

HARDSOCC

MINERS TOOLS AND SUPPLIES



CATALOG
NO. 33

HARDSOCC MFG. CO. OTTUMWA, IOWA.



Catalog Number 33

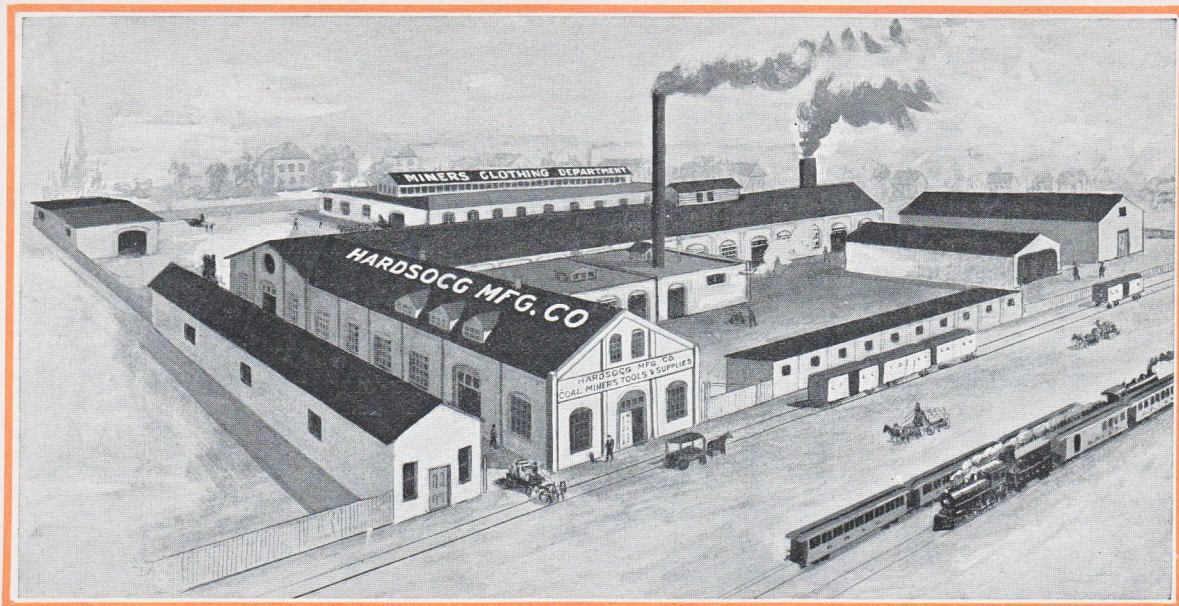
HARDSOCC

Coal Drills, Miners' Tools and Supplies

Branch:
Evansville, Ind.

Main Office and Factory:
Ottumwa, Iowa

Branch:
Pittsburg, Kan.



Better Miners' Tools and Supplies Bear "Hardsocg" Stamp



MERCHANTS and MINERS alike know what the name "Hardsocg" means in mining tools from their experiences in selling and using them. This name marked the first mining tools made, and it has labeled more new inventions in this line than any other. They cost no more than ordinary tools. Dealers find them much easier to sell than less known tools. The dealer's margin of profit too, is liberal. Yet even now with "Hardsocg Products" accepted generally among miners, operators and merchants, we do not consider this a limit to our endeavor. We have never asked ourselves "Are Hardsocg Tools better than others," but rather: "What can we do to make them still better"?

Most every new invention, or point of superiority registered, or improvement made in mining tools, drills, picks, etc., in the last half century has borne the "Hardsocg" stamp. We put into every Hardsocg product we manufacture, all the expert skill and practical experience our strong organization can offer.

HARDSOCC To build up a trade that is permanent cannot be done unless
SERVICE honest service travels hand in hand with the product—and whether your

products and the service meets the approval of merchant and miner can only be known in time. Our trade is permanent and ever increasing because we built it on the merits of our goods and satisfactory service. We feel we have succeeded in our endeavors to make our values and service the best that can possibly be obtained. We pledge you and every customer, whether you be a large or small buyer, prompt and courteous attention to your wants. This is the solemn pledge of every employee of our institution.



PITTSBURG BRANCH

TRADE CUSTOMS

TERMS To responsible parties, net cash in 30 days, 2 per cent for cash in 10 days from date of invoice. Positively no discount allowed unless earned. Overdue accounts are subject to sight draft without notice. No orders filled when past due bills are unpaid. Unless otherwise specified all prices are f. o. b. cars, Ottumwa, Iowa, Pittsburg, Kansas, or Evansville, Indiana. Statements are mailed the first of each month to enable you to check your account with our books. If errors are found advise us at once and we will make proper adjustment.

REMITTANCES All remittances should be sent to the Main Office at Ottumwa.

ORDERS AND CONTRACTS All orders accepted and contracts entered into by our representatives are subject to approval of our main office. All agreements are contingent upon strikes, accidents and other causes beyond our control.

DELIVERY It is our policy, as far as possible, to make shipment on date order is received and when urgently needed will have transportation company trace to avoid delay in transit. Our responsibility ceases when goods are delivered in good order to the transportation company. However, we will in every way assist customers in getting proper adjustment from the carriers. Goods shipped to prepay points where there is no agent are absolutely at buyer's risk. The Railroad Companies will not make good any loss or damage unless the consignee is on the spot when the train arrives and gets a memorandum of the loss or damage from the train conductor. Never accept a shipment which arrives short or in bad condition until the agent makes proper notation on paid freight bill.

CLAIMS Claims for goods lost or damaged in transit should be made on Transportation Company immediately after checking in shipments. Claims for shortage, errors, etc., should be made direct to us within 5 days after receipt of shipment.

RETURNED GOODS Under no circumstances should goods be returned without first writing us. Where we are in error notify us within 10 days after receipt of goods and we will gladly make satisfactory adjustment or give shipping instructions.

OUR GUARANTEE We replace or give credit at our option for any of our tools which with fair usage prove defective in material or workmanship, but nothing in this agreement shall render us liable to claims for labor or damages or to make good any tools that are broken or damaged by careless handling or being used for other purposes than that for which they are sold.

PARCEL POST As a safety measure all Parcel Post shipments are insured at a small additional cost to the purchaser.

A SUGGESTION To avoid mistakes and delays, orders should be plainly written, giving our catalog numbers, specifying patterns, styles, weights, and sizes. Write nothing on the order sheet that does not pertain to the order.



EVANSVILLE BRANCH

MY OWN STORY OF HARDSOCCG TOOLS

By MARTIN HARDSOCCG



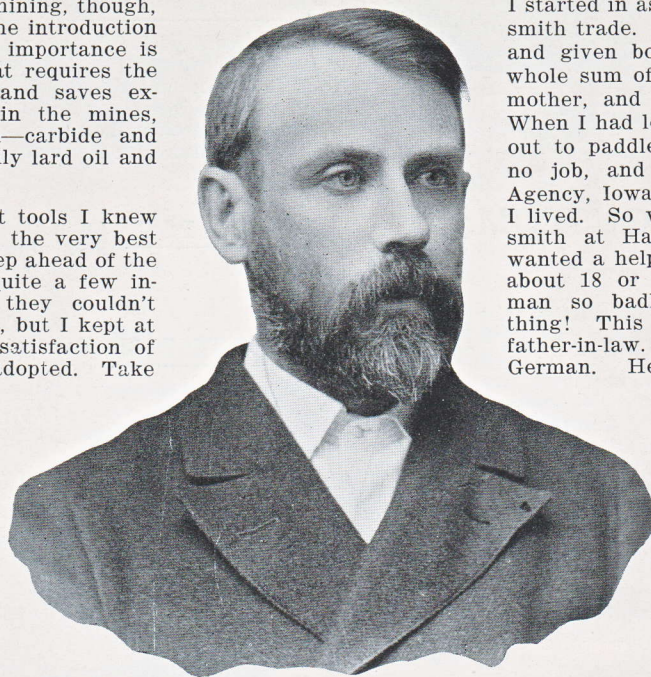
dug coal, so I know something about the miner's side. We miners went in before sun up and came out after dark. Maybe we wouldn't see the sun from one end of the month to the other. You see, we worked thirty days and then had to wait till the twentieth of the next month before we got any money. The longer we worked, the less money we had coming on payday. If it wasn't all spent for food and supplies and we happened to have a ten dollar bill left—well, we went to town and blew it in having a good time.

I have been making miners' tools and supplies for the last fifty years. Old? No—I'm not old. I'm seventy years—young. Retire? Nope, I'll never quit. Tried to get out of harness twenty-five years ago, but after laying round lazy-like for a few days, I got sick. Retiring was killing me, I figured, so I pulled on my overalls and hiked back to the factory and over to my old work bench. And here I am yet—and never felt better in my life.

The biggest change in mining, though, was brought about by the introduction of the auger. Next of importance is the detachable pick that requires the use of fewer handles and saves expense. Better lights in the mines, too, have meant much—carbide and electric in place of smelly lard oil and dripping candles.

I always made the best tools I knew how to make, and used the very best materials. I tried to keep ahead of the times, too, and made quite a few inventions. Sometimes they couldn't see my new ideas at all, but I kept at it and finally had the satisfaction of seeing most of them adopted. Take the detachable pick now used by miners everywhere. I was the first man to put this out. The miner used to pack a load of ten picks on his back into the mine. No two handles were alike, and he had to keep them carefully sorted. I literally talked my head off to miners to get this device into common use. You see, in those days, they could buy a common store pick for a half dollar, and I had to have a dollar and a half. But mine was worth every cent I asked for it for I used the very best of materials. I even gave individual miners as many as a half dozen picks to try them out. Once they saw what my picks would do, I had no trouble selling the same miners over and over again. For I took pains to make tools to suit the miners.

I came to America's free shores at six years. Started to school and had to learn to speak English and my letters at the same time. My father, a farmer in the old country, didn't want to work for the other fellow when he came over here, and began to dig wells. He sunk a well at so much a foot. I got to thinking about that and thought I would like to know before—not after, I dug a well, that I would get water, and got up a drill, twisted like a lightning rod. Since then I have perfected a great many different kinds of drills to dig coal, drill wells, rock and stone in quarries or mines, etc.



MARTIN HARDSOCCG, Founder.

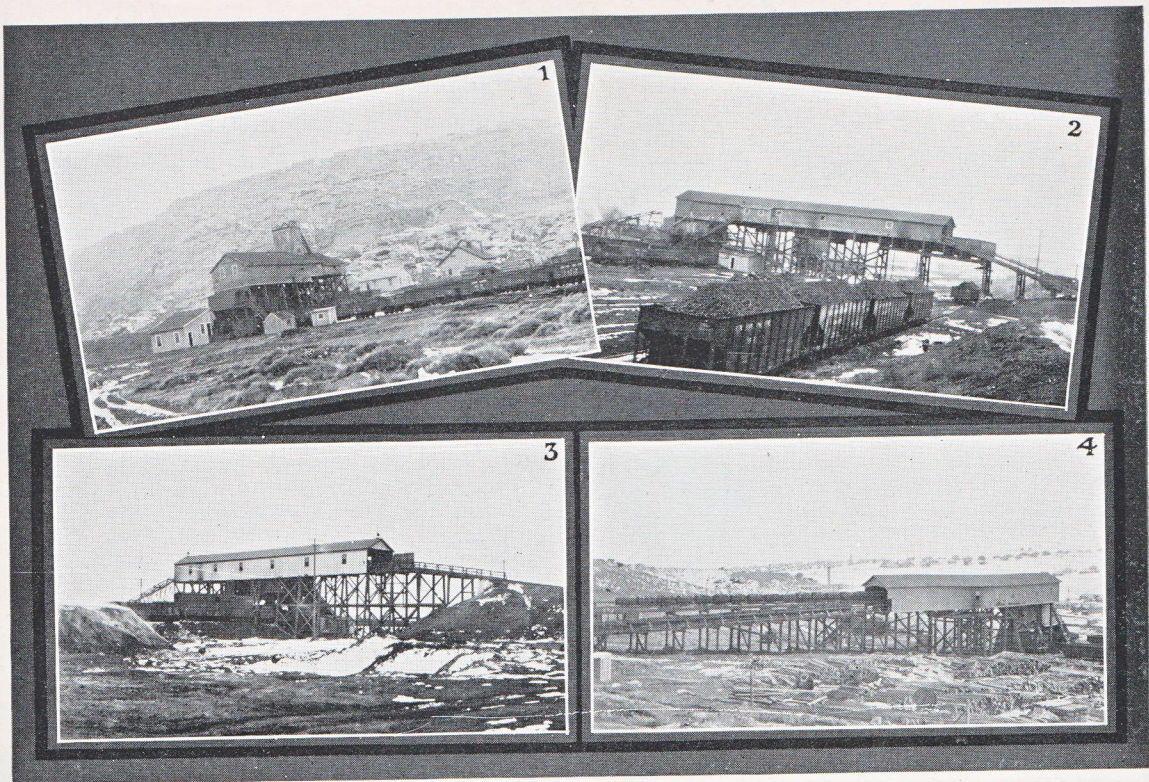
I started in as a boy to learn the blacksmith trade. I was paid \$50.00 a year and given board. I turned over the whole sum of my yearly wages to my mother, and she bought my clothes. When I had learned my trade, I started out to paddle my own canoe. I had no job, and could find none about Agency, Iowa, the little village where I lived. So when I heard of a blacksmith at Happy Hollow, Iowa, who wanted a helper, I hoofed it out there, about 18 or 20 miles. He needed a man so badly he took me. Funny thing! This man later became my father-in-law. I was a slim little German. He was a walloping big Englishman. Yet he was afraid to shoe a mule for fear he would get kicked, so when he found out I wasn't, he handed me the shoe to nail on. We had no understanding about wages. He gave me two dollars a day though, but kept back some. Then when we got ready to square up, he gave me a kit of tools to balance account and I started up my own shop a little farther away, where there was a mine.

This is where I began to make tools and build mine cars. Then the Ottumwa Chamber of Commerce offered me a substantial cash bonus to move to Ottumwa which I accepted. Then followed long years of struggles until we built and developed our present plant and full line of miners' tools and supplies.

And here I am at seventy, still at the work-bench, and happy as the day is long. I get up at four in the morning and am the first to report for work at the factory. I work till noon, eat my lunch and an apple in the shop, go back to work at one, knock off at five, and go to bed by eight at night. That's my life—and I'm having a bully time.

If these words of my own life are of interest, or give encouragement to the miner who digs coal with Hardsocg tools, or the dealer who sells the miner the tools and supplies that I am proud to have bear my name, then I shall feel repaid for what my good and wise wife will term these words—boasting.

SOME INTERESTING COAL MINING VENTURES



Union Pacific Coal Co. Mines, Rock Springs, Wyo.

1—No. 8 Tipple—Rock Springs: For many years this mine had the distinction of being the only shaft mine in Wyoming. Depth 180 feet. It is located on what is known as the No. 7 Seam. This shaft was sunk in 1887 and has been a large producer, average daily production at the present time 1200 tons. Entries extend about $4\frac{1}{2}$ miles from shaft bottom.

3—No. 4 Tipple—Rock Springs: Slope at the present time has total length of about 6500 feet. This slope is opened on what is known as the old No. 1 Rock Springs Seam. This mine is a large producer, average daily production being about 1500 tons. Height of coal about ten feet.

2—No. 10—Tipple—Rock Springs: Located adjacent to No. 8 shaft and was opened on the same seam of coal. Length of slope to main entries about 4000 feet, 1300 feet of which was driven on a 15° pitch through rock. This mine has been a large producer and the slope has been continued to what is known as No. 11 Seam.

4—C Tipple—Superior: Superior Camp is located about 20 miles from Rock Springs, Wyoming. Coal mined is from same geological series as the Rock Springs fields. C Mine is opened on what is known as the No. 1 Seam, Rock Springs. This mine has always been a good producer, average production at the present time about 1200 tons per day.

Bottom—The Orient mine of the Chicago, Wilmington and Franklin Coal Company, located in Franklin County, Illinois. Opened in July, 1913, and served by three large railways. From the date of opening Orient has taken a position among the larg-

est bituminous coal mines in the world. On March 25, 1922, Orient produced 2818 tons in eight hours, which is the world's record for a single day's operation. Orient's record for one week is 38,723 tons, and for one month 162,054 tons. Orient is mined 520 feet below the surface of the ground, and the thickness of the seam of coal is nine feet.

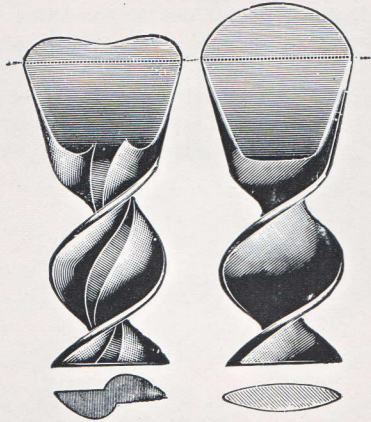


Orient Mine, Chicago, Wilmington and Franklin Coal Co.

Index

	Page		Page
Adz, Trackmen's	44	Machines, Cyclone and Repairs.....	38
Augers, Premier Patented.....	7	Machines, ECQ Post and Repairs.....	8-11
Augers, Breast	41	Machines, ECQ Grip and Repairs.....	12
Augers, Roof	33	Machines, Q Post and Repairs.....	13-15
Augers, Rock	40	Machines, Q Grip and Repairs.....	16
Axes, Miners'	45	Machines, A Post and Repairs.....	18-19
		Machines, A Grip and Repairs.....	20
Bars, Trackmen's	44	Machines, Joplin or Little Giant Post	
Belts, Miners'.....	67	No. 1	21-23
Benders, Rail	42	Machines, Joplin or Little Giant Grip	
Bits, Cutter Chain.....	43	No. 2	24
Bits, Mole Foot	39	Machines, Joplin or Little Giant Grip	
Bits, Prospector's	43	No. 3	25
Boxes, Powder	58	Machines, Joplin Post No. 4.....	26-27
Boxings, Various Styles.....	17	Machines, Joplin Grip No. 5.....	28
Brattice	72	Machines, Flat Bar and B Repairs.....	29
Brace, Stamping	43	Machines, J. & T. Corrugated Post.....	30-31
Buckets	59	Machines, J. & T. Grip.....	32
Breast Augers and Repairs.....	41	Machines, Roof Auger.....	33
		Machines, Peoria Post and Repairs.....	34-35
Cans, Powder	59	Machines, QY Post and Repairs.....	36-37
Canteens, Carbide.....	58	Machines, Ratchet Rock.....	40
Caps, Miners'	65-66-67	Mole Foot Heads and Extensions.....	39
Caps, Dynamite	63	Mittens	68
Carbide	58	Movers, Car.....	71
Cases, File.....	58		
Car Movers	71	Needles, Copper and Steel.....	54-55
Chargers	63		
Checks, Mine Car	58	Oilers	59
Cartridge Soap.....	63		
Dutch Heads and Points.....	49	Pants, Miners'.....	64
Drawers, Miners'.....	64	Paper, Blasting	63
Drills, Churn	54-55	Pads, Knee	67
Dynamite	63	Picks, Patent	46-47
		Picks, Common Eye	48-49
Files	45	Picks, Drifting	49
Forks, Coal and Coke.....	62	Picks, Poll	49
Fuse	63	Powder Boxes.....	58
Gopher Head.....	39	Rail Benders.....	42
Gloves	68	Riddles, Coal.....	71
Grinders, Tool	71	Roof Augers	33
Gauges, Track	43		
		Saws	45
Handles, Pick	69	Scrapers, Double End.....	54-55
Handles, Saw	45	Scrapers, Spoon	55
Handles, Shovel	69	Screens, Coal	71
Handles, Patent Black Diamond.....	50	Shirts, Miners'.....	64
Handles, Patent Key	50	Shovels	60-62
Handles, Patent Scott	51	Sledges	53
Handles, Patent "K. K.".....	51	Spikes	43
Hatchets, Claw, Broad and Shingling.....	45	Stamping Bits and Braces	43
Hatchets, Spiking	44		
Hats, Squam, Waterproofed	67	Tampers, Copper Head.....	54
Holdes, Tie.....	43	Tampers, Steel Head.....	55
Heels	70	Tamp Ends	54
		Tamper and Scraper Combined.....	54
Knee Pads.....	67		
Lamps	56	Wedges	52
Lamps, Repairs and Accessories.....	56-57		
Leather, Taps, Block and Squares.....	70		

THE NEW PATENTED "PREMIER" CONVEYOR AUGER



In more than forty years there has been no improvement in coal augers except the now generally used oval or Feather Edge shape which was invented by Martin Hardsocg more than thirty years ago.

Mr. Hardsocg, being a practical blacksmith, realized the Feather Edge Auger was not economical on account of the waste of material in sharpening, and was successful in developing something better—the "Premier" Auger.

The illustrations show the general shape of the Premier and old style Feather Edge augers. You will note how the material is drawn out by the blacksmith, and in sharpening the Feather Edge he usually cuts off the end at about the dotted lines as shown.

Premier Augers are made of the best quality of steel for the purpose and its peculiar shape makes it much stronger than the ordinary auger. They can be furnished in $1\frac{3}{4}$ inch and 2 inch size, to fit any style coal drill. In several places they have proved very satisfactory for Electric Drills.

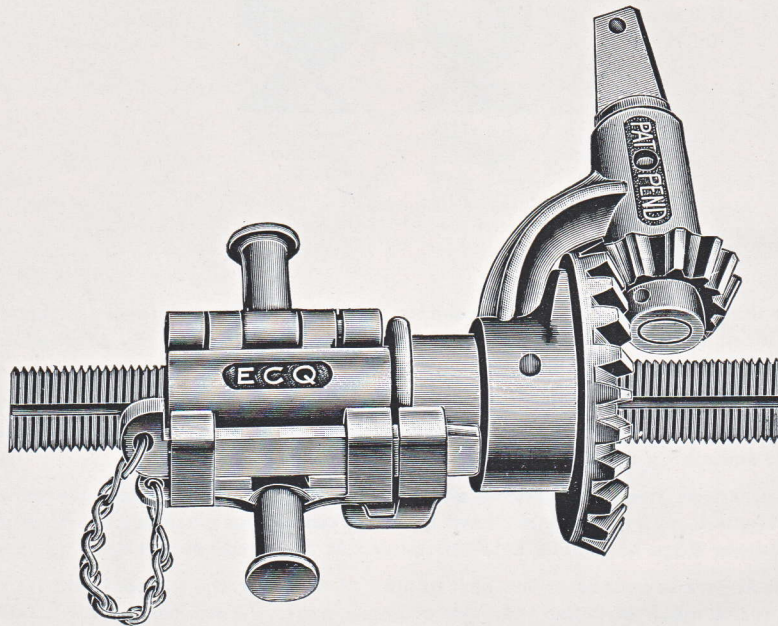
In giving the diameter of augers, we specify the size of the steel before twisting, because in heating and twisting the diameter is always reduced. Regular oval or Feather Edge pattern can be furnished in $1\frac{1}{2}$ inch, $1\frac{3}{4}$ inch and 2 inch.

Specify whether Premier or regular Feather Edge augers are wanted. Also diameter of twist.

HARDSOCC MANUFACTURING CO., OTTUMWA, IOWA

HARDSOCC E. C. "Q" DRILLS

Combines all the good features of our old "Q" machine with several important improvements, making it so far ahead of other drills for hard service that its superiority is unquestioned. Large gear wheel has double key and well formed teeth made from perfect patterns. The positive locking device prevents lost motion, and from the fact that the boxing fits inside the gear frame, it is impossible for it to spread, as is the case with other makes. All parts machined and properly fitted together, insuring long wear.



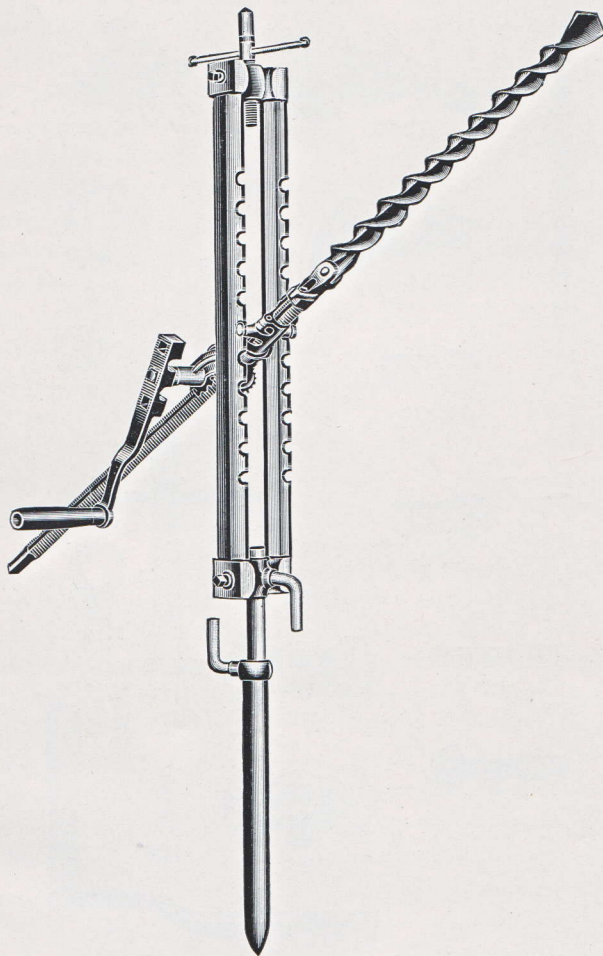
(Patented)

Adjustment could not be more simple. End of boxing fits inside the gear frame and one key locks them solidly together. Only a boxing to buy when threads wear out —not a boxing and gear complete.

DRILLS, MINING TOOLS AND MINERS' SUPPLIES

HARDSOCC E. C. "Q" POST DRILLS

Specify length of post wanted.



DRILLS FASTER WITH LESS POWER THAN ANY OTHER MACHINE WE MAKE

When a boxing wears out you have only a boxing to buy, not a complete gear frame as with other machines. Largest thread bar and strongest gearing furnished with any machine.

Thread bar is reversible and if turned frequently both bar and boxing will wear longer. Furnished in 6 square and 8, 10, 12, 14 Whitworth thread.

Unless otherwise specified, we furnish bars eight threads to the inch.

**THE MOST SATISFACTORY DRILL WE MANUFACTURE AND
THE ONE WE RECOMMEND ABOVE ALL OTHERS FOR HARD
DRILLING COAL.**

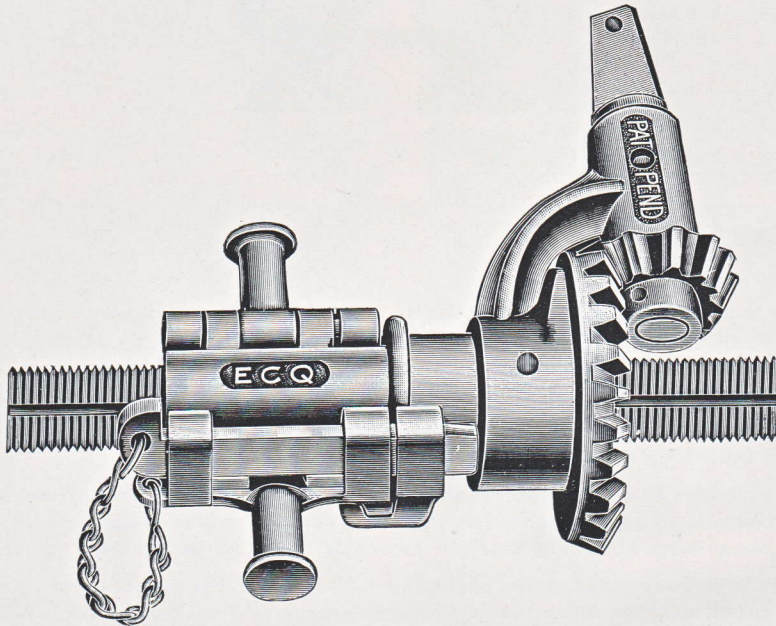


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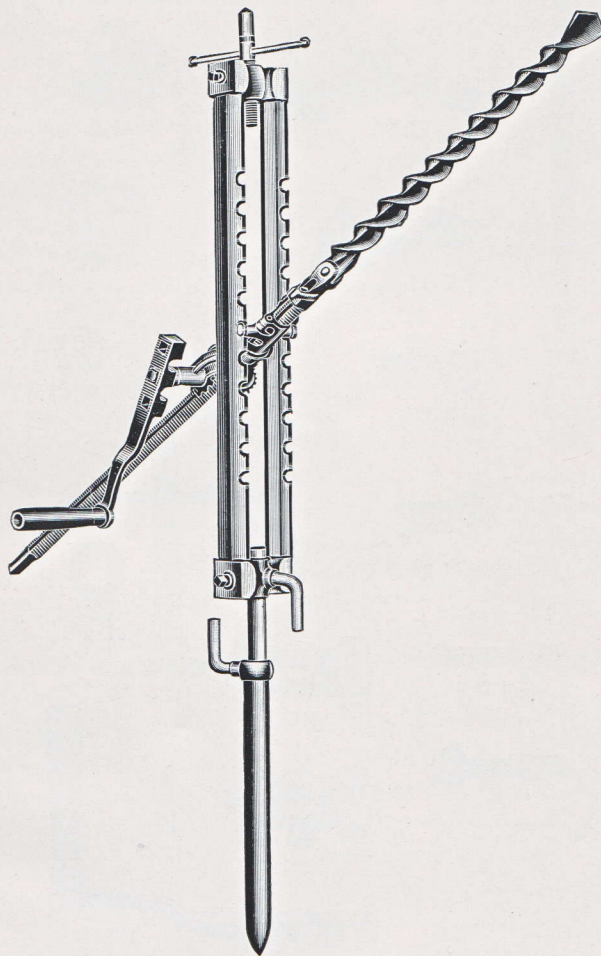
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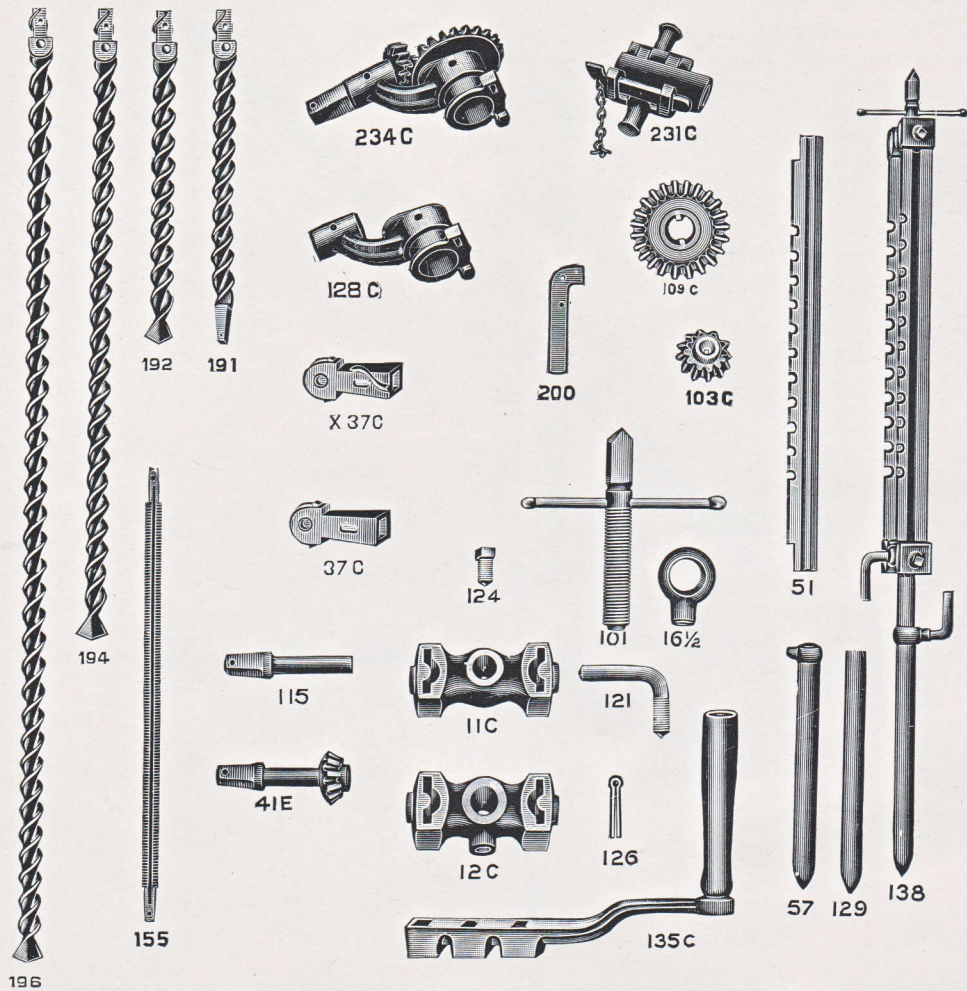
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DRILLING COAL.**



HARDSOCG MANUFACTURING CO., OTTUMWA, IOWA

HARDSOCG E. C. "Q" POST DRILL AND PARTS

Always specify length of post.



For hard drilling coal, we can supply bars and boxings having ten, twelve and fourteen threads to the inch. For easy drilling coal, we can furnish our fast feed thread bar and boxing having six threads to the inch.



HARDSOCC E. C. "Q" POST DRILL AND PARTS

REPAIR LIST

ECQ	Post Drill, complete .....	.....
11C	Post Casting for Jack Screw.....	.....
12C	Post Casting for Boot .....	.....
16½	Ring for Boot .....	.....
37C	Socket for Auger, plain .....	.....
X37C	Socket for Auger, spiral .....	.....
41E	Journal and Small Wheel .....	.....
51	Corrugated Side Bar for Post, per foot.....	.....
57	Boot, 1¼ inch .....	.....
101	Jack Screw for Post .....	.....
103C	Small Gear Wheel .....	.....
109C	Large Gear Wheel .....	.....
115	Journal only .....	.....
121	Tail Set Screw for No. 12C .....	.....
124	Set Screw for Post Castings.....	.....
126	Spring Cotter, per dozen.....	.....
128C	Gear Frame .....	.....
129	Stem for Post, 1¼ inch .....	.....
135C	Crank .....	.....
138	Post complete, 3 ft. and under. Always specify length.....	.....
	Post over 3 ft. takes an advance in price.	
155	Thread Bar .....	.....
191	Two ft. Premier Auger Extension	91 Two ft. FE Auger Extension.....
192	Two ft. Premier Auger.....	92 Two ft. FE Auger.....
194	Four ft. Premier Auger.....	94 Four ft. FE Auger.....
196	Six ft. Premier Auger.....	96 Six ft. FE Auger.....
197	Seven ft. Premier Auger (not shown)	97 Seven ft. FE Auger.....
198	Eight ft. Premier Auger (not shown)	98 Eight ft. FE Auger.....
200	Key for Boxing, with Chain.....	.....
231C	Boxing .....	.....
234C	Side Gear .....	.....

Unless otherwise specified Drill is furnished with thread bar and boxing, having eight threads to the inch, but can supply same in 6 square, or 10, 12 or 14 Whitworth thread.

We furnish Premier Augers in 1¾ inch and 2 inch size, also regular oval or Feather Edge Pattern in 1½ inch, 1¾ inch and 2 inch.

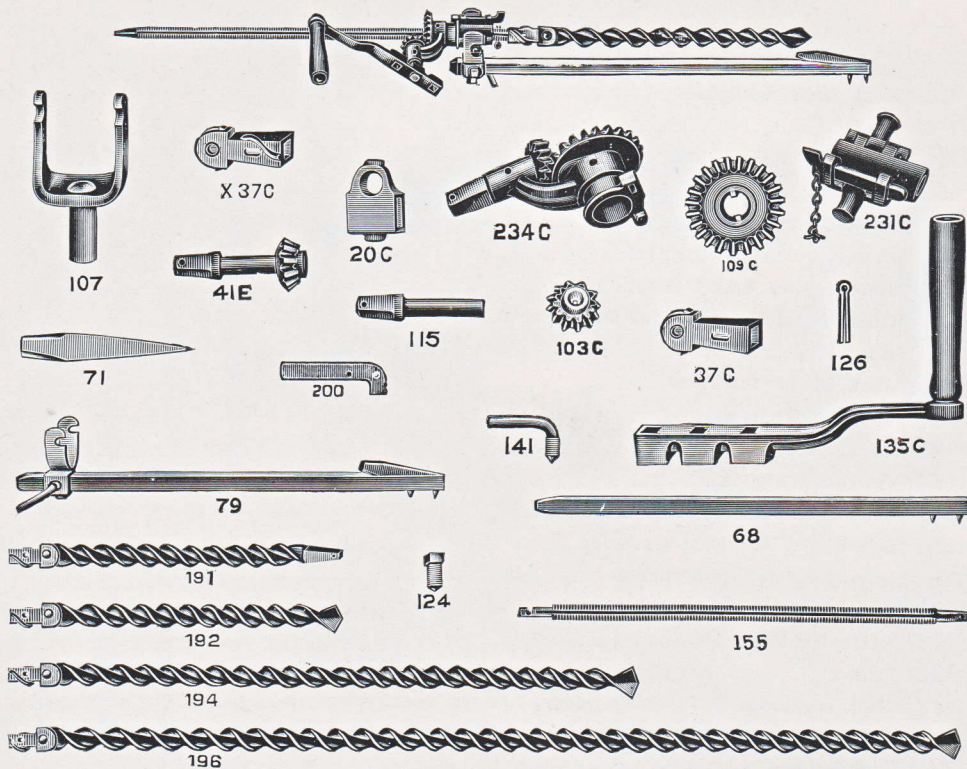
The 2 inch in either pattern take an advance in price over the smaller sizes.

Specify whether Premier or regular Feather Edge Augers are wanted, also diameter of twist.



HARDSOCCG MANUFACTURING CO., OTTUMWA, IOWA

HARDSOCCG E. C. "Q" GRIP DRILL AND PARTS



REPAIR LIST

ECQ	Grip Drill, complete	.....
20C	Slide Casting for Grip Bar	.....
37C	Socket for Auger, plain	.....
X37C	Socket for Auger, spiral	.....
41E	Journal and Small Wheel	.....
68	Square Grip Bar only	.....
71	Wedge for Grip	.....
79	Grip, complete	.....
103C	Small Gear Wheel	.....
107	Grip Chair	.....
109C	Large Gear Wheel	.....
115	Journal only	.....
124	Set Screw for No. 20C (secures chair)	.....
126	Spring Cotter	.....
135C	Crank	.....
141	Tail Set Screw for No. 20C	.....
155	Thread Bar	.....
191	Two foot Premier Auger Extension	..... 91	Two foot FE Auger Extension
192	Two foot Premier Auger	..... 92	Two foot FE Auger
194	Four foot Premier Auger	..... 94	Four foot FE Auger
196	Six foot Premier Auger	..... 96	Six foot FE Auger
197	Seven foot Premier Auger (not shown)	..... 97	Seven foot FE Auger
198	Eight foot Premier Auger (not shown)	..... 98	Eight foot FE Auger
200	Key for Boxing, with Chain	.....
231C	Boxing	.....
234C	Side Gear	.....

Please specify whether Premier or regular oval or Feather Edge Augers are wanted. Unless otherwise specified, thread bar and boxing having eight threads to the inch will be shipped. For hard drilling coal, we can supply bars and boxings having ten, twelve or fourteen threads to the inch. For easy drilling coal, we can furnish our fast feed thread bar and boxing having 6 threads to the inch.

We furnish Premier Augers in 1 1/4 inch and 2 inch size, also regular oval or Feather Edge Pattern in 1 1/2 inch, 1 3/4 inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

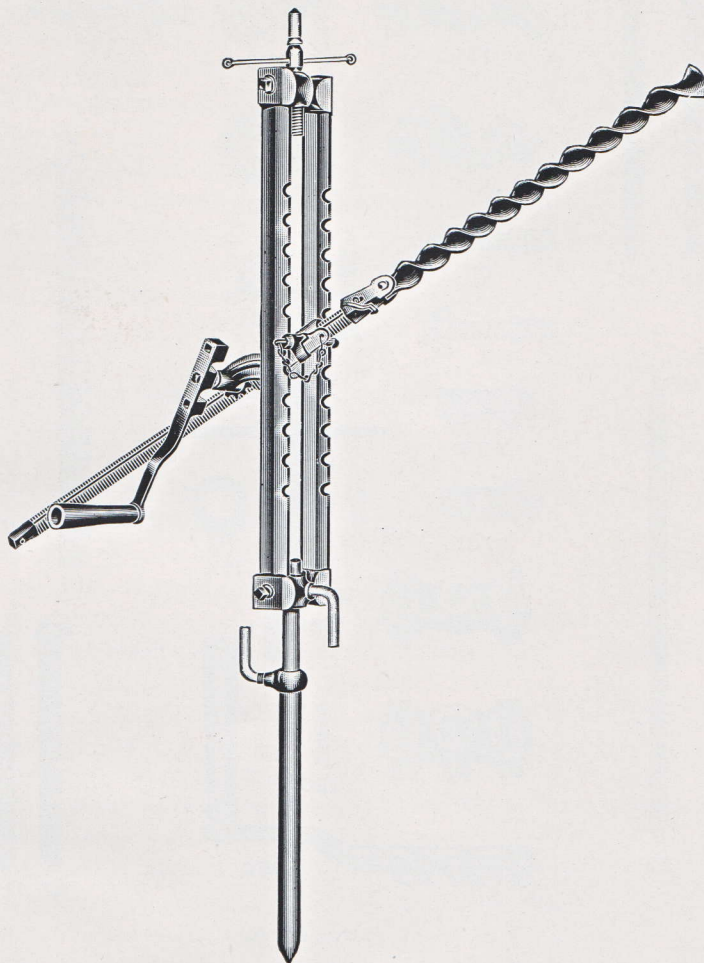
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DRILLS, MINING TOOLS AND MINERS' SUPPLIES

HARDSOCC OLD STYLE "Q" DRILL

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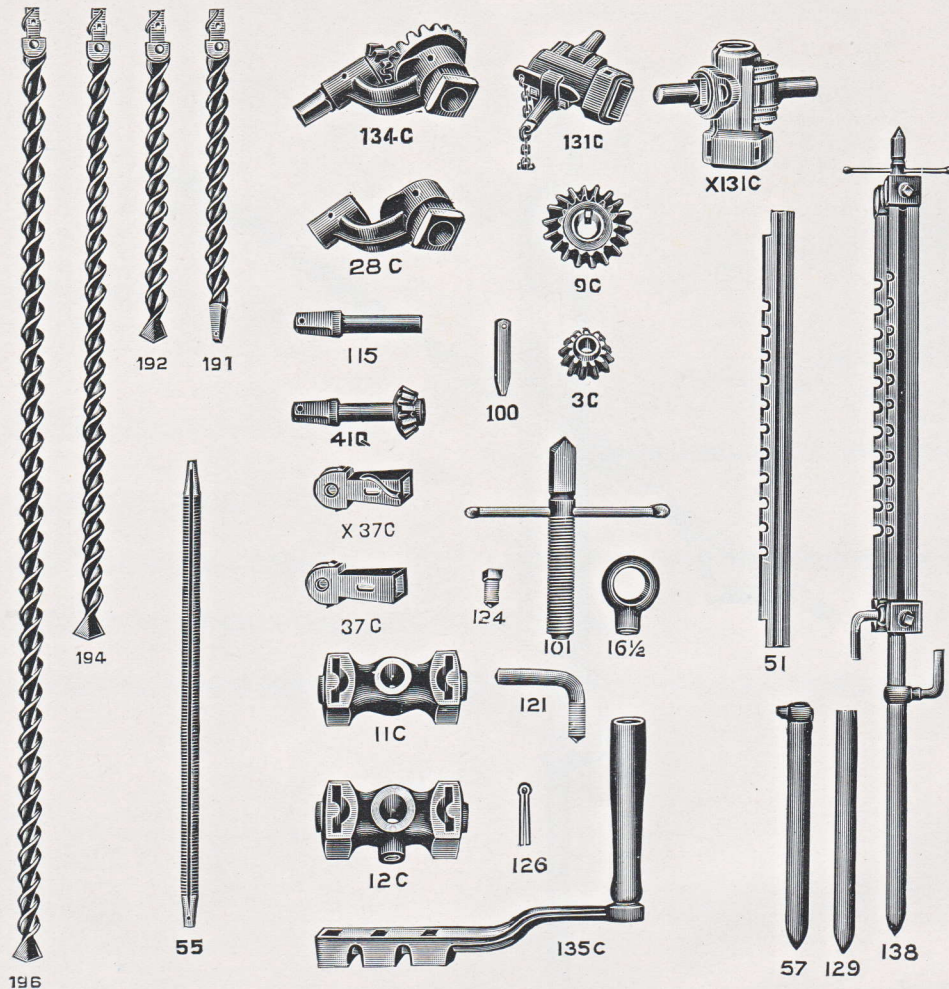
The Original Standard "Q" Drill.

Imitations of this drill are being offered to the trade under similar names. If you want to avoid trouble, we would advise you to purchase these drills and their repair parts from the original manufacturers. None genuine unless they bear the name HARDSOCC.

HARDSOCC MANUFACTURING CO., OTTUMWA, IOWA

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We furnish Premier Augers in $1\frac{3}{4}$ inch and 2 inch size, also regular oval or Feather Edge Pattern in $1\frac{1}{2}$ inch, $1\frac{3}{4}$ inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.



HARDSOEG "Q" POST DRILL AND PARTS

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"Q"	Post Drill, complete
3C	Small Gear Wheel
9C	Large Gear Wheel
11C	Post Casting for Jack Screw.....
12C	Post Casting for Boot .....	.....
16½	Ring for Boot .....	.....
28C	Gear Frame .....	.....
37C	Socket for Auger, plain .....	.....
X37C	Socket for Auger, spiral .....	.....
41Q	Journal and Wheel .....	.....
51	Corrugated Side Bar for Post, per foot .....	.....
55	Thread Bar .....	.....
57	Boot, 1¼ inch .....	.....
100	Key for Boxing, with Chain .....	.....
101	Jack Screw .....	.....
115	Journal only .....	.....
121	Tail Set Screw for No. 12C .....	.....
124	Set Screw for Post Castings .....	.....
126	Spring Cotters .....	.....
129	Stem for Post, 1¼ inch .....	.....
131C	Boxing with Key .....	.....
X131C	Boxing with Patent Lock .....	.....
134C	Side Gear .....	.....
135C	Crank .....	.....
138	Post, complete, 3 ft. and under. Always specify length.....	.....
	Post over 3 ft. takes an advance in price.	
191	Two ft. Premier Auger Extension	91 Two ft. FE Auger Extension.....
192	Two ft. Premier Auger.....	92 Two ft. FE Auger.....
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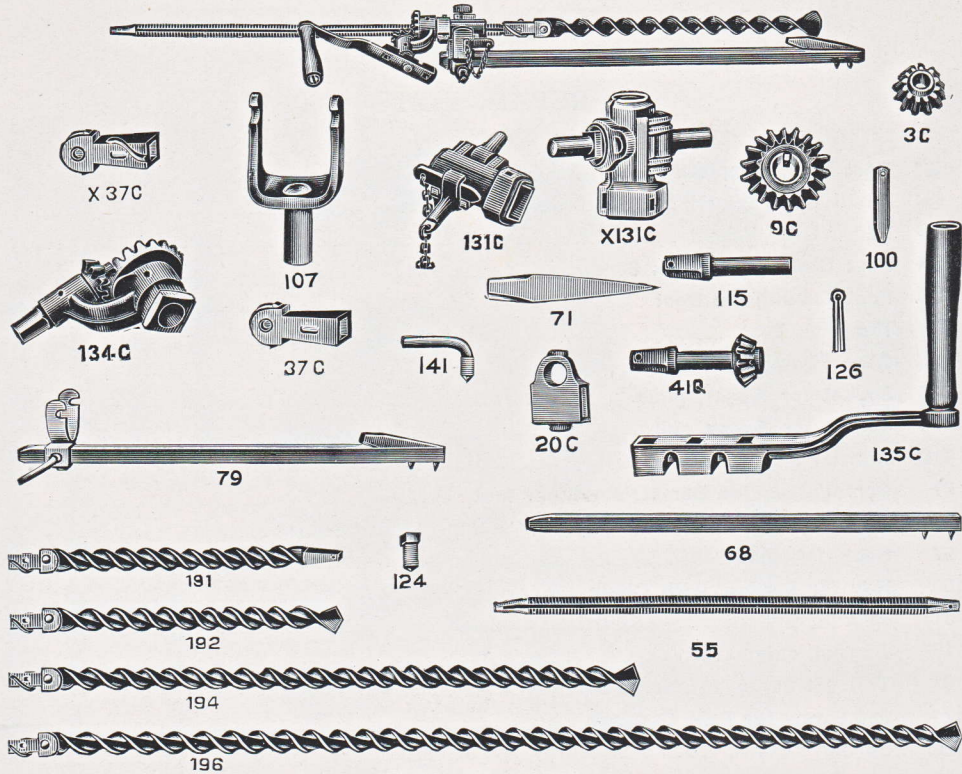
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37C	Socket for Auger, plain.....
X37C	Socket for Auger spiral.....
41Q	Journal and Small Wheel.....
55	Thread Bar.....	.....
68	Square Grip Bar only.....	.....
71	Wedge for Grip.....	.....
79	Square Grip, complete.....	.....
100	Key for Boxing, with chain.....	.....
107	Grip Chair.....	.....
115	Journal only.....	.....
124	Set Screw for No. 20C (secures chair).....	.....
126	Spring Cotter.....	.....
131C	Boxing with Key.....	.....
X131C	Boxing with Patent Lock.....	.....
134C	Side Gear.....	.....
135C	Crank.....	.....
141	Tail Set Screw for No. 20C.....	.....
191	Two foot Premier Auger Extension.....	91 Two foot FE Auger Extension.....
192	Two foot Premier Auger.....	92 Two foot FE Auger.....
194	Four foot Premier Auger.....	94 Four foot FE Auger.....
196	Six foot Premier Auger.....	96 Six foot FE Auger.....
197	Seven foot Premier Auger(not shown).....	97 Seven foot FE Auger.....
198	Eight foot Premier Auger(not shown).....	98 Eight foot Auger.....

Unless otherwise specified Drill is furnished with thread bar and boxing having 8 threads to the inch, but can supply same in 6 square thread.

We furnish Premier Augers in 1 3/4 inch and 2 inch size, also regular oval or Feather Edge Pattern in 1/2 inch, 1 1/4 inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

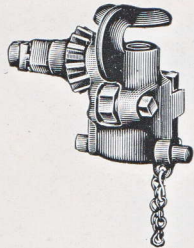
Specify whether Premier or regular oval or Feather Edge Augers are wanted, also diameter of twist.



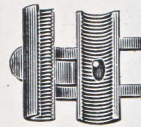
BOXINGS FOR VARIOUS MAKES OF COAL DRILLS

In addition to our own well known line, we make a number of other drills and repairs. Some of the boxings for these drills are illustrated below.

WABASH BOXING AND LINING

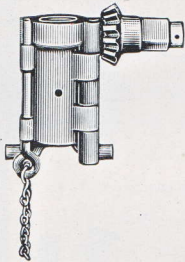


2M Boxing

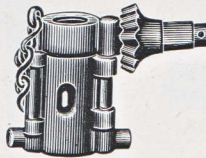


4M Lining

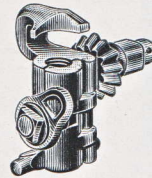
The Wabash Boxing has a removable lining which can be replaced when worn. This boxing fits the Joplin thread bar.



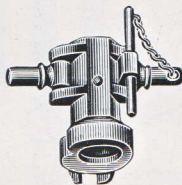
No. WIX or Little Jap
What Cheer Boxing.



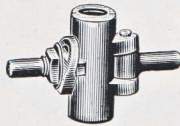
No. 1 Boxing for "Alton"
Machine.



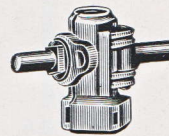
No. 02 1/2 Patented Lock
Joplin Boxing.



No. KK Boxing, formerly
made by U. S. Tool Co.
Side Gear for this Boxing
is No. 134KK.



No. X37 Patented Lock End
Gear Boxing. Fits Q. Y.
Thread Bar.



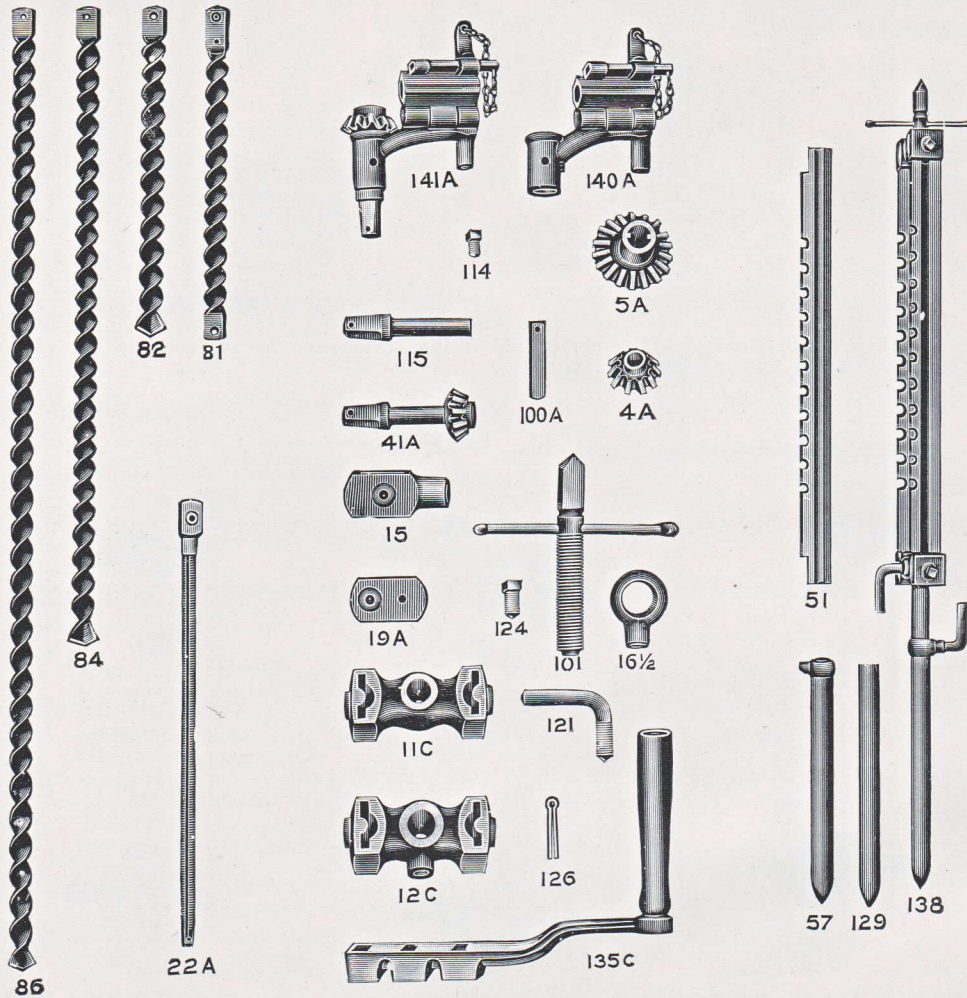
No. X131C Patented Lock
Side or End Gear Boxing.
Same size as regular 131C.

REPAIR LIST

No. 4M	Lining for "Wabash" Boxing.....	.....
No. 6	Small gear wheel for No. 2M and 02 1/2.....	.....
No. 33	Small gear wheel for No. 1 Alton Boxing.....	.....
No. 3	Alton large wheel for No. 1 Alton Boxing.....	.....
No. W3	Small gear wheel for No. WIX Boxing.....	.....
No. W6	Large gear wheel for No. WIX Boxing.....	.....

HARDSOCC "A" POST DRILL AND PARTS

Always specify length of post.



Unless otherwise specified, this machine is furnished with regular oval or Feather Edge Augers. If Premier Patented Augers are wanted specify numbers 182-184-186. Thread bar and boxing for this machine are made only in eight threads to the inch.

This is a light, yet durable machine, recommended for ordinary drilling. For hard drilling we advise using our E. C. Q. drill shown on pages 9 and 10.



HARDSOEG "A" POST DRILL AND PARTS

REPAIR LIST

- "A" Post Drill, complete
- 4A Small Gear Wheel
- 5A Large Gear Wheel
- 11C Post Casting for Jack Screw
- 12C Post Casting for Boot
- 15 Socket for Thread Bar
- 16½ Ring for Boot
- 19A Socket for Auger Extension
- 22A Thread Bar
- 41A Journal and Wheel
- 51 Corrugated Side Bar for Post, per foot.....
- 57 Boot, 1¼ inch
- 81 Two ft. Auger Extension
- 82 Two ft. FE Auger.....
- 84 Four ft. FE Auger.....
- 86 Six ft. FE Auger.....
- 87 Seven ft. FE Auger (not shown)
- 88 Eight ft. FE Auger (not shown).....
- 100A Key for Boxing, with Chain
- 101 Jack Screw
- 114 Set Screw for Nos. 15 and 19-A
- 115 Journal
- 121 Tail Set Screw for No. 12C
- 124 Set Screw for Post Castings
- 126 Spring Cotters
- 129 Stem for Post
- 135C Crank
- 138 Post, complete, 3 ft. and under. Always specify length.....
Post, over 3 ft. takes an advance in price.
- 140A Side Gear Boxing, less Journal and Wheel
- 141A Side Gear Boxing, complete, less 5A Wheel

{ If Premier Augers are
 wanted, add 100 to these
 numbers. }

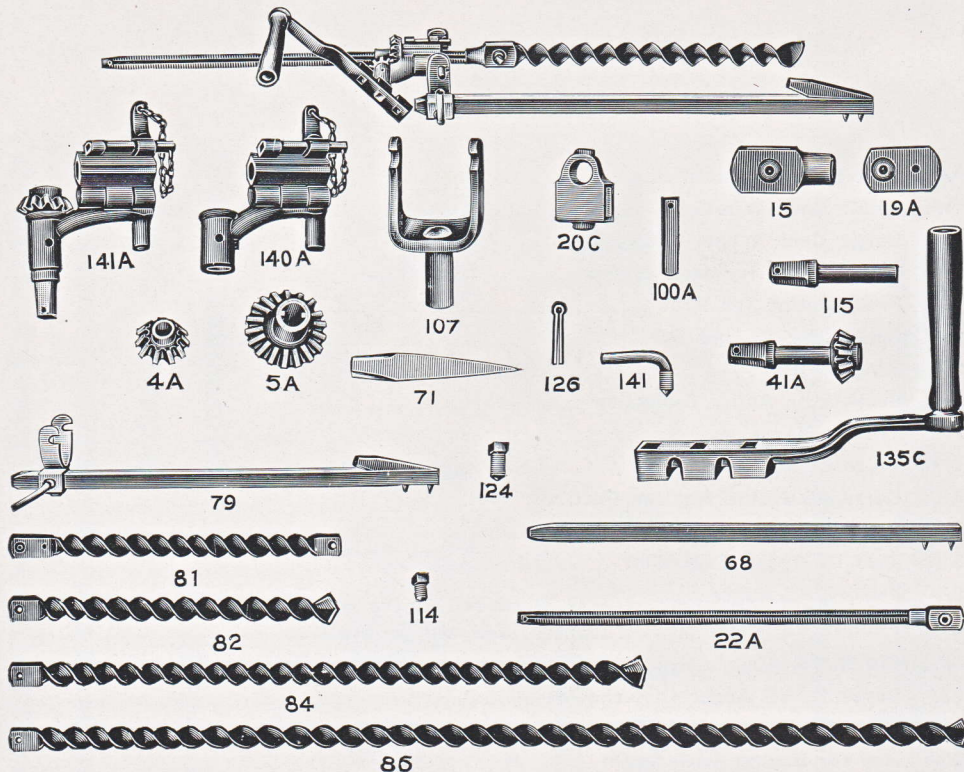
We furnish Premier Augers in 1¾ inch and 2 inch size, also regular oval or Feather Edge pattern in 1½ inch, 1¾ inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

Specify whether Premier or regular Feather Edge Augers are wanted, also diameter of twist.



HARDSOCC "A" GRIP DRILL AND PARTS



REPAIR LIST

"A" Grip Drill, complete .....	.....
4A Small Gear Wheel .....	.....
5A Large Gear Wheel .....	.....
15 Socket for Thread Bar .....	.....
19A Socket for Auger Extension .....	.....
20C Slide Casting for Grip Bar .....	.....
22A Thread Bar .....	.....
41A Journal and Wheel .....	.....
68 Square Grip Bar .....	.....
71 Wedge for Grip .....	.....
79 Square Grip, complete .....	.....
81 Two foot Auger Extension .....	.....
82 Two foot FE Auger	} If Premier Augers are wanted {	
84 Four foot FE Auger		} add 100 to these numbers. {
86 Six foot FE Auger		
87 Seven foot FE Auger (not shown).....	.....
88 Eight foot FE Auger (not shown).....	.....
100A Key for Boxing, with Chain .....	.....
107 Grip Chair .....	.....
114 Set Screw for No. 15 and 19A .....	.....
115 Journal .....	.....
124 Set Screw for No. 20C .....	.....
126 Spring Cotter .....	.....
135C Crank .....	.....
140A Side Gear Boxing, less Journal and Wheel.....	.....
141 Tail Set Screw for No. 20C .....	.....
141A Side Gear Boxing, complete, less 5A Wheel .....	.....

We furnish Premier Augers in 1 3/4 inch and 2 inch size, also regular oval or Feather Edge Pattern in 1 1/2 inch, 1 3/4 inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

Specify whether Premier or regular oval or Feather Edge Augers are wanted, also diameter of twist.

DRILLS, MINING TOOLS AND MINERS' SUPPLIES

JOPLIN POST DRILL No. 1

Always specify length of post.



We manufacture and furnish the Joplin or Little Giant Drills in both Post and Grip Machines, equipped with augers having flat shoulders or square sockets.

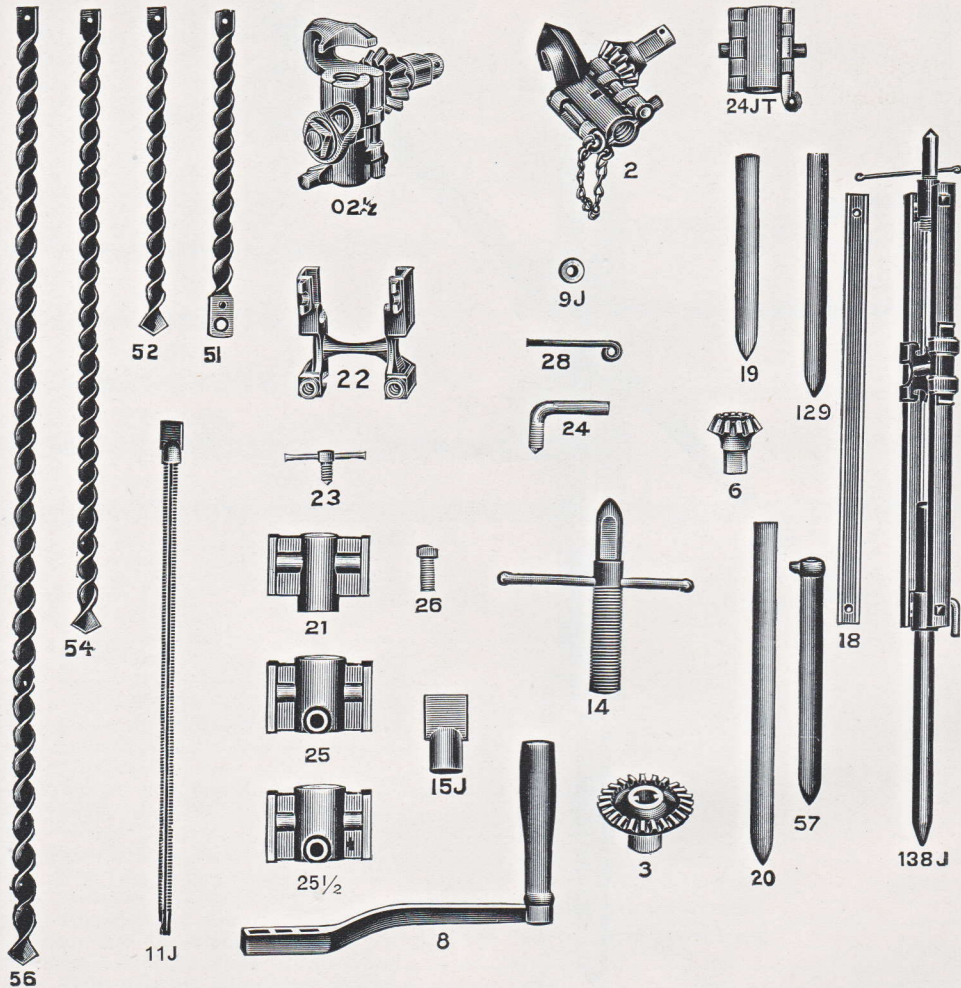
We furnish the Grip Drills with either round or square grip bars as desired. See pages 24 and 25.

We also furnish this machine with Style No. 4 Corrugated or "Doller" post when so specified. See page 26 for repairs for "Doller" post.

JOPLIN POST DRILL No. 1 AND PARTS

SOMETIMES CALLED "LITTLE GIANT"

Always specify length of post.



On the opposite page will be found a list of repairs for the above machine. In addition to those listed, we can furnish this machine with our new PATENTED PREMIER augers, and if desired in this way kindly specify augers Nos. 152, 154, 156. If thread bar is wanted with both ends square for square socket augers specify Thread Bar No. 11A and Premier Augers Nos. 192, 194, 196. Order by number and avoid mistakes.

Specify whether Premier or regular oval or Feather Edge Augers are wanted, also diameter of twist.



JOPLIN POST DRILL No. 1 AND PARTS

REPAIR LIST

Joplin Post Drill No. 1, complete .....	.....
02½ Boxing, complete, with Patent Lock .....	.....
2 Boxing, complete, with Key .....	.....
3 Large Gear Wheel .....	.....
6 Small Gear Wheel .....	.....
8 Crank .....	.....
9J Journal Nut .....	.....
11J Thread Bar .....	.....
15J Socket for Thread Bar .....	.....
14 Jack Screw for Post .....	.....
18 Post Side Bar (specify length) .....	.....
19 Short Boot, 1¼ inch .....	.....
20 Long Boot, 1¼ inch .....	.....
21 Post Casting for Jack Screw .....	.....
22 Slide Chair with Set Screw .....	.....
23 Set Screw for No. 22 .....	.....
24 Tail Set Screw for No. 25 and 25½ .....	.....
24JT End Gear Boxing .....	.....
25 Post Casting for Boot .....	.....
25½ Post Casting for 1¼ inch Stem .....	.....
26 Set Screw for Post Castings .....	.....
28 Key for Boxing, with Chain .....	.....
51 Two ft. Auger Extension	} If Premier Augers are wanted add 100 to these numbers.
52 Two ft. FE Auger	
54 Four ft. FE Auger	
56 Six ft. FE Augers	
57 Seven ft. FE Auger (not shown) ..	.....
58 Eight ft. FE Auger (not shown) ..	.....
57 Boot, 1¼ inch .....	.....
129 Stem for Post, 1¼ inch .....	.....
138J Post complete. Always specify length .....	.....

Post, over 3 ft. takes an advance in price.

We furnish Premier Augers in 1¾ inch and 2 inch size, also regular oval or Feather Edge Pattern in 1½ inch, 1¾ inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

Specify whether Premier or regular Feather Edge Augers are wanted, also diameter of twist.

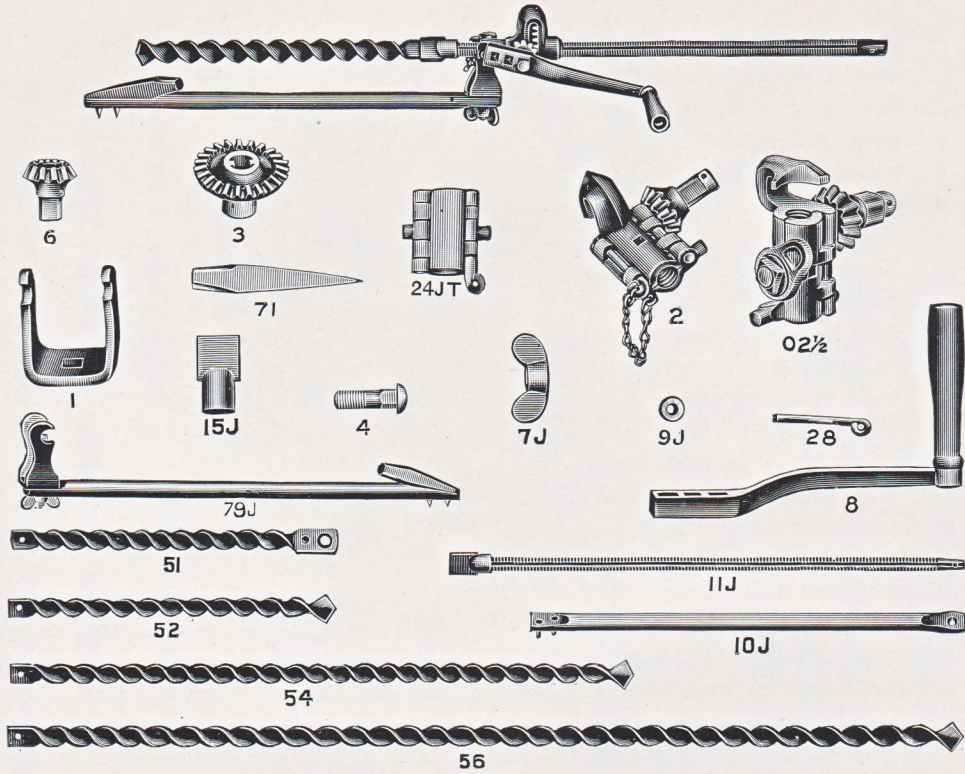


HARDSOCG MANUFACTURING CO., OTTUMWA, IOWA

JOPLIN GRIP DRILL No. 2 AND PARTS

FLAT SOCKET THREAD BAR.

ROUND GRIP BAR.



REPAIR LIST

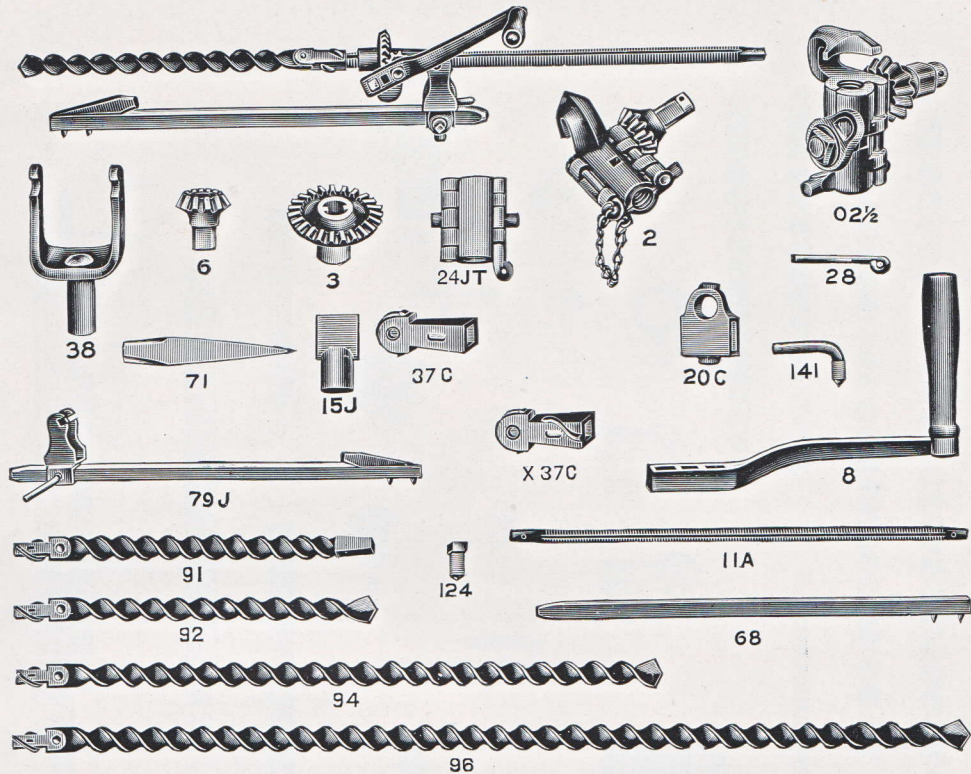
1	Joplin Grip Drill No. 2, complete	.....
1	Grip Chair	.....
02½	Boxing, complete, with Patent Lock	.....
2	Boxing, complete with Key	.....
3	Large Gear Wheel	.....
4	Chair Bolt	.....
6	Small Gear Wheel	.....
7J	Nut for Chair Bolt	.....
8	Crank	.....
9J	Journal Nut	.....
10J	Round Grip Bar	.....
11J	Thread Bar	.....
15J	Thread Bar Socket	.....
24JT	End Gear Boxing	.....
28	Key with Chain, for Boxing	.....
51	Two ft. Auger Extension	.....
52	Two ft. FE Auger	.....
54	Four ft. FE Auger	.....
56	Six ft. FE Auger	.....
57	Seven ft. FE Auger (not shown)	.....
58	Eight ft. FE Auger (not shown)	.....
71	Grip Wedge	.....
79J	Round Grip, complete	.....

If Premier Augers are
wanted add 100 to these
numbers.



JOPLIN GRIP DRILL No. 3 AND PARTS

SQUARE END THREAD BAR.
SQUARE GRIP BAR.



REPAIR LIST

02½	Joplin Grip Drill No. 3, complete .....	.....
2	Boxing, complete with Patent Lock .....	.....
3	Boxing, complete with Key .....	.....
3	Large Wheel .....	.....
6	Small Wheel .....	.....
8	Crank .....	.....
11A	Thread Bar .....	.....
15J	Socket for Thread Bar .....	.....
20C	Slide Casting for Grip Bar .....	.....
24JT	End Gear Boxing .....	.....
28	Key for Boxing with Chain .....	.....
37C	Socket for Auger, plain .....	.....
X37C	Socket for Auger, spiral .....	.....
38	Grip Chair .....	.....
68	Square Grip Bar only .....	.....
71	Wedge for Grip .....	.....
79J	Square Grip, complete .....	.....
91	Two ft. Auger Extension	} If Premier Augers are wanted add 100 to these numbers.
92	Two ft. FE Auger	
94	Four ft. FE Auger	
96	Six ft. FE Auger	
97	Seven ft. FE Auger (not shown)	
98	Eight ft. FE Auger (not shown) .....	.....

We furnish Premier Augers in 1¾ inch and 2 inch size, also regular oval or Feather Edge Pattern in 1½ inch, 1¾ inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

Specify whether Premier or regular Feather Edge Augers are wanted, also diameter of twist.

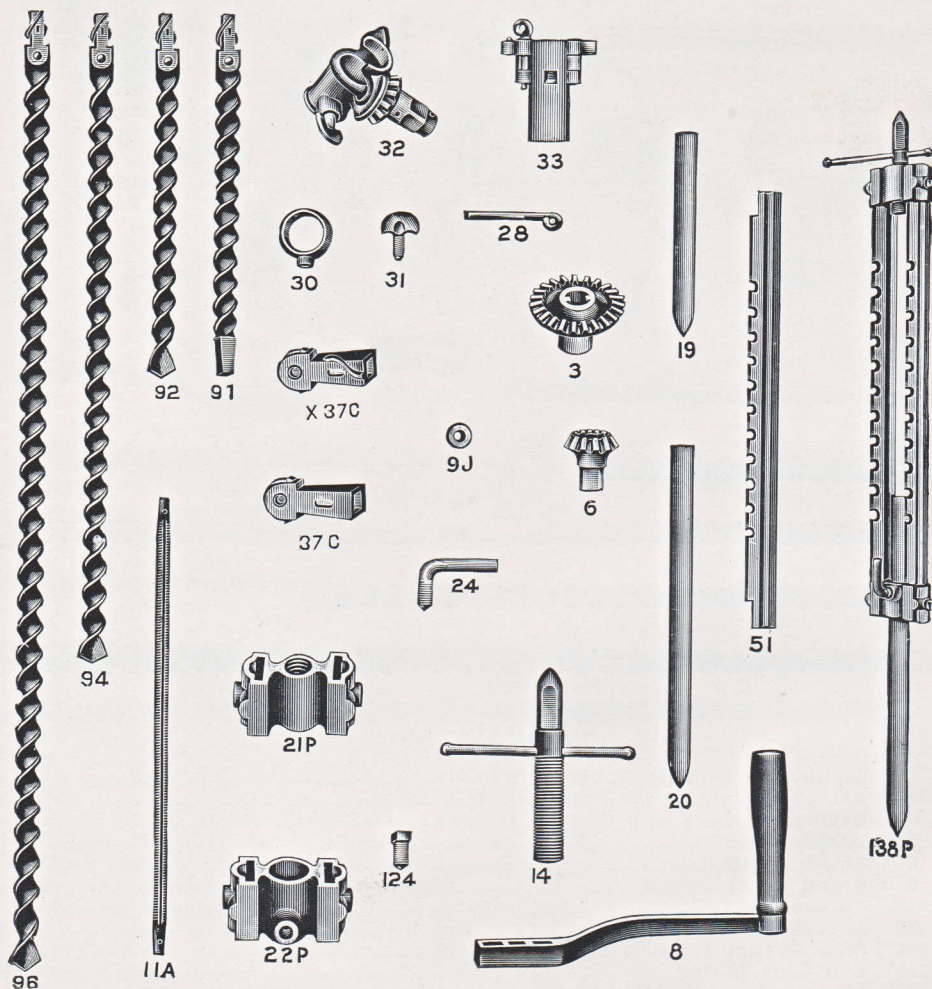


HARDSOCG MANUFACTURING CO., OTTUMWA, IOWA

JOPLIN POST DRILL No. 4 AND PARTS

Sometimes called "Doller" machine.

Always specify length of post.



Detachable gear frame.

Boxing fits inside of gear frame.

Boxing can't spread in hard drilling.

Can be used either as side gear or end gear machine.

Loop on gear frame encircles hub of large wheel, preventing gears from springing apart.

We furnish Premier Augers in 1 1/4 inch and 2 inch size, also regular oval or Feather Edge pattern in 1 1/2 inch, 1 3/4 inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

Specify whether Premier or regular Feather Edge Augers are wanted, also diameter of twist.



JOPLIN POST DRILL No. 4 AND PARTS

REPAIR LIST

Always specify length of post.

- Joplin Post Drill No. 4, complete
- 3 Large Gear Wheel
- 6 Small Gear Wheel
- 8 Crank
- 9J Journal Nut
- 11A Thread Bar
- 14 Jack Screw for Post
- 19 Short Boot, 1/4 inch
- 20 Long Boot, 1/4 inch
- 21P Post Casting for Jack Screw
- 22P Post Casting for Boot
- 28 Key, with Chain
- 30 Ring for Boxing
- 31 Set Screw for Ring
- 32 Gear Frame
- 33 Boxing
- 37C Socket for Auger, plain
- X37C Socket for Auger, spiral
- 51 Corrugated Side Bar for Post, per foot.....
- 91 Two ft. Auger Extension
- 92 Two ft. FE Auger.....
- 94 Four ft. FE Auger.....
- 96 Six ft. FE Auger.....
- 97 Seven ft. FE Auger (not shown)....
- 98 Eight ft. FE Auger (not shown)....
- 124 Set Screw for Post Casting.....
- 138P Post, complete, 3 ft. and under. Always specify length
- Post, over 3 ft., takes an advance price.

If Premier Augers are
wanted add 100 to these
numbers.

We furnish Premier Augers in 1 1/4 inch and 2 inch size, also regular oval or Feather Edge Pattern in 1 1/2 inch, 1 3/4 inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

Specify whether Premier or regular Feather Edge Augers are wanted, also diameter of twist.

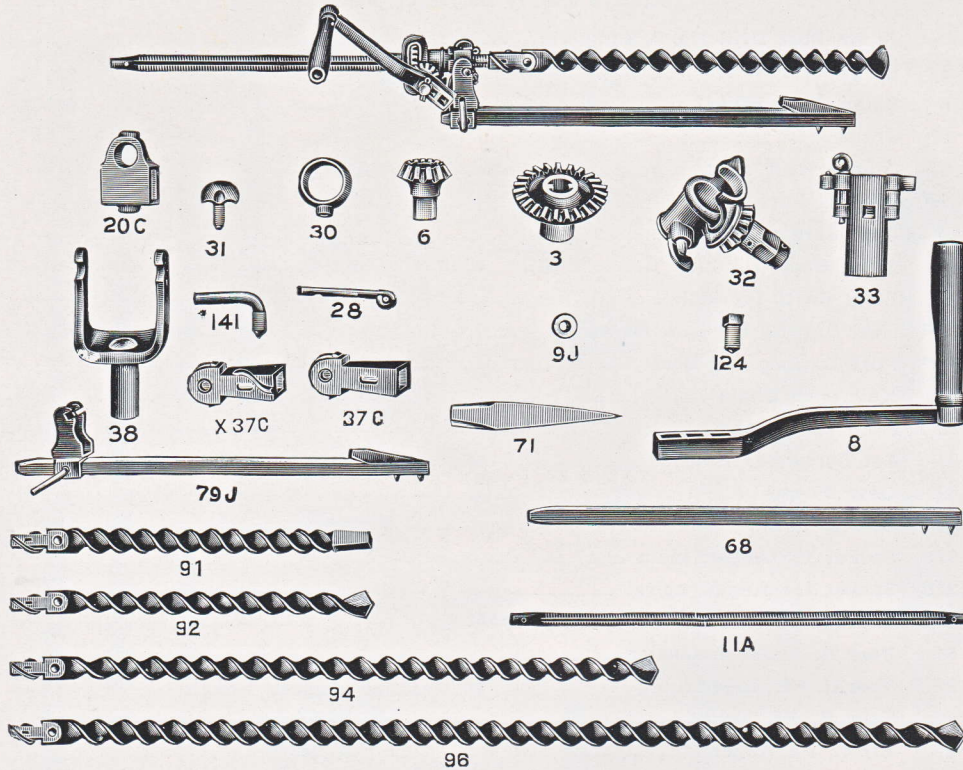


HARDSOCG MANUFACTURING CO., OTTUMWA, IOWA

JOPLIN GRIP DRILL No. 5 AND PARTS

SQUARE GRIP BAR

Sometimes Called "Doller."



REPAIR LIST

	Joplin Grip Drill No. 5, complete .....	.....
3	Large Gear Wheel .....	.....
6	Small Gear Wheel .....	.....
8	Crank .....	.....
9J	Journal Nut .....	.....
11A	Thread Bar, Double Groove .....	.....
20C	Slide Casting .....	.....
28	Key with Chain for Boxing .....	.....
30	Ring or Collar for 33 Boxing .....	.....
31	Thumb Set Screw for 30 Ring .....	.....
32	Gear Frame, complete .....	.....
33	Boxing .....	.....
37C	Auger Socket (plain) .....	.....
X37C	Auger Socket (spiral) .....	.....
38	Grip Chair for Square Bar .....	.....
68	Square Drift Bar only .....	.....
71	Wedge for Grip .....	.....
79J	Square Grip, complete .....	.....
91	Two foot Auger Extension	} If Premier Augers are wanted add 100 to these numbers.
92	Two foot Auger	
94	Four foot Auger	
96	Six foot Auger	
97	Seven foot Auger (not shown)	
98	Eight foot Auger (not shown) .....	.....
124	Set Screw for 20C .....	.....
141	Tail Set Screw for 20C .....	.....

We furnish Premier Augers in 1 3/4 inch and 2 inch size, also regular oval or Feather Edge Pattern in 1 1/2 inch, 1 3/4 inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

Specify whether Premier or regular Feather Edge Augers are wanted, also diameter of twist.

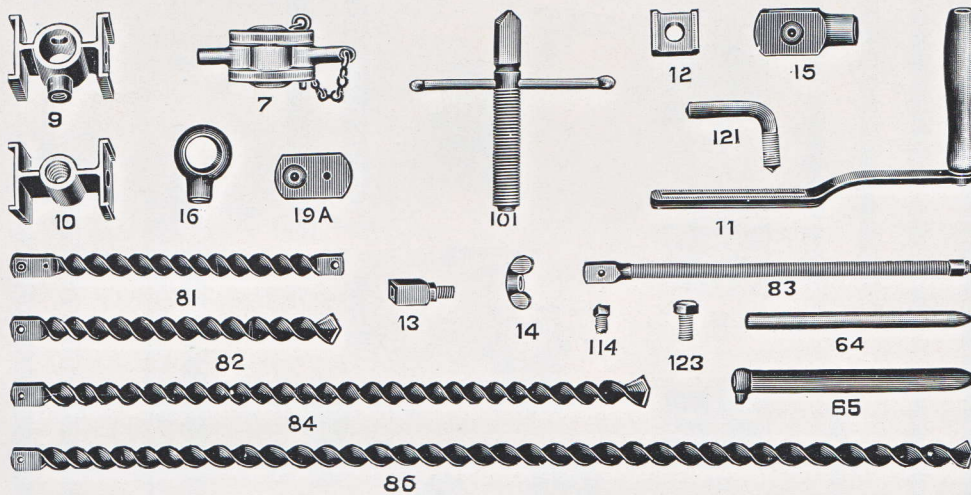


DRILLS, MINING TOOLS AND MINERS' SUPPLIES

HARDSOCC ORIGINAL "B" END GEAR,
POST DRILL AND PARTS

Called "Birmingham" Machine by some manufacturers.

Always specify length of post.



REPAIR PARTS FOR "B" DRILL

7	Boxing .....	.....
11	Crank .....	.....
12	Clamp which secures Crank .....	.....
13	Square Socket for Thread Bar .....	.....
14	Thumb Nut .....	.....
15	Flat Socket for Thread Bar .....	.....
19A	Socket for Auger Extension .....	.....
83	Thread Bar .....	.....
81	Two foot Auger Extension	} If Premier Augers are wanted add 100 to these numbers.
82	Two foot Auger	
84	Four foot Auger	
86	Six foot Auger	
87	Seven foot Auger (not shown)	
88	Eight foot Auger (not shown) .....	.....
114	Set Screw for Auger Socket .....	.....

Unless otherwise specified Drill is furnished with thread bar and boxing having 8 threads to the inch, but can supply same in 12 thread.

We furnish Premier Augers in 1 3/4 inch and 2 inch size, also regular oval or Feather Edge Pattern in 1 1/2 inch, 1 3/4 inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

Specify whether Premier or regular Feather Edge Augers are wanted, also diameter of twist.

REPAIRS FOR FLAT BAR POST

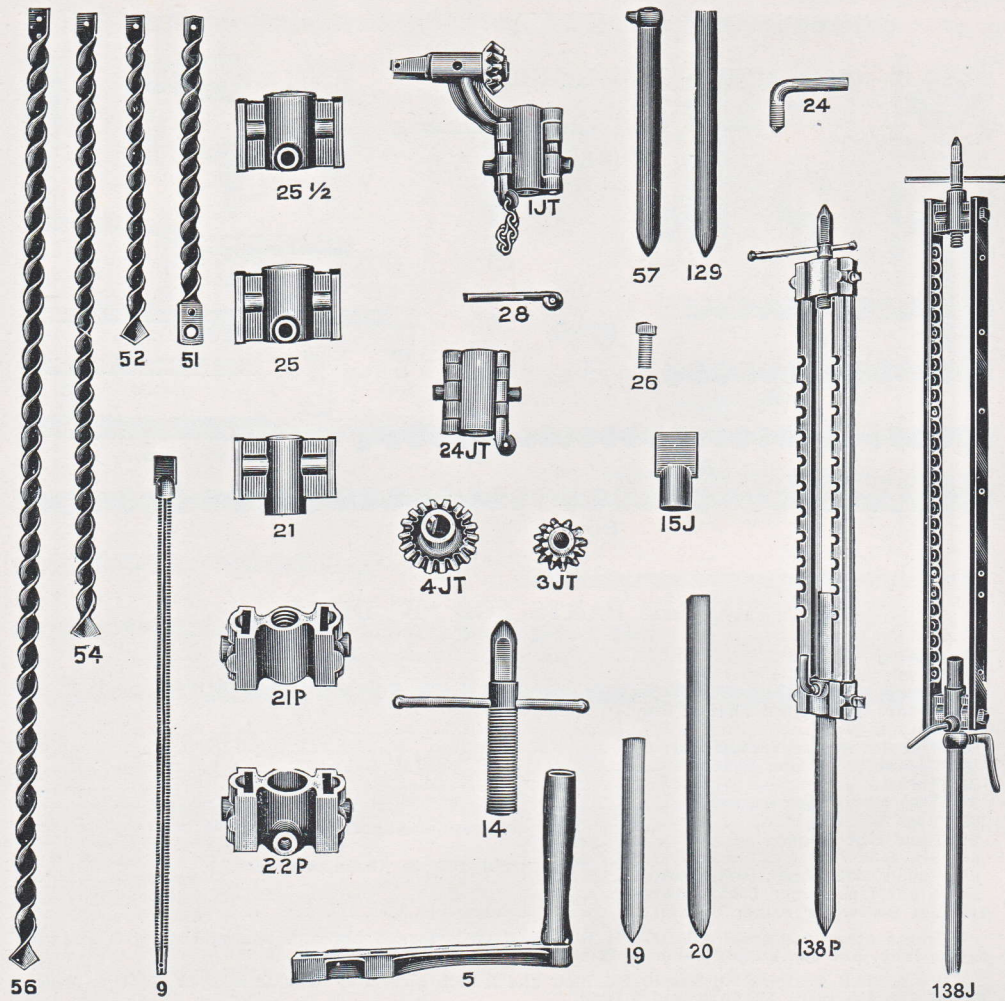
9	Boot Casting for Flat Bar Post .....	.....
10	Jack Screw Casting for Flat Bar Post .....	.....
16	Ring for 1 1/2-inch Boot .....	.....
64	Large Stem 1 1/2-inch .....	.....
65	Large Boot 1 1/2-inch .....	.....
101	Jack Screw .....	.....
121	Tail Set Screw .....	.....
123	Set Screw for Post Casting .....	.....
138F	Flat Bar Post (not shown) 3 feet and under. Always Specify Length .....	.....

Post, complete, over 3 feet takes an advance in price.

J. & T. POST DRILL AND PARTS

Old Style Post Notches inside Channel.

Always specify length of post.



This shows the Old Style J. & T. Post with notches inside the channel. We can furnish regular corrugated side bars or the "Doller" post when desired. The corrugated bars furnished with all our corrugated Post Drills are made of special high carbon drill post steel, which insures their strength and stiffness. We recommend our corrugated post for all hard drilling coals.

Specify whether Premier or regular oval or Feather Edge Augers are wanted, also diameter of twist.



J. & T. POST DRILL AND PARTS

REPAIR LIST

J. & T. Post Drill, complete .....	.....
1JT Side Gear Boxing, less Journal and Wheel .....	.....
3JT Small Gear Wheel .....	.....
4JT Large Gear Wheel .....	.....
5 Crank .....	.....
9 Thread Bar .....	.....
14 Jack Screw for 21 Post Casting .....	.....
15J Socket for Thread Bar .....	.....
19 Short Boot, 1/4 inch .....	.....
20 Long Boot, 1/4 inch .....	.....
21 Post Casting for Jack Screw .....	.....
21P Post Casting for Jack Screw.....	.....
22P Post Casting for Boot .....	.....
24 Tail Set Screw for 25 .....	.....
24JT End Gear Boxing .....	.....
25 Post Casting for Boot .....	.....
25 1/2 Post Casting for 1/4 inch Stem .....	.....
26 Set Screw for Post Castings .....	.....
28 Key with Chain, for Boxing .....	.....
51 Two ft. Auger Extension	} If Premier. Augers are wanted add 100 to these numbers.
52 Two ft. FE Auger	
54 Four ft. FE Auger	
56 Six ft. FE Auger	
57 Seven ft. FE Auger (not shown) ..	
58 Eight ft. FE Auger (not shown) ..	.....
138J Post, complete, 3 ft. and under.....	.....
138P Post, complete, 3 ft. and under.....	.....

Post, over 3 ft., takes an advance in price.

We furnish Premier Augers in 1 3/4 inch and 2 inch size, also regular oval or Feather Edge pattern in 1 1/2 inch, 1 3/4 inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

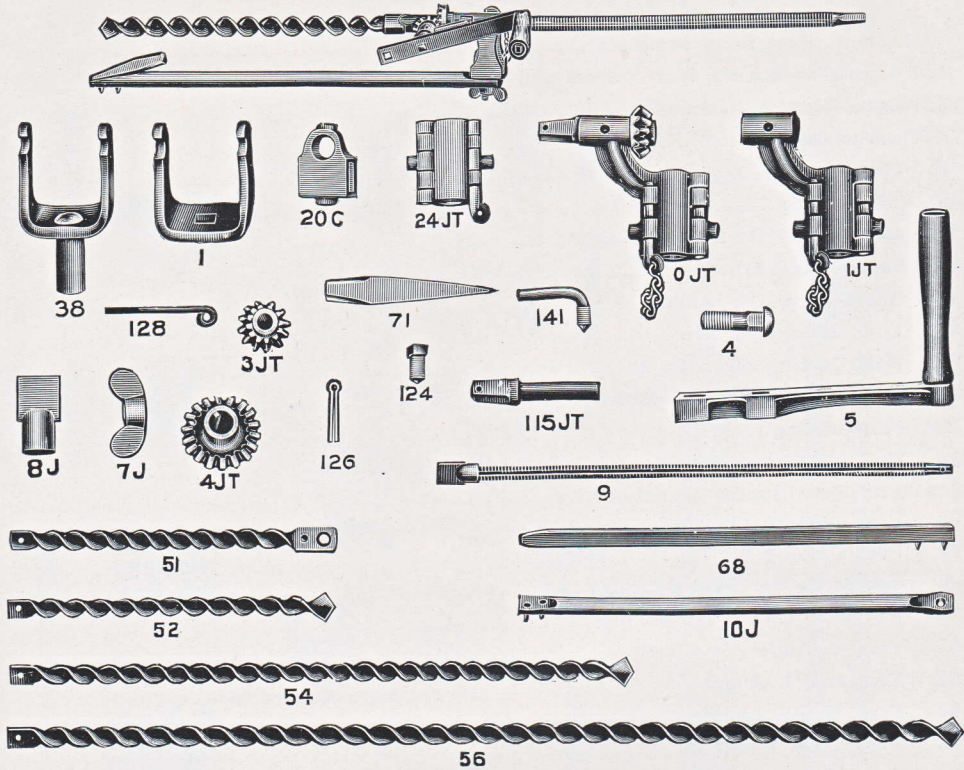
Specify whether Premier or regular oval or Feather Edge Augers are wanted, also diameter of twist.

Unless otherwise specified drill is furnished with thread bar and boxing having eight threads to the inch, but can supply same in six square thread.



J. & T. GRIP DRILLS AND PARTS

Specify whether Round or Square Grip Bar is wanted, otherwise we will send Square Bar.



REPAIR LIST

JT	Grip Machine, complete	.....
0JT	Side Gear Boxing, less Journal and Wheel	.....
1JT	Side Gear Boxing, complete less Large Wheel	.....
1	Grip Chair for Round Bar	.....
3JT	Small Gear Wheel	.....
4JT	Large Gear Wheel	.....
4	Bolt for Grip Chair	.....
5	Crank	.....
7J	Thumb Nut for No. 4	.....
8J	Socket for Thread Bar	.....
9	Thread Bar	.....
10J	Round Grip Bar only	.....
20C	Slide Casting for Square Grip Bar	.....
24JT	End Gear Boxing	.....
38	Grip Chair for Square Bar	.....
51	Two foot Auger Extension	.....
52	Two foot FE Auger	} If Premier Augers are wanted add 100 to these numbers. }
54	Four foot FE Auger	
56	Six foot FE Auger	
57	Seven foot FE Auger (not shown)	
58	Eight foot FE Auger (not shown)	.....
68	Square Grip Bar only	.....
71	Wedge for Grip	.....
115JT	Journal	.....
124	Set Screw for No. 20C	.....
126	Spring Cotter	.....
128	Key with Chain for Boxing	.....
141	Tail Set Screw for No. 20C	.....

We furnish Premier Augers in 1 3/4 inch and 2 inch size, also regular oval or Feather Edge Pattern in 1 1/2 inch, 1 3/4 inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

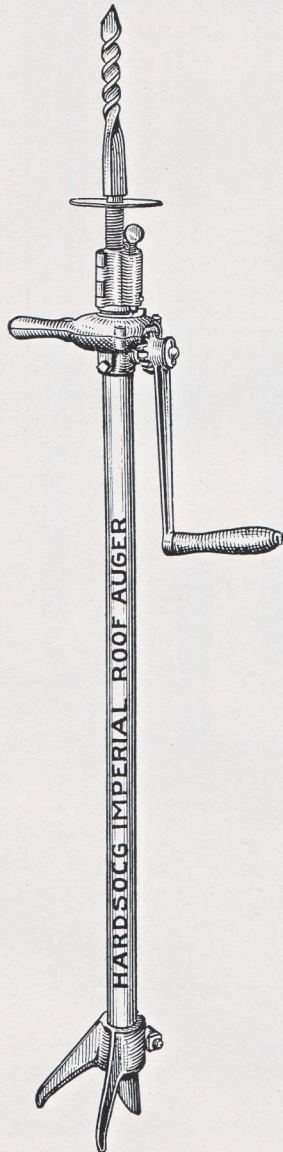
Specify whether Premier or regular oval or Feather Edge Augers are wanted, also diameter of twist.



HARDSOCC "IMPERIAL" ROOF AUGER

Designed especially for drilling holes in roof or side entries for insulator pegs to suspend trolley wires in electrified mines.

Efficient, strong, simple and portable with all the latest mechanical improvements. Equipped with Patent Friction Feed Boxing which automatically adjusts feed to conditions of substances drilled.



LIST OF ROOF MACHINE AND PARTS

Machine complete with 6 inch and 12 inch Augers.....	.....
1E Crank and Small Cog .....	.....
2E Upper Half Housing .....	.....
3E Lower Half Housing .....	.....
4E Crow Foot for Bottom of Post .....	.....
5E Brass Boxing .....	.....
6E Malleable Boxing .....	.....
7E Main Pipe Stand .....	.....
8E Reversible Feed Bar .....	.....
9E Large Cog .....	.....
10E Complete Housing, with Bolts .....	.....
11E 6 inch Tool Steel Auger .....	.....
12E 12 inch Tool Steel Auger .....	.....
13E 18 inch Tool Steel Auger .....	.....
14E 24 inch Tool Steel Auger .....	.....
15E Bolt for Housing .....	.....
12I Tail Screw for Crow Foot .....	.....

A Machine now in many mines and should be in every mine. Made in any height posts required from 3 ft. to 10 ft.

Weight of machine, complete, 45 lbs.

Be sure to state height of entry in which machine is to be used.

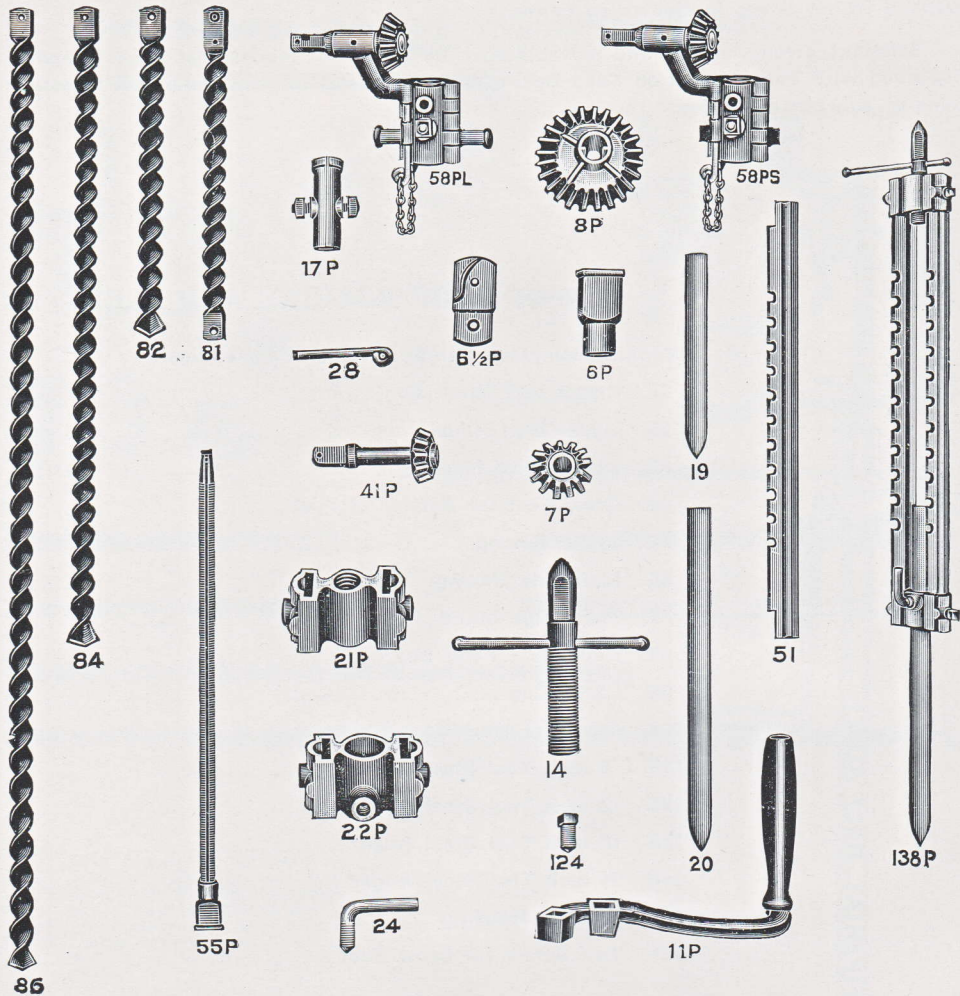
Write us for prices and other information.



HARDSOCC MANUFACTURING CO., OTTUMWA, IOWA

PEORIA POST DRILL AND PARTS

Always specify length of post.



Boxings are shown in two styles.

No. 58 P. S. has short arms, fitting Slide Chair Post and also Peoria Grip Chair. For Slide Chair Post and parts see page 22.

No. 58 P. L. has long arms to fit the regular notched post.

We make the Peoria Grip Machines with either square or round grip bar, as desired.

We furnish these machines regularly with thread bar having flat socket and augers with flat shanks, but if desired will furnish with square end thread bar and square socket augers.

Thread bars have one groove, but will furnish same with double groove if desired.

We furnish Premier Augers in 1¾ inch and 2 inch size, also regular Feather Edge Pattern in 1½ inch, 1¾ inch and 2 inch sizes. The 2 inch in either pattern take an advance in price over the smaller sizes.

Specify whether Premier or regular oval or Feather Edge Augers are wanted, also diameter of twist.



DRILLS, MINING TOOLS AND MINERS' SUPPLIES

PEORIA POST DRILL AND PARTS

REPAIR LIST

- Peoria Post Drill, complete
- 6P Socket for Thread Bar
- 6½P Socket for Auger Extension
- 7P Small Gear Wheel
- 8P Large Gear Wheel, Single Key (Double Key furnished when desired).....
- 11P Crank
- 17P Lining for Boxing, 1 Bolt
- 14 Jack Screw for Post
- 19 Short Boot, 1¼ inch
- 20 Long Boot, 1¼ inch
- 21P Post Casting for Jack Screw
- 22P Post Casting for Boot
- 24 Tail Set Screw for No. 22P
- 28 Key for Boxing with Chain
- 41P Journal with Wheel
- 51 Corrugated Side Bar for Post, per foot
- 55P Flat Socket Thread Bar, single groove (Double Groove furnished when desired)
- 58PSide Gear Boxing with Lining, for Slide Post
- 58PLSide Gear Boxing with Lining, for Notched Post
- 81 Two ft. Auger Extension.....
- 82 Two ft. FE Auger
- 84 Four ft. FE Auger
- 86 Six ft. FE Auger
- 87 Seven ft. FE Auger (not shown).....
- 88 Eight ft. FE Auger (not shown)
- 124 Set Screw for Post Castings
- 138P Post, complete, 3 ft. and under. Always specify length
- Post, over 3 ft., takes an advance in price.

If Premier Augers are
wanted add 100 to these
numbers.

We furnish Premier Augers in 1¾ inch and 2 inch size, also regular oval or Feather Edge Pattern in 1½ inch, 1¾ inch and 2 inch.

The 2 inch in either pattern takes an advance in price over the smaller sizes.

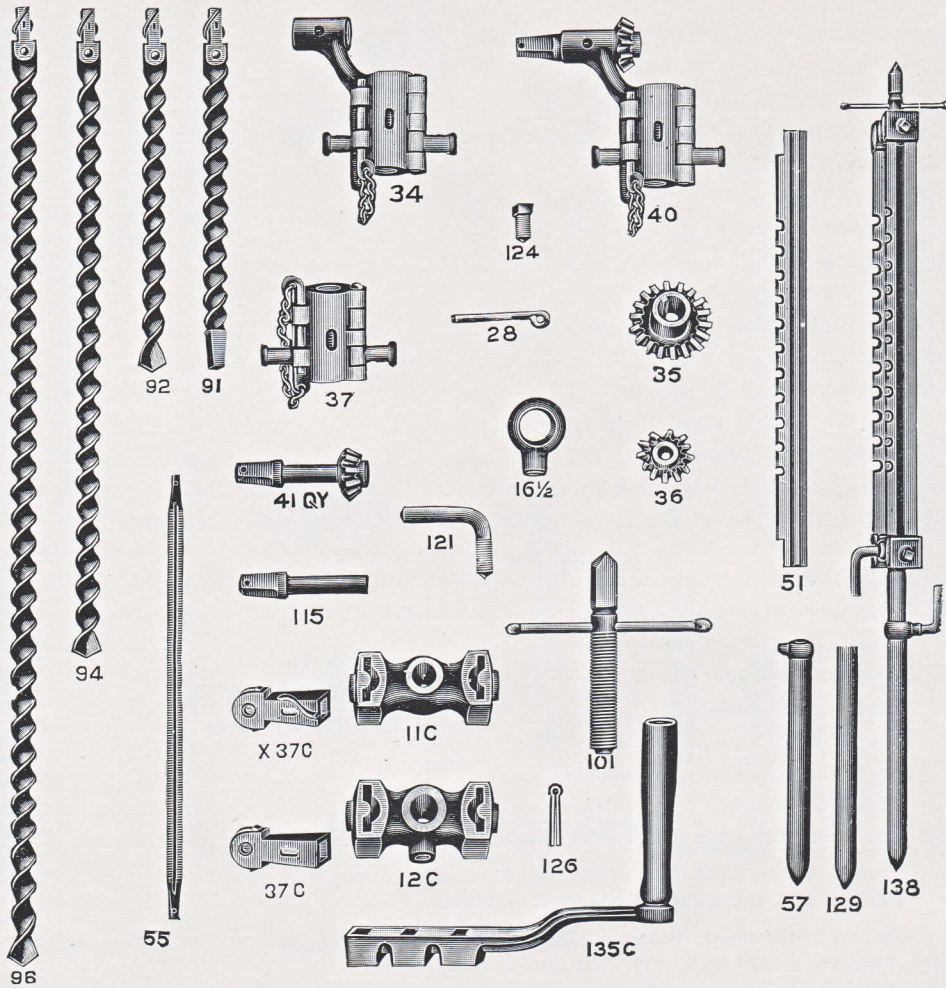
Specify whether Premier or regular Feather Edge Augers are wanted, also diameter of twist.



HARDSOCC MANUFACTURING CO., OTTUMWA, IOWA

HARDSOCC "QY" POST DRILL AND PARTS

Always specify length of post.



Machine is furnished with either Feather Edge Augers (as shown) or Premier Patented Augers (Nos. 192, 194 and 196). Always specify whether Premier or regular oval Feather Edge Augers are wanted, also diameter of twist.

Post and post repairs are the same as on EC-"Q" and Q Drills. If Grip Drill is wanted, specify QY Grip Drill. See page 16 for Grip Bar complete, No. 79, and parts.



HARDSOCC "QY" POST DRILL AND PARTS

REPAIR LIST

QY	Post Drill, complete .....	.....
11C	Post Casting for Jack Screw .....	.....
12C	Post Casting for Boot .....	.....
16½	Ring Casting for Boot .....	.....
28	Pin and Chain for Boxing .....	.....
34	Boxing, less Journal and Small Gear Wheel .....	.....
35	Large Gear Wheel .....	.....
36	Small Gear Wheel .....	.....
37	End Gear Boxing .....	.....
37C	Socket for Augers, plain .....	.....
X37C	Socket for Augers, spiral .....	.....
40	Side Gear Boxing, complete .....	.....
41QY	Journal and Small Gear Wheel .....	.....
51	Corrugated Side Bar, for Post .....	.....
55	Thread Bar .....	.....
57	Boot, 1¼ inch .....	.....
91	Two ft. Auger Extension	} If Premier Augers are wanted add 100 to these numbers.
92	Two ft. FE Auger	
94	Four ft. FE Auger	
96	Six ft. FE Auger	
97	Seven ft. FE Auger (not shown) ..	
98	Eight ft. FE Auger (not shown) ..	.....
101	Jack Screw .....	.....
115	Journal only .....	.....
121	Tail Set Screw for 12C .....	.....
124	Set Screw for Post Castings.....	.....
126	Spring Cotter .....	.....
129	Stem for Post, 1¼ inch .....	.....
135C	Crank .....	.....
138	Post, complete. Always specify length .....	.....

Post, complete, over 3 feet, takes an advance in price.

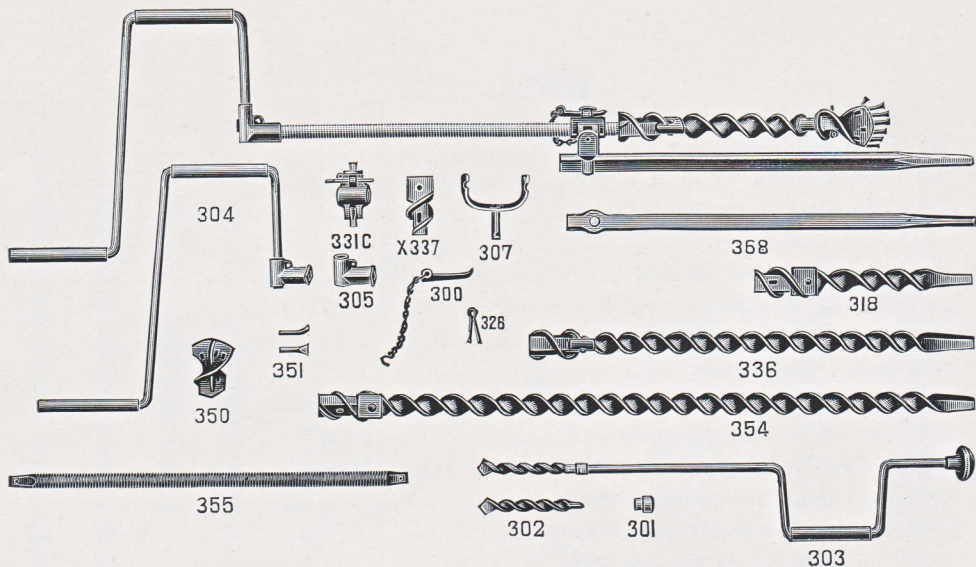
We furnish Premier Augers in 1¾ inch and 2 inch size, also regular oval or Feather Edge Pattern in 1½ inch, 1¾ inch and 2 inch.

The 2 inch in either pattern take an advance in price over the smaller sizes.

Specify whether Premier or regular oval Feather Edge Augers are wanted, also diameter of twist.



CYCLONE GRIP MACHINE



The above cut represents our Cyclone Grip Machine, which is made to meet the demand for a light durable drill with detachable bit, for drilling medium soft coal in thick veins. To set up, bore a hole in the face of the coal or rib with the small brace auger and drive the grip bar into the hole with a sledge.

The newly designed "Gopher" Cutter Head has been perfected after months of experiment and it will be found superior to anything of the kind on the market. The "Gopher" Head, also the extension shanks and sockets have a simple device (patent applied for) which keeps them from coming apart in the hole and eliminates the cotter pin or key.

Boxing is made of the best quality malleable iron and the chair or yoke is of steel.

Thread bar is reversible and has 10 square threads per inch.

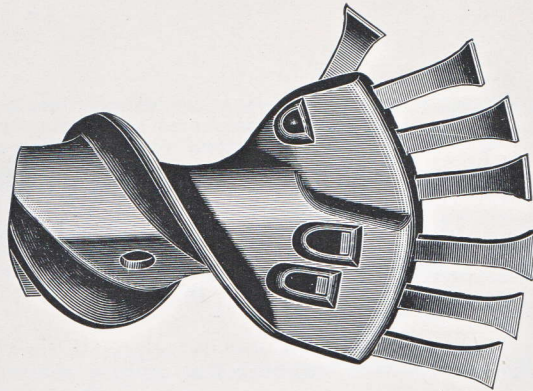
Extensions are 18 inches, 36 inches and 42 inches long.

REPAIR LIST

300	Key and Chain.....	.....
301	Screw Coupling .....	.....
302	Stamping Bit .....	.....
303	Stamping Brace, complete .....	.....
304	Double Crank .....	.....
305	Crank Casting .....	.....
307	Grip Chair .....	.....
326	Cotter Pin .....	.....
331C	Boxing, 10 threads .....	.....
X337	Socket, Spiral .....	.....
350	"Gopher" Cutter Head .....	.....
351	Cutter Bits .....	.....
355	Thread Bar, 10 threads .....	.....
368	Grip Bar, taper point .....	.....
318	Extension, 18 inches long.....	.....
336	Extension, 36 inches long.....	.....
354	Extension, 54 inches long.....	.....



"GOPHER" CUTTER HEAD



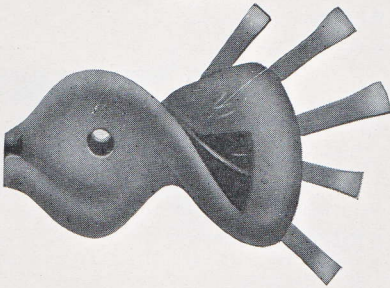
No. 350

Scientifically designed after months of study and experiment. Bits are arranged so they have the proper amount of clearance on the back and sides. Extensions have a simple device (patent applied for) which prevents the Cutter Head from coming off in the hole, and which makes it unnecessary to use a split key or other means of fastening.

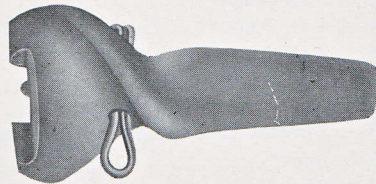
Cutter Head is made to fit the standard makes of thread bar and extension shanks. It is not necessary to use a Socket Bushing.

Bits are made of special analysis high carbon tool steel, which does not require tempering to give the proper stiffness and cutting edge. Extensions are made of high carbon 2 inch Oval Auger Steel, which conveys the cuttings much better than the ordinary square edge material. Standard lengths 2, 4 and 6 feet. Special lengths made to order.

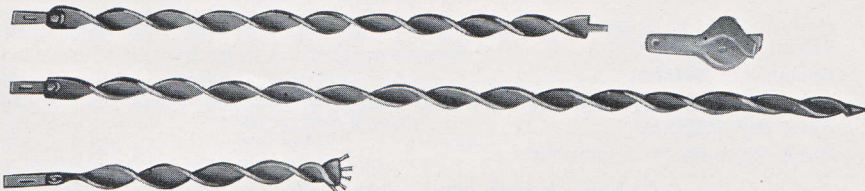
MOLE FOOT CUTTER HEAD



SOCKET BUSHING



JUMBO EXTENTIONS



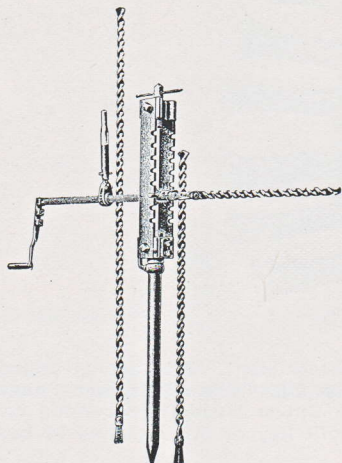
Mole Foot Cutter Heads, Socket Bushings, Jumbo Extensions and Bits. We are prepared to furnish all the above items from stock.



HARDSOCC MANUFACTURING CO., OTTUMWA, IOWA



HARDSOCC RATCHET ROCK MACHINE



This is a special machine, particularly designed for coal companies and contractors for use in sand rock, lime stone, rock salt, fire clay, etc. To those wanting a serviceable rock machine we recommend this as the best result of our long continued experiments.

It is very strong and durable. Careful attention has been given to the design and construction of every part of this drill, making it modern in every respect.

The post is adjustable from four to seven feet in length and by using a shorter stem can be used in three-foot work. If special length post or extra deep hole is wanted, please specify.

The augers are made of an exceptionally good quality of steel $1\frac{1}{4} \times \frac{1}{2}$ inch square edge with welded steel square sockets. Standard lengths are 2, 4 and 6 feet. Special lengths furnished promptly when desired.

It is very essential and important to have extra sets of augers in very hard work, as it saves time and labor; one set can be working while the other is being sharpened.

Unless otherwise specified, machines are equipped with thread bar and boxing 12 threads to one inch but we also furnish same in either 10 or 14 threads.

REPAIR LIST

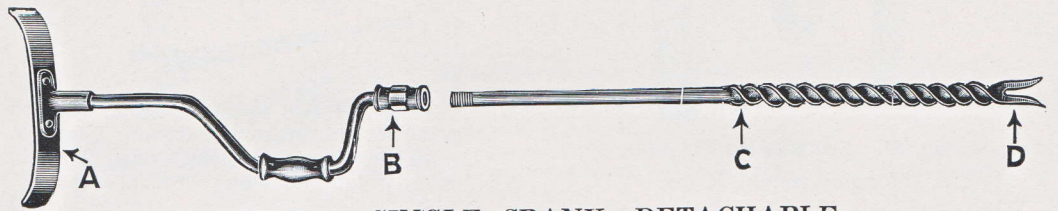
	Machine to drill 6 ft. hole, with 2, 4 and 6 ft. Augers.....	.....
	Machine to drill 4 ft. hole, with 2 and 4 ft. Augers.....	.....
202	2 ft. Auger .....	.....
204	4 ft. Auger .....	.....
206	6 ft. Auger .....	.....
1B	Stem Casting .....	.....
2B	Jack Screw Casting .....	.....
55	Thread Bar, 10, 12 or 14 threads to inch .....	.....
66	Boot .....	.....
67	Stem .....	.....
116	Ring for Boot .....	.....
121	Tail Set Screw for holding boot.....	.....
125	Set Screw for holding No. 67 in No. 1B .....	.....
126	Bolt for holding Post Side Bar .....	.....
131C	Boxing, 10, 12 or 14 threads to inch .....	.....
135C	Crank .....	.....
201	Jack Screw .....	.....
252	Wheel for Ratchet .....	.....
253	Spring for Ratchet .....	.....
254	Universal Ratchet, complete .....	.....
255	Pawl for Ratchet .....	.....
256	Rock Machine Post, complete .....	.....

Special length Augers can be furnished when desired.

HARDSOEG BREAST AUGERS

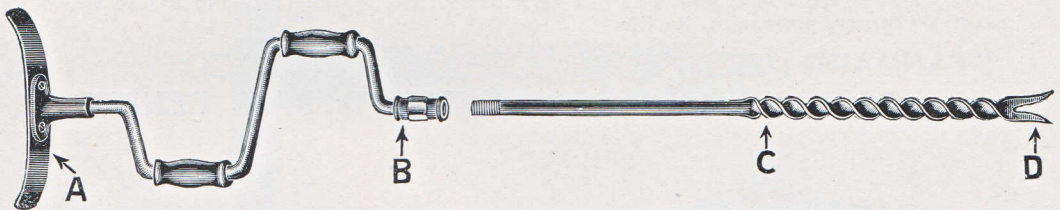


STYLE 1—SOLID ONE-PIECE AUGER



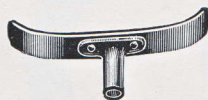
STYLE 2—SINGLE CRANK—DETACHABLE

Screw Socket.



STYLE 3—DOUBLE CRANK—DETACHABLE

Screw Socket.



5E Casting and Plate



V Coupling



5 1/2 E Extension

NOTE CAREFULLY

To enable us to fill your orders promptly it is very necessary that you specify the following:

Single or Double Crank.
Screw Connection or Solid.
Length of Shank, B to C.
Length of Twist, C to D.

Diameter of Twist.
Size of Plate.
Plate and Casting Attached or Detached.
Length of Extension.

The following sizes and dimensions are considered standard.

BREAST PLATES with Castings Attached.

- No. 1. $\frac{3}{8}$ x $1\frac{3}{4}$ x 10 inches, curved.
- No. 2. $\frac{3}{8}$ x $1\frac{3}{4}$ x 16 inches, curved.
- No. 3. $\frac{3}{8}$ x $2\frac{1}{2}$ x 22 inches, Knee Brace.
- No. 4. $\frac{3}{8}$ x $3\frac{1}{2}$ x 16 inches, extra large curved.

SHANKS. 6, 12, 24, 36 and 48 inches.

TWISTS. 3, 4 and 6 feet long, $1\frac{1}{2}$ and $1\frac{3}{4}$ inches diameter.

Extensions with Couplings, 2 and 4 feet long.

Special length shanks, twists and extensions furnished when desired.

Single Crank, 18 inches A to B.

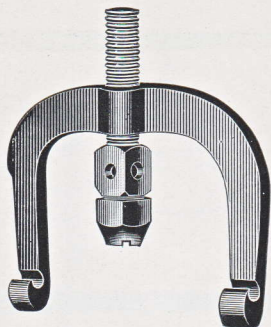
Double Crank, 24 inches, A to B.



HARDSOEG RAIL BENDERS

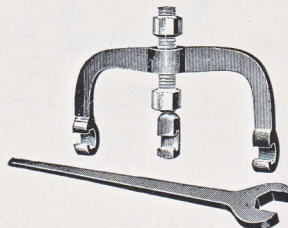
Solid Steel.

SINGLE ACTING



No. 61. For 8 to 30 lb. Rails.
Shipping weight 40 lbs.

DOUBLE ACTING

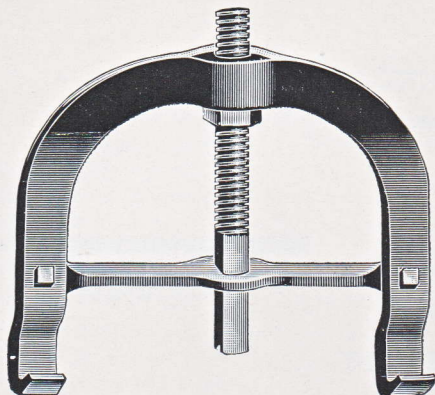


No. 41. For 8 to 30 lb. Rails.
Shipping weight, including wrench, 70 lbs.
No. 51. For 8 to 20 lb. Rails.
Shipping weight, including wrench, 40 lbs.

These Bender Frames are made from a quality of steel that we can recommend as the best for the purpose. Screws are made from forged steel and are carefully machined and accurately fitted.

Would call attention to the Double Acting Benders in which the bearings for jam nuts are recessed and the nuts turned to a perfect fit, thereby insuring the screw to work in center, prolonging its life.

STANDARD "JIM CROW" RAIL BENDER

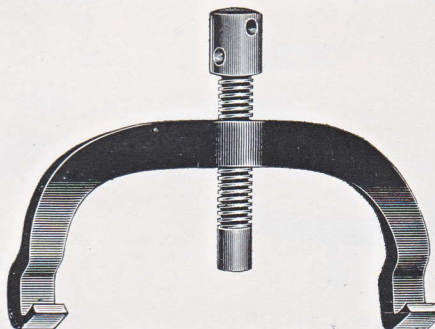


With bolted on cross-bar and forged wrench furnished. Forged from O. H. steel, square machine cut threads, three to the inch, steel screws.

Special price on welded cross-bar upon request.

Size No.	Capacity Size of Rails	Span of Hooks	Diameter of Screws	Weight, Each Complete
5	25	16 in.	1 $\frac{3}{4}$ in.	60
6	16	14 in.	1 $\frac{3}{4}$ in.	40

"CHICAGO" SCREW RAIL BENDER



Without Cross-Bar

Widely used in mines because of compactness. May be used for many purposes.

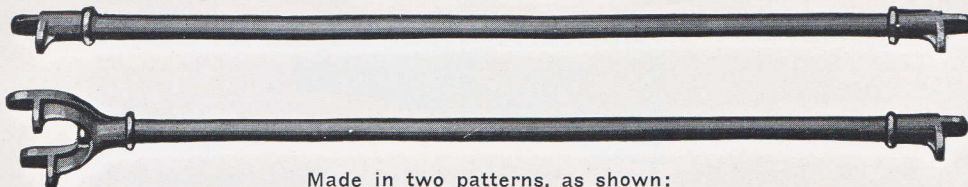
Forged from best O. H. steel.

Square threads, machine cut, three to the inch, steel screws. Malleable cap to fit rails. Furnished with or without steel lever.

Size No.	Capacity Size of Rails	Size of Hole for Lever	Span of Hooks	Diameter of Screws	Weight, Each
4	50	1 $\frac{1}{8}$ in.	20 in.	2 $\frac{1}{4}$ in.	85
5	25	1 in.	16 in.	2 in.	65
6	16	1 in.	14 in.	1 $\frac{3}{4}$ in.	40
7	10	$\frac{7}{8}$ in.	14 in.	1 $\frac{1}{2}$ in.	30

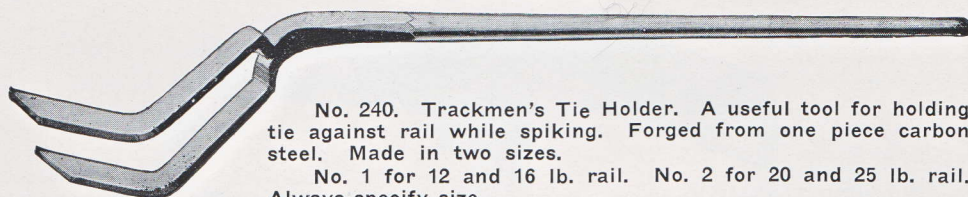
Rail Benders are extensively used for straightening Automobile Truck and Tractor Axles and Frames—Also for straightening, bending or breaking Shafting Rods, Pipe, etc.

TRACK GAUGES



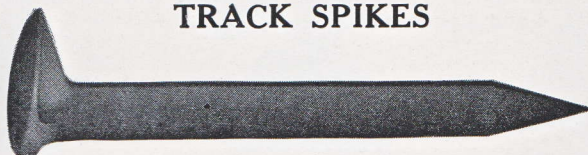
Made in two patterns, as shown:
 No. 228. With straight head on either end.
 No. 238. With forked head on one end.
 Bar is made of $\frac{3}{4}$ inch pipe to which malleable heads are securely fastened. There being no standard gauge for mine track, always give distance between rails, as well as catalog number.

TIE HOLDER



No. 240. Trackmen's Tie Holder. A useful tool for holding tie against rail while spiking. Forged from one piece carbon steel. Made in two sizes.
 No. 1 for 12 and 16 lb. rail. No. 2 for 20 and 25 lb. rail. Always specify size.

TRACK SPIKES



Rail	Size of Spike	No. in 200 lb. Keg
12 lb.	$2\frac{1}{2} \times \frac{5}{16}$ inch	2200
12 to 16 lb.	$2\frac{1}{2} \times \frac{3}{8}$ inch	1650
16 to 20 lb.	$3 \times \frac{3}{8}$ inch	1350

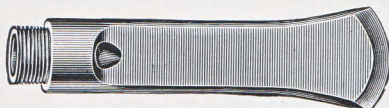
MACHINE CHAIN CUTTER BITS



No. 108

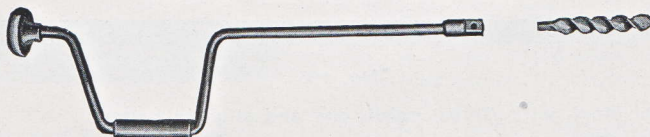
No. 108. Chisel Point.
 No. 208. Pick Point.
 Made of high grade cutter bit steel $\frac{1}{2} \times \frac{3}{4}$ inch or $\frac{1}{2} \times 1$ inch in either pick or chisel point. Please specify make and type of machine on which they are to be used.

PROSPECTOR'S DRILL BIT



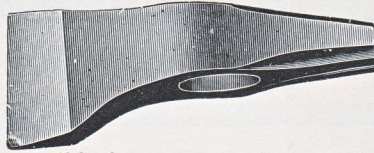
Made of best quality crucible tool steel, threaded to fit one inch pipe coupling. Ordinarily furnished with bit spread to 3 inches but can furnish other widths when specified.

HAND BRACE AND BIT



This is a very handy tool for drilling plug holes, and also for setting grip bars. Made with screw coupling, and with crucible steel bit.

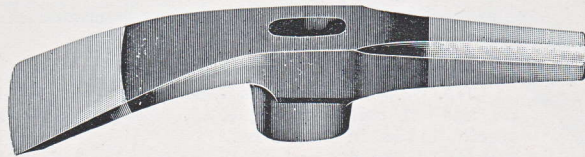
TRACKMEN'S SPIKING HATCHETS



No. 102. Forged from a solid piece of tool steel carefully tempered and made to stand rough usage. The pole is made long, for driving spikes over rails and around switches. Furnished either with or without handles.

Weights, $2\frac{1}{2}$, $2\frac{3}{4}$, 3 and $3\frac{1}{2}$ pounds.

TRACKMEN'S ADZ

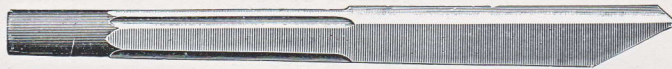


No. 103. This will be found a very useful tool for trackmen. Forged from a solid piece of tool steel and carefully tempered. Furnished without handles only.

Weights, 3, $3\frac{1}{2}$, 4 and 5 pounds.

MINERS' CROW BARS

Solid Steel.



No. 104.

3 ft. $\frac{7}{8}$ inch square; approximate weight 6 pounds.

$3\frac{1}{2}$ ft. 1 inch square; approximate weight 8 pounds.

4 ft. 1 inch square; approximate weight 10 pounds.

$4\frac{1}{2}$ ft. $1\frac{1}{8}$ inch square; approximate weight 12 pounds.

Made in either Pinch point (as shown) or Wedge point. Specify catalog number and length.

TRACKMEN'S SPIKE BARS



No. 105

This type is a special favorite with trackmen, as it is very strong and durable and the large heel admits of driving claw under spike head.

Made for $\frac{5}{16}$ and $\frac{3}{8}$ inch spikes. Length 32 inches; approximate weight 8 lbs.

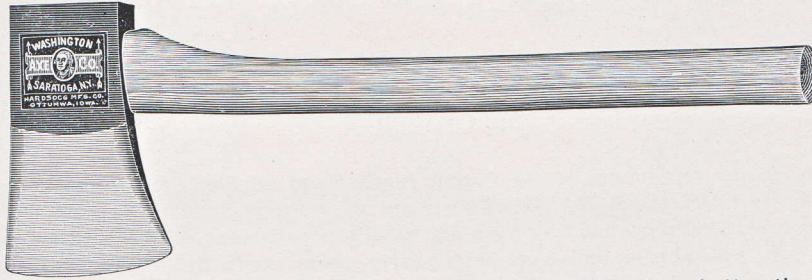


No. 106

Made of tool steel, with Chisel point, one end slightly curved.

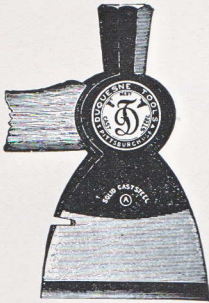
Furnished in either regular pattern (as shown) or in Goose Neck pattern. Length 31 inches; approximate weight 5 lbs.

MINERS' HANDLED AXES



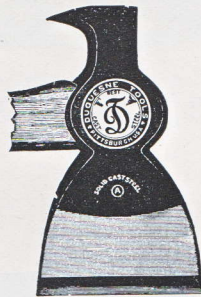
No. 140—"Washington" brand miners' axes. Best crucible steel; better than most axes being offered to the trade. Ebony finish. Assorted weights 3 to 4 and 3½ to 4½ pounds.

SHINGLING HATCHET



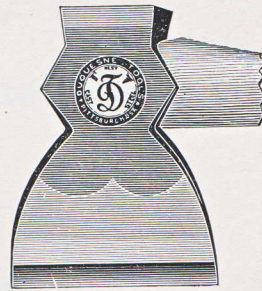
No. 2.....
No. 3.....

CLAW HATCHET



No. 2.....
No. 3.....

BROAD HATCHET



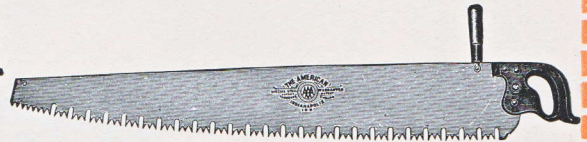
No. 2.....
No. 3.....

MINERS' HAND SAWS



No. 120. These saws are specially made for mine work, having very coarse points. They are the product of one of the largest saw factories in the United States and will be found entirely satisfactory. Five or six points to the inch.

ONE-MAN CROSS-CUT SAWS

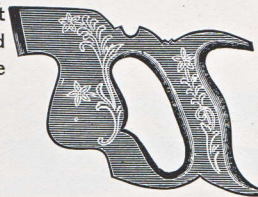


No. 490. 2½, 3, 3½ and 4 feet.....

MILL FILES



Premier and Victor Grades.
6, 8, 10, 12 and 14 inches.



No. 112H



No. 114H No. 116H

No. 112H. HAND. Beechwood, varnished; for regular 26 inch Hand Saw. Slit only.

No. 114H. ONE-MAN. Beechwood, varnished edges; for regular One-Man saws. Slit only.

No. 116H. Supplementary One-Man Saw Handle. Steel ferrule, malleable iron clip.

HARDSOCC PATENT BLACK DIAMOND CUTTING PICKS

CAUTION

We are the originators of the Patent Black Diamond Picks and Handles, and you should be sure the name "HARDSOCC" is on every one you use. There are imitations of these on the market, but to insure getting Picks and Handles that will fit and give satisfaction, you should insist on having only those made by HARDSOCC. Always specify pattern and weight.



10

No. 10 is a short, square pattern furnished in weights from 2 to 3 pounds.



19

No. 19 has a slight anchor and is drawn a little longer than No. 10. Weights 2 to 3 pounds.



14

No. 14 is a straight pattern and the most popular. Weights $1\frac{1}{2}$ to 3 lbs.



15

No. 15. Same as No. 14 but drawn a little longer. Weights $1\frac{3}{4}$ to 3 lbs.

We can furnish any of the above patterns with Black Diamond Tool Steel Points, either plain or polished.



DRILLS, MINING TOOLS AND MINERS' SUPPLIES

HARDSOCC PATENT BLACK DIAMOND MINING PICKS



17

No. 17 is a short pattern Mining Pick. Weights $1\frac{3}{4}$ to $2\frac{1}{2}$ pounds.



18

No. 18 pattern for either coal or clay mining. Weights $1\frac{3}{4}$ to $2\frac{1}{2}$ pounds.



18-11

No. 18-11 pattern, same as No. 18 except with anchor. Weights $1\frac{3}{4}$ to $2\frac{1}{2}$ pounds.



11

No. 11 pattern is drawn thin and anchored. It is extensively used in long wall work. Weights $1\frac{1}{2}$ to $2\frac{1}{2}$ pounds.

We can furnish any of the above patterns with Black Diamond Tool Steel Points, either plain or polished.



HARDSOCCG MANUFACTURING CO., OTTUMWA, IOWA

HARDSOCCG COMMON STYLE CUTTING PICKS



14

No. 14 is a straight pattern and the most popular. Weights 2 to 5 pounds.



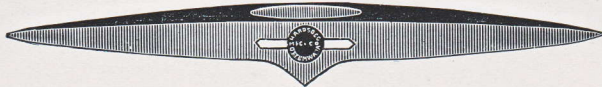
19

No. 19 is a square pattern with a slight anchor. Weights 2 to 5 pounds.



B

Pattern B is similar in shape to No. 19 but drawn a little longer. Weights $2\frac{1}{4}$ to $4\frac{1}{2}$ pounds.



M

Pattern M is similar in shape to No. 14 but drawn a little longer. Weights 2 to $4\frac{1}{2}$ pounds.

Always specify pattern, weights, and whether patent or common eye picks are wanted.

We can furnish any of the above patterns with Black Diamond Tool Steel Points, either plain or polished.

HARDSOEG COMMON STYLE MINING PICKS



17

No. 17 is a short pattern mining pick. Weights $1\frac{3}{4}$ to 3 pounds.



18

No. 18 is our regular pattern Clay Mining Pick, which is adapted for all ordinary mining coals. Weight $1\frac{1}{2}$ to 3 pounds.



11

No. 11 is a thin drawn, anchored Clay Mining Pick, which is extensively used in long wall work. Weights $1\frac{3}{4}$ to $2\frac{1}{2}$ pounds.

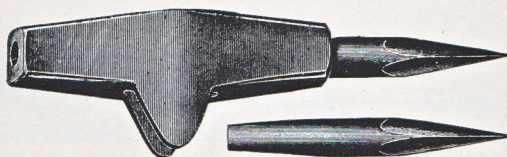
We can furnish any of the above patterns with Black Diamond Tool Steel Points, either plain or polished.

POLL, OR LOADER'S PICK



Made in same patterns as Cutting Picks. Weights $2\frac{1}{2}$ to 4 pounds.

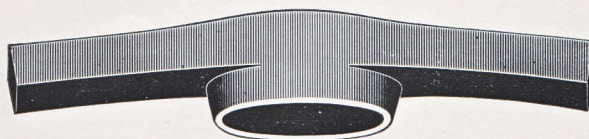
DUTCH HEADS AND POINTS



A very serviceable Pick. Heads made of one solid piece of steel with a good eye for handle. Points of high carbon steel, fitting accurately into the head.

Weights: Heads only $1\frac{3}{4}$ to 3 lbs.; complete with points $2\frac{1}{4}$ to $3\frac{1}{2}$ lbs. Specify weight of head.

DRIFTING PICKS AND EYES



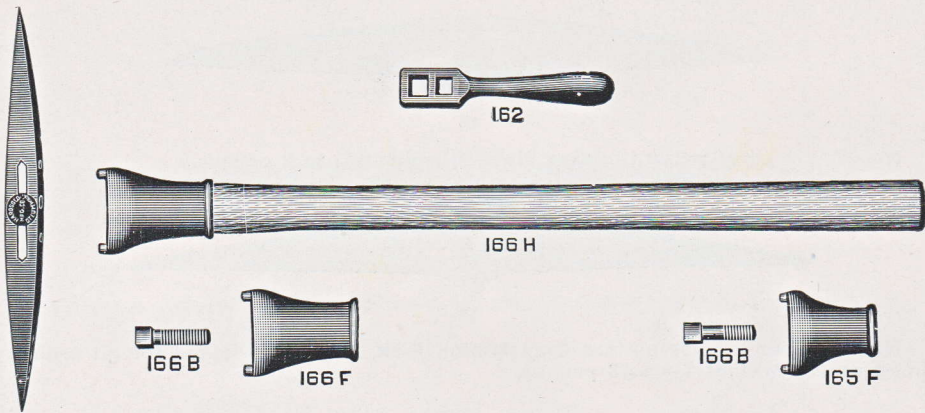
Note the correct shape of this eye. We make these picks and eyes of the best material and our guarantee is back of them. Weights 3 to 5 pounds.

We furnish Railroad Picks in weights from 4 to 6 pounds.



HARDSOCG MANUFACTURING CO., OTTUMWA, IOWA

HARDSOCG PATENT BLACK DIAMOND HANDLE



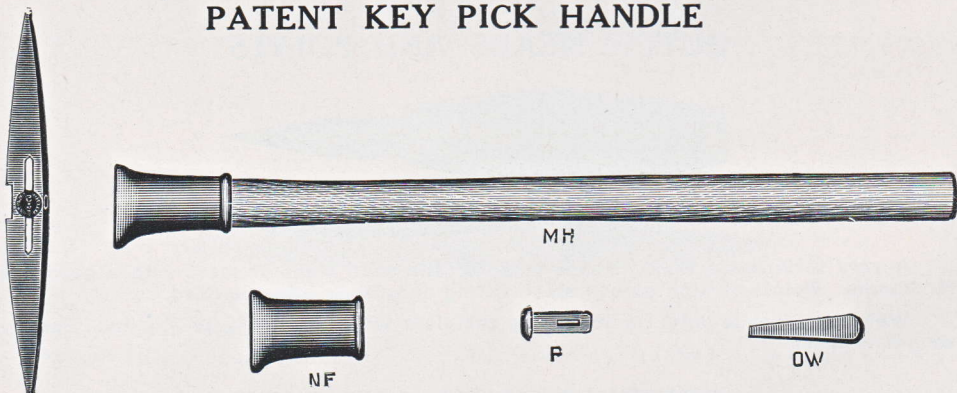
These ferrules are made in two sizes.

No. 165F with 1/2 inch bolt is the smaller size, recommended only for use on light weight mining picks.

No. 166F with 1/2 inch bolt is the standard and most popular size for all weight mining and cutting picks.

- No. 162 Wrench
- No. 165F Small Ferrule
- No. 166F Standard Ferrule
- No. 166B 1/2 inch Bolt, for either Ferrule
- No. 166H Handle, complete, with Ferrule, Bolt and Wrench.....

PATENT KEY PICK HANDLE

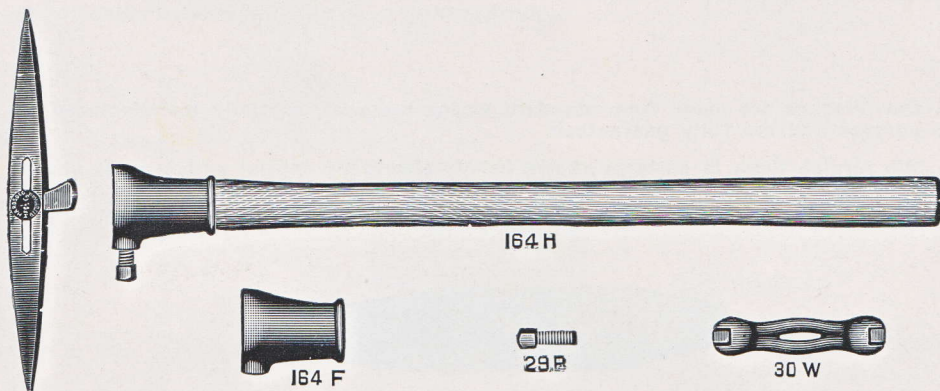


- No. MH Handle, complete with Ferrule Bolt and Key.....
- No. P Bolt only
- No. OW Key only

See pages 46 and 47 for the various styles of picks we furnish to fit the above handles.



THE "SCOTT" PATENT PICK HANDLE

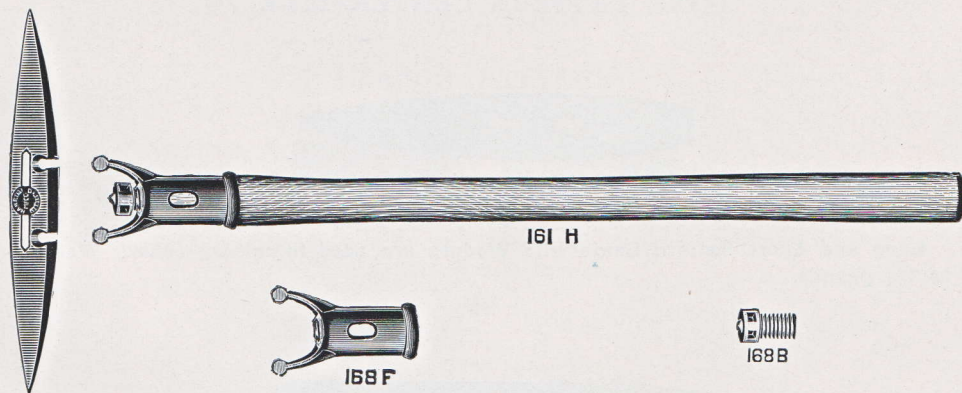


We manufacture the Scott Patent Pick and can furnish them in all patterns.

Ferrules made extra large to prevent handles from breaking. Lugs on picks are machined to fit the ferrules.

- No. 164H Handle, complete with Bolt and Wrench
- No. 164F Ferrule only
- No. 29B Bolt
- No. 30W Wrench

HARDSOEG PATENT "KK" PICK HANDLE



- No. 161H Handle, complete with Bolt
- No. 168F Ferrule only
- No. 168B Bolt

See pages 46 and 47 for general description of patterns of Picks.

We can furnish any of the above patterns with Black Diamond Tool Steel Points, either plain or polished.

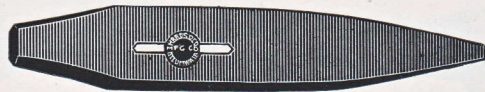


HARDSOCG MANUFACTURING CO., OTTUMWA, IOWA

HARDSOCG WEDGES

Our Wedges are made from standard wedge material, specially manufactured for the purpose and are fully guaranteed.

We furnish them in patterns shown below, also many special patterns not shown.



Pattern No. 10 Wedges are adapted for all shooting coals. Weights 1 to 5 pounds.



Pattern No. 11 is a long drawn wedge for mining coals. Weights $1\frac{1}{4}$ to $2\frac{1}{2}$ pounds.

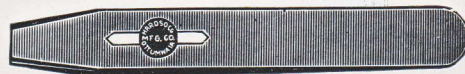


LONG PATTERN CENTERVILLE



SHORT PATTERN CENTERVILLE

Long and Short Pattern Centerville Wedges are used in mining coals. Weights 1 to $1\frac{3}{4}$ pounds.



The Missouri Pattern is a flat wedge with a wide point, used in mining coals. Weights $1\frac{1}{4}$ to 2 pounds.

Always give name or number of pattern and weights.

We also furnish any of the above in Tool Steel.

HARDSOCC SLEDGES

Our Sledges are made of solid Cast Steel, with large oval eyes and are guaranteed against imperfections in material or workmanship.

STRIKING HAMMER



No. 7

Weights 4 to 12 pounds.

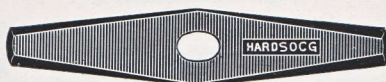
STRAIGHT PATTERN



No. 3

Weights 4 to 8 pounds.

TAPER PATTERN



No. 5

Weights 4 to 8 pounds.

CENTERVILLE PATTERN



Weights 4 to 8 pounds.

Always specify pattern and weights.

HARDSOCC COPPER TOOLS

As a Safety Measure use Copper Tampers, Needles and Scrapers.
In the manufacture of these tools we use only Genuine Lake Superior Bolt Copper and our system of brazing enables us to guarantee them to hold fast.

COPPER NEEDLES



No. 125. Copper Needle, $\frac{1}{2}$ inch taper. Stock lengths 5 to 7 feet. Approximate shipping weight per dozen, 45 pounds.

COPPER END CHURN DRILLS



No. 127. Made of $\frac{3}{4}$ inch steel pipe with Tool Steel Bit and 6 inch Copper Head. Approximate shipping weight per dozen 120 pounds.

No. 227. Made of 1 inch solid steel with Tool Steel Bit and 6 inch Copper Head. Approximate shipping weight per dozen 190 pounds. Stock lengths, 5 to 7 feet.

COPPER END TAMPERS



No. 229. Made of $\frac{3}{4}$ inch steel pipe with 6 inch Copper Head. Approximate shipping weight per dozen, 110 pounds.

No. 329. Made of 1 inch solid steel with 6 inch Copper Head. Approximate shipping weight per dozen 220 pounds.

We also furnish Copper Head Churn Drills and Tampers with Extra Large Head. Stock lengths 5 to 7 feet. Always specify whether Churn Drills or Tampers are wanted.

COPPER TAMP ENDS



No. 131. Made of 1 foot of 1 inch round steel to which is brazed by a special process, a 6 inch Copper Head. Approximate shipping weight per dozen 60 pounds.

COPPER END SCRAPERS



Made of 7-16 inch round steel with 5 inch copper, in both Single and Double End. Stock lengths 6 to 9 feet.

No. 132. Single End Copper Scraper. Approximate shipping weight per dozen 55 pounds.

No. 133. Double End Copper Scraper. Approximate shipping weight per dozen, 55 pounds.

COMBINED COPPER TAMPER AND SCRAPER



No. 149. Copper Head with Steel Scraper. Approximate shipping weight per dozen, 80 pounds.

No. 249. Copper Head with Copper Scraper. Approximate shipping weight per dozen, 85 pounds.

Stock lengths 6 to 8 feet.

STEEL NEEDLES



No. 135. Steel Needles, $\frac{1}{2}$ inch taper. Approximate shipping weight per dozen, 35 pounds.

STEEL CHURN DRILLS



No. 137. Made of 1 inch round mild steel with 8 inch Tool Steel Bit. Approximate shipping weight per dozen 190 pounds.

No. 237. Made of $\frac{3}{4}$ inch steel pipe with solid Steel Head and Tool Steel Bit. Approximate shipping weight per dozen, 90 pounds.

STEEL TAMPERS



No. 139. Made of $\frac{3}{4}$ inch steel pipe with Solid Steel Head. Approximate shipping weight per dozen, 95 pounds.

No. 239. Same as No. 139 except made of 1 inch round solid steel. Approximate shipping weight per dozen, 190 pounds.

ALWAYS SPECIFY WHETHER TAMPERS OR CHURN DRILLS ARE WANTED. STOCK LENGTHS, NEEDLES, CHURN DRILLS AND TAMPERS 5 TO 7 FEET.

DOUBLE END SCRAPERS



No. 143. Made of either $\frac{3}{8}$ or 7-16 inch steel. Approximate shipping weight per dozen, 30 pounds.

SPOON SCRAPERS



No. 145. Indiana Pattern, with $2\frac{1}{2}$ x12 inch spoon. Approximate shipping weight per dozen, 50 pounds.

No. 245. Iowa Pattern, with $2\frac{1}{2}$ x9 inch spoon. Approximate shipping weight per dozen, 40 pounds.

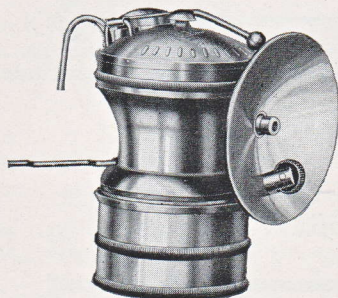
STOCK LENGTHS OF ALL PATTERN SCRAPERS 6 TO 8 FEET.



HARDSOCC MANUFACTURING CO., OTTUMWA, IOWA

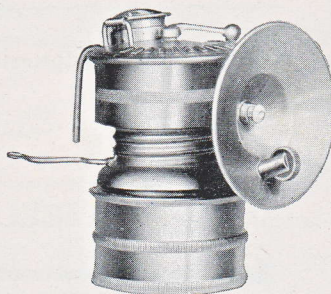


MINERS' CARBIDE LAMPS



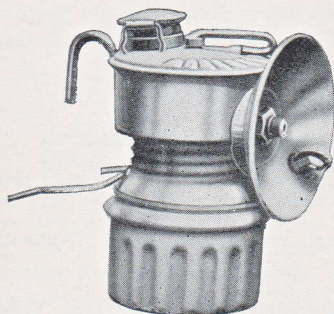
Auto-Lite

No. 102X. Brass. No. 302X. Nickel.
2½ inch silver nickered reflector with self lighter.



Arrow

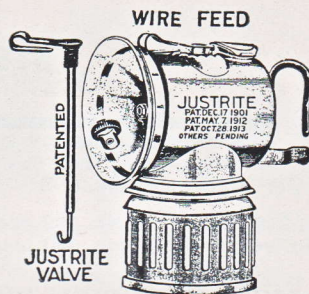
No. 10. Brass. No. 30. Nickel.
2¾ inch wind-proof reflector with self lighter.



Guy's Dropper

No. 5 Lamp. Bright Brass Finish. 2⅛ inch Brass Self-lighter Reflector. Round or hexagon bottom.

No. 28 Lamp. Bright Brass Finish. 2½ inch deep Brass Reflector, which protects the burner tip from dripping water. Round or hexagon bottom.



WIRE FEED

Justrite

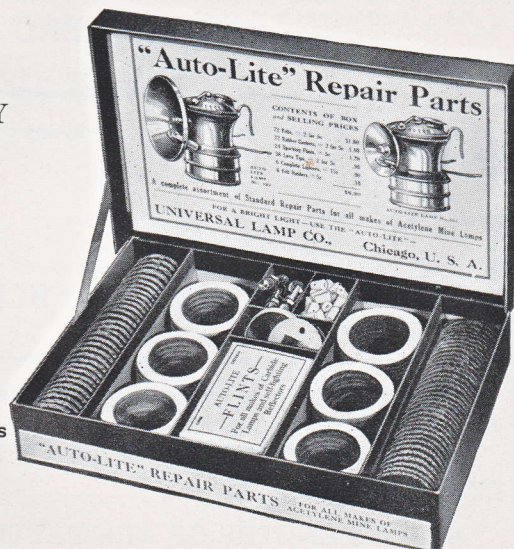
No. 407. Polished Brass.

NO. 24 THE AUTO-LITE SUPPLY BOX

PACKED IN A HANDY SHELF-BOX

What the box contains:

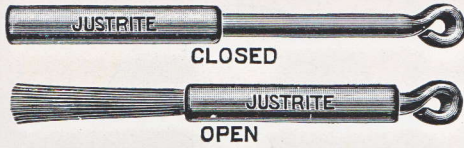
- 6 dozen felts
- 6 dozen flat rubber gaskets
- 3 dozen lava tips
- 2 dozen flints
- 6 complete lighters
- 6 brass felt holders





LAMP ACCESSORIES

JUSTRITE WIRE BRUSH CLEANER



CLOSED



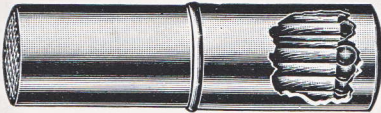
OPEN

No. 37. Fifty Hard, Rust-Proof Steel Wires; Sliding Cover. Protects wires when not in use.



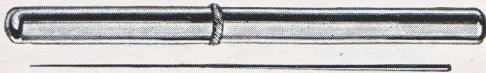
No. 22. Wire Brush Cleaner.

MATCH BOX

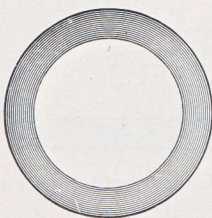


No. 75. Round, Seamless Brass, Nickel Plated.
No. 3400. Aluminum Satin Finish, knurled.

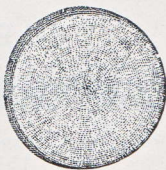
REAMERS AND REAMER TUBES



No. 146. Empty Reamer Tubes.
No. 145. Imported Reamers.



No. 60
Rubber Gasket.



No. 62
Felt Packing.

FLINTS



No. 172



No. 173



No. 174



No. 28



No. 177

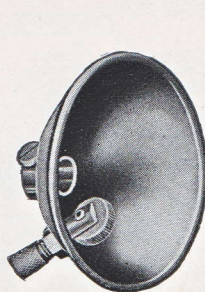


No. 182

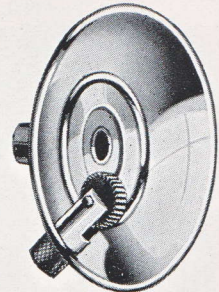


No. 66
Lava Tip

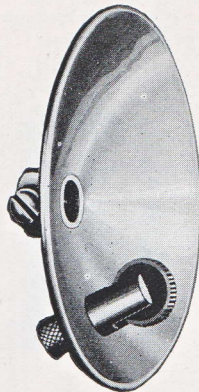
JEWEL METAL TIP



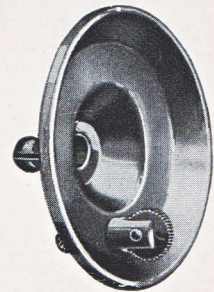
No. 200
2 1/8 in. Extra Deep
Polished Nickel
Reflector with
Lighter.



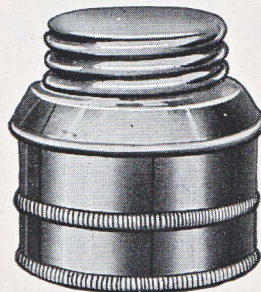
No. 201
2 1/8 in. Polished
Nickel Reflector
with Lighter.



No. 202
2 1/2-inch Polished
Nickel Reflector
with Lighter.



Guy's No. 5
Boss Reflector 2 1/2-
inch with Lighter.
For No. 5 Guy
Dropper
Lamps.

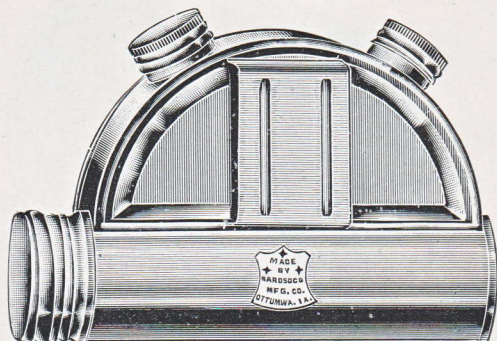


Extra Bottoms
Polished Brass and Nickel Plated, for all
makes of lamps.



HARDSOCC MANUFACTURING CO., OTTUMWA, IOWA

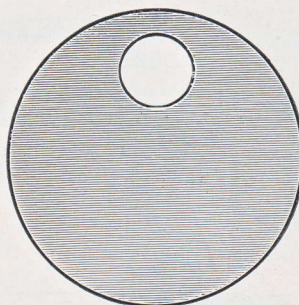
HARDSOCC PATENT COMPARTMENT
CANTEEN FOR CARBIDE, WATER
AND MATCHES



No. 21

Where the miners use acetylene lamps these canteens are indispensable. Made in Tin only. Weight, 6¼ oz. Approximate capacity—water, ½ pt.; carbide, ½ lb.; matches, 24.

MINE CAR CHECKS



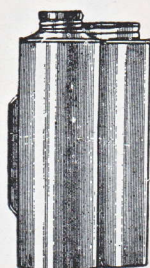
We can furnish these in either brass or galvanized iron, plain or numbered. Cut shows 1½-inch size. Can also furnish in 2-inch diameter.

SINGLE TUBE
CARBIDE
CONTAINER



No. 20
Made of Heavy
Sheet Brass.

DOUBLE TUBE
CARBIDE
CANTEEN



No. 22
For Carbide and
Water. Made in
Tin only.

CARBIDE
FLASK



No. 23
Capacity, about 1
pint. Made in
Tin only.

POCKET CARBIDE
CAN



No. 77
Capacity 10 oz.
Carbide.

UNION CARBIDE



Packed in blue and gray drums. Capacity 25 lbs. and 100 lbs.

Shipped from nearest stock of Union Carbide in any quantity desired.

FILE CASES



Furnished in three sizes to hold 8, 10 and 12-inch files.

POWDER OR
DYNAMITE BOXES



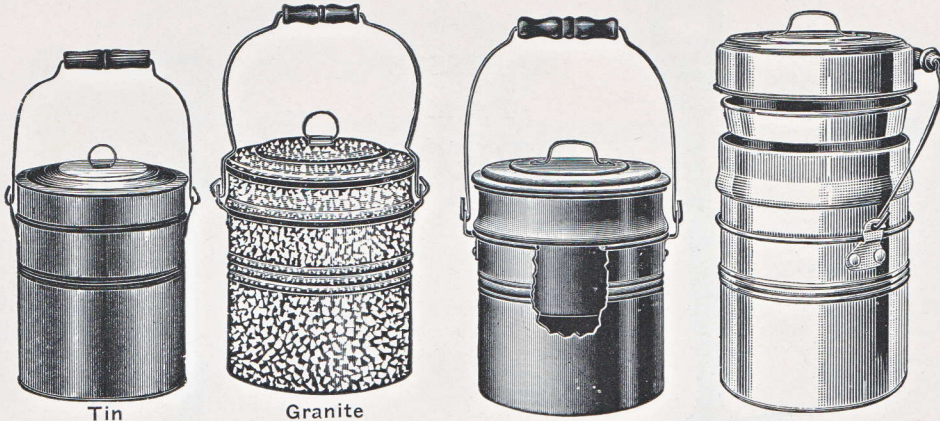
Made of heavy water-proof Fibre, securely sewed with heavy thread. No rivets.

Regular size: 9 inches high, 6½ inches wide, 3¼ inches thick.

Large size: 9 inches high, 8½ inches wide, 4¼ inches thick.



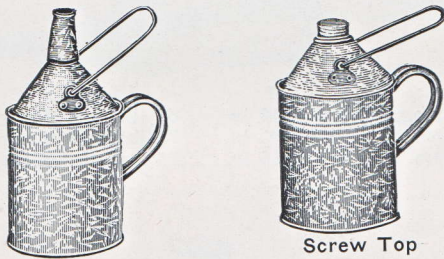
MINERS' DINNER BUCKETS



- Tin
 No. 104. 4-Quart IC Tin.
 No. 105. 5-Quart IC Tin.
 No. 204. 4-Quart Extra Heavy Tin.
 No. 205. 5-Quart Extra Heavy Tin.

- Granite
 No. 77. 5-Quart Granite.
 No. 2775. 5-Quart Aluminum.
 No. 2777. 5-Quart Aluminum with Pie Plate.

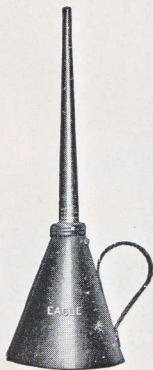
MINERS' POWDER CANS



Made of good quality galvanized iron, with measure for powder.

- SLIP TOP SCREW TOP
 No. 126. 4-Quart. No. 226. 4-Quart.
 No. 128. 6-Quart. No. 228. 6-Quart.

EAGLE WELDED STEEL MINE CAR OILER



Black Enamel Finish

Made of heavy cold rolled steel, seamless body; bottom and handle WELDED into place; fitted with vent tube to regulate flow of oil. Heavy steel spout with WELDED seam and heavy rolled thread.

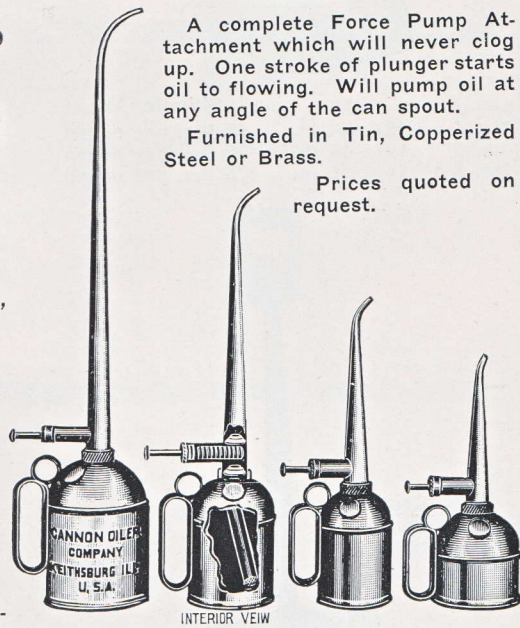
- No. 30. 1-Qt., 8-in. Spout.
 No. 31. 1-Qt., 10-in. Spout.

THE CANNON PUMP OILER

A complete Force Pump Attachment which will never clog up. One stroke of plunger starts oil to flowing. Will pump oil at any angle of the can spout.

Furnished in Tin, Copperized Steel or Brass.

Prices quoted on request.



No.	Capacity Pints	Diameter Inches	Extreme Height Inches	Length of Spout Inches	Weight Per Dozen	Cu. Ft. Per Dozen
00	1/2	3	8	6	12	3/4
0	1	3 1/2	9 1/4	6	13	1
1	1	3	12 1/2	8	13	1
2	1 1/2	3 1/2	17 1/4	12	16	1 1/2
2 1/2	2	4	18	12	18	2
3	2	4	26	20	22	3

Securely packed, 1/2 dozen in heavy cartons.



HARDSOCC "PREMIER" SOLID CAST STEEL SHOVELS

Also
ANDERSON
Patent
"TRICOR"



Anderson
Patent
"Tricor"

	Size	Shipping Wt.
No. 1	13 $\frac{1}{4}$ x14 in.	65 lbs. per dozen
No. 2	14x14 $\frac{1}{2}$ in.	70 lbs. per dozen
No. 3	14 $\frac{1}{2}$ x15 in.	75 lbs. per dozen



Corrugated
Pattern
Coal or Coke

	Size	Shipping Wt.
No. 1	13 $\frac{1}{4}$ x14 in.	65 lbs. per dozen
No. 2	14x14 $\frac{1}{2}$ in.	70 lbs. per dozen
No. 3	14 $\frac{1}{2}$ x15 in.	75 lbs. per dozen



Low Coal or
Tennessee
Pattern

	Size	Shipping Wt.
No. 1	13 $\frac{1}{4}$ x14 in.	65 lbs. per dozen
No. 2	14x14 $\frac{1}{2}$ in.	70 lbs. per dozen
No. 3	14 $\frac{1}{2}$ x15 in.	75 lbs. per dozen

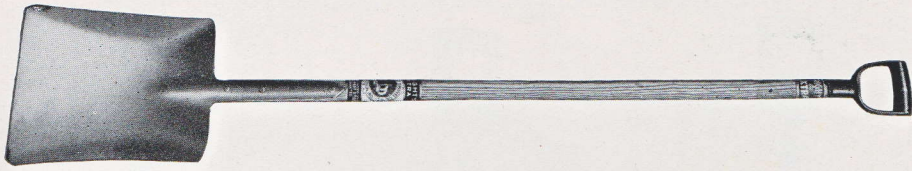
Corrugated Ore
Shovel
Polished



	Size	Shipping Wt.
No. 4	11x13 in.	55 lbs. per dozen
No. 5	11 $\frac{1}{2}$ x13 $\frac{1}{2}$ in.	58 lbs. per dozen
No. 6	12x14 in.	63 lbs. per dozen

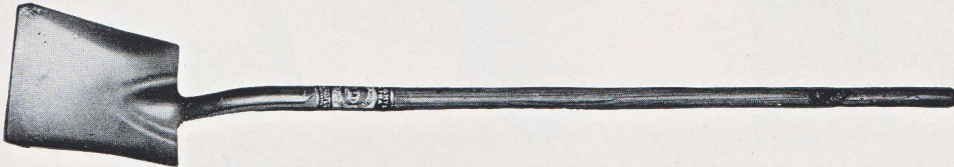


HARDSOCC "PREMIER" SHOVELS AND SCOOPS

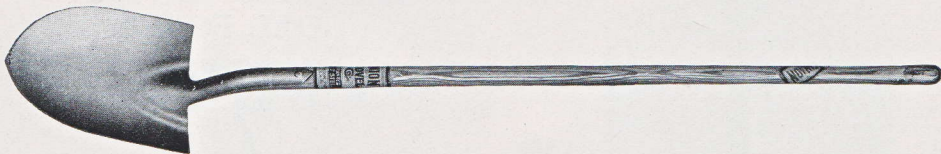


Malleable D Mining Machine Shovel.

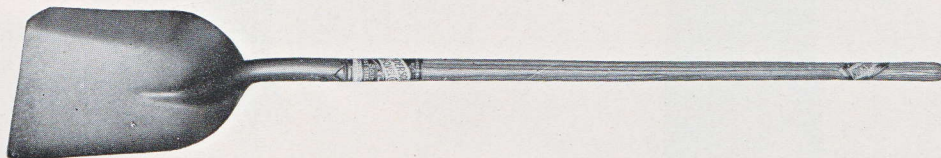
No. 4. 11x13 inch, polished; 4½ ft. handle with malleable D. Shipping weight per dozen, 80 pounds.



Long Handle, Square Point Dirt Shovel. Shipping weight per dozen, 60 pounds.



Long Handle, Round Point Dirt Shovel. Shipping weight per dozen, 60 pounds.



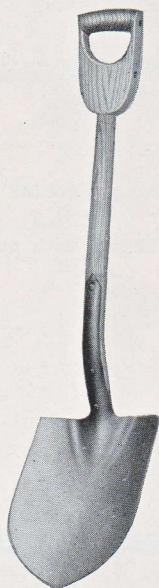
Long Handle Furnace Scoop. Shipping weight per dozen, 51 pounds.



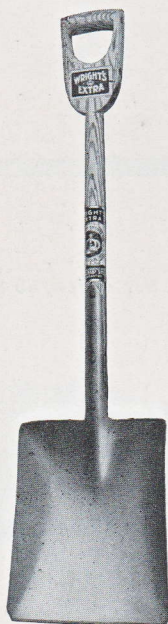
HARDSOCC SHOVELS—Continued



No. 2. Square and Round Point, plain back, polished Dirt Shovels. Size $9\frac{1}{2} \times 11\frac{3}{4}$ inches. Shipping weight 55 lbs. per dozen.



- No. 4. $11\frac{1}{4} \times 15\frac{3}{4}$ inches, shipping weight 77 lbs. per dozen.
- No. 6. $12\frac{3}{4} \times 16\frac{1}{4}$ inches, shipping weight 74 lbs. per dozen.
- No. 8. $13\frac{1}{2} \times 17\frac{1}{4}$ inches, shipping weight 85 lbs. per dozen.



Slack Shovel

No. 4. 11×13 inches, polished shallow blade, low lift, regular handle. Shipping weight 70 lbs. per dozen.

COAL FORKS



- No. 810. 10-Tine, shipping weight 90 lbs. per dozen.
- No. 812. 12-Tine, shipping weight 100 lbs. per dozen.
- No. 814. 14-Tine, shipping weight 105 lbs. per dozen.



DRILLS, MINING TOOLS AND MINERS' SUPPLIES



HARDSOCC "PREMIER"

WATERPROOF BLASTING PAPER



"Premier" Waterproof Blasting Paper is the best that can be obtained, which we furnish in 9, 12 and 15 inch widths in rolls of standard weights.

CARTRIDGE SOAP



Best for miners' use. Packed 100 bars to a case. Shipping weight 50 pounds.

AMERICAN PATENT CHARGER



No. 77. Charger only.
No. 78. Charger, complete.

MINERS' FUSE



Ensign Bickford & Co.'s Single and Double Tape. Beaver and Clover brands.



Packed in Cartridges, in 50-lb. and 25-lb. dovetailed boxes.

Unless otherwise specified, we will send Cartridges (sticks) 1 1/4 x 8 inches, weighing one-half pound each.

BLASTING CAPS

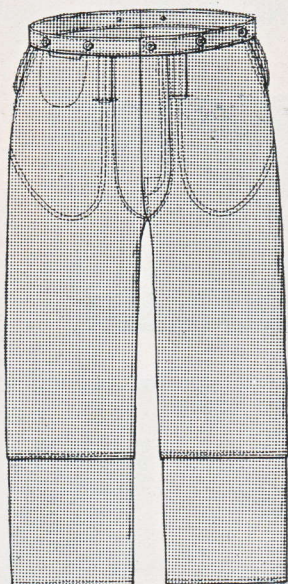


Packed 100 in a box.



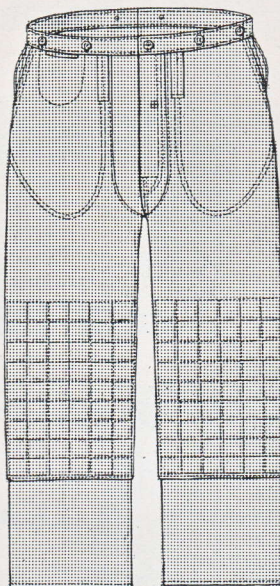
HARDSOCG MANUFACTURING CO., OTTUMWA, IOWA

MINERS' PANTS



No. 405—Plain Knees

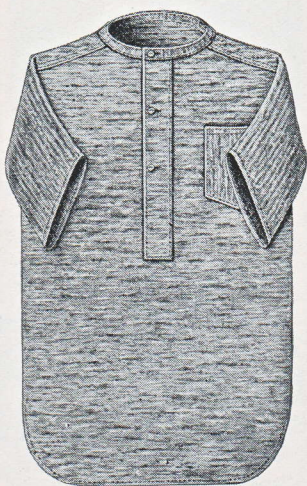
Made of heavy White Duck, with double front and seat, cut full size, allowing plenty of room in the seat. All parts subject to strain are double seamed and reinforced, especially in the crotch. The front "Patches" are cut extra long, extending well below the knees.



No. 407—Padded Knees

Made just like No. 405, with the addition of the heavy knee pads. We use sufficient cotton in pads to afford ample knee protection and they are cut extra long, extending well below the knees.

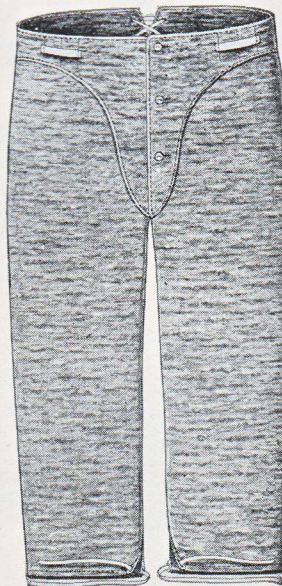
MINERS' SHIRTS



No. 413

Made of good weight Grey Mottled Outing Flannel, short sleeves and without collar. Sizes 14½ to 17.

MINERS' DRAWERS

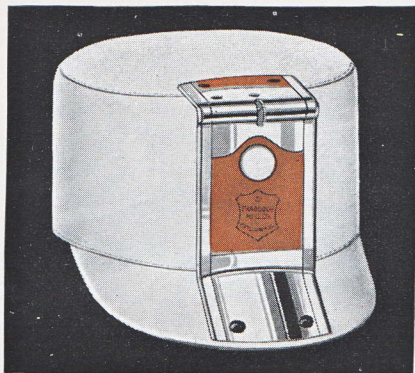


No. 415

Made of good weight Grey Mottled Outing Flannel. Draw-strings at the bottom of the legs and also in the waist band. Sizes 32 to 44.



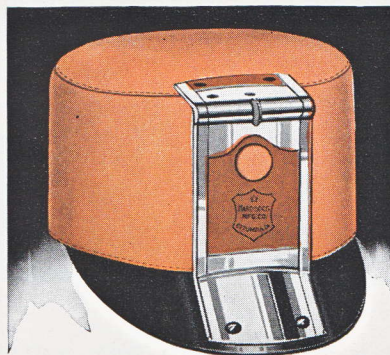
MINERS' DUCK CAPS



No. 1-W

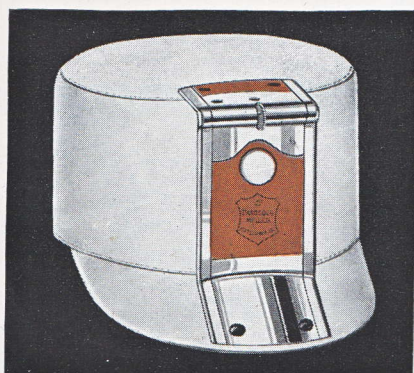
Made of heavy White Duck, and Flannel lined. The Visor is made in our factory by our own process and its covered with heavy duck.

The Lamp Holder is substantially made of heavy tin and fibre and is the type best suited for carrying carbide and oil lamps.



No. 3-B

Made of heavy Brown Duck and has our regular size heavy Visor covered with a good grade Black Glazed Muslin. The Lamp Holder is just like the one on our No. 1-W Cap.



No. 2-W

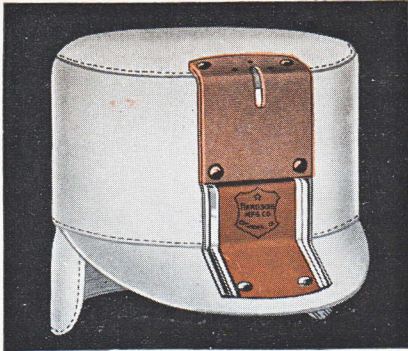
Made just like our No. 1-W excepting the Visor which has a metal reinforcing which prevents it from becoming soft or flimsy.



No. 6-W

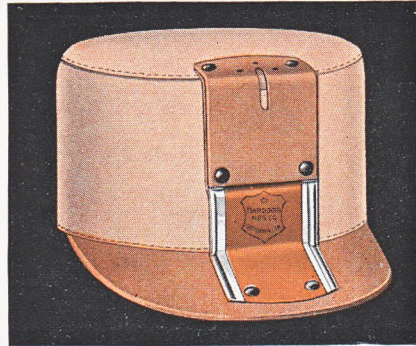
Made of heavy White Duck, just like our No. 1-W Cap but has our special combination Metal and Leather Lamp Holder.

This Lamp Holder is preferred by a great many miners on account of its stiffness and durability. It is used extensively in mines having overhead wiring.



No. 6-EFW

Made of heavy White Duck, just like our No. 6-W, but with ear flaps to protect the ears in cold weather. Many miners use this as a winter cap in going to and from the mines. We will attach any style Lamp Holder desired on this Cap.

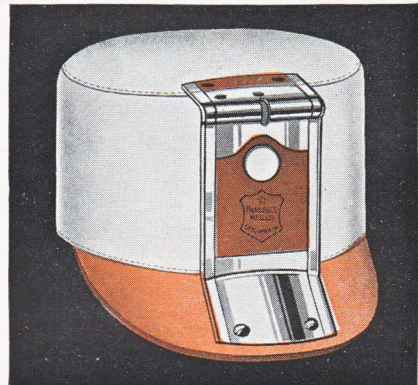


No. 6-8EB

Made just like our No. 6-8EW, excepting heavy Brown Duck instead of white. For Electric Lamps.



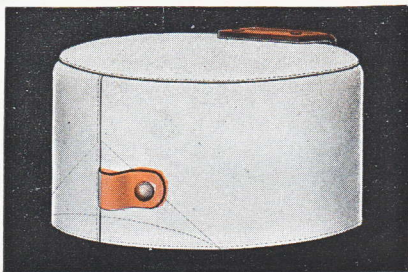
No. 6-8EW



No. 8-W

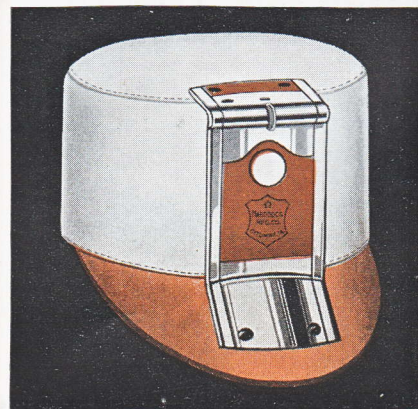
Made of heavy White Duck, flannel lined. Heavy Sole Leather Visor, 1½ inches wide.

Same Lamp Holder as No. 1-W.



No. 6-8EW

Above cuts show the front and rear view of our special Cap for Electric Mine Lamps. Made of heavy White Duck with the combination Metal and Leather Lamp Holder, also 1½-inch Sole Leather Visor. It has the small leather strap and fastener in the rear to hold the Battery Cable in place. The most satisfactory Cap on the market for Electric Mine Lamps.

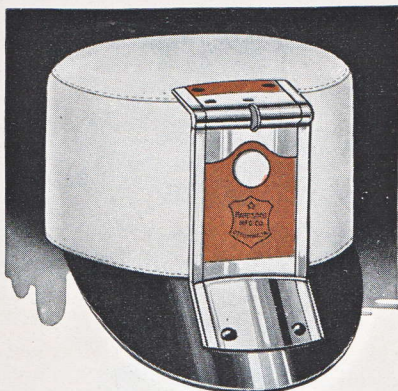


No. 10-W

Made just like our No. 1-W, excepting the Visor, which is heavy sole leather, 3 inches wide. This is a very popular Cap as the large Visor gives added protection to the eyes.



DRILLS, MINING TOOLS AND MINERS' SUPPLIES



No. 12-W

Made just like our No. 1-W Cap, excepting the Visor, which is 3 inches wide, metal reinforced and is covered with a good grade of black Glazed Muslin. This Cap is used very extensively by drivers and will give the best of satisfaction.

How Our Caps Are Packed

Unless otherwise ordered, all our Caps are neatly packed one dozen to the box, assorted as follows:

Sizes	6 $\frac{3}{4}$	6 $\frac{7}{8}$	7	7 $\frac{1}{8}$	7 $\frac{1}{4}$	7 $\frac{3}{8}$	
Caps	1	2	3	3	2	1	= 1 doz.

We pack Caps in any assortment desired, also in dozens of solid sizes, from 6 $\frac{1}{2}$ to 7 $\frac{3}{8}$.

Shipping Packages and Weights

We pack twelve dozen Caps in corrugated container, or thirty-six dozen in wooden case. Weight approximately 45 pounds per gross.

Pants packed for shipment weigh approximately 27 pounds per dozen.

Shirts and Drawers packed for shipment weigh approximately 10 pounds per dozen.

Gloves and Mittens are packed ten dozen in fibre container averaging approximately 2 pounds per dozen. We also accept orders for smaller quantities.

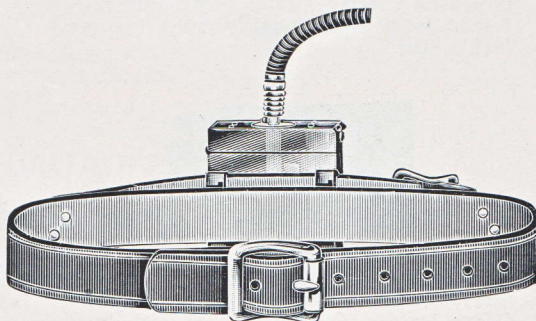
MINERS' SQUAM HAT



No. 20

This Hat is made of extra heavy water-proofed material and is adapted for use in wet mines. Very extensively used in gold, copper, lead and zinc mines. The Lamp Holder is constructed of heavy tin and fibre and will fit any style miner's lamp.

MINERS' BELTS



No. 400—BATTERY BELT

Made of heavy Russet Leather, 1 $\frac{1}{2}$ inches wide, with extra strap and buckle in rear for carrying electric battery, making it unnecessary to unfasten belt when removing battery. Assorted sizes 34 to 44 inches.



No. 402—MINER'S DUCK BELT

Made of heavy Quilted Duck, 1 $\frac{1}{2}$ inches wide, with 1-inch leather billet and chafe and heavily tinned buckle. Assorted sizes from 34 to 44 inches and packed 1 dozen in a box.



No. 404—MINER'S DUCK BELT

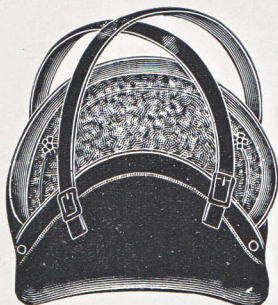
Made of heavy Quilted Duck, with heavily tinned patent hook fasteners. Made in one size, adjustable from 32 to 44 inches. Packed 1 dozen in a box.



No. 406—MINER'S WEBB BELT

Made of extra heavy interwoven, stitched brown webbing, with an adjustable buckle. Made long enough for any size. Packed 1 dozen in a box.

KNEE PADS



Made of high grade heavy leather and padded with a heavy thickness of felt.



BOSS

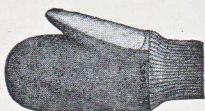


Nationally Advertised

GLOVES AND MITTENS

For MEN and WOMEN, BOYS and GIRLS

We list below our best selling gloves and mittens. Space will not permit us to show our complete line.



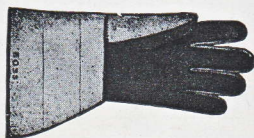
No. 281

Heavy weight dark Oxford Covert Cloth Mitten, heavy fleece lined, heavy wadding interlined and quilted. Black mixed knit wrist. Palm and thumb reinforced with extra quality split leather. Men's size.



No. 403

Jerzy. Knit Wrist Jersey Glove. Three seamed back pattern. Heavy weight seal brown color Jersey material. Seal Brown knit wrist. Men's size.



No. 320

Letherpom. Men's medium heavy weight canton flannel gauntlet glove, fleece inside. Canton flannel cuff, lined with good quality stiffening, and quilted. Crocheted edge and cuff seam. Three seam back pattern. Palm, fingers and thumb of good grade split leather, with canton flannel underneath leather, next to hand.



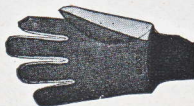
No. 461

Heavy weight white canton flannel gauntlet glove, fleece inside. Three seamed back pattern. Canton flannel cuff lined with good quality stiffening and quilted. Crocheted edge and cuff seam. Men's size.



No. 640

Meedy. Good weight white canton flannel glove, fleece inside. Seamed back pattern blue knit wrist. Men's size.



No. 322

Letherpom. Men's medium heavy weight canton flannel glove, fleece inside. Three seam back pattern. Full leather reinforced palm, fingers and thumb with good grade split leather. Blue knit wrist.

No. 641

Hevy. Medium heavy weight canton flannel glove, fleece inside. Seamed back pattern. Blue knit wrist. Men's size.

No. 642

Xtra Hevy. Heavy weight, white canton flannel glove, fleece inside. Seamed back pattern. Blue knit wrist. Men's size.

No. 643

Walloper. Extra heavy weight white canton flannel glove, fleece inside. Seamed back pattern, Blue knit wrist. Men's size.



No. 389

Tikmit. Men's size, extra heavy weight fancy striped tick Mitten, three-ply. Heavy fleece lined, heavy wadding interlined and quilted. Blue knit wrist.



No. 8738

Striped glove. Medium weight narrow striped flannel, fleece inside. Blue knit wrist. Men's size.



DRILLS, MINING TOOLS AND MINERS' SUPPLIES

HARDSOCC HANDLE



1st and Best Grade.



2nd Grade. Best Seller.



3rd Grade. An Excellent Handle.

Second-Growth Hickory Sledge and Patent Handles.



Made in Select and Victor grades only.

SHELLBARK HICKORY COAL PICK HANDLES



Small Eye, $3 \times \frac{5}{8}$ inch.

Medium Eye, $3 \times \frac{3}{4}$ inch.
Made in grades as above.

Large Eye, $3 \frac{1}{8} \times \frac{7}{8}$ inch.

Always specify whether Coal or Patent Pick Handles are wanted.

SURFACE AND RAILROAD PICK HANDLES



No. 1 grade only.

MINERS' AXE HANDLES

Flexo and Standard grades, 28 inches in length.

COAL SHOVEL HANDLES

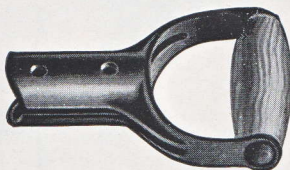


Made of a good grade of Ash, in 18, 24 and 28 inch lengths. We also furnish Malleable D Tops with Hardwood Grips.

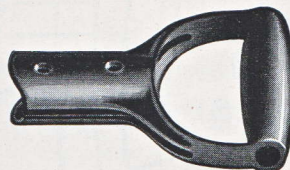
CARTRIDGE PINS

36, 42 and 48 inches long, standard sizes.

R-W ADJUSTABLE MALLEABLE D'S



No. 282. Malleable D, Wood Grip.



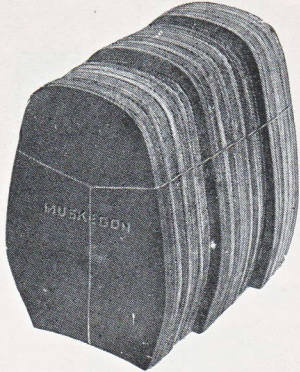
No. 382. All Malleable D.





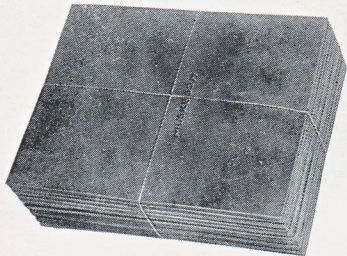
LEATHER

OAK AND CHROME TAPS



- C-40. Oak Taps
- C-42. Oak Taps
- C-50. Oak Taps
- C-52. Oak Taps
- C-50. Chrome Taps.....
- C-52. Chrome Taps.....

OAK BLOCKS AND SQUARES



Blocks 8½x12½ inches. Squares 6¼x8¼ inches.

- 7 lb.
- 8 lb.
- 9 lb.
- 10 lb.
- 12 lb.
- 8 lb. Chrome Blocks.....
- 8 lb. Chrome Squares.....

OAK SHOULDER AND BEND STRIPS

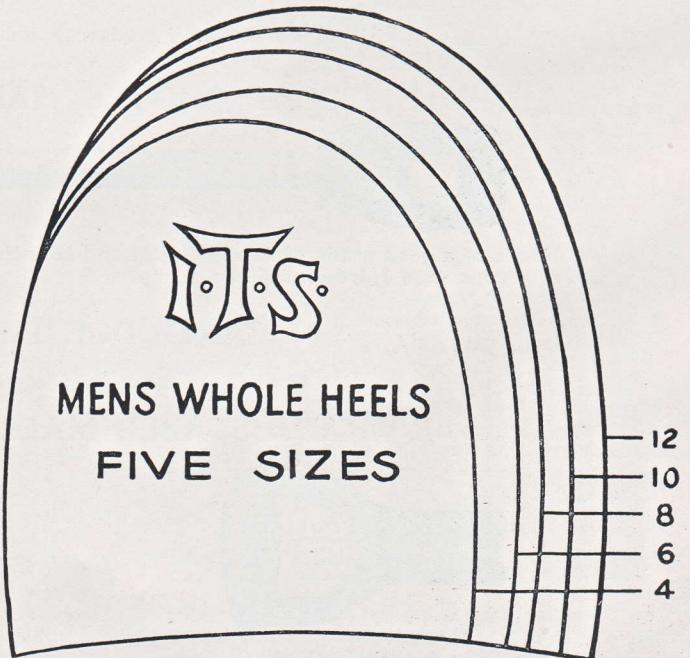
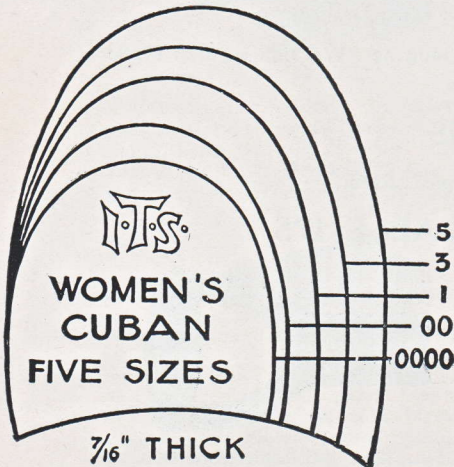


- No. 1 Shoulder Strips.....
- Prime Bend Strips.....
- No. 1 Chrome Shoulder Strips.....
- Prime Chrome Strips.....

All Chrome Stock is tanned from the very best leather and is known as Vanadium Chrome, with lasting qualities and universal service in all grades.

RUBBER HEELS

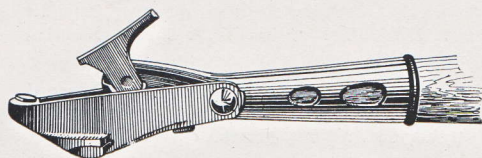
The shape of the "ITS" Rubber Heel makes a perfectly tight joint without the use of cement.



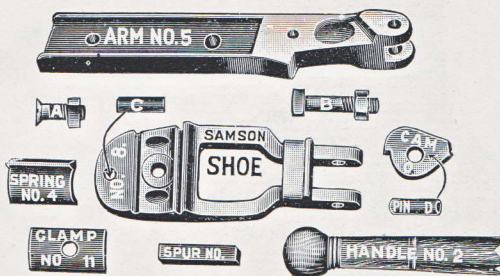
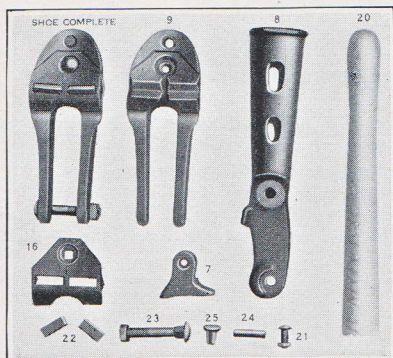
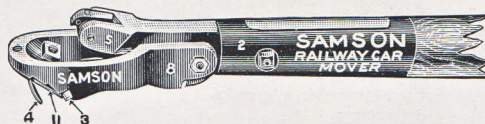


DRILLS, MINING TOOLS AND MINERS' SUPPLIES

BADGER CAR MOVER

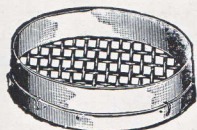


SAMSON CAR MOVER



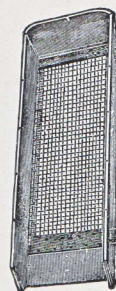
The above cuts show the Badger and Samson Car Movers. These are the best movers on the market. We have been selling them for several years and have found that they give universal satisfaction. Can furnish repairs. Prices on application. Complete Mover weighs 15 pounds.

MINERS' EXTRA HEAVY COAL RIDDLES



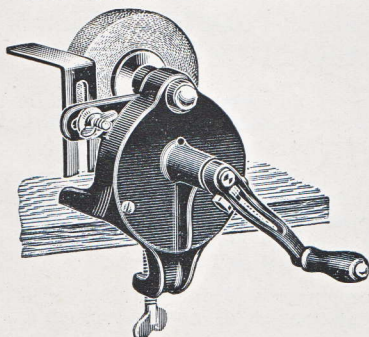
Extra Heavy Steel Wire, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{4}$ or $1\frac{1}{2}$ inch mesh. Packed $\frac{1}{2}$ dozen to a crate.

HEAVY STEEL WIRE COAL SCREENS



Coal Screen

LUTHER GRINDERS



24 Standard 4x1x1 wheel
25 Standard 5x1x1 wheel

- No. 6—Size 5 ft. by 30 inches.
- No. 7—Size 6 ft. by 36 inches.

State size of mesh in ordering. Unless otherwise specified, size of mesh will be openings in the clear.



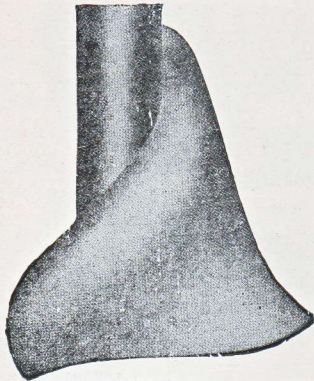
BRATTICE CLOTH

Our fabrics are specially treated and designed for all kinds of service and to meet existing conditions.

To secure the best results we recommend for wet and non-gaseous mines **BLACK JACK** in either Cotton Duck or Jute. Where conditions are otherwise, especially in dry and gaseous mines, our **JUTEX Non-Inflammable** and **PYLOX**

Non-Inflammable and **Waterproof Jute** will be found the most satisfactory. Where a **Duck Cloth** is desired we can furnish our **BRATEX** or **DUTEX Duck Non-Inflammable Brattice**.

Rolls supplied in either 50 or 100 lineal yards, range in width being 36, 40, 48, 60, 70, 72, 84 and 96 inches.



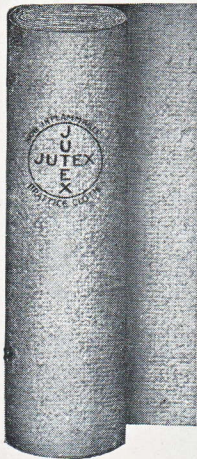
BLACK JACK

Water-Proof

JUTE OR DUCK BRATTICE CLOTH

Durable and especially adapted where conditions do not require a high degree of non-inflammability.

Not susceptible to moisture and our special treatment—which thoroughly coats the yarns—protects the fabric against surface friction and prevents rot. **Black Jack** is put up in 50 and 100 lineal yard rolls of standard widths; color, black on both sides.



JUTEX

Trade Mark Registered

NON-INFLAMMABLE JUTE BRATTICE CLOTH

A very closely woven, mangled cloth, manufactured from heavy jute yarns. Treated in our converting plant, where it is rendered non-inflammable and its wearing qualities amplified.

Jutex Special, Jutex No. 1, Jutex No. 3

Especially adaptable and desirable for gassy mines. Because of the density of weave and treatment in the converter, it will withstand hard wear, making it the most economical Brattice Cloth sold in America.



DUTEX

FIRE-PROOF, MILDEW-PROOF, WATER-PROOF, DUCK BRATTICE CLOTH

A brattice of superior excellence; of heavy weight, without porosity, made to resist the hardest kind of wear.

Our special treatment thoroughly protects the cloth and insures long life. Besides being non-inflammable the yarns are so protected by the coating that the cloth is water-proof, mildew proof, fire proof and rot proof.

Highly recommended for service in mines where a high degree of non-inflammability is required.

DUTEX is put up in 50 and 100 lineal yard rolls of standard widths.

3

3

