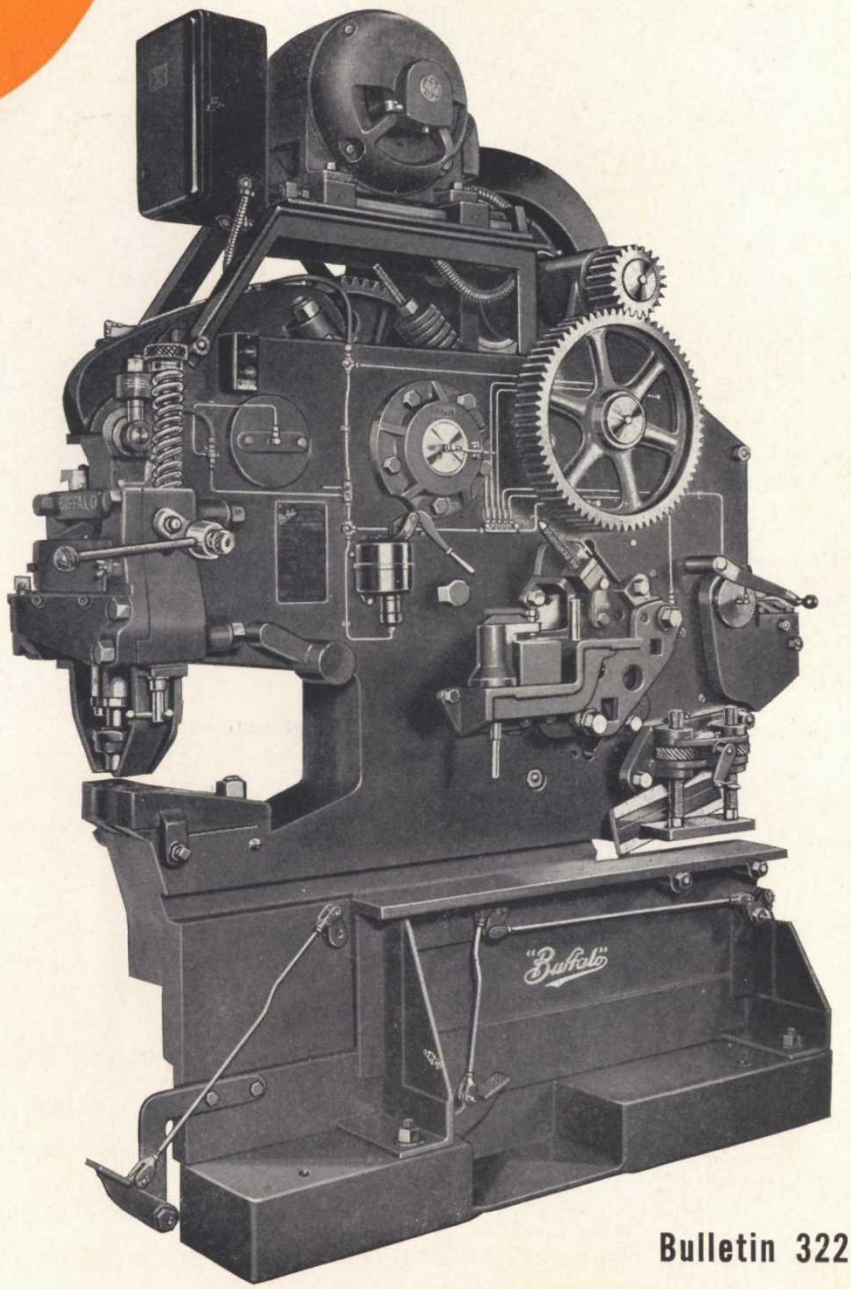
"Buffalo"

Universal Iron Workers



for

PUNCHING

•

ANGLE SHEARING

•

BAR CUTTING

•

PLATE SLITTING

•

NOTCHING & COPING

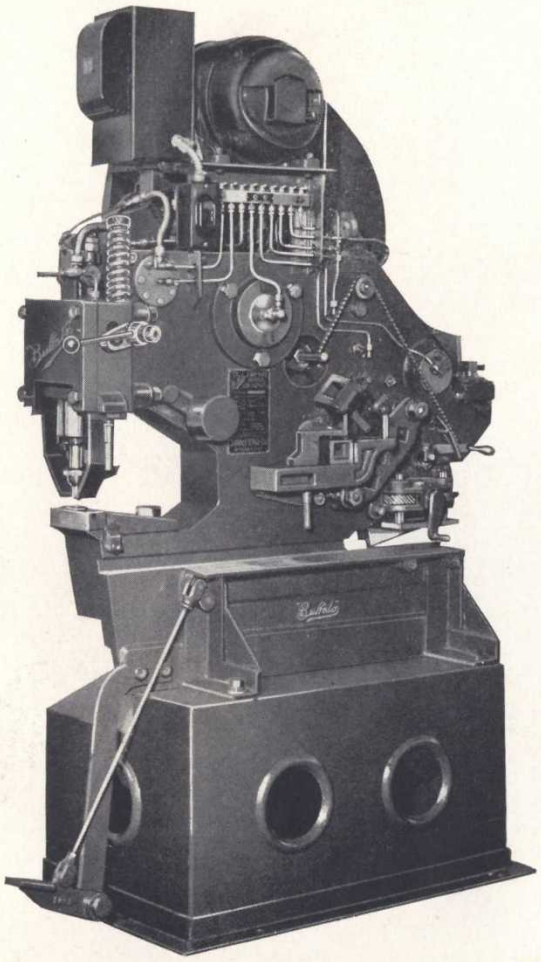
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Bulletin 322-P

BUFFALO FORGE COMPANY

BUFFALO 5, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.



No. 0 Universal Iron Worker with "built-in" notcher on shear end, equipped with centralized oiling system and mounted on steel base. Low dieblock in place, high dieblock not shown.

"Buffalo"

Universal Iron Workers

Frames of all machines are of electrically welded steel, no bolts or rivets used.

"Buffalo" Universal Iron Workers are the highly perfected products of a firm engaged continuously for more than sixty years in the manufacture of metal working machinery. Because of experience accumulated in over thirty years of manufacturing Iron Workers, we have every reason to build only machinery which will give the kind of service you have a right to expect.

One of the most desirable characteristics of the "Buffalo" Universal Iron Worker is its ability to do a number of jobs well—its flexibility. When you install a "Buffalo" Universal Iron Worker in your plant, you are ready for a real day's work every day.

Angles, tees, rounds, squares, flats — punching, bar-shearing, angle-shearing — plate-slitting, coping or notching—it's all the same to a "Universal."

The Punch head on all "Buffalo" Universal Iron Workers is of the full floating type, and may be brought down on the work by means of a quick-acting hand wheel—for locating hole centers correctly, or to center punches and dies. When lowered by means of this hand wheel, punch will stay down as long as desired. It may be lifted if required, but will automatically return to highest position after hole is punched by using the foot treadle.

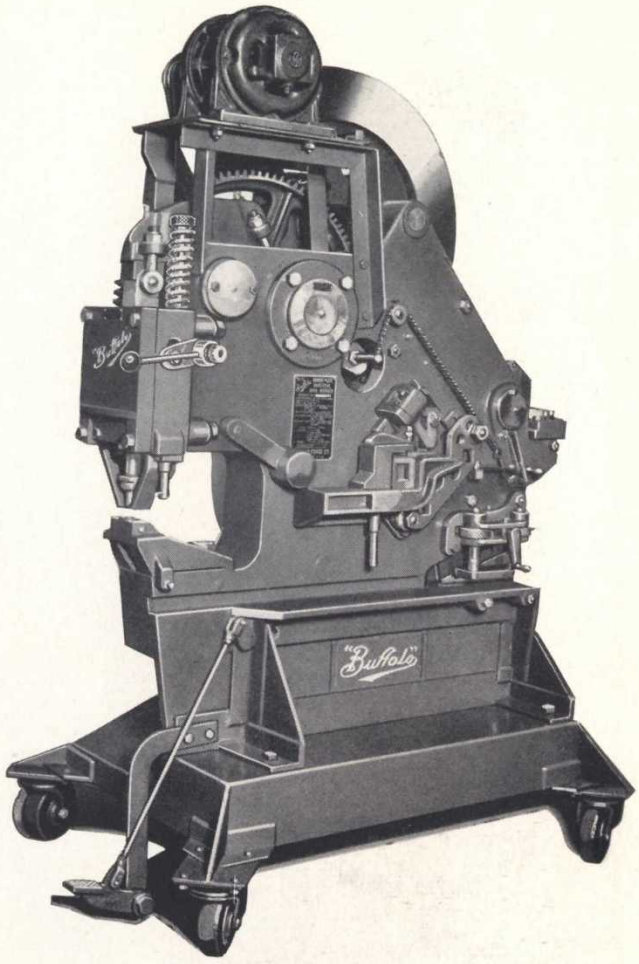
The punch stripper can be swung out of the way by releasing the handle at the right hand side, no tools being required.

The standard die-blocks are of such a construction as to permit flange and web punching of beams and channels without changes, except on the very smallest sizes.

Triple punching attachments can be furnished at additional cost either at time of purchasing machine or at a later date. The triple punching attachments will punch angles, at close gauges, in addition to flat and plate stock—but are not suitable for punching beams and channels.

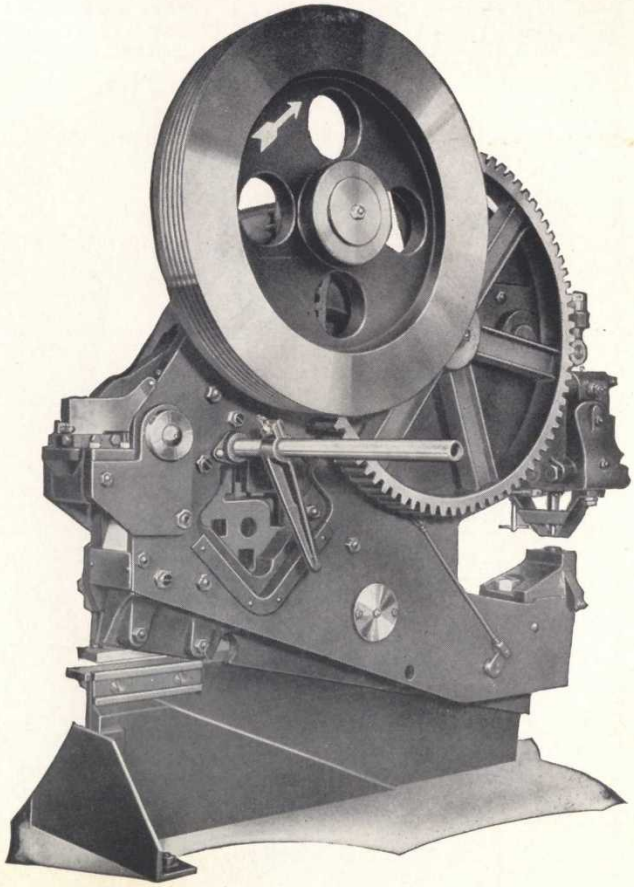
A 90 degree notcher can be built into the machine at either the punch or the shear end. On the shear end, we can also furnish a square coper instead. For shops having a lot of notching and coping to do, we can furnish a machine with both tools built-in, the notcher at the punch end and the coper at the shear end, thus doing away with time lost in changing tools.

The bar-cutter section has a substantial support for shearing angles, with means of cutting standard miters without the necessity of previous layout, and there are no tools necessary for the different setting of gauge stops. This cutter section is constructed in such a manner that the standard bar shearing knives for angles, tees, and round and square bars, are interchangeable with special knives, which enable the machine to shear I-beams, channels, or angles. Bar Cutter gauge forms are extra.

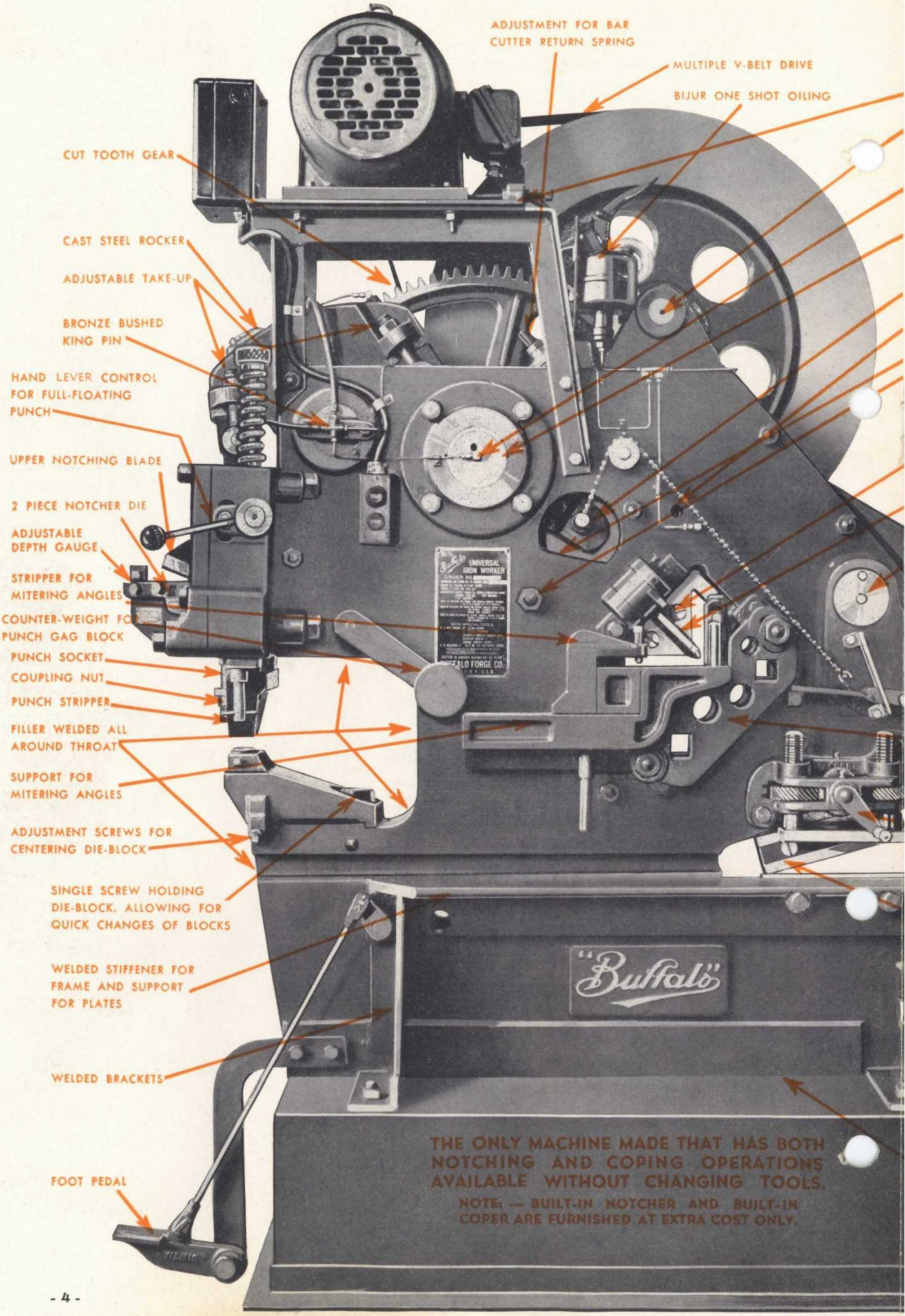


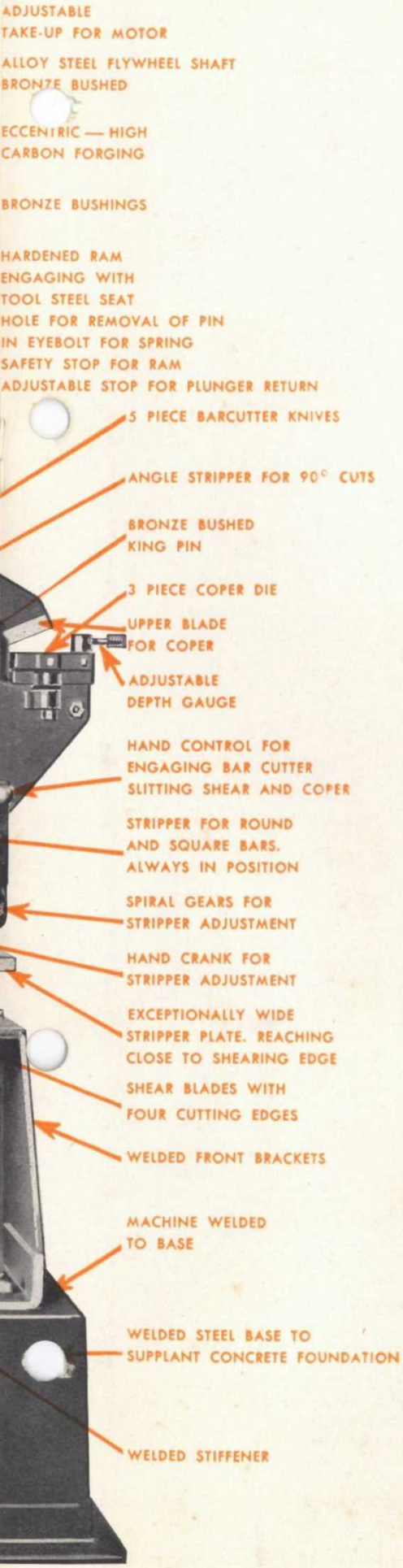
No. ½ U. I. W. on Casters.

Rear View of No. ½ U. I. W.



Bar Cutter Gauge — Available for all sizes.


ADJUSTMENT FOR BAR CUTTER RETURN SPRING
MULTIPLE V-BELT DRIVE
BIJUR ONE SHOT OILING
CUT TOOTH GEAR
CAST STEEL ROCKER
ADJUSTABLE TAKE-UP
BRONZE BUSHED KING PIN
HAND LEVER CONTROL FOR FULL-FLOATING PUNCH
UPPER NOTCHING BLADE
2 PIECE NOTCHER DIE
ADJUSTABLE DEPTH GAUGE
STRIPPER FOR MITERING ANGLES
COUNTER-WEIGHT FO PUNCH GAG BLOCK
PUNCH SOCKET
COUPLING NUT
PUNCH STRIPPER
FILLER WELDED ALL AROUND THROAT
SUPPORT FOR MITERING ANGLES
ADJUSTMENT SCREWS FOR CENTERING DIE-BLOCK
SINGLE SCREW HOLDING DIE-BLOCK. ALLOWING FOR QUICK CHANGES OF BLOCKS
WELDED STIFFENER FOR FRAME AND SUPPORT FOR PLATES
WELDED BRACKETS
FOOT PEDAL
UNIVERSAL IRON WORKER
"Buffalo"
THE ONLY MACHINE MADE THAT HAS BOTH NOTCHING AND COPING OPERATIONS AVAILABLE WITHOUT CHANGING TOOLS.
NOTE — BUILT-IN NOTCHER AND BUILT-IN COPER ARE FURNISHED AT EXTRA COST ONLY.



Built-in Coper or Notcher on Shear End

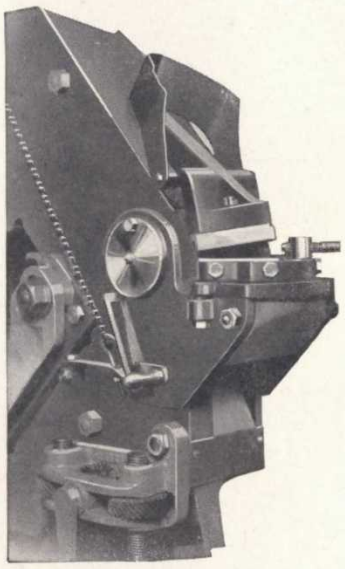
The new "built-in" coping and notching devices, either one on the shear end . . . a notcher only on the punch end, are features found exclusively in "Buffalo" Universal Iron Workers.

For shops that use the punch more extensively than the bar-cutter and shear sections, the 90° notching tools can be furnished on the shear end instead of in the punch head.

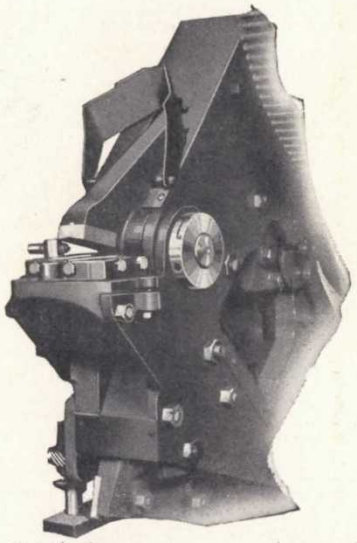
Square coping tools can be furnished on the shear end only. The square coper on the shear end and the 90° notcher in the punch head form the best combination, as in this case no time is lost for tool changes.

The 90° notcher will also cope the ends of beams and channels (flanges only) or angles and tees square by inserting the material diagonally and suitable stops are provided for either square coping at the ends or 90° "V" notching in the center.

For both operations, the material is fed into the dies without tilting, making it easy for the operator to cut on the line.



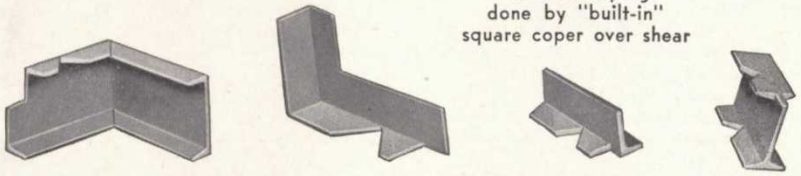
Detail of 90° V-notcher on shear end.



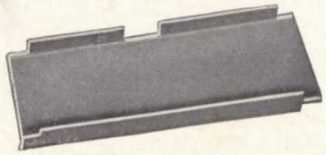
Detail of square coper on shear end.



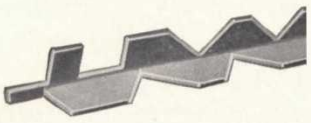
Channel coping
done by "built-in"
square coper over shear



Channels, angles, tees and beams notched by "Buffalo" "built-in" notcher.



I-beam coping done by
"built-in" square coper
over shear



Angle coping and notching
done by new "built-in"
coper and notcher

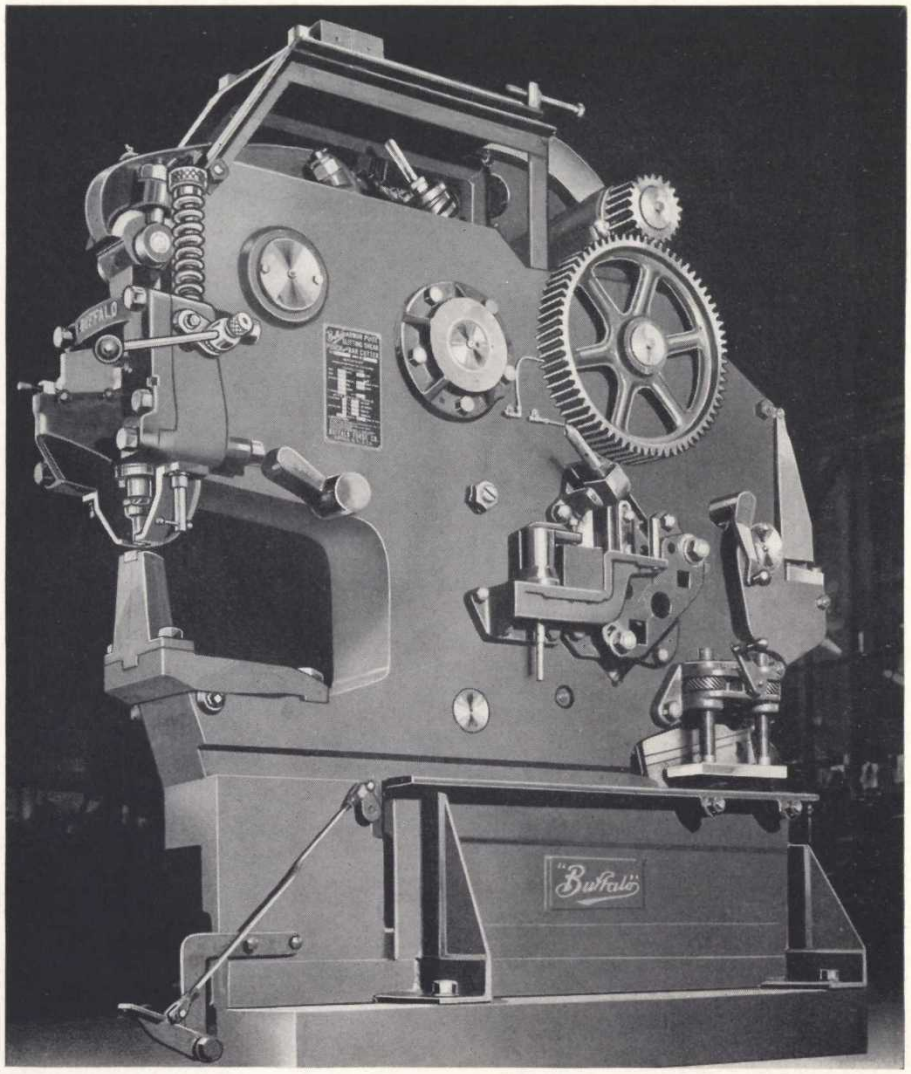
CAPACITIES Nos. O, ½, 1½ U. I. W.

	No. 0	No. ½	No. 1½	
PUNCH - - -	13/16" x 7/16" 3/4" x 1/2"	1 1/16" x 5/8" 13/16" x 3/4"	1 1/16" x 3/4" 7/8" x 7/8"	With Standard Dieblocks
Channels in Flanges	3" to 8"	6" to 12"	6" to 15"	
I-Beams in Flanges	3" to 8"	6" to 12"	6" to 20"	
Channels in Web	3" to 10"	5" to 15"	6" to 15"	
I-Beams in Web	3" to 10"	5" to 15"	6" to 24"	
In Flange, Bethlehem I-Beam	8" to 10"			
In Web, Bethlehem I-Beam	8"			
In Flange Carnegie H-Sections	4" to 5"			
In Web, Carnegie H-Sections	4" to 5"			With special dieblock not furnished with machine
Beams and Channels, Flange or Web		3", 4", 5"	3", 4", 5"	
SHEAR . . .				
Plates	3/8"	1/2"	5/8"	
Flats	4" x 1/2"	6" x 5/8"	6" x 3/4"	
Flats — with special upper knife	1 1/2" x 1/2"	2" x 5/8"	2 1/2" x 3/4"	
Flats — with special upper knife	7" x 3/16"	8" x 5/16"	10" x 3/8"	
Length of Knives	8"	10"	12"	
Trims One Leg of Angles up to	2 1/2" x 3/8"	3" x 1/2"	4" x 5/8"	
BUILT-IN 90° NOTCHER IN PUNCH HEAD . . .				
Angles	2" x 1/4"	3" x 5/16"	3" x 3/8"	
Tees — Flanges	1 3/4" x 1/4"	2 1/2" x 5/16"	3" x 3/8"	
Flanges of Beams	3" to 4"	4" to 6"	4" to 7"	
Flanges of Channels	3"	4" to 5"	4" to 6"	
Plates	1/4"	5/16"	3/8"	
Depth of Cut	1 3/4"	2 3/4"	2 3/4"	
BUILT-IN 90° NOTCHER ON SHEAR END . . .				
Angles	2" x 1/4"	3" x 3/8"	3" x 1/2"	
Tees — Flanges	2" x 5/16"	3" x 3/8"	3" x 1/2"	
Flanges of Beams	3" to 4"	3" to 6"	3" to 7"	
Flanges of Channels	3"	3" to 6"	3" to 7"	
Plates	1/4"	5/16"	3/8"	
Depth of Cut	1 3/4"	2 3/4"	2 3/4"	
BUILT-IN SQUARE COPER ON SHEAR END . . .				
Angles	3" x 1/4"	3" x 3/8"	3" x 1/2"	
Tees	2" x 5/16"	3" x 3/8"	3" x 1/2"	
Flanges of Beams	3" to 4"	3" to 6"	3" to 7"	
Flanges of Channels	3"	3" to 6"	3" to 7"	
Plates	1/4"	3/8"	1/2"	
Width of Cut	2"	2"	2"	
Depth of Cut	2 3/4"	3"	3"	
BAR CUTTER WILL SHEAR . . .				
Rounds	1 1/4"	1 5/8"	1 7/8"	With Standard Knives
Squares	1 1/8"	1 1/2"	1 3/4"	
Angles — 90°	3" x 3" x 3/8"	4" x 4" x 1/2"	5" x 5" x 1/2"	
Angles — 45°	2" x 2" x 5/16"	3" x 3" x 5/16"	4" x 3" x 3/8"	
Tees — Square ..... (Given Size Only)	2 1/2" x 2 1/2" x 1/4"	3" x 3" x 3/8"	4" x 4" x 3/8"	With Special Knives
Beams and Channels	4"-7.5 lb.	5"-12.25 lb.	6"-14.75 lb.	
Channels only	5"-6.5 lb.	7"-12.25 lb.	8"-13.75 lb.	
Angles — Square	4" x 4" x 1/4"	3 1/2" x 6" x 5/16"	5" x 5" x 3/8"	
Angles — Square	3" x 4" x 5/16"	3 1/2" x 5" x 3/8"	4" x 6" x 3/8"	
Angles — Flare	4" x 5" x 5/16"	5" x 5" x 3/8"	6" x 6" x 7/16"	
SPECIFICATIONS . . .				
Revolutions per Minute	290	300	277	
Horsepower required	2	3	3	
Number of Strokes per minute	44	43	38	
Height of Stroke	7/8"	1 1/8"	1 1/4"	
Depth of Throat	12"	12"	20"	
Weight, Motor Drive	1840 lbs.	3500 lbs.	6230 lbs.	
Shipping Weight, additional	120 lbs.	150 lbs.	200 lbs.	
Ram Pressure	30 tons	50 tons	65 tons	
WE FURNISH WITH THE MACHINE . . .				
Round Punches for Bolt and Rivet Size	5/8" & 3/4"	3/4" & 7/8"	3/4" & 1"	
Straight Die for Bolt and Rivet Size	3/4"	7/8"	1"	
Bevel Die for Bolt and Rivet Size	5/8"	3/4"	3/4"	

Shear Blades for Plates and Flats. Bar-Cutter Blades for Rounds, Squares, Angles and Tees. We can also furnish triple punching attachment, as shown on page eight. This is an exclusive feautre on this type of machine. Only one nut to be loosened to change dieblock for this. The capacities given above are actual capacities based on soft steel . . . 60,000 tensile and we guarantee the machines to handle them satisfactorily.

NEW!

"Buffalo"



The No. 2½ Unistructural Iron Worker with high die block in place.

UNISTRUCTURAL IRON WORKERS

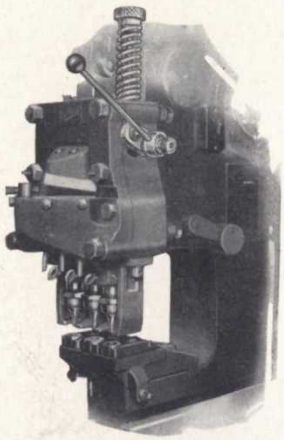
For a machine of higher capacities than shown on the opposite page send your inquiry for full information on the No. 2½ Unistructural Type. Request Bulletin 3880.

STRUCTURAL IRON WORKERS

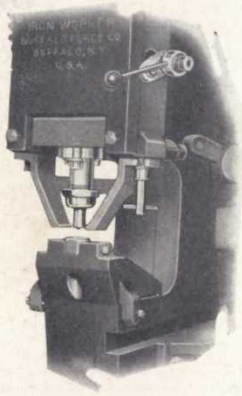
To meet the changing requirements of Structural Fabricators. "Buffalo" has added to its famous line of Universal Ironworkers a newly improved design. The new machine is the Structural Iron Worker and is being offered in two popular sizes. They are No. ½ and No. 1½ Structural Iron Workers. These machines, in addition to offering a *wide range of punching facilities* have *increased shearing capacities* over the standard Universal Iron Workers of the same size. They replace the former No. 1 and No. 2 Universal Workers. Request Bulletin 3813.

"Buffalo"

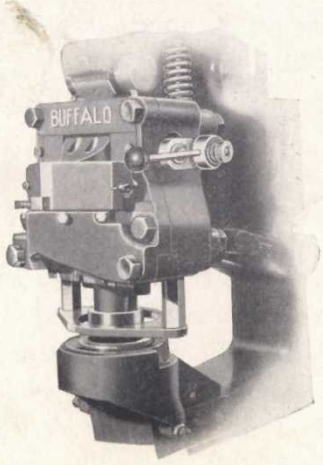
UNIVERSAL IRON WORKERS
have features shown on this page



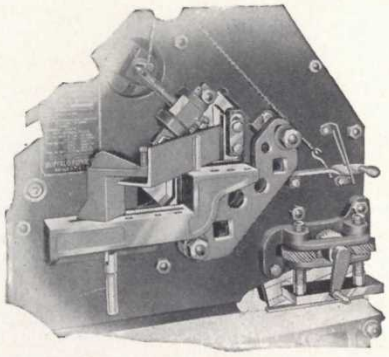
Triple punching attachment and "built-in" notcher in punch head of No. 1½.



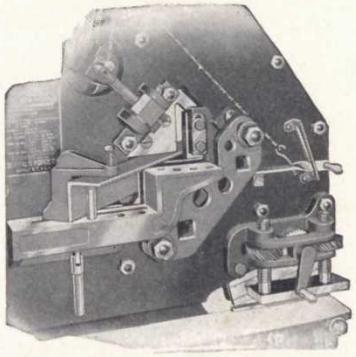
Standard combination die-block for punching I-beams and channels in web or flange, in addition to plates, angles, flats and tees, on Nos. ½ or 1½.



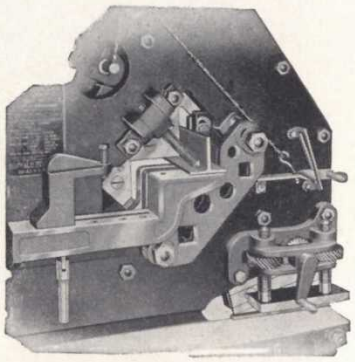
Special attachment on No. ½ U. I. W. for punching 6" hand holes.



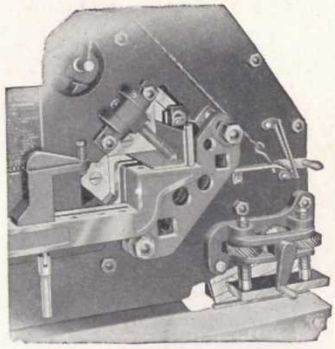
Angle being mitered at 45° with leg up. Note that the stripper screw does not interfere with insertion of the angle in the machine, consequently does not have to be removed.



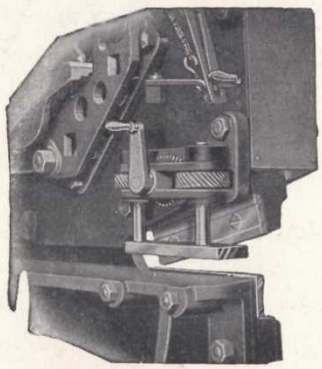
Mitering an angle leg down at 45° thus giving left and right hand miters for making frames, legs in or out. Set screw at left for holding angle down may be adjusted without tools.



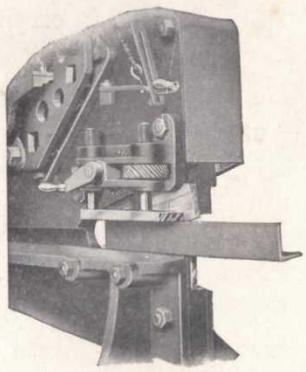
When cutting tees the gauge used for cutting angles square is removed without using tools. Rounds and squares of all sizes up to capacity are handled with only five openings.



Position of stripper screw when cutting an angle at 90°. Again no tools are required to set the stripper screw. Note the heavy bar-cutter support. No possibility of breakage here.

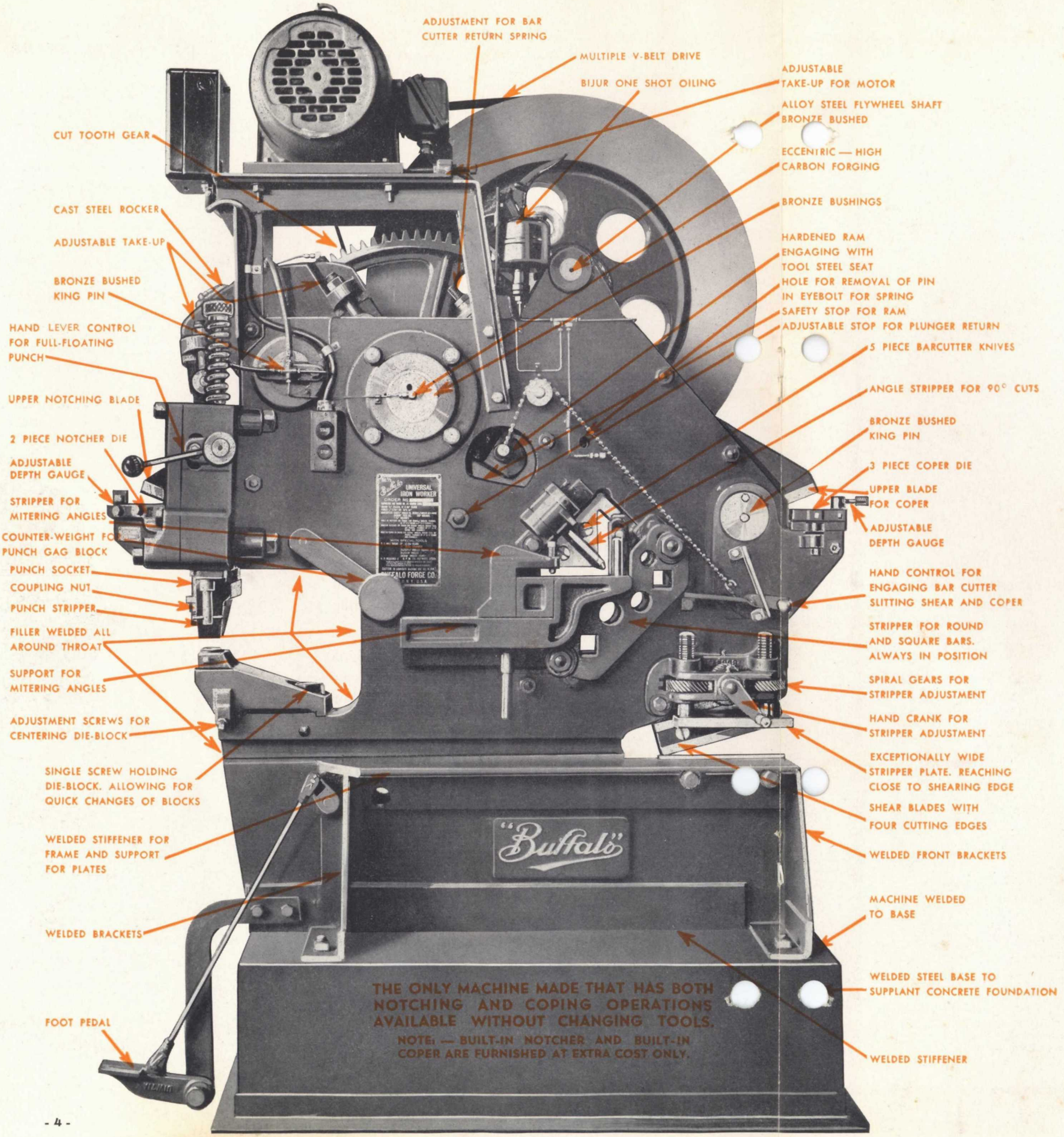


Note the stripper which enables the cutting of short pieces, by reason of its width; and which is adjusted by a crank, requiring no tools.



A popular feature of "Buffalo" construction on this type of machine; stripper can be raised high enough to trim off one leg of angle.

Buffalo Forge Company, Buffalo 5, N. Y.
CANADIAN BLOWER & FORGE CO., LTD. KITCHENER, ONT.
Bulletin 322-P 10M 4-53
Printed in U. S. A.


ADJUSTMENT FOR BAR CUTTER RETURN SPRING
MULTIPLE V-BELT DRIVE
BIJUR ONE SHOT OILING
ADJUSTABLE TAKE-UP FOR MOTOR
ALLOY STEEL FLYWHEEL SHAFT BRONZE BUSHED
CUT TOOTH GEAR
ECCENTRIC — HIGH CARBON FORGING
CAST STEEL ROCKER
BRONZE BUSHINGS
ADJUSTABLE TAKE-UP
HARDENED RAM ENGAGING WITH TOOL STEEL SEAT
BRONZE BUSHED KING PIN
HOLE FOR REMOVAL OF PIN IN EYEBOLT FOR SPRING
SAFETY STOP FOR RAM
HAND LEVER CONTROL FOR FULL-FLOATING PUNCH
ADJUSTABLE STOP FOR PLUNGER RETURN
5 PIECE BARCUTTER KNIVES
UPPER NOTCHING BLADE
ANGLE STRIPPER FOR 90° CUTS
2 PIECE NOTCHER DIE
BRONZE BUSHED KING PIN
ADJUSTABLE DEPTH GAUGE
3 PIECE COPER DIE
STRIPPER FOR MITERING ANGLES
UPPER BLADE FOR COPER
COUNTER-WEIGHT FO PUNCH GAG BLOCK
ADJUSTABLE DEPTH GAUGE
PUNCH SOCKET
HAND CONTROL FOR ENGAGING BAR CUTTER SLITTING SHEAR AND COPER
COUPLING NUT
PUNCH STRIPPER
STRIPPER FOR ROUND AND SQUARE BARS. ALWAYS IN POSITION
FILLER WELDED ALL AROUND THROAT
SUPPORT FOR MITERING ANGLES
SPIRAL GEARS FOR STRIPPER ADJUSTMENT
ADJUSTMENT SCREWS FOR CENTERING DIE-BLOCK
HAND CRANK FOR STRIPPER ADJUSTMENT
EXCEPTIONALLY WIDE STRIPPER PLATE. REACHING CLOSE TO SHEARING EDGE
SINGLE SCREW HOLDING DIE-BLOCK. ALLOWING FOR QUICK CHANGES OF BLOCKS
SHEAR BLADES WITH FOUR CUTTING EDGES
WELDED STIFFENER FOR FRAME AND SUPPORT FOR PLATES
WELDED FRONT BRACKETS
MACHINE WELDED TO BASE
WELDED BRACKETS
WELDED STEEL BASE TO SUPPLANT CONCRETE FOUNDATION
THE ONLY MACHINE MADE THAT HAS BOTH NOTCHING AND COPING OPERATIONS AVAILABLE WITHOUT CHANGING TOOLS.
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