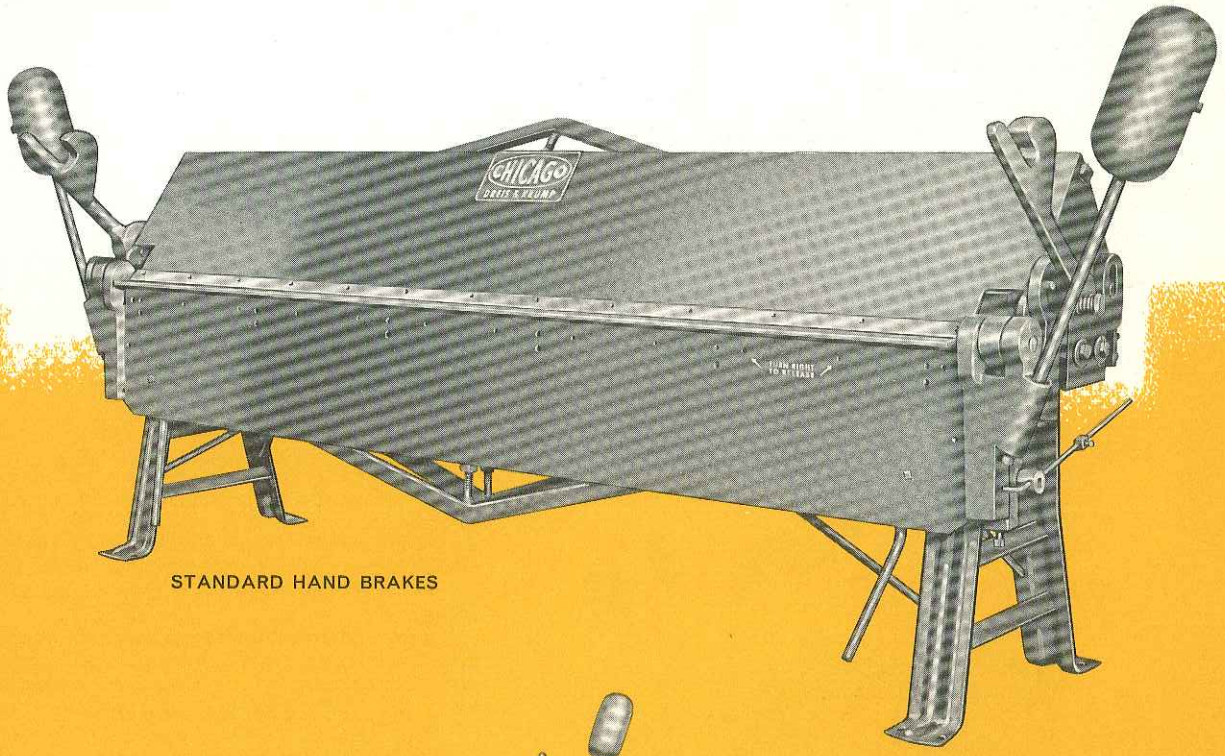
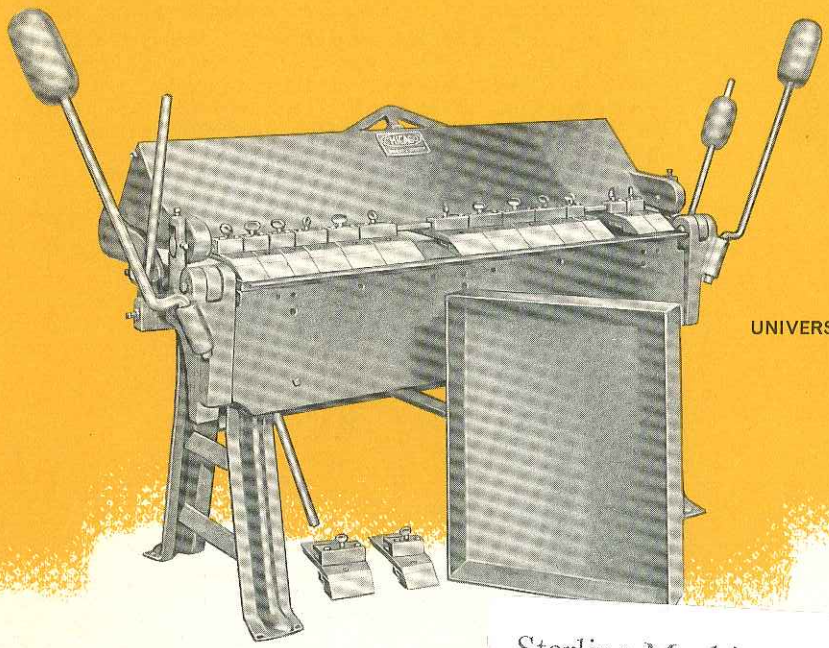
CHICAGO
DREIS & KRUMP

Hand Operated

BENDING BRAKES



STANDARD HAND BRAKES



UNIVERSAL BOX AND PAN BRAKES

BULLETIN HB-59

DREIS & KRUMP MANUFACTURING CO.
7400 SOUTH LOOMIS BOULEVARD CHICAGO, ILLINOIS

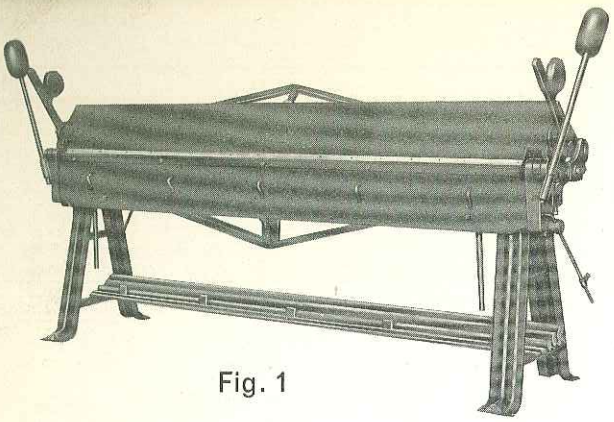


Fig. 1

Standard

Specifications of

STANDARD OF THE WORLD

These brakes have attained the position of the accepted standard in this class of machinery. They have been improved for use in fabrication of modern metals such as stainless steel, aluminum alloys and high tensile alloys. They have attained this leading position due to the features of design and operation.

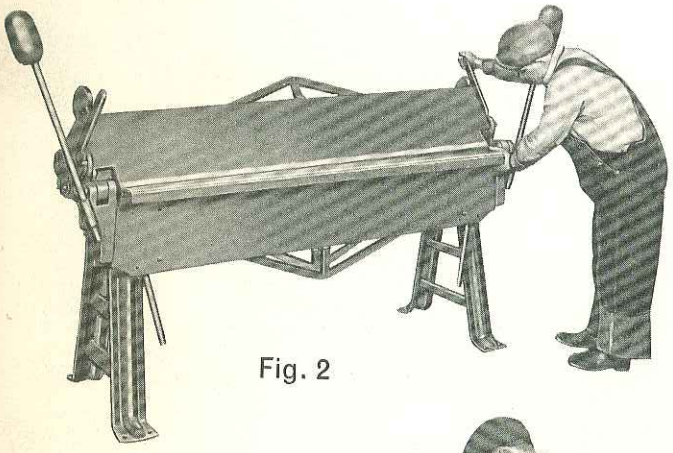


Fig. 2

RUGGED CONSTRUCTION

Improvement in these machines has been steady to keep in step with the current needs in sheet metal work. All efforts have been toward simplicity of design and the utmost in strength and long life.

The long useful life of these machines is proof of their superiority in design and strength. The first CHICAGO steel brakes made are still in operation. The ruggedness of design and trussing is shown in Fig. 7.

All main sections are welded steel plate with heavy truss rods and braces designed to give the greatest strength, perfect alignment and long life.

No parts can be permanently sprung, all can be adjusted if thrown out of line through overloading.

Fig. 3

QUICK AND POSITIVE ADJUSTMENT

These machines have the simplest and most efficient means of adjustment so that the inexperienced, as well as the experienced workman, can set and operate this machine in the minimum amount of time.

Quick clamping adjustment is obtained with a simple link and block arrangement. Fig. 5 shows workman regulating clamping pressure by adjusting screw at bottom of link. With this type of adjustable link, it is possible to clamp all gauges of metal. The wide range of adjustment allows forms and nose bars to be clamped for special shapes.

Adjustment of the top leaf back and forward is made with convenient set screws which positively lock it at any setting.

ONE-MAN OPERATION

This is the only hand bending brake manufactured today which is truly a one-man brake. Each end clamps independ-

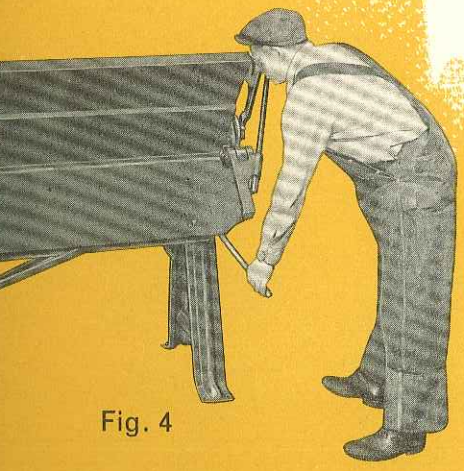
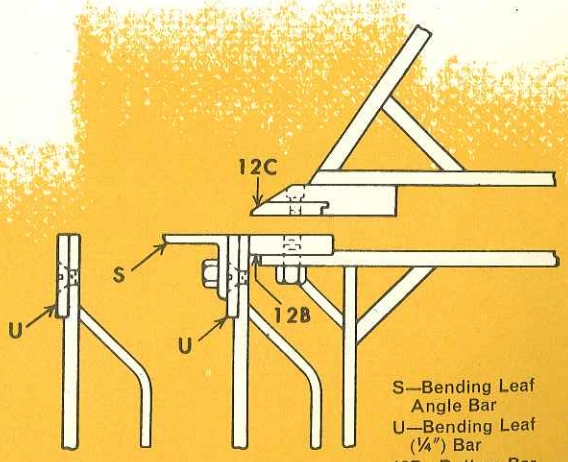


Fig. 4

Fig. 5



S—Bending Leaf Angle Bar
U—Bending Leaf (¼") Bar
12B—Bottom Bar
12C—Top Nose Bar

Fig. 6
Cross Section of Construction of Standard Brakes for sizes 316, 416, 518, 618, 818 *only*

Hand Brakes

Standard Sizes, Page 7

ently on brakes over 4 feet long. It is possible to clamp a sheet to a mark at one end of the brake (see Fig. 2) and move the sheet to clamp the mark at the other end.

EASE OF OPERATION

Simplicity of design with improved truss rod construction and a minimum number of moving parts makes this the easiest operating brake ever made.

No multiplicity of complicated parts. Machine is made to work in the most direct manner.

These machines require less effort in clamping, bending and flattening than any other machine of equal capacity.

REMOVABLE TOP AND BOTTOM BARS

All models of these hand bending brakes are provided with easily removable top and bottom bars, 12C and 12B, Figs. 6 and 11. This construction feature permits renewal of the bending edges whenever required simply by replacing the bar.

CAPACITY

Capacity of all machines is rated at 1″ flange or wider on mild steel. Narrower flanges can be bent on lighter metal. When brake is used for capacity work, the reinforcing angle bar S or SS must be in the regular position. When the angle bar S, Fig. 6, is removed the capacity of the brake is reduced four gauges. When the angle bar SS, Fig. 11, is removed and bending leaf (½″) bar, U6 is substituted, the capacity of the brake is reduced four gauges. Whenever the bending leaf edge is reduced to ¼″ thickness the capacity of the machine is reduced seven gauges. Minimum reverse bends of ¼″ can be made. Clearance when top is open is shown on Page 7.

EXTRA EQUIPMENT

A set of five molding formers are furnished at additional cost. These can be used with any standard hand brake or universal box and pan brake. The five standard sizes of formers are: ⅝″, 1″, 1⅝″, 2¼″, and 3″. Figs. 8, 9 and 10 show method of attaching and using these formers.

Stop gauge for duplicate work is standard equipment.

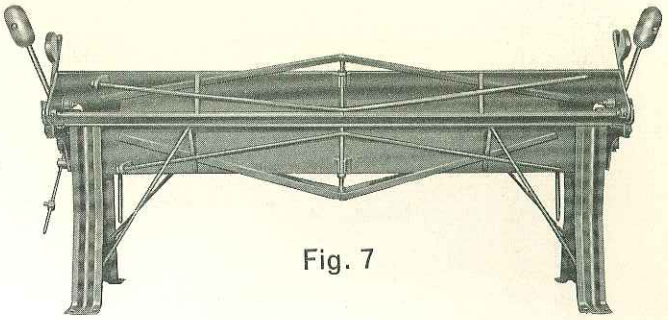
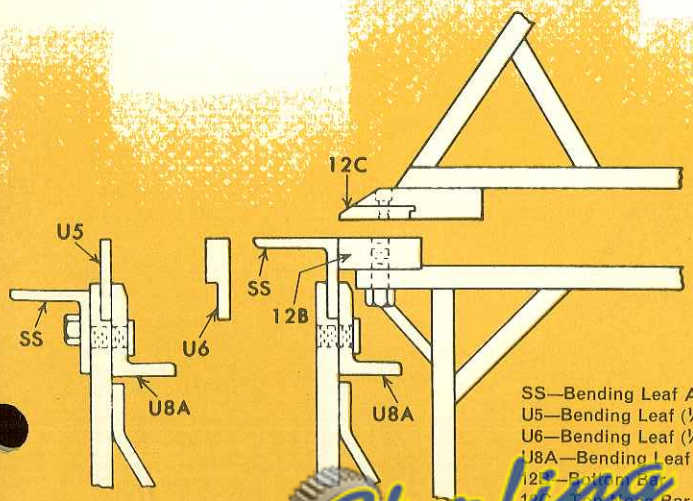


Fig. 7

Fig. 8

Fig. 9



SS—Bending Leaf Angle Bar
U5—Bending Leaf (¼″) Bar
U6—Bending Leaf (½″) Bar
U8A—Bending Leaf Bar Clamp
12B—Bottom Bar
12C—Top Nose Bar

Cross Section of Construction of Standard Brakes
for all sizes *except* 316, 416, 518, 618, 818 (see Fig. 6)

Fig. 10

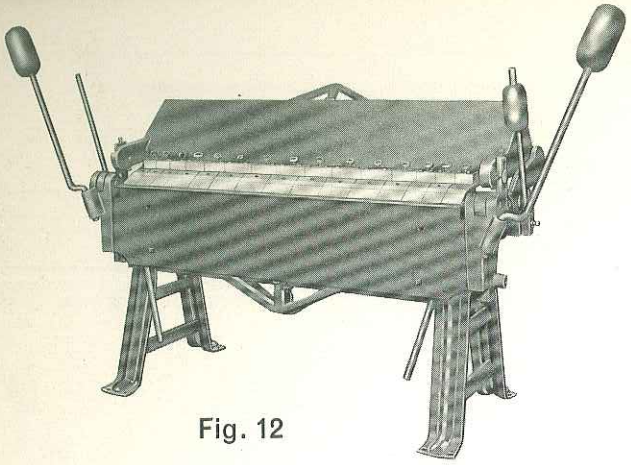


Fig. 12

Universal Box a

Specifications of St

The CHICAGO universal box and pan brake replaces two machines and combines the features of three. It is correctly called a universal box and pan brake because it combines the features of the universal brake with the box and pan brake as well as the standard hand brake. It is the culmination of many years of experience in the manufacture and development of hand bending brakes.

This machine is offered with a great deal of pride because of its wide range of use and its many advantages. Some of the main advantages are:

Can be used to form a box or pan of one piece of metal, including the four sides and bottom. In addition to this a narrow flange on the top of a box can be made as in the manufacture of electric switch boxes. The sequence of operations for making this type of box is shown in Fig. 22.

Nose bars are quickly interchangeable so that special bars such as radius types can be used as in the previous universal type brake. Radius bends such as used in all modern metal furniture and cabinets can be made with these round nose bars shown in Fig. 15.

A full length nose bar can be used in place of the individual nose bars for each size finger. With the full length nose bar in place the machine becomes a standard straight brake.

Tubular shapes can be formed by extending nose bars between fingers as shown in Figs. 20 and 21.

With the fingers set in the regular manner large tubular shapes can be formed by allowing the metal to spring out of shape against the top side of the fingers. On most metals the shape is distorted only while it is being finished up. Just as soon as the tube is removed from the brake it springs back to the correct shape. Deep channels, Fig. 14, can be formed because of the finger extension.

Fig. 13

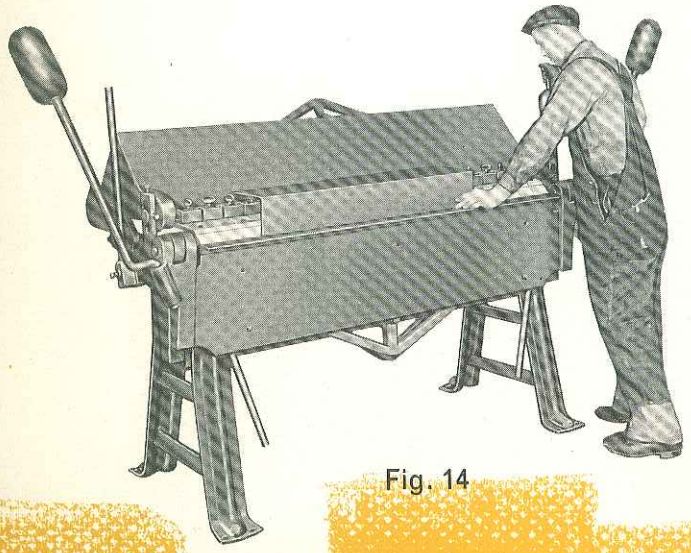


Fig. 14

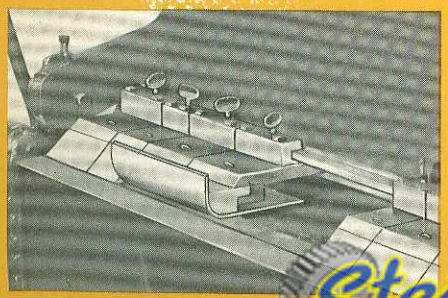
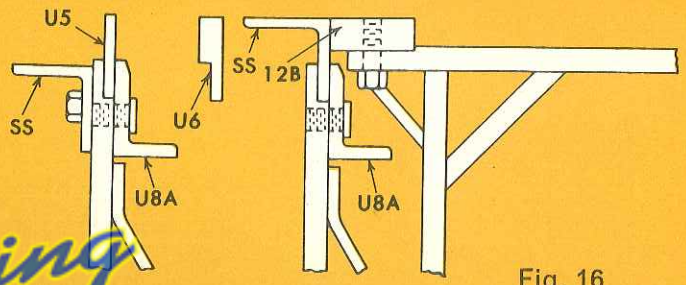
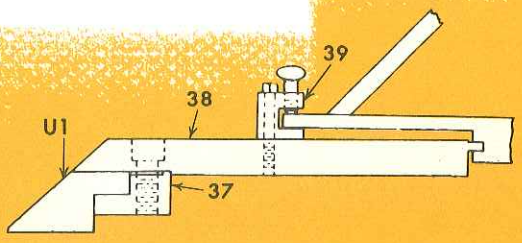


Fig. 15





SS—Bending Leaf Angle Bar
U1—Standard Nose Bar
U5—Bending Leaf (¼") Bar
U6—Bending Leaf (½") Bar
U8A—Bending Leaf Bar Clamp
12B—Bottom Bar
37—Nose Clamp Bar
38—Finger Extension
39—Channel Bar

Fig. 16
Cross Section of Construction of Universal Box and Pan Brakes

and Pan Brakes

ndard Sizes, Page 7

The standard assortment of fingers for each size box and pan brake is given in table below. By grouping these fingers, any length from the 3″ dimension to the full length of machine can be obtained.

The fingers are made of rolled steel bars for maximum strength and light weight.

Adjustment or removal of fingers is easily accomplished with the use of the convenient thumbscrews.

These brakes are used by manufacturers for forming electric switch boxes, cutout boxes, and panel board cabinets. They are also used extensively in the manufacture of conveyor buckets, tote boxes, in fact all classes of box and pan work, as well as a large variety of other work.

The outstanding use for these machines today is in the forming of radio chassis.

The labor-saving features of the CHICAGO universal box and pan brakes are apparent, and the large demand for them has proved their efficiency for quantity production, as well as for variety of work.

CAPACITY

All machines are rated to bend a 1″ flange or wider on mild steel sheets when the reinforcing angle SS is in place. Narrower flanges can be bent on lighter metal. When angle bar SS is removed the capacity of the brake with the ½″ bar U6 is four gauges less than rated capacity. When U5 ¼″ bar is in place, the capacity is reduced seven gauges. When either U5 or U6 bars are used the angle bar SS should be in the low position as shown in Fig. 16.

The bottom bar 12B, Fig. 16, is easily removable permitting renewal of the bending edge whenever required.

Molding forms can be used the same as on standard brakes and can be furnished as extra equipment.

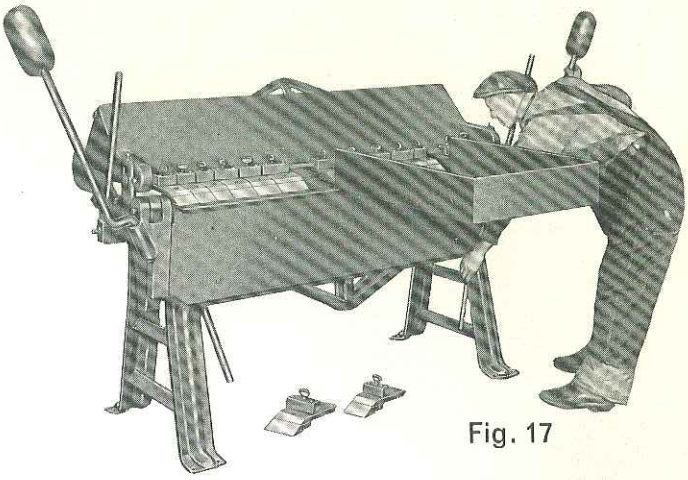


Fig. 17

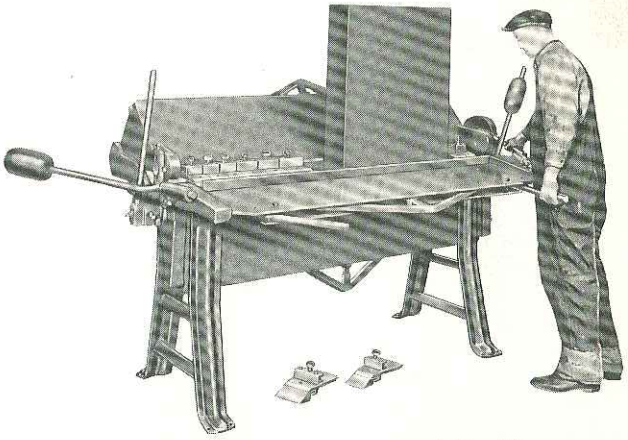


Fig. 18

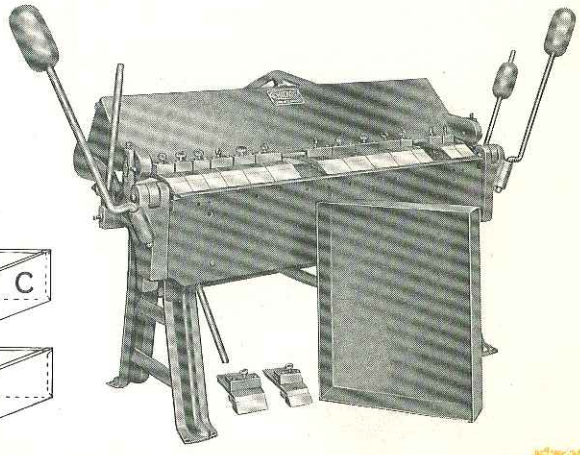


Fig. 19

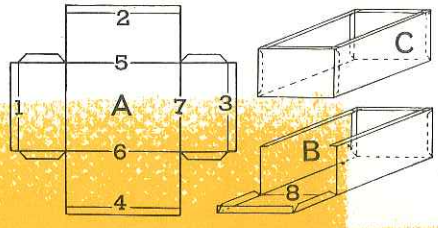


Fig. 22

STANDARD FINGER ASSORTMENTS

Size	Width and No. of Fingers				
	3″	4″	5″	6″	Total
L30	4	1	4	0	9
W30	4	1	4	0	9
L31	5	2	5	0	12
W31	5	2	5	0	12
L32	6	3	6	0	15
W32	5	2	5	2	14
L36	5	4	7	1	17
W36	5	2	5	4	16
L37	5	6	9	2	22
W37	5	2	5	8	20
W38	6	10	10	2	28
R38	5	2	5	12	24
W33	4	1	4	0	9
W34	5	2	5	0	12
W35	6	3	[illegible]	[illegible]	15
W39	7	4	[illegible]	[illegible]	[illegible]
W40	9	6	[illegible]	[illegible]	24

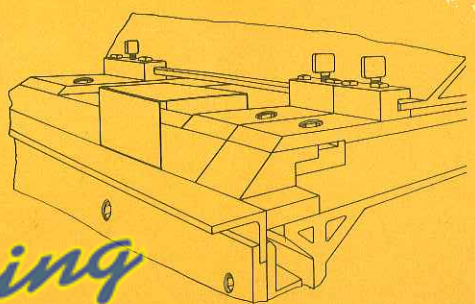


Fig. 21

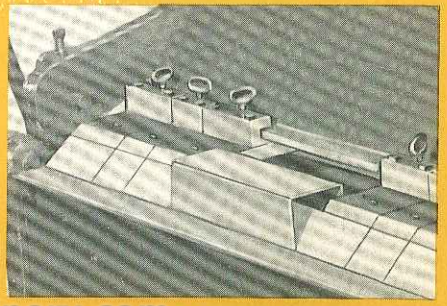


Fig. 20

Portable Hand Brakes

Specifications of Standard Sizes, Page 7

LIGHT WEIGHT • POWERFUL CLAMPING

It is general practice on large ventilating and air conditioning jobs to set up shop right on the job. Because of ease of transportation CHICAGO hand brakes have been the most popular.

The CHICAGO portable hand brake was developed for use on small as well as large jobs. This brake is built to fill a definite need in air conditioning work, yet it retains all the features of the regular CHICAGO hand brakes except for the great difference in weight.

It is not a bench machine. It is a standard brake in every way and is ideal for general shop use and in trade schools. All bending is done in the same manner as on the larger machines.

There is a radical change in the fabrication of the three main sections on these brakes. Top and bottom sections are made of embossed steel plates to give the greatest strength with minimum weight. The bending leaf consists of a solid plate reinforced with a specially formed plate.

Top section and bending leaf can be quickly detached without disturbing any adjustment; this allows one man to carry machine as heaviest section weighs less than 200 pounds on 5-foot size.

Clamping handles operate independently and move downward instead of forward when clamping or flattening. By this method the brake always remains firmly in place while in operation and bolting to floor is unnecessary. It also imparts enormous power with minimum effort when flattening seams.

Bending leaf has a detachable ¼″ bar so that reverse bends as narrow as ¼″ can be made. Clearance is provided on both ends of bending edges as on regular brakes.

No counterweights are used on these machines.

CAPACITY

Bend and flatten ¼″ or wider seam on 22 gauge. Bend ½″ flange or wider on 20 gauge.

Fig. 23

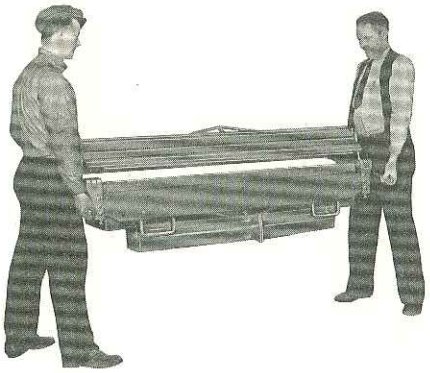


Fig. 24

Brake Being Carried by Two Men. Note that legs are hinged to swing up and make a very compact piece to carry. Note also that the clamping handles are used for carrying. Swinging the hinged legs into position is the only change necessary to get the brake ready for transportation.

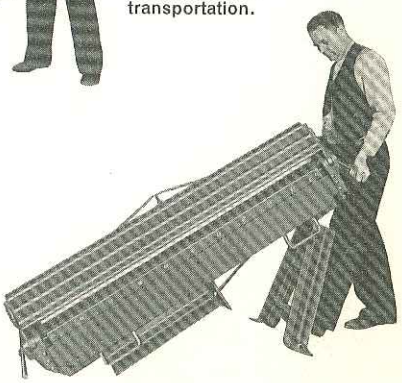


Fig. 25

Setting up Machine. One man can easily set up brake on the job by bringing the hinged legs to the upright position and locking them with the convenient thumbscrews.

Hand Folder Brakes

Specifications of Standard Sizes, Page 7

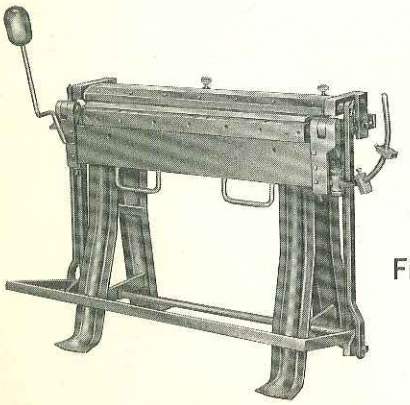


Fig. 26

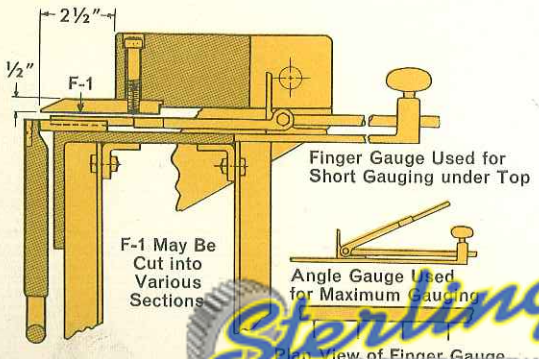


Fig. 27

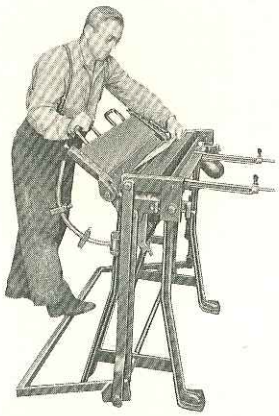


Fig. 28

This folder brake is light in weight, but the clamping and bending are done in such a way as to leave the machine set solidly on the floor, Fig. 26.

The simplicity and ease of operation make it a very desirable machine for light sheet metal work, cabinets, novelties and advertising displays, Fig. 28. It is equipped with adjustable back gauge and stop gauge for regulating size and angle of bend.

All sizes have foot treadle clamping. Sizes 25 and 26 have one counterweight on bending leaf; size 27, two.

This folder can be used for any kind of work that can be done on a standard brake within its capacity. It is like the regular machine, that is, it is open front to back.

The top nose bar extends outward from the main part of the top jaw and has an acute angle so that seams and locks can be made efficiently.

Specifications

STANDARD HAND BRAKES

Size	Code	Bending Length	Capacity	Domestic Shipping, Wt., Lbs.	DIMENSIONS				
					H	L	M	O	P
312	ORWOL	3′-½″	12 Ga.	1000	⅝″	⅝″	3″	1⅝″	3¼″
314	OUSEL	3′-½″	14 Ga.	725	⅝″	⅝″	2″	1⅝″	3¼″
316	OXALI	3′-½″	16 Ga.	485	⅜″	⅝″	2″	1⅝″	3¼″
412	OCLAR	4′-½″	12 Ga.	1230	⅝″	⅝″	3″	1⅝″	3¼″
414	OTIOS	4′-½″	14 Ga.	855	⅝″	⅝″	2″	1⅝″	3¼″
416	OWLET	4′-½″	16 Ga.	570	⅜″	⅝″	2″	1⅝″	3¼″
512	OBLIW	5′-1″	12 Ga.	1875	⅞″	1″	3″	2¼″	4¼″
514	OWMIN	5′-1″	14 Ga.	1415	⅝″	⅝″	2″	1⅝″	3¼″
516	OWTIL	5′-1″	16 Ga.	1085	⅝″	⅝″	2″	1⅝″	3¼″
518	OSMUN	5′-1″	18 Ga.	735	⅜″	⅝″	2″	1⅝″	3¼″
612	OLWIT	6′-1″	12 Ga.	2095	⅞″	1″	3″	2¼″	4¼″
614	OGNIN	6′-1″	14 Ga.	1620	⅝″	⅝″	2″	1⅝″	3¼″
616	ONAGE	6′-1″	16 Ga.	1215	⅝″	⅝″	2″	1⅝″	3¼″
618	ORCHI	6′-1″	18 Ga.	835	⅜″	⅝″	2″	1⅝″	3¼″
812	OWLAR	8′-1″	12 Ga.	2635	⅞″	1″	3″	2¼″	4¼″
814	OLOIC	8′-1″	14 Ga.	2065	⅝″	⅝″	2″	1⅝″	3¼″
816	OMEGA	8′-1″	16 Ga.	1545	⅝″	⅝″	2″	1⅝″	3¼″
818	OMARO	8′-1″	18 Ga.	1060	⅜″	⅝″	2″	1⅝″	3¼″
1014	OBELU	10′-1″	14 Ga.	3000	⅞″	1″	3″	2¼″	4¼″
1016	OCHRE	10′-1″	16 Ga.	2500	⅝″	⅝″	2″	1⅝″	3¼″
1018	OGIVE	10′-1″	18 Ga.	2045	⅝″	⅝″	2″	1⅝″	3¼″
1218	OAKUM	12′-1″	18 Ga.	4250	⅞″	1″	3″	2¼″	4¼″
1222	OASIS	12′-1″	22 Ga.	2950	⅝″	⅝″	2″	1⅝″	3¼″

Details of Standard Hand Brakes sizes 316, 416, 518, 618, 818 *only*

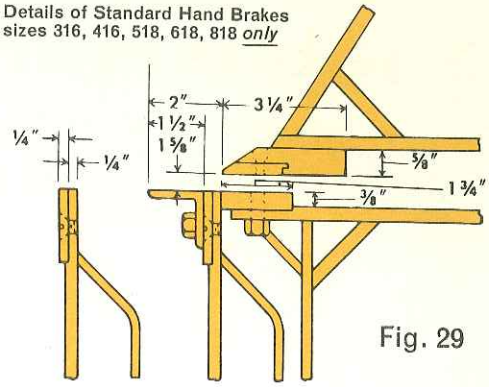


Fig. 29

Details of Standard Hand Brakes all sizes *except* 316, 416, 518, 618, 818 (see Fig. 29)

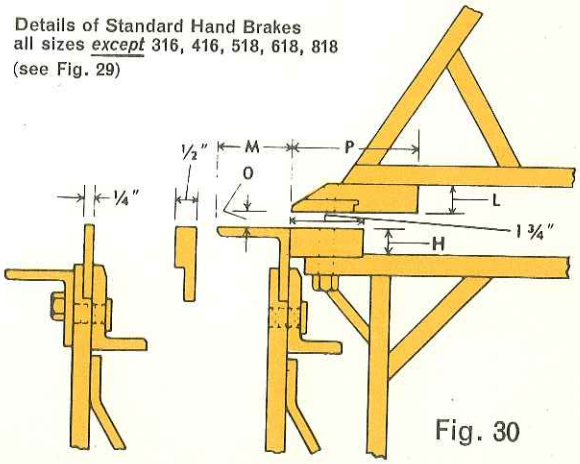


Fig. 30

UNIVERSAL HAND BOX AND PAN BRAKES

Size	Code	Bending Length	Capacity	Domestic Shipping Wt., Lbs.	DIMENSIONS			
					AA	BB	MM	OO
L30	WULIR	3′	12 Ga.	1315	6″	1¼″	3″	1⅝″
W30	WUROL	3′	14 Ga.	960	6″	¾″	2″	1⅝″
L31	WURLA	4′	12 Ga.	1700	6″	1¼″	3″	1⅝″
W31	WURAW	4′	14 Ga.	1255	6″	¾″	2″	1⅝″
L32	WUWAL	5′	12 Ga.	2320	6″	1¼″	3″	2¼″
W32	WULOS	5′	14 Ga.	1800	6″	¾″	2″	1⅝″
L36	WUWLI	6′	12 Ga.	2550	6″	1¼″	3″	2¼″
W36	WULWA	6′	14 Ga.	2030	6″	¾″	2″	1⅝″
L37	WUSIL	8′	12 Ga.	3100	6″	1¼″	3″	2¼″
W37	WUNAR	8′	14 Ga.	2600	6″	¾″	2″	1⅝″
W38	WUPLO	10′	14 Ga.	3750	6″	1¼″	3″	2¼″
R38	WULAP	10′	16 Ga.	3200	6″	¾″	2″	1⅝″
W33	WUSTR	3′	14 Ga.	1060	8″	1″	2″	1⅝″
W34	WULKI	4′	14 Ga.	1570	8″	1″	2″	1⅝″
W35	WUWOL	5′	14 Ga.	1920	8″	1″	2″	1⅝″
W39	WUAMW	6′	14 Ga.	2215	8″	1″	2″	1⅝″
W40	WUSOL	8′	14 Ga.	2900	8″	1″	2″	1⅝″

Details of Universal Box and Pan Brakes

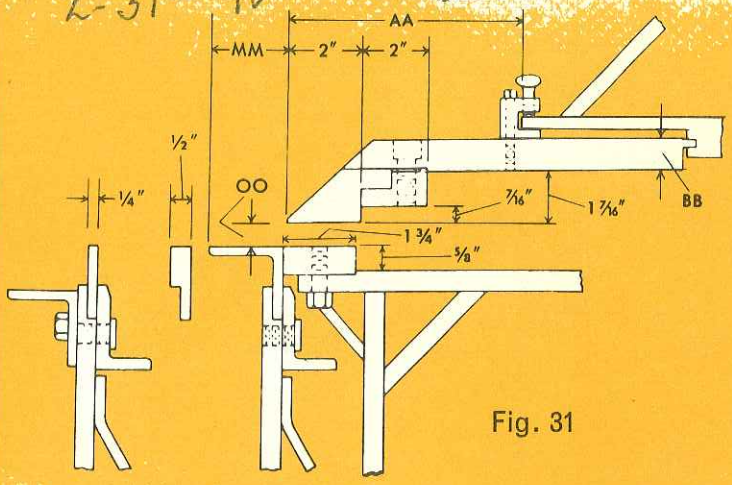


Fig. 31

PORTABLE HAND BRAKES

Size	Code	Bending Length	Capacity	Domestic Shipping Wt., Lbs.
420	ODLUW	49″	20 Ga.	395
520	ODUCT	61″	20 Ga.	435

HAND FOLDER BRAKES

Size	Code	Bending Length	Capacity	Domestic Shipping Wt., Lbs.
25	OFOLO	36″	20 Ga.	520
26	OFRUM	42″	20 Ga.	595
27	OFLOR	48″	20 Ga.	805

Fig. 32

Special hand brake with extra high adjustment on top leaf to permit clamping high and low radius bars as well as standard nose bars. Special box and pan type fingers can also be used.

Special Hand Brakes

Illustrated on this page are a few of the typical modifications in the design of standard hand brakes to meet special bending requirements. Special hand brakes can be made in different lengths and capacities to provide special clearances, auxiliary bending leaf, to accommodate radius attachments, or to make special bends and shapes in sheet metal.

Recommendations will be made upon receipt of drawings of the parts with complete details of the work to be done.

Fig. 33

Special hand brake for forming round mold and reverse bend for side of metal casket using die on bending leaf and auxiliary top wiping leaf.

Fig. 34

Same machine as Fig. 33 with auxiliary top wiping leaf swung up out of the way when regular straight bends are made.

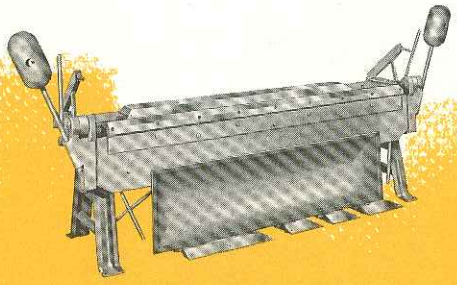


Fig. 35

Special 8-foot, low-top hand brake with horn-end sections for forming inturned flange on metal casket tops.

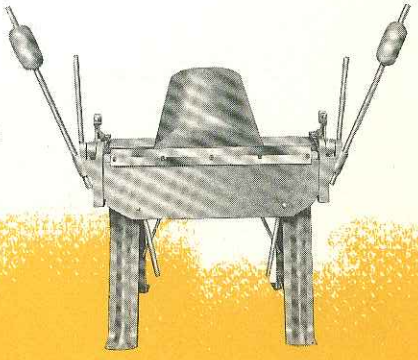


Fig. 36

Special 3-foot, low-top hand brake for forming the inturned flange on ends of metal casket tops. The casket top is shown in the brake after the flange has been formed.

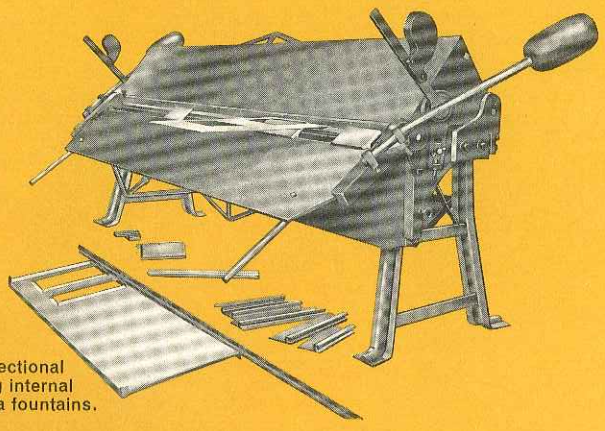


Fig. 37

Standard hand brake equipped with special sectional apron insert for bending internal flanges such as on soda fountains.

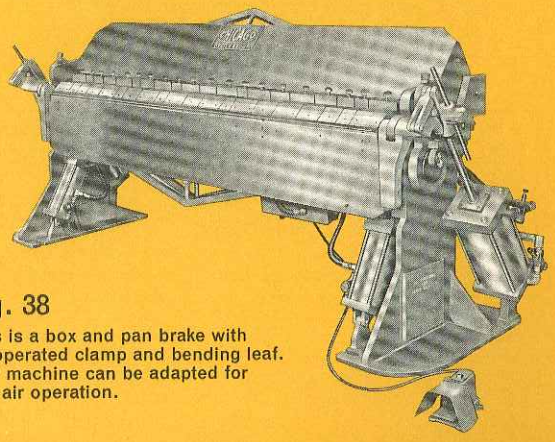


Fig. 38

This is a box and pan brake with air-operated clamp and bending leaf. Any machine can be adapted for this air operation.

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