

No. 653,122.

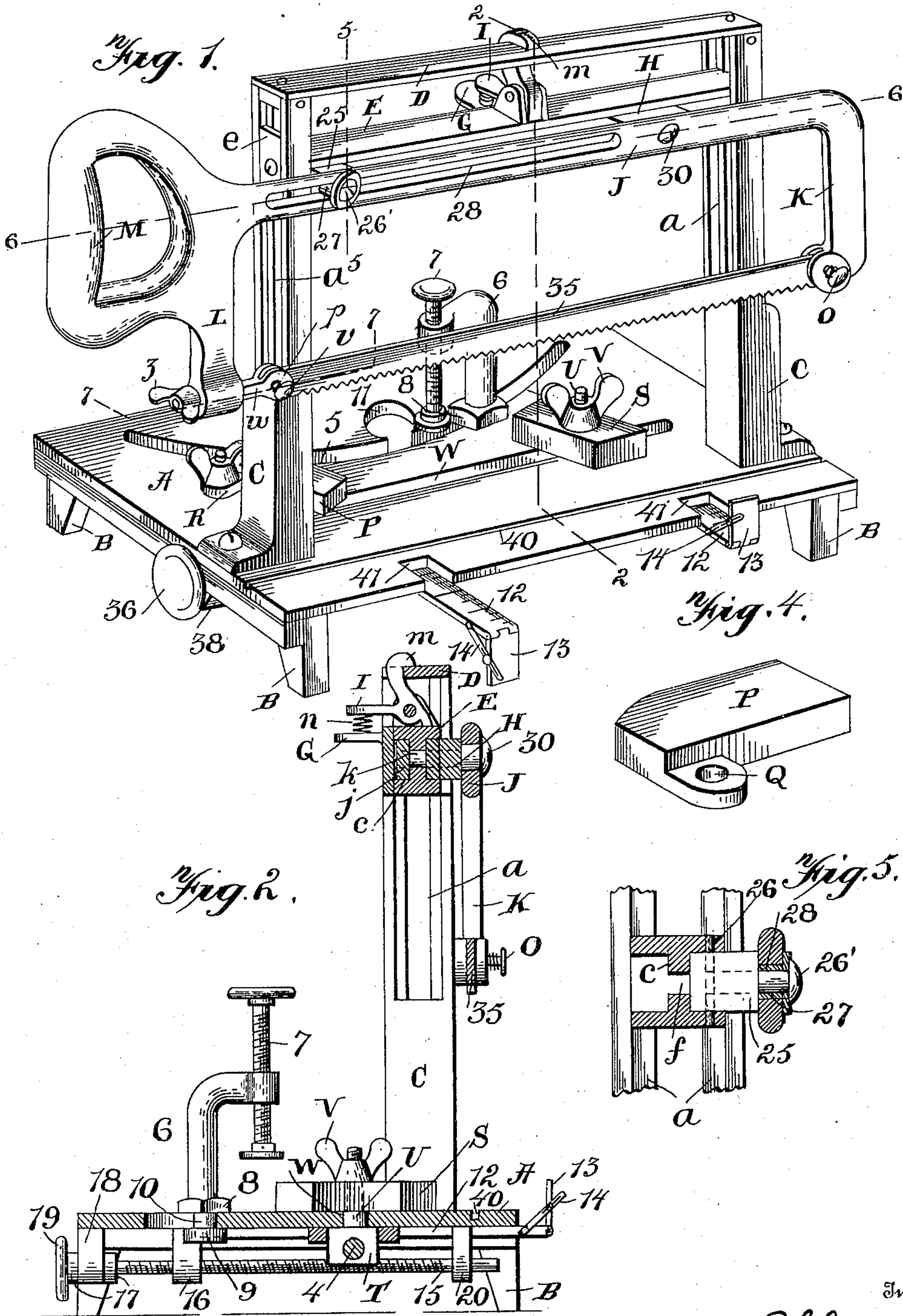
Patented July 3, 1900.

C. L. SHONLE.
METAL BENCH SAW.

(Application filed Nov. 9, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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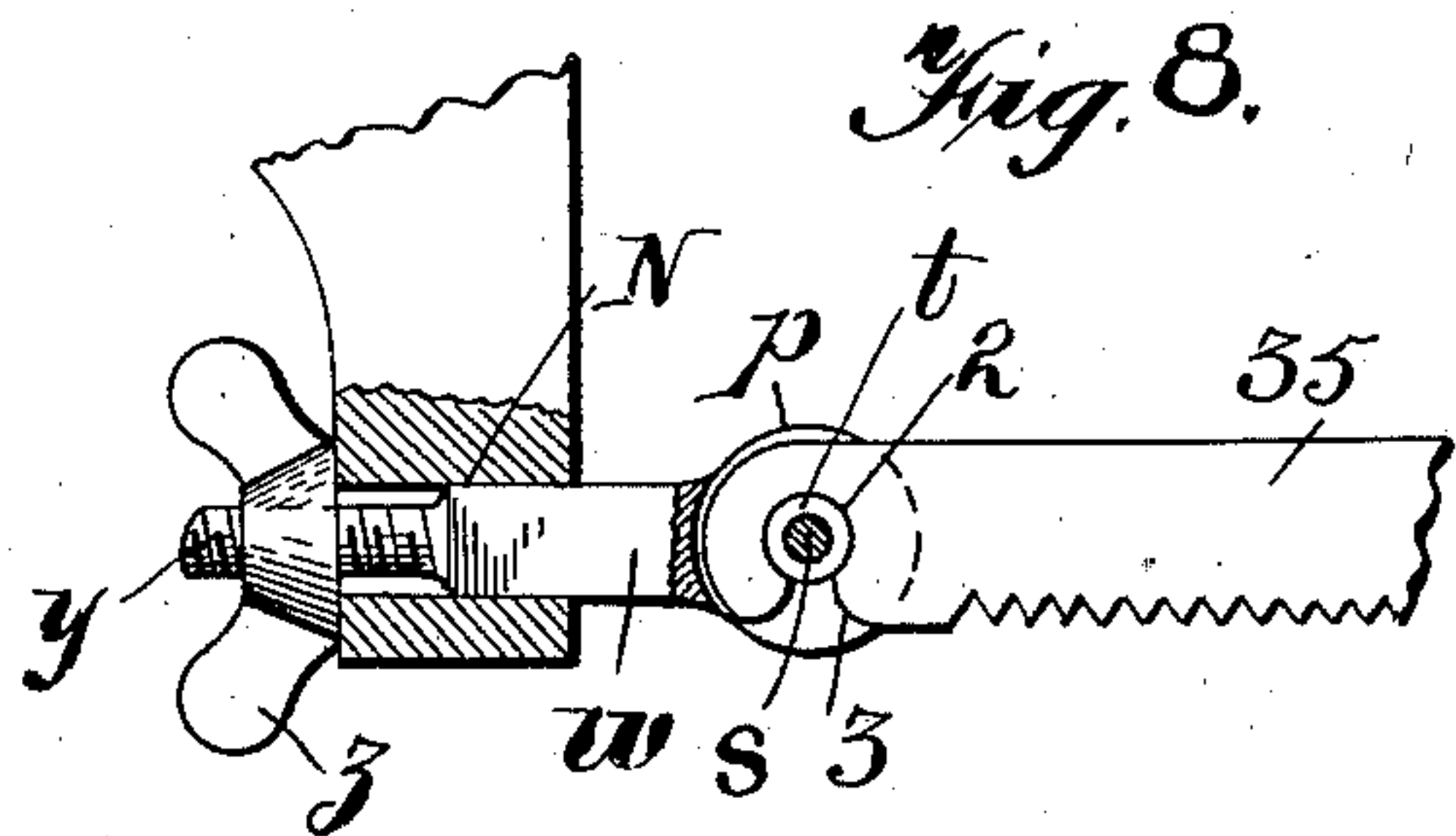
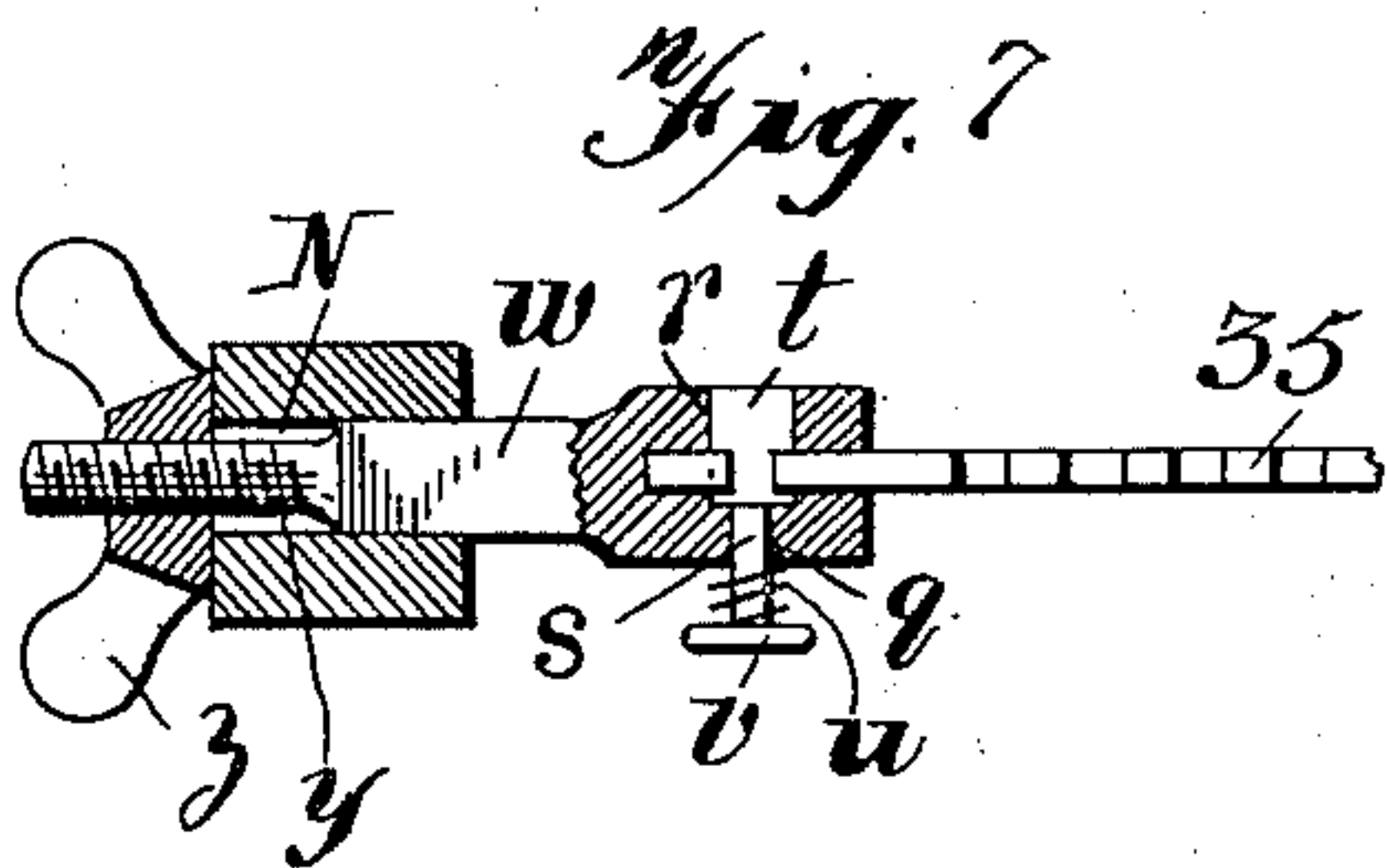
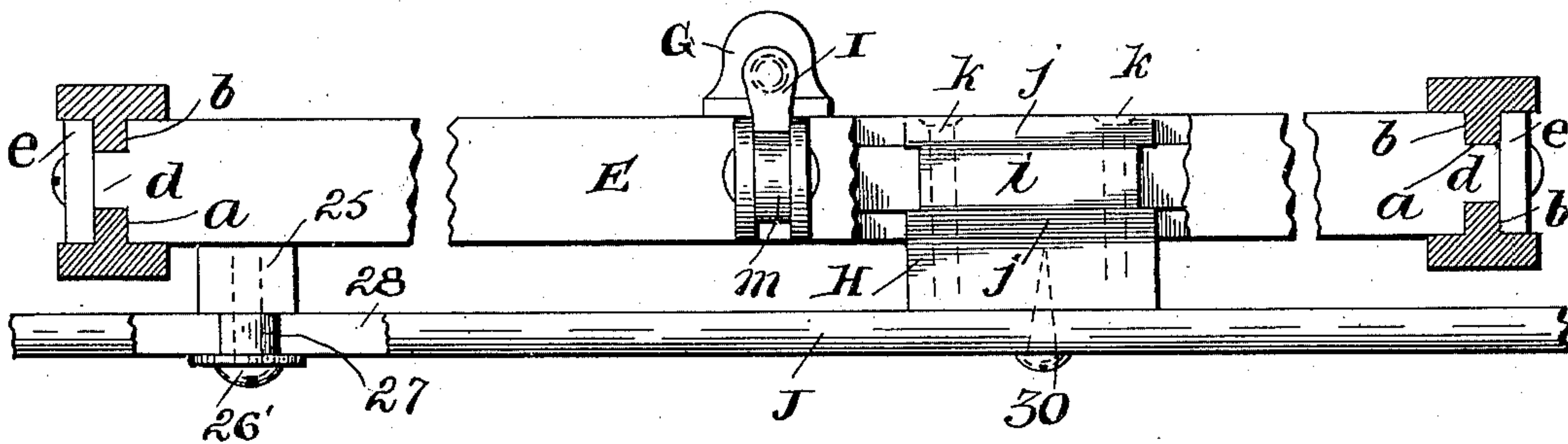
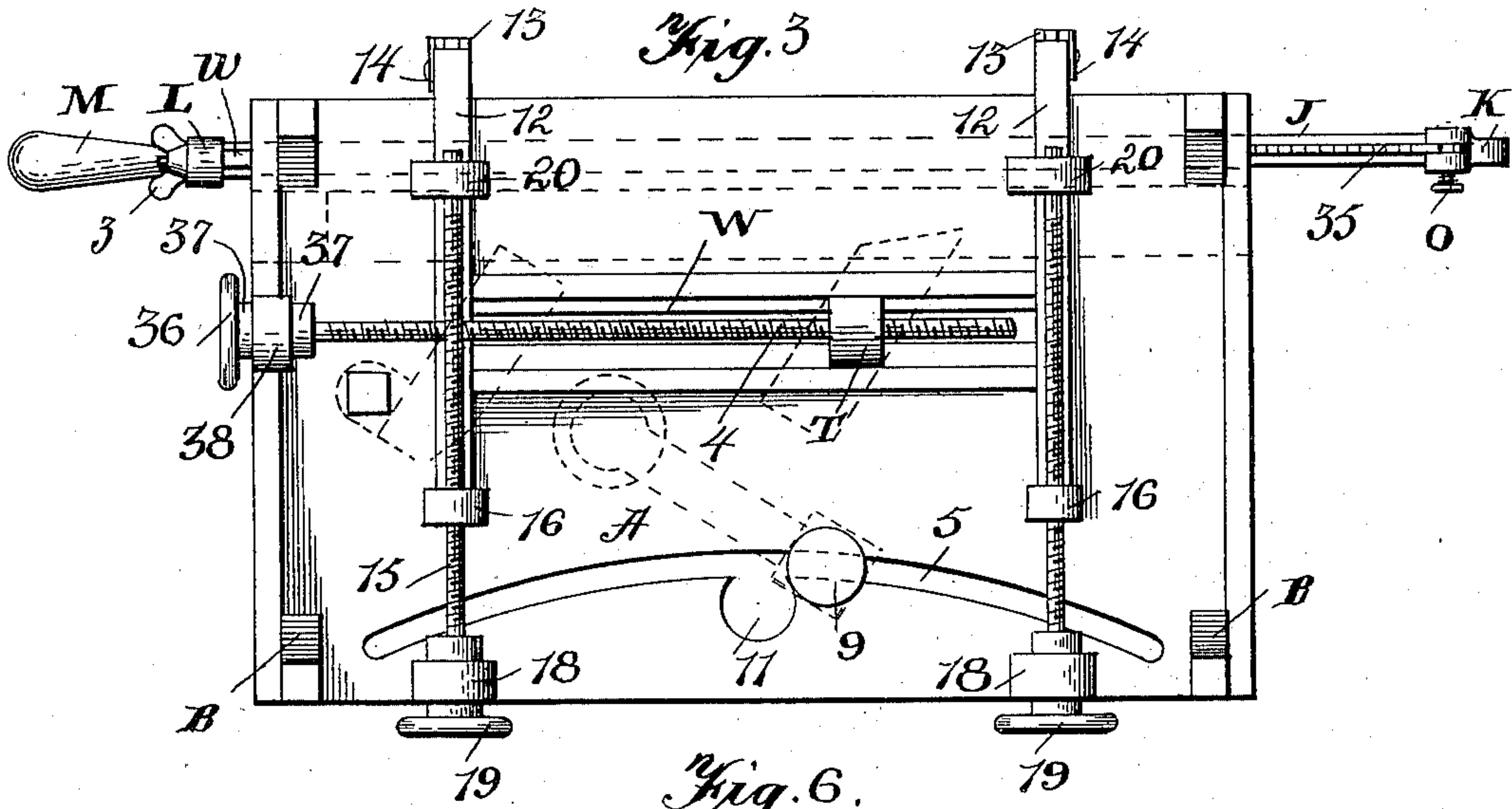
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

CHARLES L. SHONLE, OF TUSCOLA, ILLINOIS.

METAL BENCH-SAW.

SPECIFICATION forming part of Letters Patent No. 653,122, dated July 3, 1900.

Application filed November 9, 1899. Serial No. 736,426. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. SHONLE, a citizen of the United States, residing at Tuscola, in the county of Douglas and State of Illinois, have invented new and useful Improvements in Metal Bench-Saws, of which the following is a specification.

My invention relates to improvements in metal bench-saws, and pertains to a saw supported in guideways upon a base, the said base constructed to clamp and hold the piece of metal being sawed at any desired angle and also provided with means for measuring the length of the piece to be sawed and by which means pieces of uniform lengths can also be sawed, all of which will be fully described hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a machine embodying my invention. Fig. 2 is a vertical sectional view on line 2 2 of Fig. 1. Fig. 3 is an inverted plan view. Fig. 4 is a detail view of one of the base-clamping blocks. Fig. 5 is an enlarged sectional view on the line 5 5 of Fig. 1. Fig. 6 is a horizontal sectional view on the line 6 6 of Fig. 1. Fig. 7 is a horizontal sectional view on line 7 7 of Fig. 1. Fig. 8 is a sectional view at right angles to Fig. 7.

Referring now to the drawings, A is a base having at its under side and preferably at its corners the depending legs or projections B, by means of which the base is supported and by means of which the base can be screwed or otherwise suitably attached to a bench. Projecting from opposite sides of the base A and near one edge thereof are the standards C, the standards being connected at their upper ends by a cross-bar D. The upper portions of the standards C are provided with longitudinally-extending centrally-arranged slots *a* and at the inner and outer sides with the longitudinally-extending grooves *b*.

E is a saw-supporting track or way, which is provided with a horizontal slot *f*, and at each side of this horizontal slot are provided the horizontal grooves *c*, which face in opposite directions, the track or way E serving to support the saw in a manner which will be presently described. The ends of the track E fit in the inner groove *b* of the standards C, and said track is provided at each end with

outwardly-projecting studs *d*, to which studs are attached the sliding plates *e*, the attachment preferably being by means of screws. By this construction the track or way E readily moves up and down in the standards C and the track is held against any lateral play for the purpose of more firmly and accurately holding the saw, which is attached and carried by the track or way E in a manner which I will now explain.

Secured to one end of the track E (preferably the left-hand end of Fig. 1) by means of a pin 26 or otherwise is a block 25, the said block adapted to receive a screw 26', and upon this screw is situated a sleeve 27, which in effect constitutes a roller.

The saw consists of a U-shaped frame, of which J is the back and K and L the two depending parallel arms, the handle M being connected with the arm L. The back J of the saw is provided with a longitudinal slot 28, which receives the sleeve or roller 27, upon which sleeve or roller one end of the back of the saw is supported and reciprocated. The opposite end of the saw is supported by means of a block H, which is attached thereto by means of a screw 30, as here shown, or the block may be otherwise attached or made integral with the back, and attached to the opposite side of this block is a sliding plate *i*, fitting and sliding in one of the longitudinal grooves *c* of the track or way E, and connected with this block is another sliding plate *j*, fitting in the other groove *c* in the opposite side of the track or way. This plate *j* may be attached to the back J by means of screws *k*, as here shown, or in any other desired manner. By means of an attachment of this character the saw is held against any lateral movement and is thus guided accurately in the sawing operation and yet permitted to freely move up and down as is necessary. The horizontal elongated bearing for the saw provided by the plates *i* and *j* serves to hold the saw-frame, and consequently the saw, against any lateral movement, as will be readily understood.

The saw 35 has one end attached by means of an adjustable bolt, which is provided at its inner end with the ears *p* and at its outer end with a screw-threaded stem *q* and intermediate its ends with a square portion *w*,

passing through a correspondingly-shaped opening N in the arm L. The screw-threaded end *y* receives a thumb-screw *z*, by means of which the saw is readily tightened within the 5 frame.

The means for attaching the saw is so constructed that the saw can be readily removed for the purpose of inserting another, according to the character of work it is desired 10 to perform. This construction, whereby the saw can be readily attached and detached, consists of an endwise spring-actuated pin having a stem portion *s* and a larger end *t*. One of the ears *p* is provided with an opening *q*, adapted to receive the stem *s* of the 15 pin, and the other ear is provided with an opening *r* of a size adapted to receive the larger end *t*. Situated between the head *v* and the adjacent ear *p* is a spring *u*, serving 20 to hold the pin normally in the position shown in Fig. 7. The arm K at the opposite end of the saw is provided with arms O and a spring-actuated pin constructed exactly the same as that described of Fig. 7, and each end of 25 the saw is provided with an opening 2, into which a slot 3 extends. The slot is smaller than the opening 2, whereby the head *t* when engaging the opening 2 will hold the saw firmly in position; but when the spring-pin 30 is pressed inward against the tension of the spring *u* the small stem portion *s* is brought within the opening 2, and the stem portion will freely pass through the slot 3 of the saw, thus permitting the saw to be readily removed 35 and attached by simply the pressure upon the spring-pins at each end of the saw-frame, as will be readily understood.

For the purpose of supporting the saw in an elevated position, as shown in Fig. 1, while 40 the work to be sawed is being adjusted upon the base, the track E is provided with a latch I, having a shoulder *m*, adapted to engage the upper side of the cross-bar D, and the track is readily lifted in this position by means of 45 a projecting ear G, and situated between this projecting ear G and the adjacent end of the latch I is a spring *n*, serving to hold the latch normally in engagement with the cross-bar D when the track, and consequently the saw, 50 is elevated, as shown in Figs. 1 and 2. This arrangement enables the quick manipulation of the saw for either supporting it or releasing it for operation when the work has been properly adjusted.

It is desirable to provide means for holding the metal to be sawed at any desired angle, and for this I provide by means of adjustable blocks P and S. The block P is 60 provided with a perforated ear Q, through which a clamping-screw R passes and by means of which the block can be adjusted to any desired angle and held in its adjusted position. The block S is held in its adjusted 65 position by means of the clamping-nut V, which screws upon the screw-threaded end U of a block T, the screw-threaded portion passing through a transverse slot W in the base

A. The head or block T is provided with a screw-threaded opening through which a screw-threaded rod 4 passes, the screw-threaded rod and the block T being situated beneath the base A, as clearly shown. One end 70 of the rod 4 projects beyond the base and is provided with an operating-handle 36 and with two separated flanges 37, between which 75 a projection 38 of the base rests. By means of this construction the block T can be moved in either direction across the base, as will be readily understood, and can be turned to any 80 desired angle and then clamped in the adjusted position by means of the nut V. It is also desirable to clamp the metal being sawed after the blocks P and S have been adjusted for holding it in the desired position, and this 85 is provided for through the medium of an L-shaped arm 6, carrying at its upper end a clamping-rod 7, adapted to be moved downward in contact with the piece of metal to be 90 sawed. The lower end of this arm 6 is provided with a shoulder 8 above the base, a shoulder 9 below the base, and a reduced portion 10, which moves in a cam-groove 5, 95 formed in the base. Communicating with the slot 5 is an opening 11 of a size adapted to permit the passage therethrough of the 95 flange or head 9, and therefore the ready removal or attachment of the clamping-arm 6, as may be desired. The object in making the slot 5 curved is to bring the clamping-arm nearer to the saw when it is desired to 100 clamp a small flat piece of metal to the base.

The base A is provided with the transverse groove 40, which the saw will enter after having passed through the object being sawed and by means of which the object can be 105 sawed entirely in two without bringing the saw in contact with the base.

For the purpose of enabling the operator to cut off a predetermined length of metal and also for the purpose of enabling the operator to cut off a number of pieces of uniform lengths I provide the base with the 110 rules 12, which are situated at the underside thereof, the inner ends of the rules being connected with a block 16, having a screw-threaded perforation through which a screw-threaded rod 15 passes. One end of this screw-threaded rod is provided with a handle 19, by means of which it is readily rotated in either direction, and adjacent this 120 handle 19 the rod is provided with two separated flanges 17, between which a depending ear 18 from the base extends, the opposite end of the rod being supported by a suitable bearing 20. By means of this construction 125 the rules are moved back and forth to the desired adjustment, and the adjacent edges of the base are provided with openings 41, extending to or adjacent the groove 40 therein and by means of which the operator is enabled to accurately measure the length of the 130 article to be cut. The outer ends of these rules are provided with hinged stops 13, held by means of clamping-braces 14, so that the

stops when turned upward in the position shown in solid lines will serve as stops against which the end of the article to be sawed will abut, and when it is desired to move the rules under the base A the stops are turned downward into the position shown in dotted lines.

By means of a construction as herein shown and described I am enabled to support the saw steadily and firmly against lateral movement, thus assuring accurate work, and am also enabled to measure the length of the article to be cut, to cut pieces of uniform lengths, and to clamp and support the object to be sawed at any desired angle to the saw.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A bench sawing-machine comprising a base having parallel vertically - arranged standards, said standards having at their inner sides vertically-arranged slots, a saw-supporting track having its ends reduced and fitting and sliding within said vertical slots, and a saw horizontally movable upon the same track, substantially as described.

2. A sawing-machine comprising a base having vertical standards with vertical slots, a horizontal saw-supporting track having its ends provided with vertically-elongated bearings fitting the said standards for holding it against lateral movement, a saw, the saw and the saw-supporting track provided with horizontally-elongated bearings for holding the saw against lateral movement, substantially as described.

3. A sawing-machine comprising a base provided with vertical standards, the vertical standards having vertical slots and vertical grooves at their inner and outer sides, a horizontal saw-supporting track provided at its ends with projections passing through the said slots and provided with elongated bearing-plates fitting within said grooves, a saw, the supporting-track provided with a horizontal slot and a horizontal groove, elongated bearing-plates within the grooves, and a connection between the saw and the elongated bearing-plates, substantially as described.

4. A sawing-machine comprising a base having vertical standards, a horizontal saw-supporting track vertically movable upon said standards, the said track provided with a horizontal slot, a projection supported and carried by one end of the track, a saw provided with a horizontal slot, the projection passing through the said slot for supporting one end of the saw, and the opposite end of the saw having elongated bearing-plates fitting the said horizontal track, substantially as described.

5. A sawing-machine comprising a base, a vertically and horizontally movable saw supported thereby, the base having a slot extending longitudinally the saw, a block adjustably

supported within the said groove and means for clamping the said block, and a pivoted block adjustably clamped to the said base and coacting with the first said block for holding the work at the desired angle, substantially as described.

6. A sawing-machine comprising a base, a vertically and horizontally movable saw, the base having a slot extending longitudinally the saw, a head beneath the base having a screw-threaded stem extending through the slot, a block and a clamping-screw upon the said stem, and a screw-threaded rod supported at the under side of the base and extending longitudinally of the slot and passing through the said stem-provided block, and a pivoted block coacting with the first said block, substantially as described.

7. A sawing-machine comprising a base, a vertically and horizontally movable saw supported thereby, and a clamp for the work comprising an inverted-L-shaped arm provided with a vertically-arranged clamping-screw, the lower end of the clamping-screw adapted to cooperate with the base for clamping the article thereon, substantially as described.

8. A sawing-machine comprising a base, a vertically and horizontally movable saw supported thereby, and a clamp for the work comprising an inverted-L-shaped arm having the lower end of its stem portion adjustably connected with the base, and a vertically-arranged clamping-screw passing through the lateral portion of the L and extending downward and adapted to cooperate with the base for clamping the work thereon, substantially as described.

9. A sawing-machine comprising a base, the base having a longitudinally-arranged slot, a vertically and horizontally movable saw supported by the base and movable in a direction longitudinally of said slot, and an inverted-L-shaped clamping member having the lower end of its stem portion removably and adjustably connected to the base within the said slot, the upper laterally-projecting end of the said clamping-arm provided with a downwardly-adjustable clamping-screw adapted to cooperate with the base for clamping the work, substantially as described.

10. A sawing-machine comprising a base, a vertically and horizontally movable saw, the base having a curved slot arranged at one side of the saw and being nearest the saw at a point intermediate its ends, said slot being of a length practically equal to the length of the base, and a clamping member movable within the said slot, substantially as described.

11. A sawing-machine comprising a base, a vertically and horizontally movable saw supported thereby, the base provided with a slot, a clamping-arm having a flange above and below the base and reduced intermediate portion, and an opening in communication with the slot, of a size adapted to permit the pas-

sage of the lower flange or shoulder there-
through, substantially as and for the purpose
described.

12. A sawing-machine comprising a base, a
5 vertically and longitudinally movable saw
supported thereby, the under side of the base
provided with two depending bearings, a
screw-rod supported in said bearings, a rule
extending transverse the under side of the
10 base and having one end provided with a
screw-threaded socket receiving the screw-
threaded rod and its outer end movably sup-

ported by one of said shaft-supporting jour-
nals, the free end of the said rule adapted to
project beyond the adjacent side of the base, 15
substantially as described.

In testimony whereof I have hereunto set
my hand in the presence of two subscribing
witnesses.

CHARLES L. SHONLE.

Witnesses:

GEORGE B. PICKERING,
MCKENZIE CONOVER.