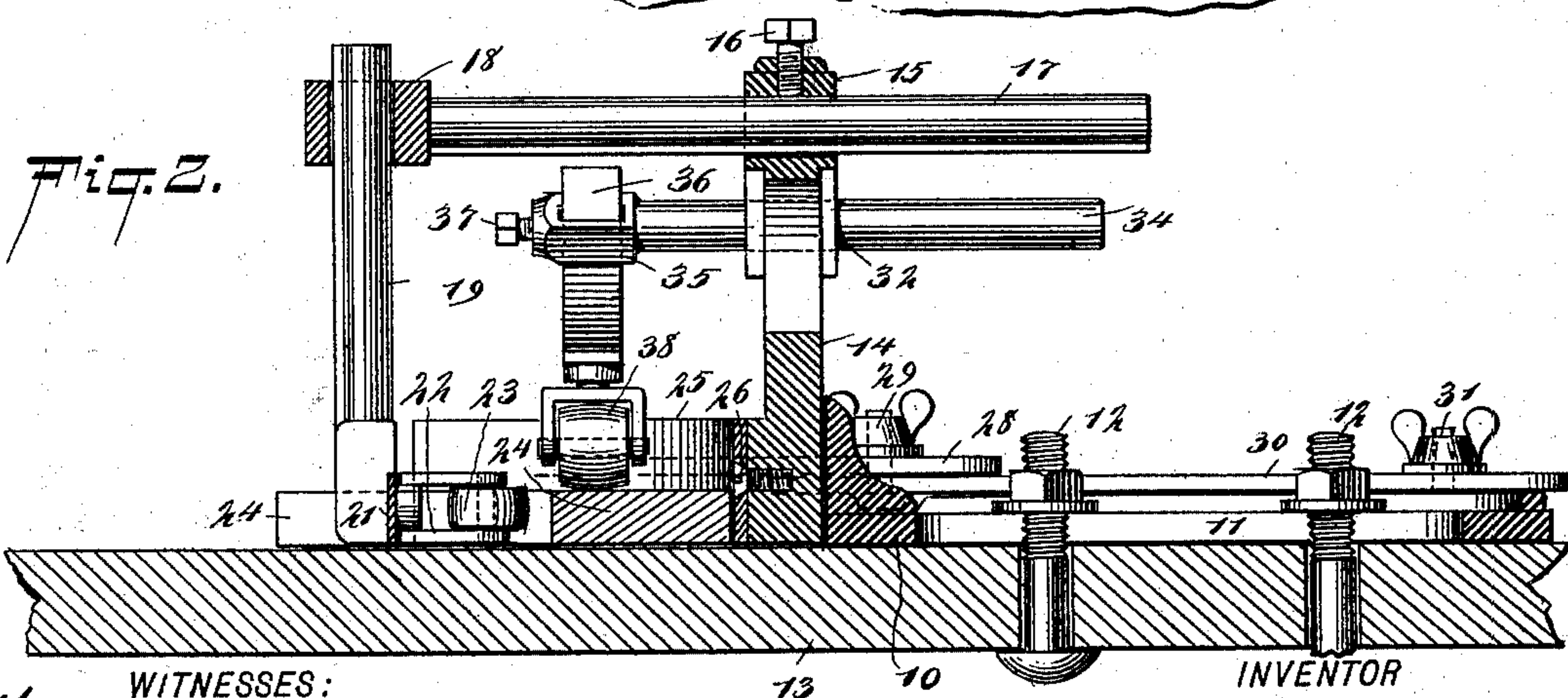
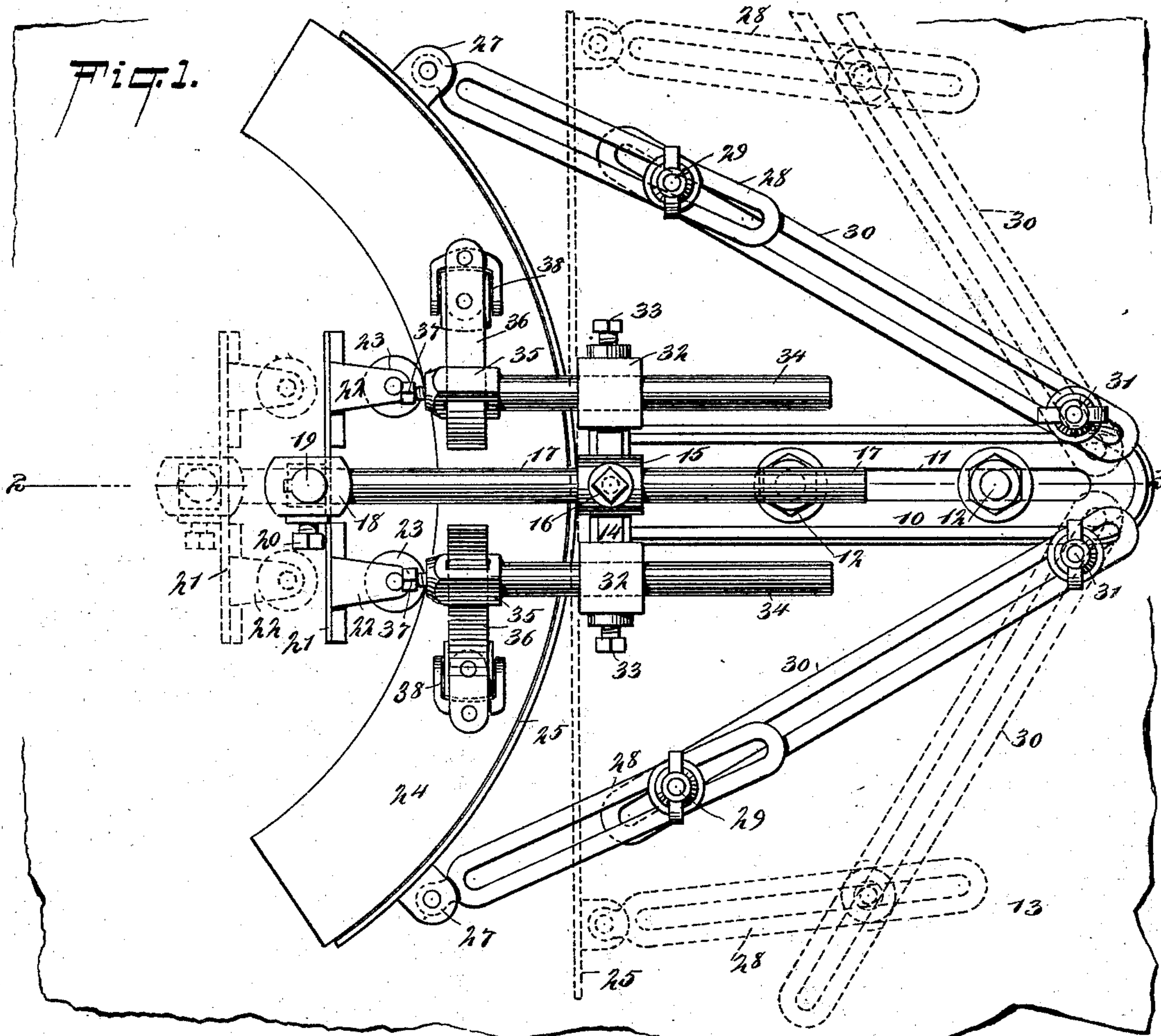


(No Model.)

W. J. AVEY.
WORK HOLDING CLAMP.

No. 504,960.

Patented Sept. 12, 1893.



WITNESSES:

William Goebel.
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UNITED STATES PATENT OFFICE.

WILLIAM J. AVEY, OF CINCINNATI, OHIO.

WORK-HOLDING CLAMP.

SPECIFICATION forming part of Letters Patent No. 504,960, dated September 12, 1893.

Application filed May 6, 1893. Serial No. 473,245. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. AVEY, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and Improved Work-Holding Clamp, of which the following is a full, clear, and exact description.

In certain kinds of wood working machinery the knives work up through a table and the wood to be operated on is passed over the knives and upon the table top. Guides of various kinds are used, but as a rule the work is held in the hands, and if a knot is struck and the work slips the operator is liable to injury.

The object of my invention is to produce a simple, strong and easily operated and adjusted clamp which is adapted to be applied to machines of this kind, being intended to be attached to the table top; which may be quickly made to fit different kinds of work such as semi-circular pieces, straight pieces, &c., and which prevents the workman's hands from coming into injurious contact with the cutters and also facilitates the progress of the work, as it forms a convenient guide and when once adjusted to a certain piece permits other similar pieces to be readily inserted in it.

To this end my invention consists in certain features of construction and combinations of parts as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in both the views.

Figure 1 is a plan view of the mechanism embodying my invention; and Fig. 2 is a vertical section on the line 2—2 in Fig. 1.

The clamp is provided with a suitable base plate 10 which has a longitudinal slot 11 to receive the bolts 12 by which the base plate is clamped to the table 13, which is of the usual kind and through which the cutters may be made to operate in the usual way. The base plate has formed integral with it a post 14 in the upper middle portion of which is a box 15, and this box is provided with a set screw 16 adapted to fasten in place a shaft 17 which extends horizontally through the box 15, the shaft 17 having at one end a head 18 which has a vertical bore to receive a vertical shaft 19, and the shaft is adapted to be moved lon-

gitudinally through the head and is fastened by a set screw 20. The shaft 17 projects outward beyond the forward end of the base plate 10, and the shaft 19 projects downward in front of the base plate and has at its lower end a horizontal cross bar 21 with arms 22 projecting toward the base plate and having pivoted in them rollers 23 which are adapted to contact with the edge of the work 24 to be clamped by the device. The work 24 may be either straight, curved, or of any usual shape, and as above remarked, one edge of it is held against the rollers 23 while the back edge abuts with a spring plate 25 which may be curved to any necessary extent, as shown in Fig. 1, or may be straight, as illustrated by dotted lines in the same figure.

The spring plate is secured at its center, as shown at 26, to the front end of the base plate 10 and this leaves its ends free to spring. On the back side of the spring plate 25 and near the ends, are lugs 27, to which are pivoted rearwardly extending links 28 which are slotted longitudinally and these links are bound, by means of thumb screws 29, to other similar links 30, and the latter extend rearward, converging as they approach the rear end of the base plate to which they are secured by thumb screws 31. It will be seen that by properly manipulating the links and thumb screws, the plate 25 may be fastened in a straight position or at any necessary curve.

The post 14 has at the top and near opposite edges, boxes 32, which are parallel with the box 15, and these boxes are provided with set screws 33 by which the horizontal shafts 34 are held in place, these shafts being adapted to be adjusted longitudinally in the boxes; and at their forward ends the shafts terminate in slotted heads 35 which are adapted to receive and carry the spring arms 36, these being held in place in the boxes by set screws 37 and having at their lower ends casters 38, the rollers of which are adapted to press downward upon the top surface of the work 24.

When the clamp is to be used, it is first fitted to a piece of work 24, similar to other pieces which are to be operated upon, and to do this the work is placed flat upon the table so as to abut with the plate 25, the shafts 17 and 19 adjusted so that the rollers 23 will press firmly against the front side of the

work, the shafts 34 are adjusted so as to bring the heads 35 above the work, the arms 36 are adjusted in such a manner as to make the rollers of the casters 38 press firmly upon the top of the work, and the links 29 and 30 are secured in such a way as to hold the back or spring plate 25 firmly against the back of the work. The work 24 is thus clamped on all sides and is held securely so that the knives may be operated in a proper manner upon it, and after one piece of work has been finished it is pushed out endwise from the clamp and another piece pushed in, the springiness of the plate 25 and arms 36 permitting this to be easily done, and yet the said parts serve to hold the work with sufficient firmness.

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

1. A work holding clamp, comprising a spring plate supported edgewise, means for flexing the plate, clamping rollers arranged opposite the spring plate and adjustable to and from the same, and a second set of adjustable rollers adapted to bear upon the top of the work, substantially as described.

2. A work holding clamp, comprising a spring plate held edgewise, means for flexing the said plate, clamping rollers arranged opposite the spring plate and adjustable to and from the same, yieldingly supported rollers for engaging the top of the work, and means for adjusting both of said rollers horizontally and vertically, substantially as described.

3. A work holding clamp, comprising a ta-

ble, a base plate secured thereon and having an upwardly extending post, a spring plate secured to the front end of the base plate at the foot of the post, fastening links secured to the back of the spring plate and also to the base plate, a longitudinal adjustable shaft carried by the top of the post and extending parallel with the table top, a cross bar suspended rigidly from the shaft and carrying rollers which turn in vertical axes and opposite the spring plate, a second set of shafts arranged parallel with the first shaft and mounted adjustably in the post, spring arms carried by the second set of shafts, and casters secured to the arms and adapted to press upon the work, substantially as described.

4. A work holding clamp, comprising a base plate having a post in one end, a central shaft mounted in the post and extending parallel with the base plate, means for adjusting the shaft longitudinally, a vertical shaft adjustable in the outer end of the central shaft, a cross bar carried at the lower end of the vertical shaft and provided with clamping rollers, a spring plate secured to the base plate and extending opposite the clamping rollers, a fastening device for fixing the position of the spring plate, and vertically adjustable casters arranged in front of the spring plate and adapted to ride on the work held against the plate, substantially as described.

WILLIAM J. AVEY.

Witnesses:

GEORGE H. SCHAEFER,
ELIZABETH AVEY.