

(No Model.)

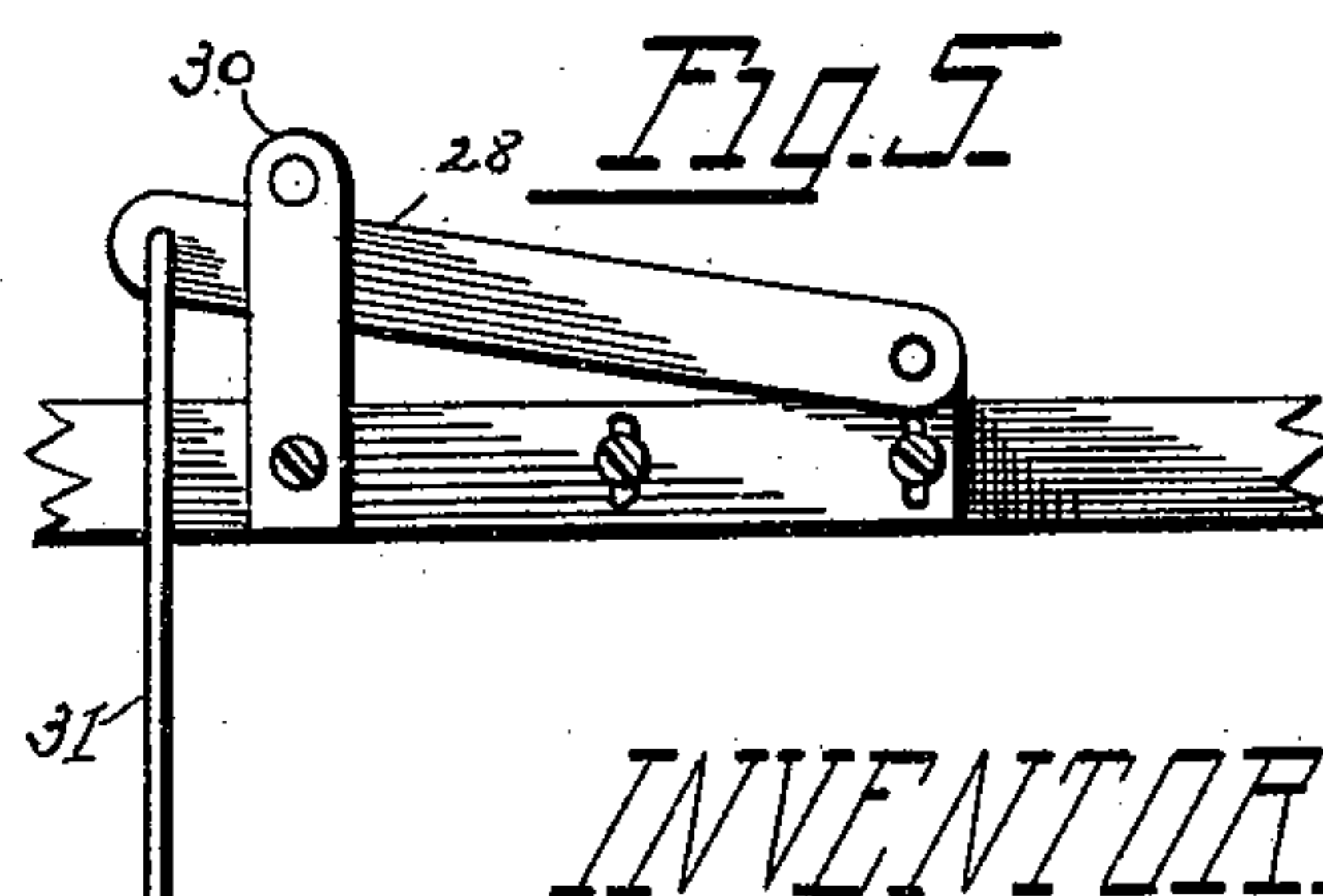
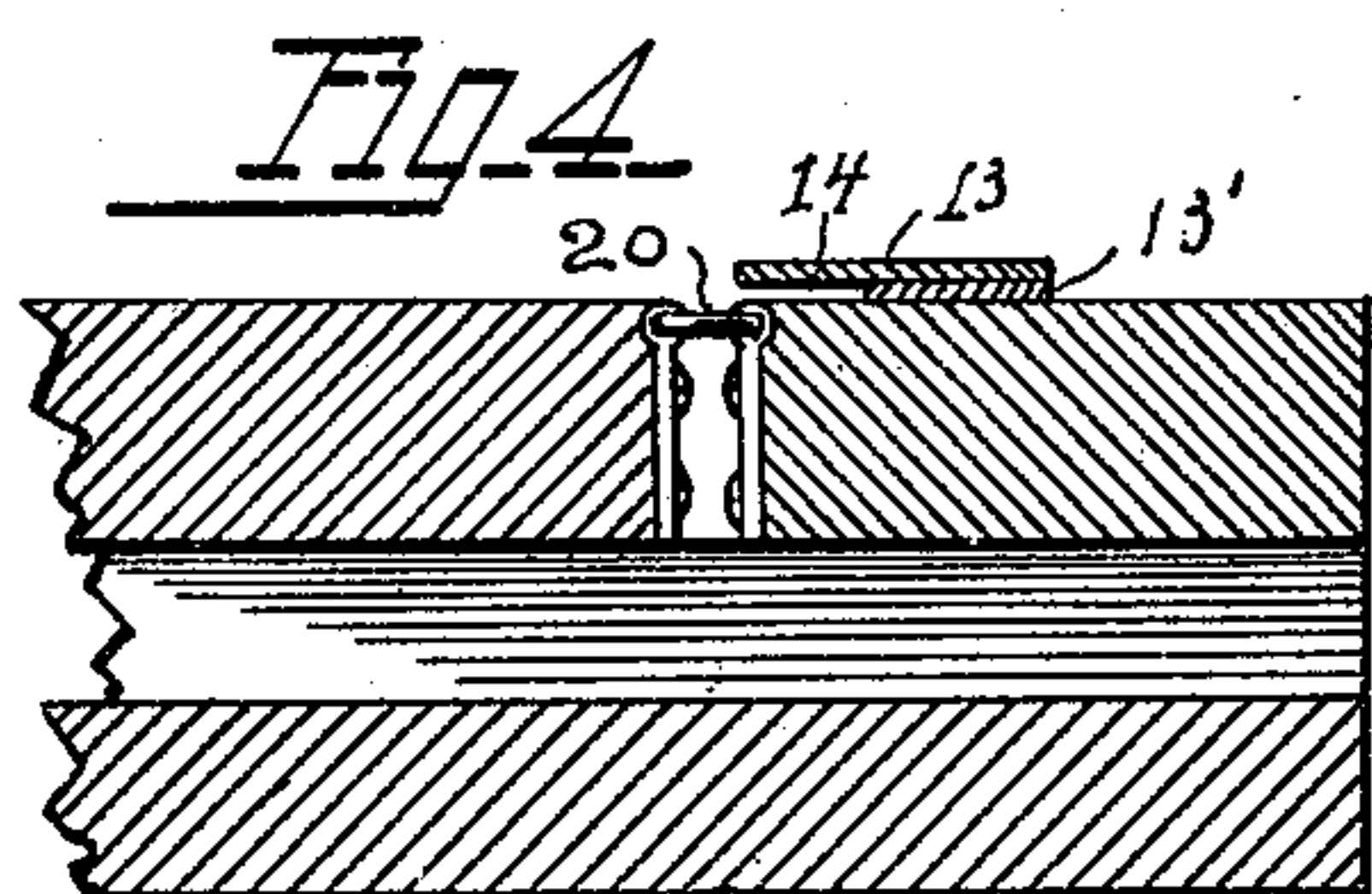
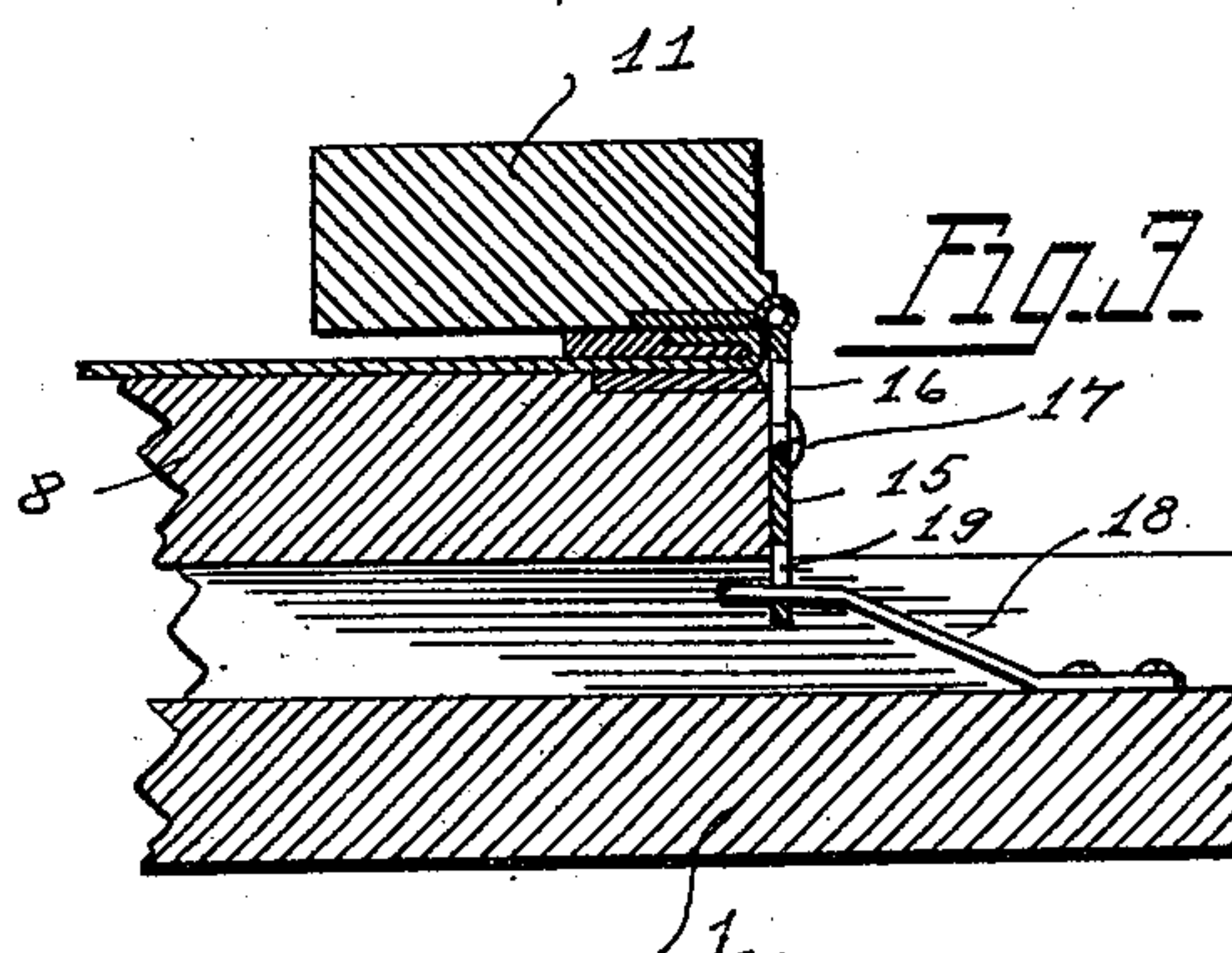
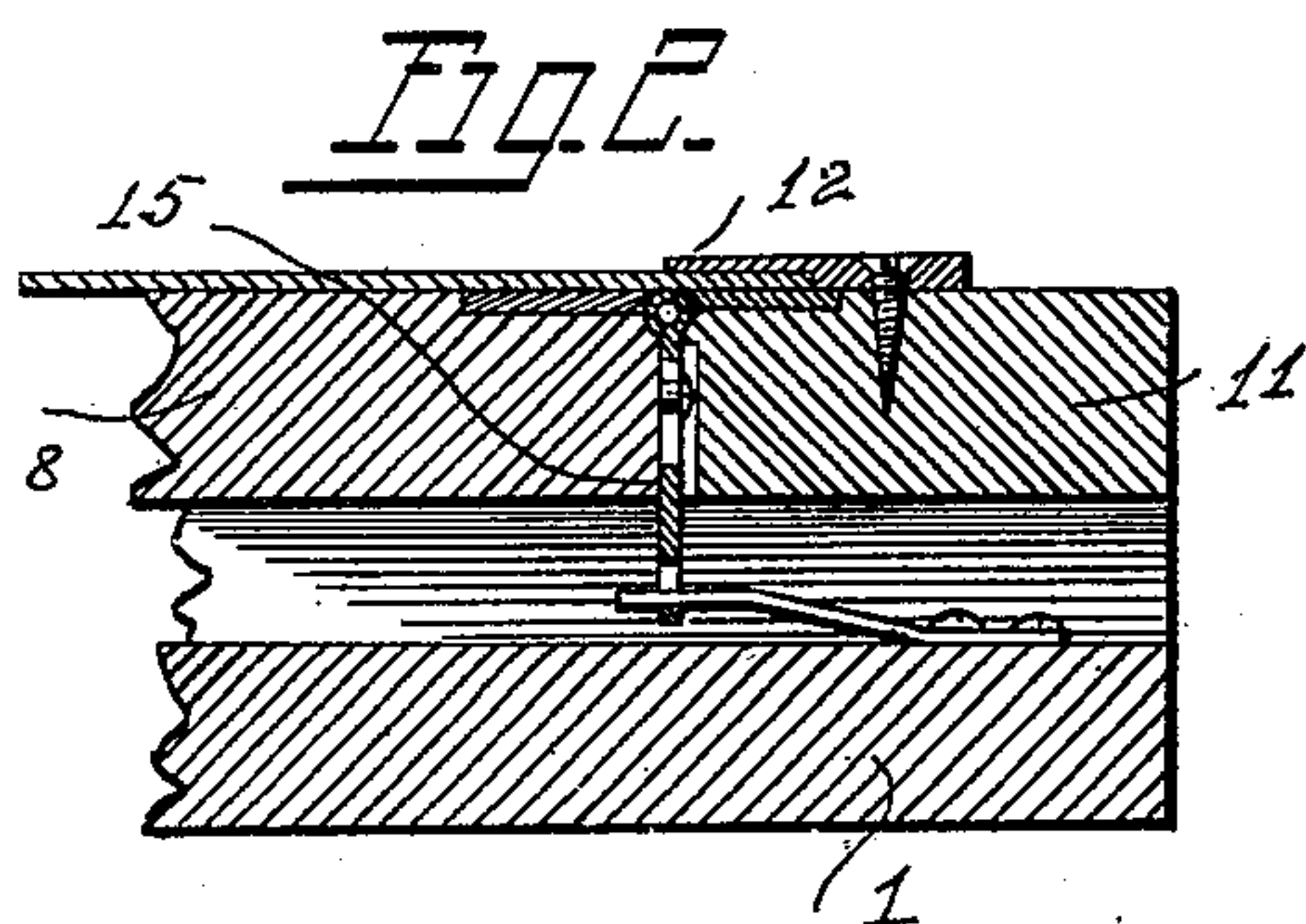
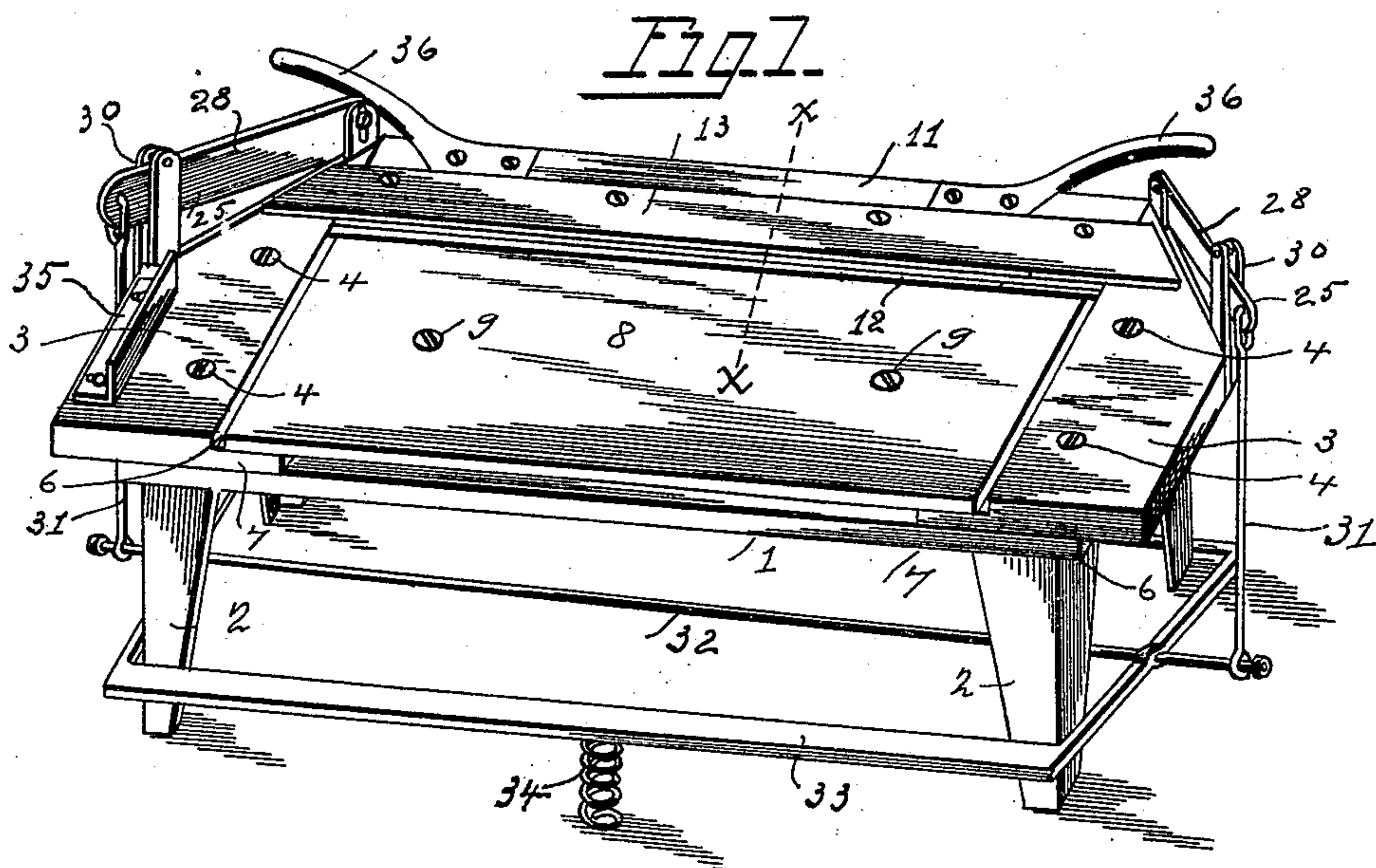
2 Sheets—Sheet 1.

J. P. MEHRMAN.

MACHINE FOR CUTTING AND BENDING SHEET METAL.

No. 594,643.

Patented Nov. 30, 1897.



WITNESSES

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H. H. Martin

INVENTOR
Jacob Phillip Mehrman
By William Webster
Atty

(No Model.)

2 Sheets—Sheet 2.

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Fig. 6.

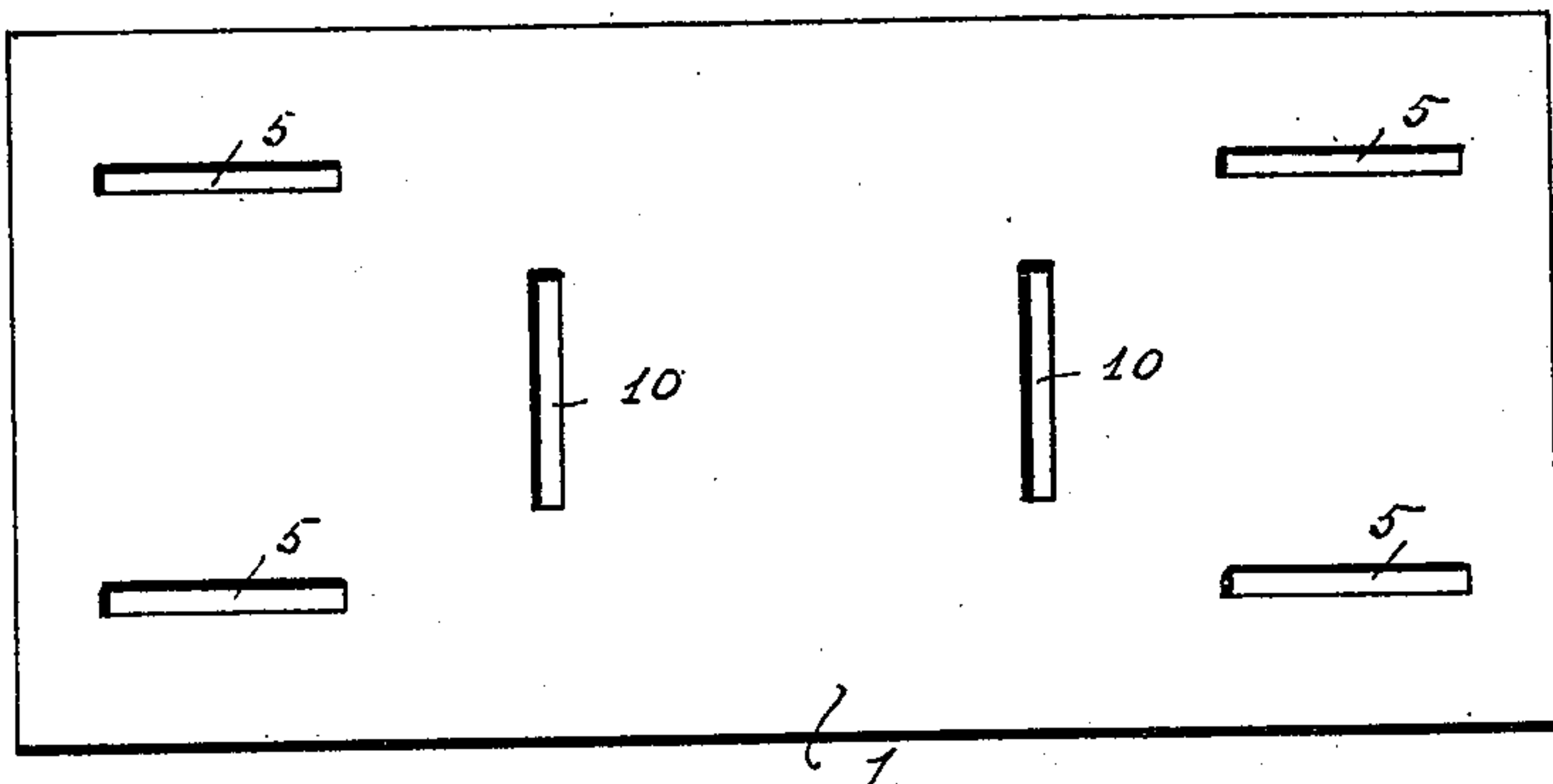


Fig. 7.

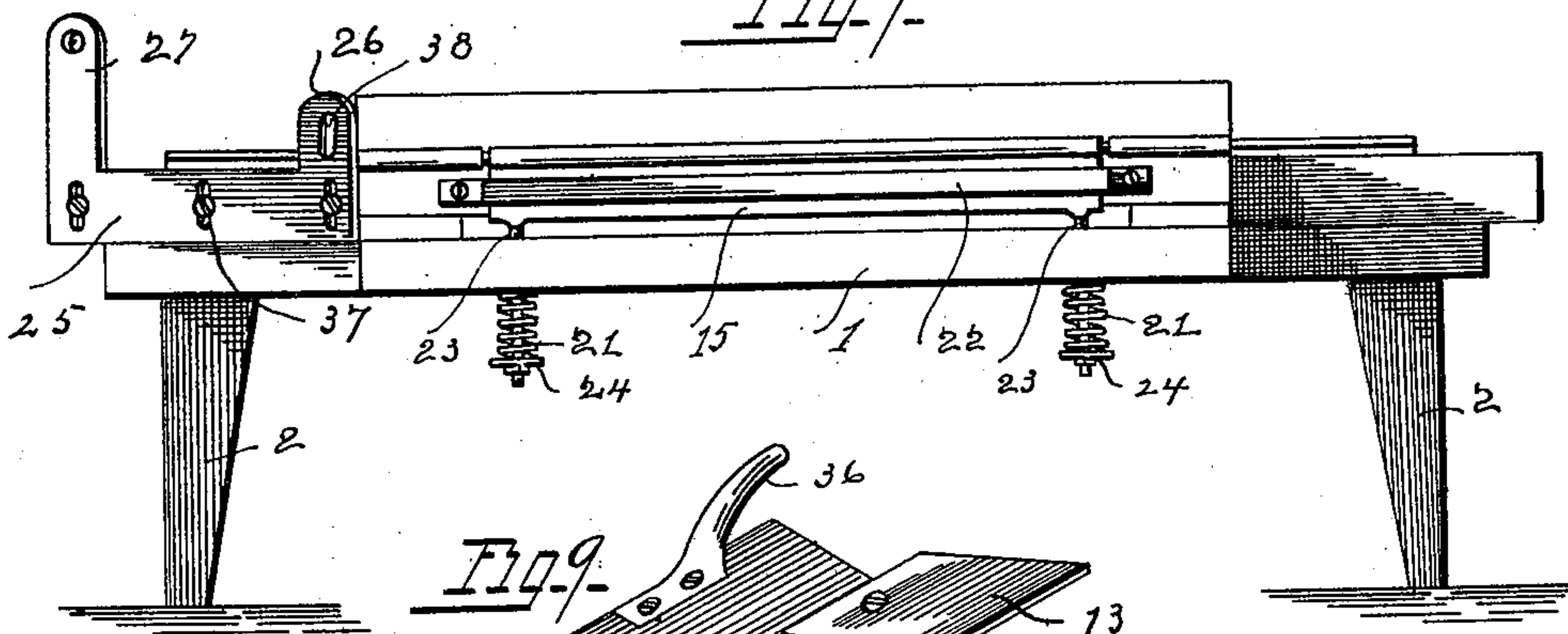


Fig. 9.

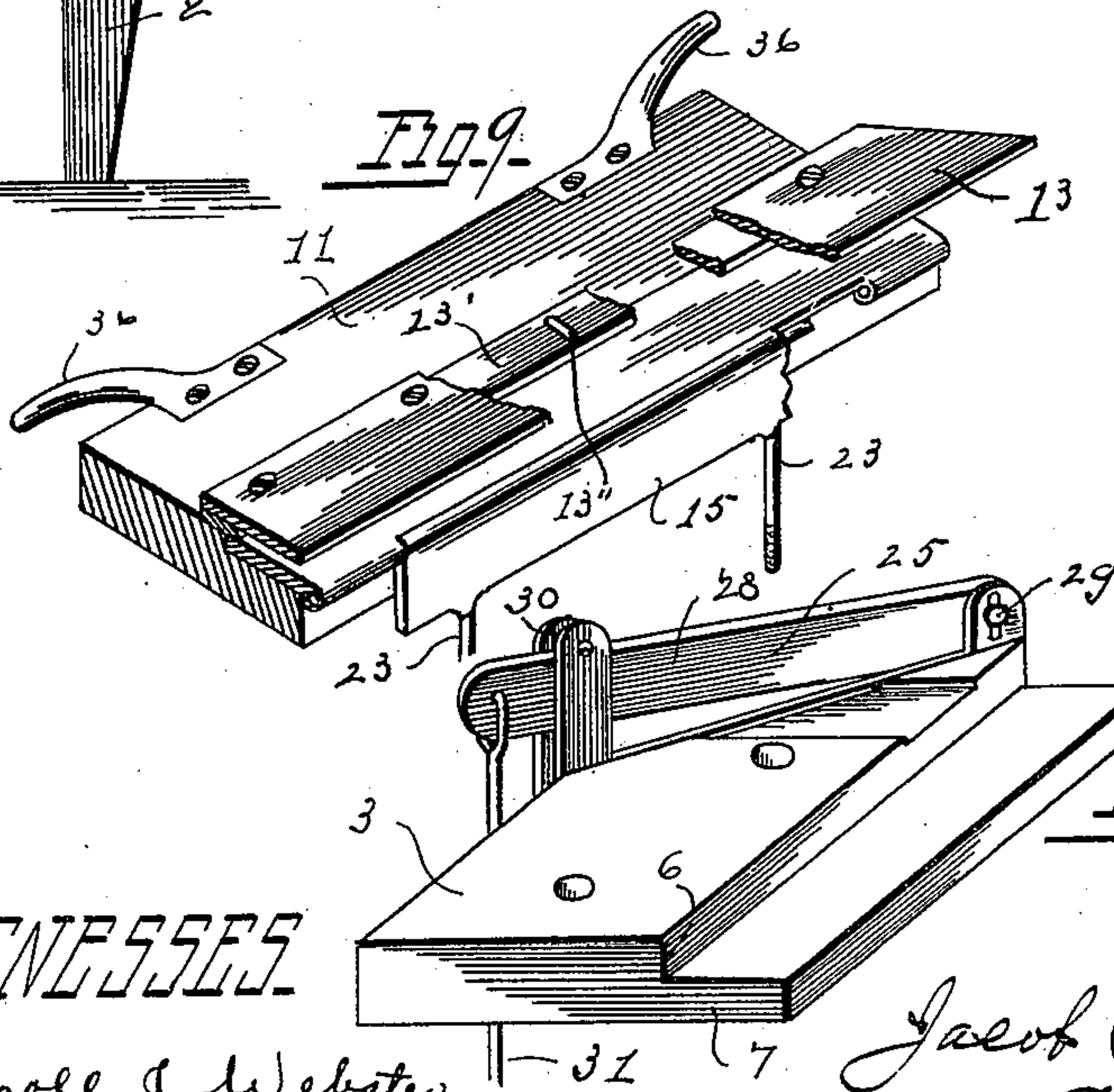


Fig. 8.

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UNITED STATES PATENT OFFICE.

JACOB PHILIP MEHRMAN, OF TOLEDO, OHIO.

MACHINE FOR CUTTING AND BENDING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 594,643, dated November 30, 1897.

Application filed March 15, 1897. Serial No. 627,542. (No model.)

To all whom it may concern:

Be it known that I, JACOB PHILIP MEHRMAN, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful
5 Improvements in a Machine for Cutting and Bending Sheet Metal; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains
10 to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My invention relates to a machine for cutting and bending sheet metal, and has for its
15 object to provide a machine of this character which shall be of a size to be used either in the shop or to be portable to a building and prepare sheets of metal ready to be used in
20 metallic roofing, this operation requiring that the corners be cut off and that the sides be folded.

The invention therefore consists in a table having two knives thereon set at an angle to
25 each other and means whereby when the knives are lowered the sheet which is previously placed thereunder is severed upon two of the corners and a hinged table provided with a recess to receive the edge of the sheet
30 and when folded over to carry the edge and fold the same, there being certain details of construction whereby the several parts are adjustable to compensate for different sizes of sheets of metal and also for the wear of the
35 knives, &c.

The invention further consists in the parts as shown, described, and claimed.

In the drawings, Figure 1 is a perspective view of a combined cutting and folding machine constructed in accordance with my invention. Fig. 2 is a sectional elevation taken at a point indicated by the lines $x x$, Fig. 1. Fig. 3 is a like view, this view showing the hinged portion of the table thrown over to
40 illustrate the operation of folding the edge of the sheet. Fig. 4 is a view similar to Fig. 2, illustrating a modified construction of hinge. Fig. 5 is a detail view illustrating more particularly one of the rear corners of the table
45 and the knife attached thereto. Fig. 6 is a plan view of the table, illustrating the slots through the medium of which adjustability

of the several parts is secured. Fig. 7 is a rear elevation of the machine, illustrating the hinged portion of the table as thrown over and
55 a modified construction of hinge. Fig. 8 is a detail view of one of the knife-carrying sections. Fig. 9 is a detail view, partly in section, of the hinged section of the table detached therefrom.

1 designates the table, supported upon legs 2 in any suitable manner, upon each end of which are secured knife-carrying frames 3, which are adjustable longitudinally of the table by means of the bolts 4, which secure
60 the frames to the table, passing through the longitudinal slots 5 in the table. Each frame 3 is recessed upon its inner side, as at 6, forming an extension 7 of less thickness than that of the body of the frame, upon which extension rests the stationary section of folder 8, which is secured thereto by a bolt 9 passing
65 therethrough and through the elongated slots 10 in the table 1, whereby the folder-section 8 is adjustable laterally.

11 designates the hinged section of the folder, which is secured to the stationary portion 8 through the medium of a hinge 12. Secured upon the foldable section 11 is a longitudinal strip 13, recessed upon the inner
70 lower edge, as at 14, to receive the edge of the sheet.

It will be readily understood that were the two sections of the hinge attached rigidly to the folding sections 8 and 11, respectively, of
85 the table the section 11 could not swing forward to a plane parallel with the section 8, inasmuch as the strip 13 would abut against the section 8 and prevent further movement of the section 11. It would therefore be im-
90 possible to fold a flange upon the edge of the sheet in a plane parallel with the body of the sheet. I have therefore provided a means whereby as the section 8 revolves forward upon its hinge it has a vertical movement to
95 compensate for the thickness of the strip 13 and can fold to a plane parallel with the section 8, as illustrated in Fig. 3. To accomplish this result, one section 15 of the hinge is provided with a slot 16, through which
100 passes a bolt 17, which provides a limited vertical movement of the section 11 with reference to the section 8 of the folding table, there being a spring 18 secured upon the stationary

table 1 and passing through an orifice 19 in the hinged section, which normally holds the section 11 in a lowered position when extended, as shown in Fig. 2.

5 The form of hinge may be varied, it only being necessary to provide for a vertical movement of the section 11 to compensate for the thickness of the strip 13. For instance, I may interpose a link 20 between the hinged sections, as shown in Fig. 4, or I may use instead of the leaf-spring 18, as shown in Figs. 2 and 3, a coil-spring 21, as shown in Fig. 7, this construction requiring the use of a strap 22 to act as a guide to the hinge-section 15, and rods 23 depend therefrom, which are embraced by the spring, the spring abutting against the under side of the stationary table 1 at one end and against the nut 24, screwed upon the rod at the opposite end.

20 Each knife-frame 3 is formed with a rear angled side, and secured thereto is a knife 25, which is provided with upwardly-extending lips 26 and 27, respectively.

28 designates the movable section of knife, which is pivoted by means of the bolt 29 to the lip 26 and is guided at the opposite end by means of the lip 27 upon the inner side and a standard 30 upon the outer side thereof.

31 designates rods secured at their lower ends to a rod 32, connected to a foot-treadle 33, normally held in a raised position by a spring 34, the upper ends of the rods 31 being connected to the movable section of knife 28.

In operation a sheet is placed upon the machine, guided upon its edge by the adjustable guide 35, secured upon one of the knife-frames 3, the edge of the sheet passing beneath the strip 13, as shown in Fig. 2. The guide 35 is so arranged that the corners of the sheet extend beneath the knives 28 when the treadle is lowered, forcing down the movable knives, which coact with the stationary knives as shears to cut the corners of the sheet. The operator now grasps one of the handles 36 upon the hinged section 11 of the folder and pulls the same forward, which bends over the edge of the sheet, as shown in Fig. 3, when by grasping the sheet and returning the section 11 of the folder to its proper position the sheet can be removed and the opposite side inserted. Should the sheets vary in size, it is only necessary to remove the stationary section 8 of the folder and consequently the hinged section and to either move the knife-frames 3 inwardly or outwardly and secure a smaller or larger folder-section thereto, which, it will be seen, provides for cutting and folding sheets of any size.

To compensate for the wearing of the knives,

the lower knife-section is provided with elongated slots 37, whereby it can be raised to compensate for the wear, and the lip 26 is provided with an elongated slot 38, which allows the movable knife 28 to be lowered, whereby the knives can always be retained in their proper relation one to the other.

The strip 13 is mounted upon a separate strip 13', Fig. 9, having slots 13'', which allow said strip to be moved backward or forward to vary the width of the recess 14, which receives the edge of the sheet.

What I claim is—

1. In a machine for cutting and bending sheet metal, a table having knife-carrying arms adjustable longitudinally thereon, a stationary section of folder secured thereon between the knife-carrying sections and a folding section of folder, having means thereon to receive the edge of the sheet hinged to the stationary section of folder.

2. In a machine for cutting and bending sheet metal, a table having knife-carrying frames secured thereon, knives adjustable to each other secured to the frames upon the table, and a hinged section hinged thereto, said hinged section having a limited vertical movement with reference to the stationary portion normally held in a lowered position.

3. In a machine for cutting and bending sheet metal, a table having knife-carrying frames secured thereto, a stationary section of folder secured between the knife-carrying sections, a movable section of folder hinged to the stationary section, hinges being provided with vertical slots whereby the movable section has a limited vertical movement with reference to the stationary section, and springs for normally holding the movable section in a lowered position against the table.

4. In a machine for cutting and bending sheet metal, a table, knife-carrying frames having means for adjusting the same vertically with reference to the knife-carrying frames, a movable section of knife pivotally secured to the stationary section of knife, and means for adjusting the pivotal point vertically with reference to the stationary section of knife, and a treadle connected to the movable portion of the knife for depressing the same, and a spring for normally holding the movable knife in a raised position.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

JACOB PHILIP MEHRMAN.

Witnesses:

CARROLL J. WEBSTER,
MAUD SCHUMACHER.