

No. 688,535.

Patented Dec. 10, 1901.

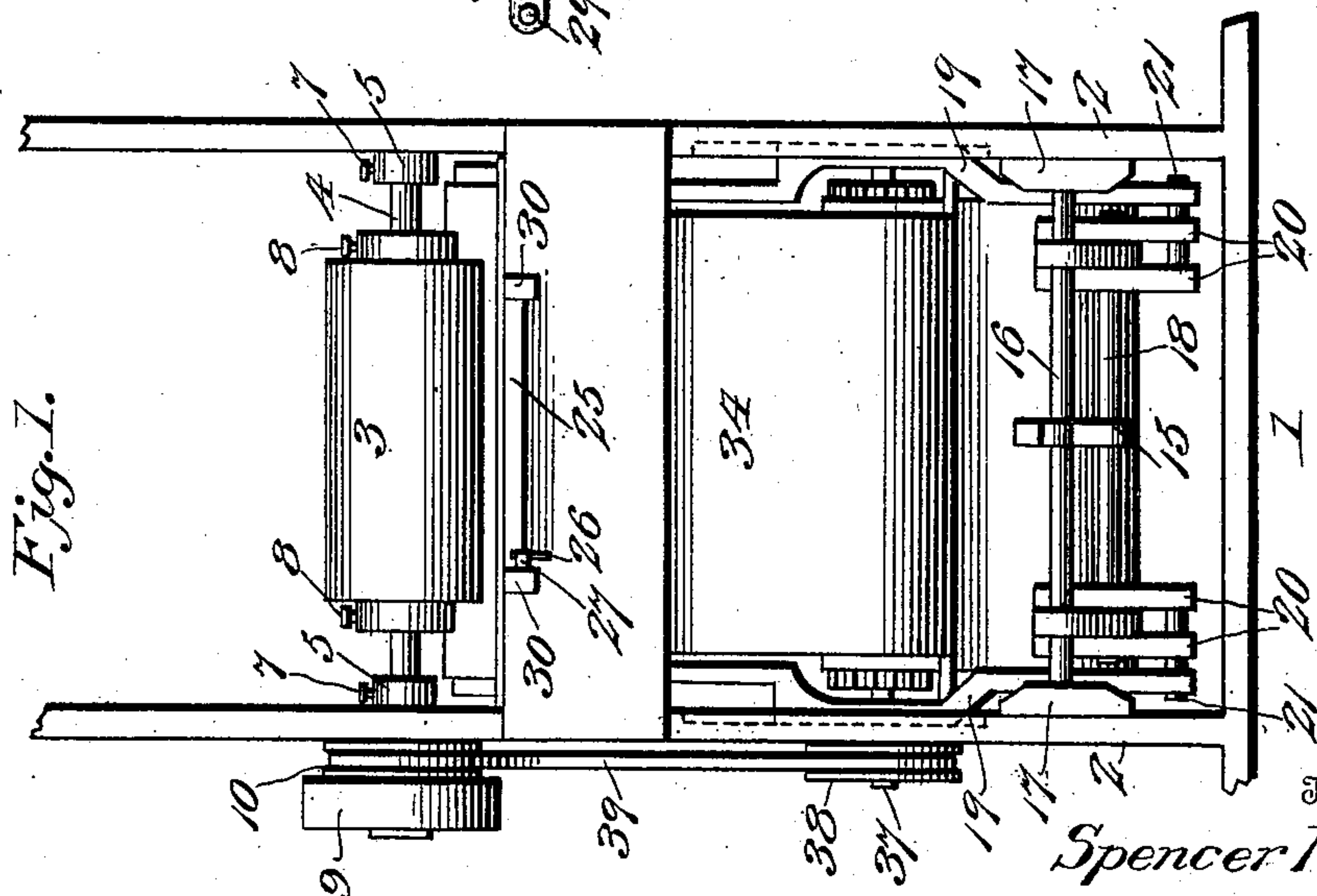
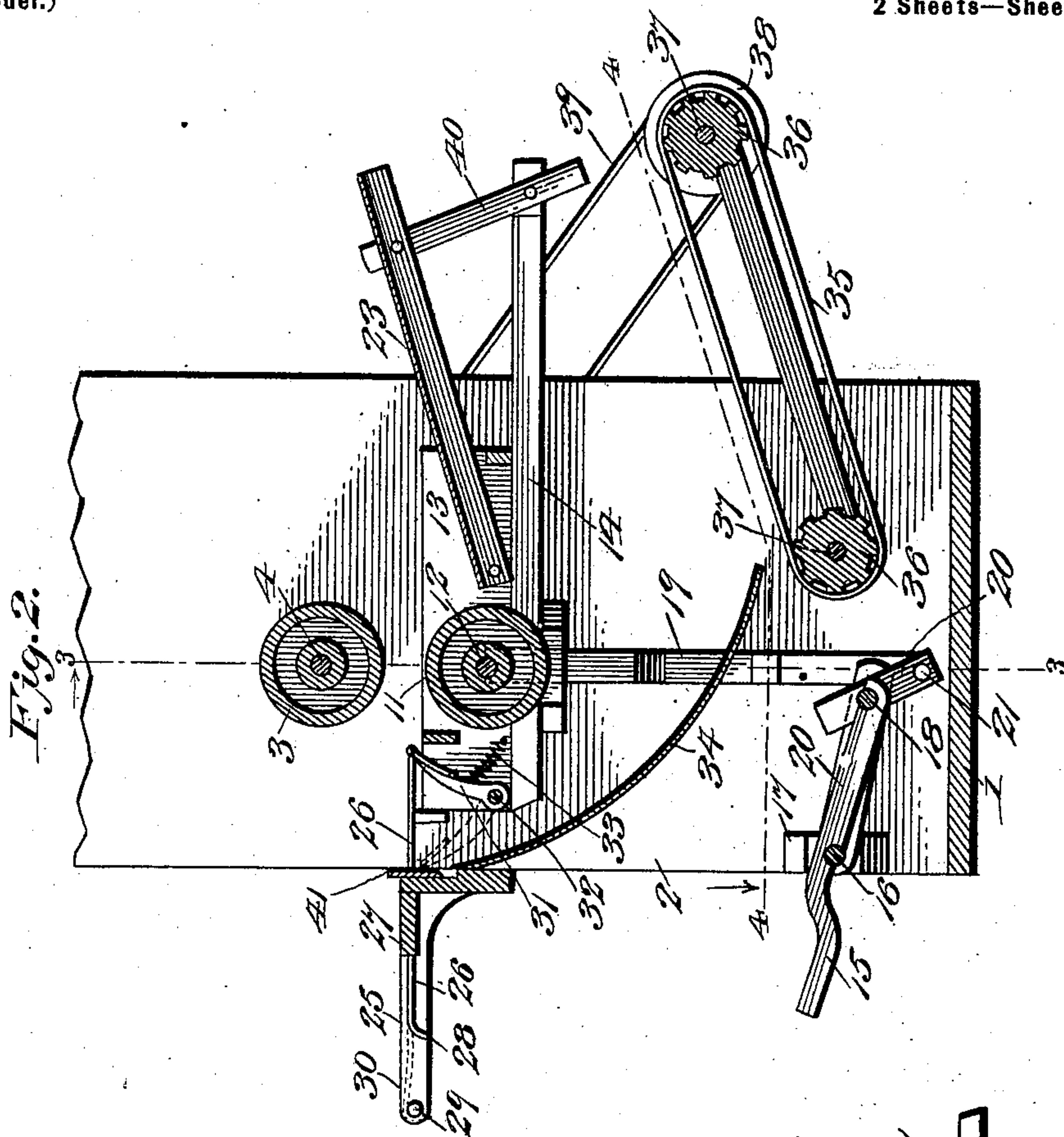
S. MAHAN.

METAL SHEARING MACHINE.

(Application filed Mar. 25, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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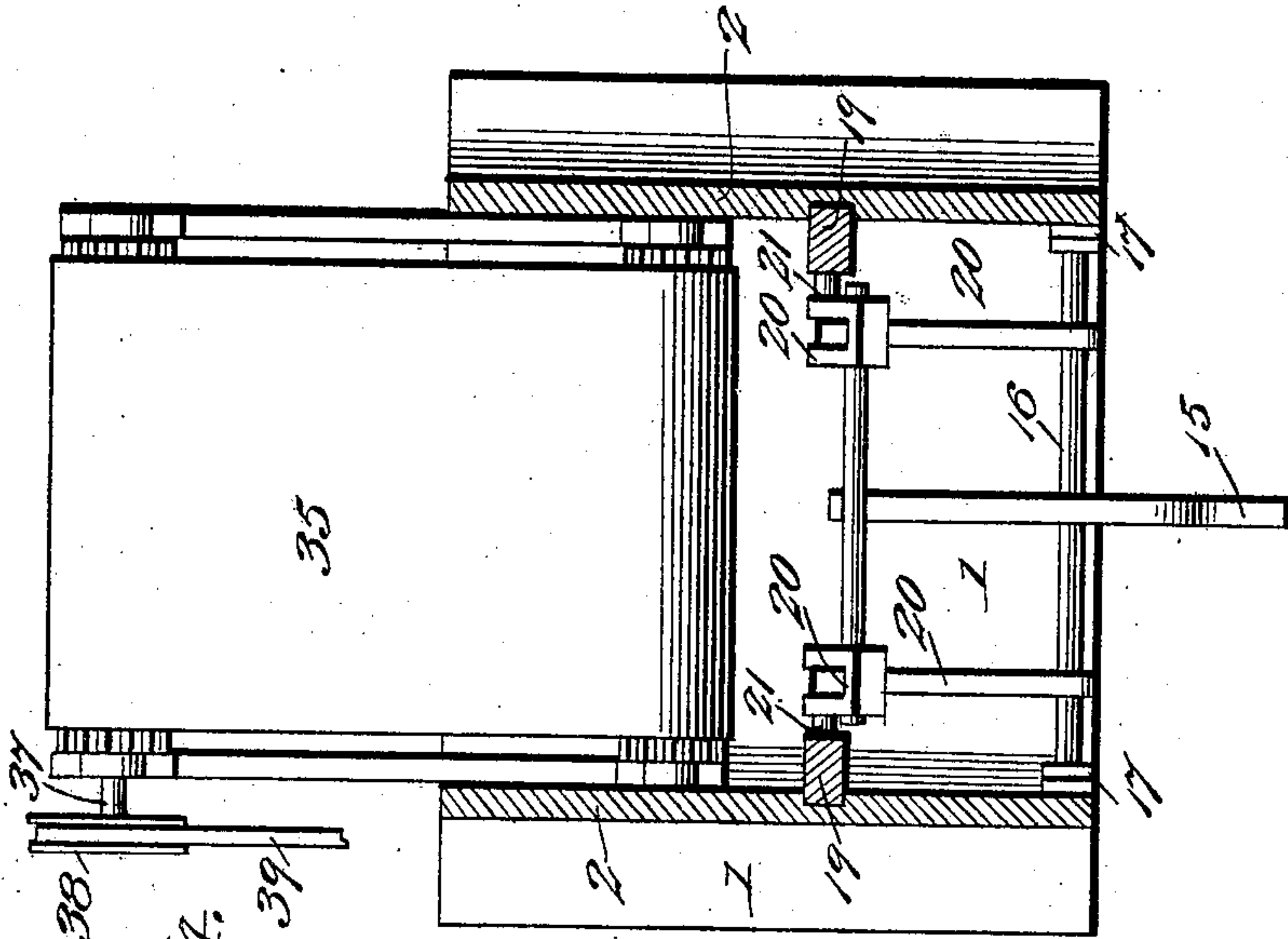


Fig. 4.

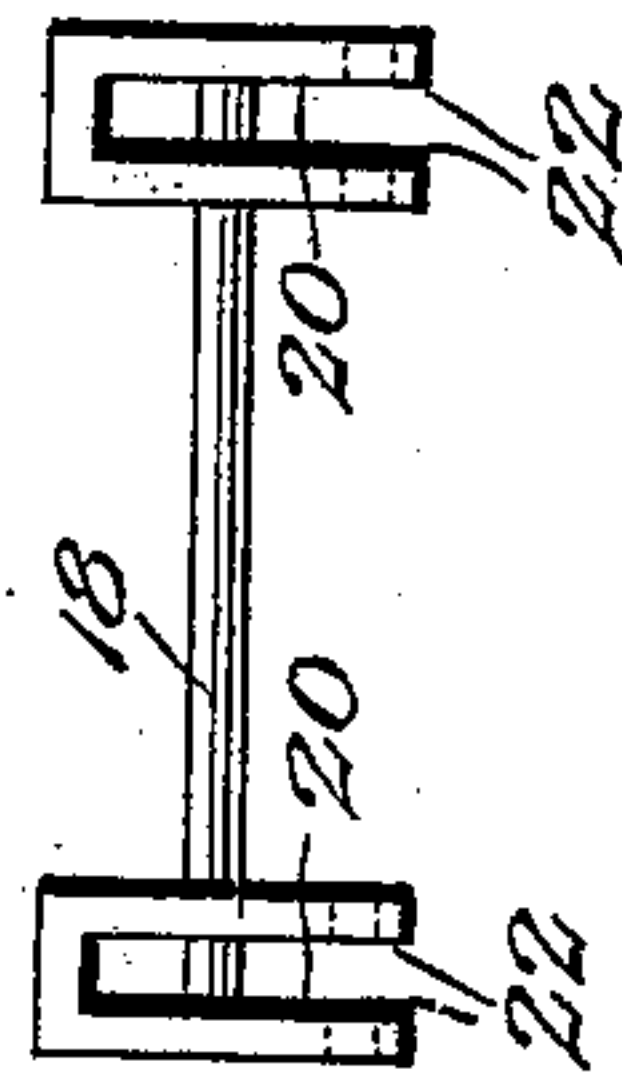


Fig. 5.

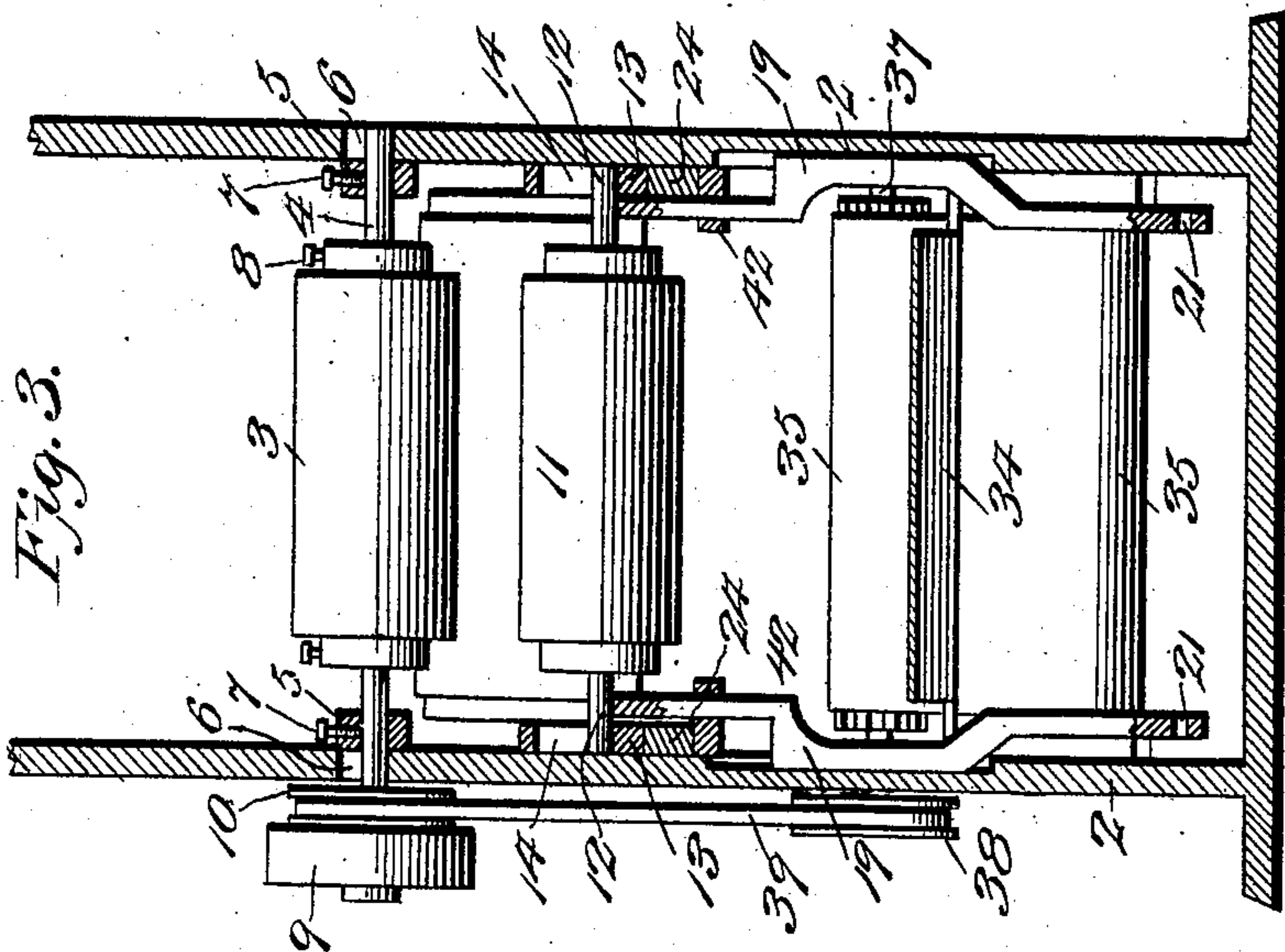


Fig. 3.

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UNITED STATES PATENT OFFICE.

SPENCER MAHAN, OF ELWOOD, INDIANA.

METAL-SHEARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 688,535, dated December 10, 1901.

Application filed March 25, 1901. Serial No. 52,834. (No model.)

To all whom it may concern:

Be it known that I, SPENCER MAHAN, a citizen of the United States, residing at Elwood, in the county of Madison and State of Indiana, have invented new and useful Improvements in Metal-Shearing Machines, of which the following is a specification.

This invention relates to certain new and useful improvements in attachments for metal-shearing machines, and has for its object, among others, to provide a vertically-adjustable roll, a novel table attachment, and an endless carrier for conducting away the trimmings from the sheared iron, which are deposited upon the carrier by an apron, which receives and discharges the trimmings.

I aim further at improvements in the details of construction whereby a cheaper, simpler, and more satisfactory device is provided.

The invention in the present instance resides in the peculiar construction, combination, and arrangement of parts, all as more particularly hereinafter described and then pointed out in the claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a rear elevation showing my improvement. Fig. 2 is a substantially central vertical section through the same from front to rear. Fig. 3 is a vertical section on the line 3 3 of Fig. 2. Fig. 4 is a horizontal section on the line 4 4 of Fig. 2 looking in the direction of the arrow. Fig. 5 is a detail more particularly hereinafter referred to.

Like numerals of reference indicate like parts throughout the several views.

Referring now to the drawings, 1 designates the base, and 2 the uprights, of the machine, which, except as hereinafter specified, may be of any well-known or approved form of construction.

3 is a metallic roll mounted upon a shaft 4 and journaled in suitable bearings or boxes 5, as seen clearly in Figs. 1 and 3, the ends of the said shaft or the pintles or spindles of the roller being designed to have sufficient play vertically in the slots 6 of the upright castings 2 to permit of leveling of the roll when desired. Set-screws 7 provide for the removal of the roll when desired. Set-screws

or analogous devices 8 allow for the adjustment of the roll lengthwise of its shaft when occasion requires. This roll is designed to be continuously revolved by means of a belt (not shown) running over a pulley 9 on the extended end of the shaft, as seen in Figs. 1 and 3, and on this extended end is a grooved pulley 10 for a purpose which will be hereinafter set forth. The belt designed to impart continuous rotation to the roll 3 is, it will be readily understood, designed to be operated from the main shaft of the machinery or from any other suitable source; but as this constitutes no part of the invention it has not been deemed necessary to illustrate the same.

11 designates the lower roll, of metal, and preferably, like the upper roll, formed hollow, as seen clearly in Fig. 2, although it is evident that this is not essential. This shaft 12 is mounted to revolve in suitable bearings in a frame or carrier 13 and is designed to have vertical play in slots 14 in said frame, as seen clearly in Fig. 3. It is designed to be moved vertically by means of the foot of the operator placed upon the treadle 15, pivotally mounted, as at 16, in bearings 17 on the castings of the shears, the inner end of said treadle engaging a transverse rod or shaft 18, and this rod or shaft 18 is designed to actuate the vertical slides 19 to raise the roll, the connection between the said treadle and the slides being a knuckle-joint, as seen at 20 in Figs. 1 and 2, the pivotal connection 21 with the knuckle being at the lower end of the slides. In Fig. 5 I have illustrated in detail a portion of this knuckle-joint connection, in which the openings 22 (indicated by dotted lines) are for the reception of the pivot 21, as will be readily understood. It will thus be seen that when the operator places his foot upon the treadle the slides 19 will by reason of the connection just described be forced upward, raising the roll 11 until the same comes in contact with the roll 3, which latter being in continuous motion will impart its motion by frictional contact to the roll 11, which latter is used for the purpose of returning the unsheared iron to the operator from the table 23. (Seen most clearly in Fig. 2.)

The frame 13 rests upon two slides 24, attached to the upright castings 2 of the shears,

and this frame is designed to be removed like a drawer in order to give the operator access to the shearing-knives of the machine and to change and adjust the same when necessary.

5 25 is a table suitably supported upon the upright castings 2, as seen best in Figs. 1 and 2.

26 is a rod or lever, mounted to slide through a suitable guide 27, its outer end being provided with a hook or bent end 28, designed when the rod or lever is pulled outward to engage over a pin or projection 29, as will be readily understood from Fig. 2, extending from one of the extension-guards 30. The inner end of this rod or lever is pivotally connected with the shifter 31, pivotally mounted at 32, as seen clearly in Fig. 2, so as to be actuated by the outward movement of the rod or lever 26, and when said rod is released by the operator the shifter is automatically returned by means of a spring 33, thus pushing the unsheared plate out upon the table 23, affording ample room for the trimmings from the iron to slide down upon an apron 34, (seen best in Fig. 2,) which apron is supported in any suitable manner and extends in an inclined direction, as shown, so as to deliver the trimmings from the iron upon an endless carrier 35, as seen clearly in Fig. 2 and in top plan in Fig. 4, and by which carrier the said trimmings are carried out upon the floor in one pile ready for bundling into bales. This carrier is carried upon the rollers 36 on the shafts 37, supported in any suitable manner, and upon an extended end of the outer shaft is a pulley 38, preferably grooved, as seen in Fig. 1, and over which passes the belt 39, which passes around the pulley 10 on the shaft 4 of the upper roll and from which latter pulley motion is imparted to the belt and to the carrier.

The table 23 is attached to the separate frame 13 and is braced at its outer end by suitable braces 40, one of which is seen in Fig. 2, and this table is provided for the purpose of the iron lying thereon until returned to the operator by coming in contact with the rolls 3 and 11.

The knives of the shears are designed to be secured to the castings 2 at the point 41 in Fig. 2, and the slides 19 are guided by suitable guides 42, as indicated in Fig. 3.

The operation will be clearly understood from the foregoing description when taken in connection with the annexed drawings, and

further detailed description thereof does not seem necessary.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. The combination with the upper and lower rolls, of an apron beneath the lower roll, a table for receiving the unsheared metal, and means for moving such metal so the trimmings may drop onto the said apron, as set forth.

2. The combination with the upper and lower rolls, of an apron beneath the lower roll, an endless carrier mounted to receive the trimmings from said apron, a table to receive the uncut metal, and means for moving the uncut metal to allow the trimmings to fall upon said apron as set forth.

3. The combination with the upper and lower rolls, and a separate removable frame in which the latter is carried, of a spring-actuated shifter, means for actuating the same in one direction, means for vertically adjusting the lower roll, a table to receive the unsheared metal, an apron to receive the trimmings, and an endless carrier for conveying away said trimmings, as set forth.

4. The combination with the upper roll and the vertically-adjustable lower roll, of an endless carrier, and means for operating the same from the upper roll, substantially as described.

5. The combination with the upper roll and the vertically-adjustable lower roll, of an endless carrier, means for operating the same from the upper roll, and an apron disposed to deposit trimmings upon said carrier, substantially as described.

6. The combination with the continuously-moving upper roll, of a vertically-adjustable roll beneath the same, a treadle, slides for moving the lower roll, pivotal connections between the treadle and slides, a table supported by a separate frame in which the shaft of the movable roll works, and a shifter and means for operating the same, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

SPENCER MAHAN.

Witnesses:

O. A. ARMFIELD,
EMMA MAHAN.