

No. 742,239.

PATENTED OCT. 27, 1903.

T. H. SAVERY.
PAPER MAKING MACHINE.
APPLICATION FILED MAR. 6, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

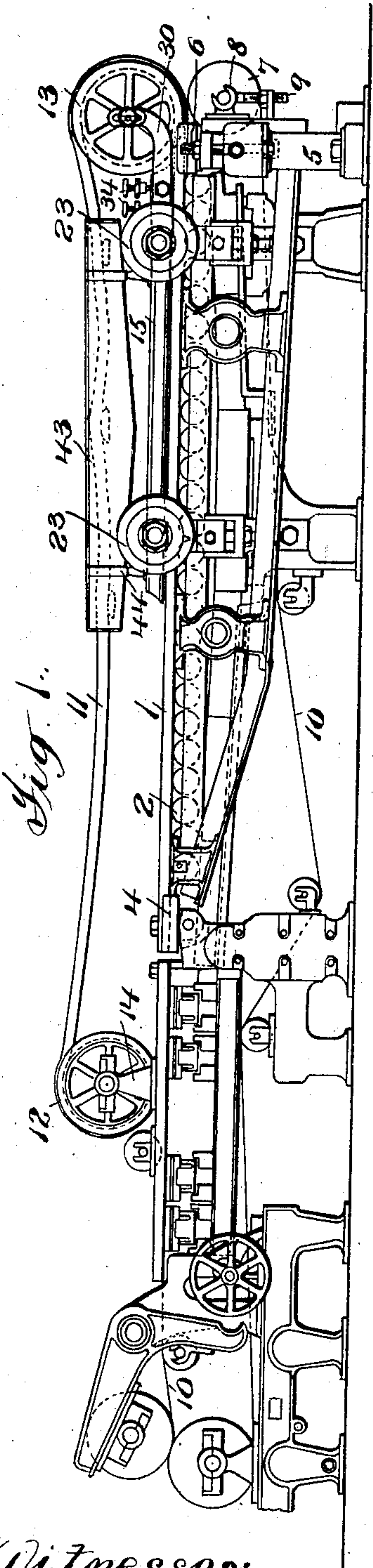


Fig. 1.

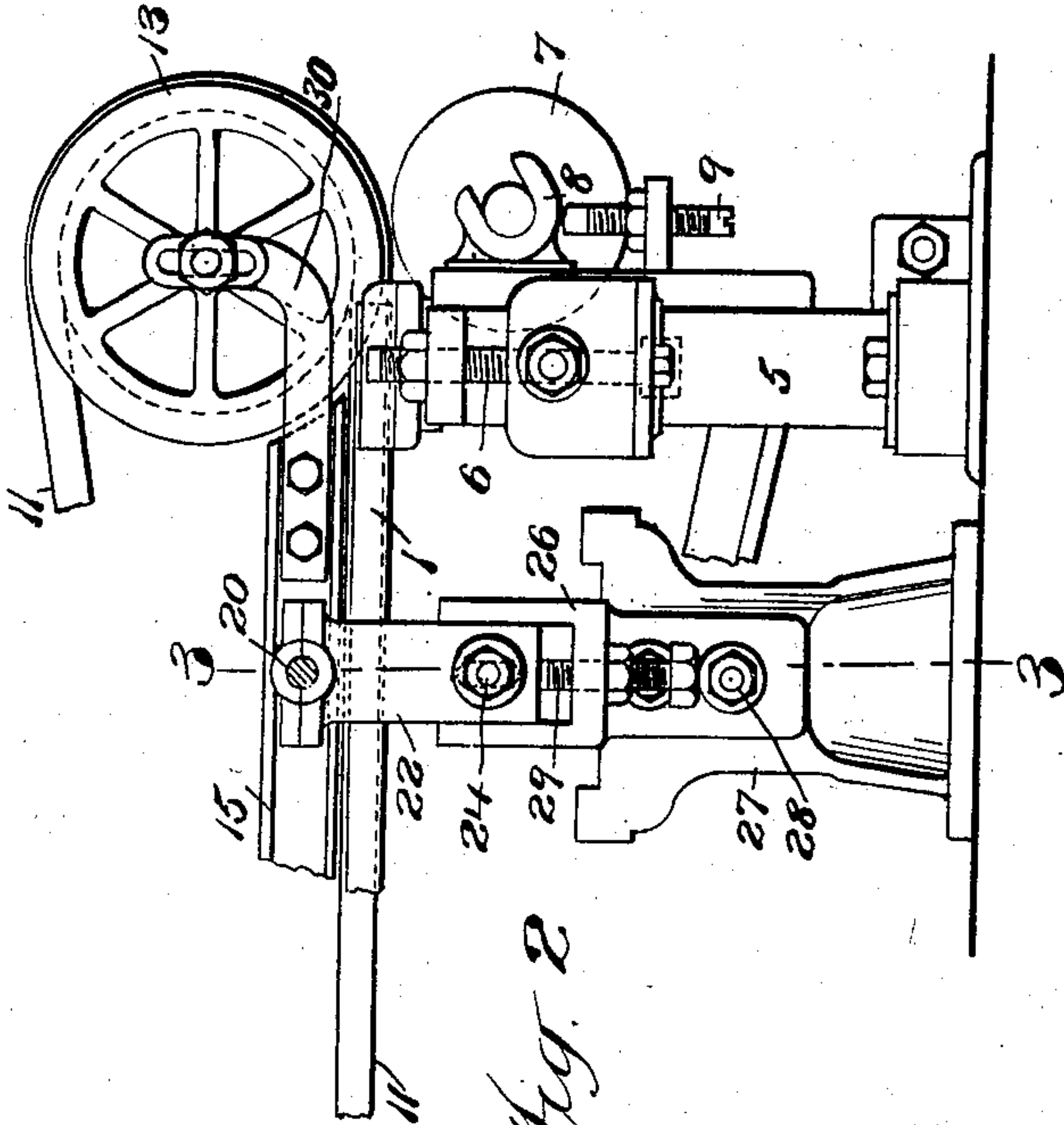


Fig. 2.

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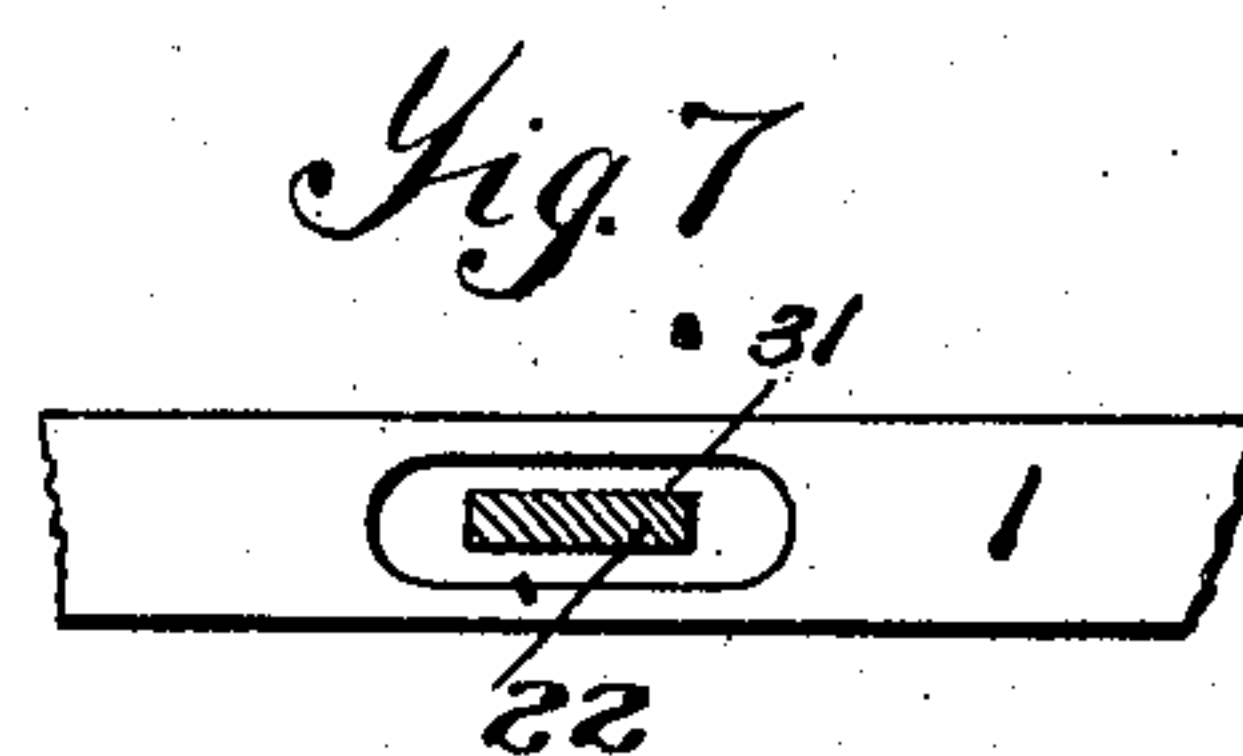
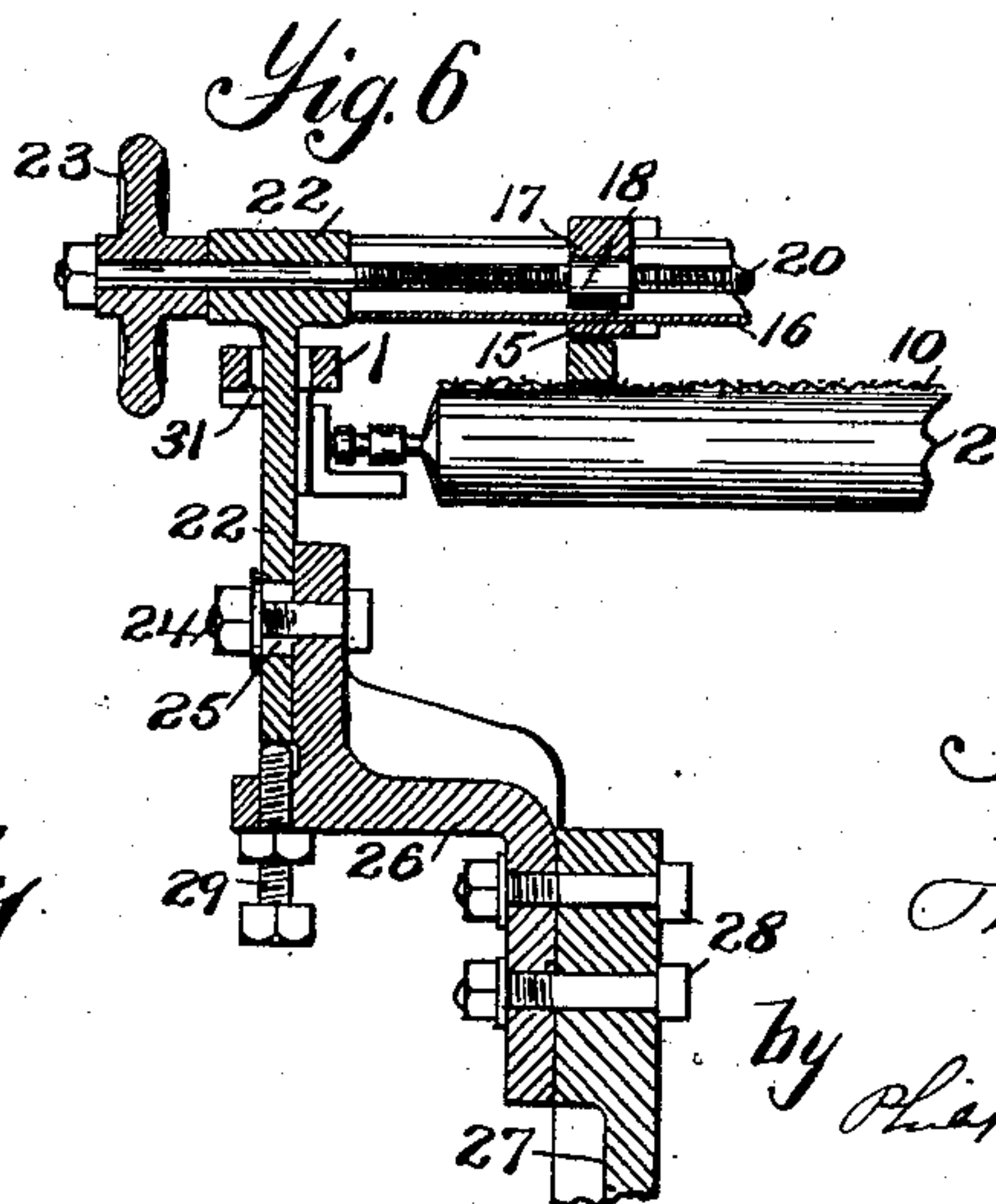
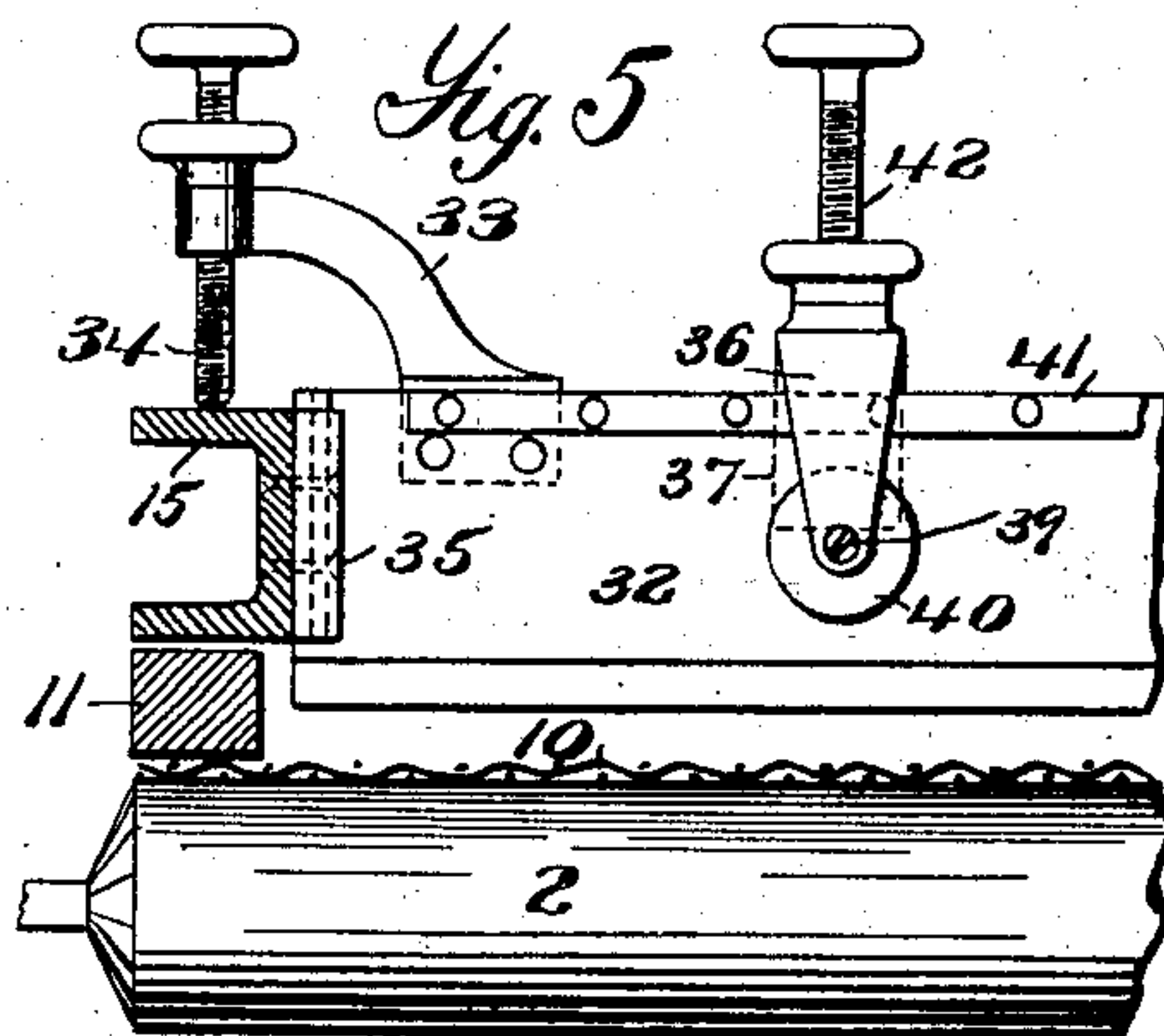
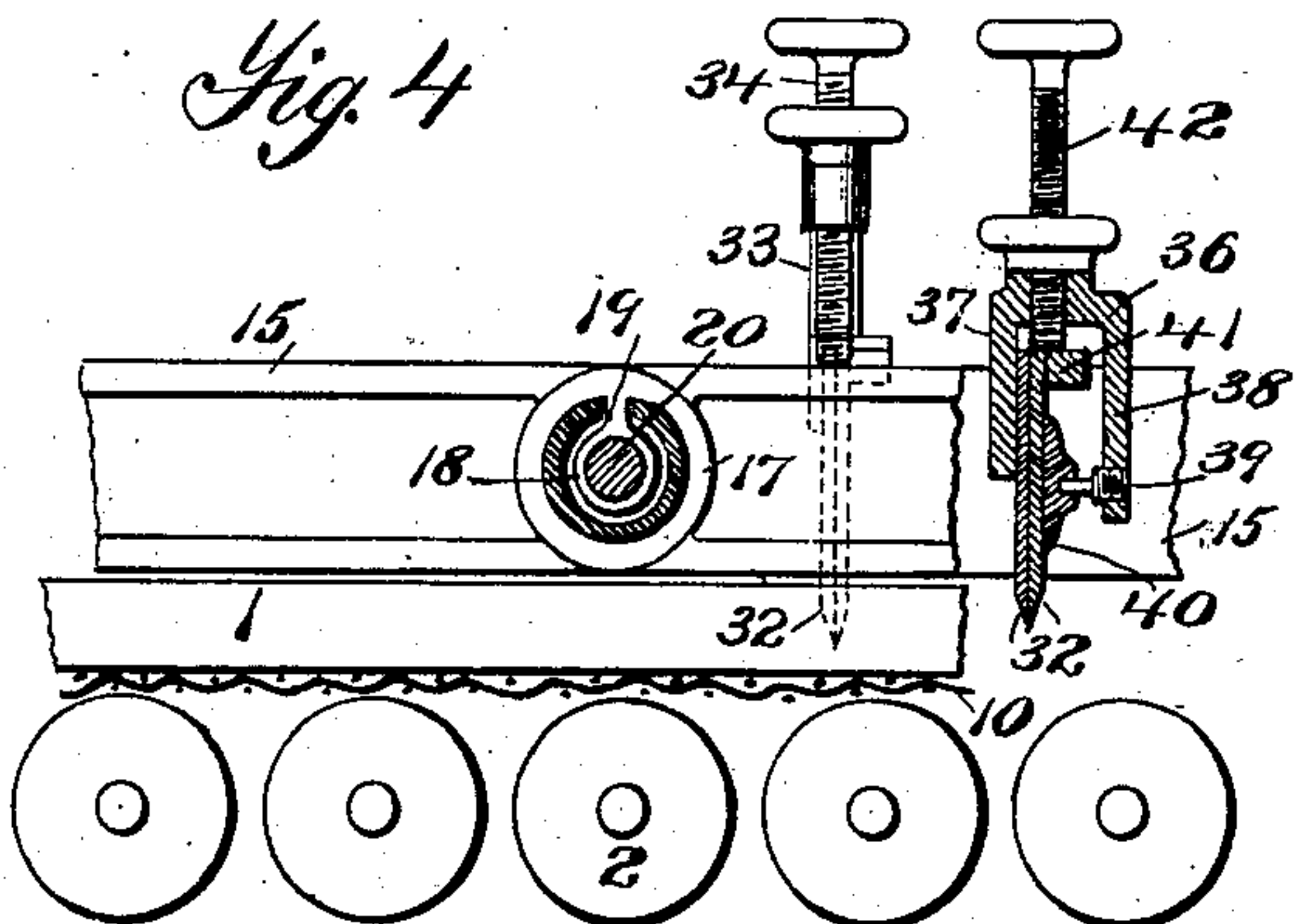
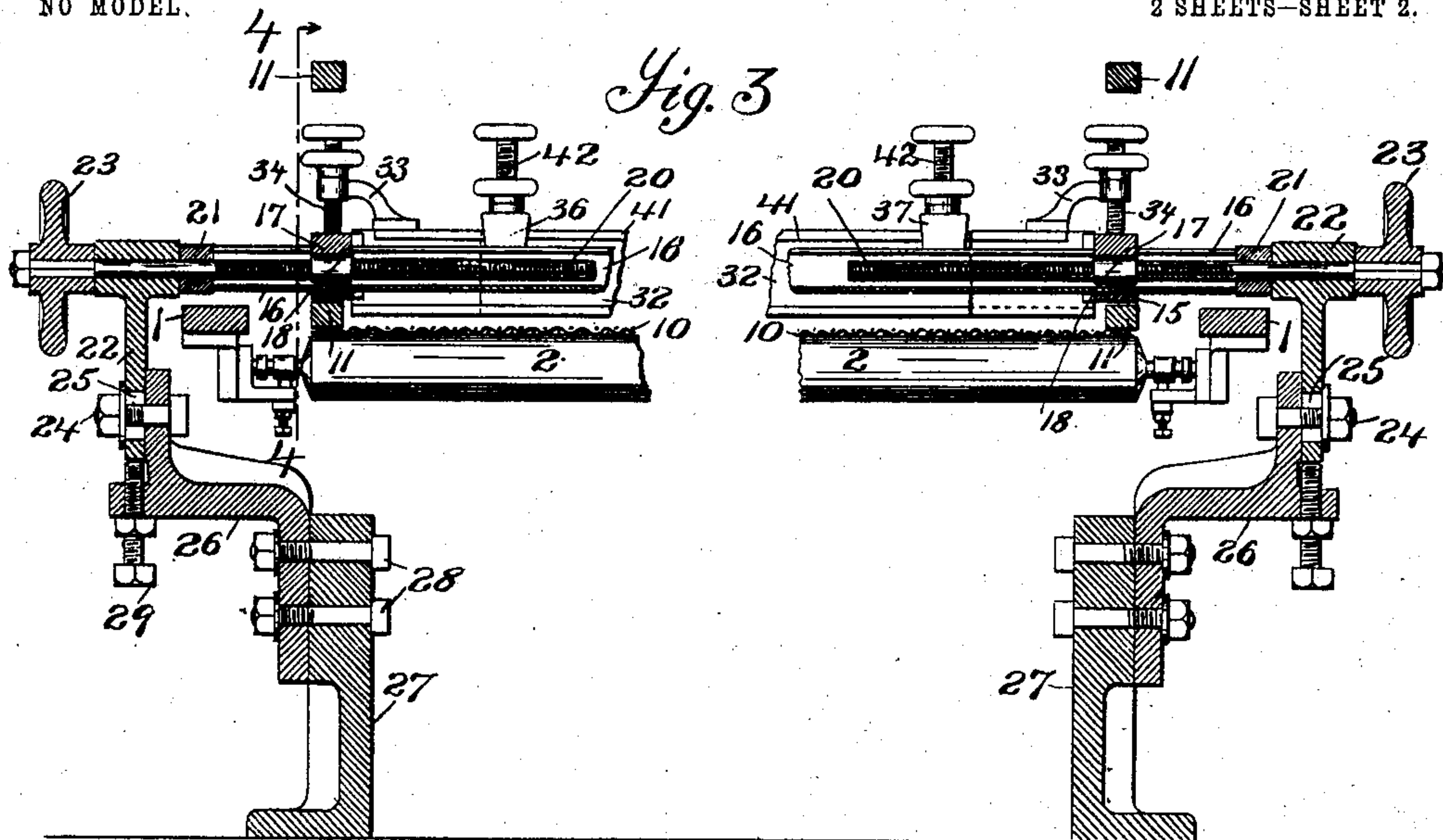
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UNITED STATES PATENT OFFICE.

THOMAS H. SAVERY, OF WILMINGTON, DELAWARE.

PAPER-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 742,239, dated October 27, 1903.

Application filed March 6, 1903. Serial No. 146,442. (No model.)

To all whom it may concern:

Be it known that I, THOMAS H. SAVERY, a citizen of the United States, residing at Wilmington, county of Newcastle, and State of Delaware, have invented certain new and useful Improvements in Paper-Making Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 This invention relates to certain improvements in paper-making machines.

In paper-making machines of the Fourdrinier type as now usually constructed the stream or web of pulp on the making-wire is controlled by the deckle-straps and slices. 15 These slices, the pulleys which carry the deckle-straps at the end of the machine at which the pulp enters, and the parts cooperating with these controlling devices—such, for instance, as the wash-troughs for the deckle-straps—are carried by the shaking-section. This shaking-section is vibrated laterally at a high rate of speed, usually at about two hundred and fifty times a minute, and it follows, of course, that the slices, pulleys, &c., 25 are moved with it. The weight of these controlling devices, however, is very considerable, and not only is no useful function subserved by moving them, but the work incident to moving the shaking-section, as well as the wear and tear on the machine, is increased by their movement.

It is the object of this invention to produce an improved paper-making machine of the 35 Fourdrinier type in which the controlling devices for the web or stream of pulp shall be mounted independently of the shaking-section, so as not to move therewith.

With this and other objects in view the invention consists in certain constructions and in certain parts, improvements, and combinations, as will be hereinafter fully described and then specifically pointed out in the claims hereunto appended.

45 In the accompanying drawings, Figure 1 is a side elevation of a paper-making machine of the Fourdrinier type embodying the invention. Fig. 2 is an enlarged detail elevation of the right-hand end of the machine shown in Fig. 1. Fig. 3 is a sectional elevation on the line 3 3 of Fig. 2. Figs. 4, 5, 6, and 7 are detail views.

Referring to the drawings, which illustrate a well-known type of Fourdrinier paper-making machine, 1 indicates the shaking-section, 55 the side rails of which serve to support the usual table-rolls 2. While the shaking-section may be mounted and operated in any desired manner, it will preferably be supported in the manner set forth in my patent No. 675,072, 60 granted May 28, 1901—that is to say, the ends of the side rails nearest the couch-rolls are pivotally connected to pivot-blocks 4, mounted in the frame, so that the shaking-section is capacitated not only for the shaking movement, 65 but also for vertical adjustment. The opposite ends of the shaking-section rails will also preferably be adjustably supported on stiff springs 5, all as particularly set forth in the patent before referred to, the vertical adjustment being effected through suitable screws 70 6. The breast-roll, which is marked 7, is suitably supported in bearings 8, connected to the shaking-section, the adjustment of these bearings being determined by screws 9. The means for operating the shaking-section are not shown, inasmuch as they have no bearing on the present invention; but they may be of the character described in the patent before referred to. It may be here remarked 8c that while the construction of shaking-section here illustrated and specifically described in the patent above referred to forms a convenient construction for illustrating the invention the invention may be used with any form 85 of Fourdrinier paper-making machine employing a shaking-section.

The devices for controlling the width of the stream or web of pulp on the making-wire 10, which wire may be constructed, mounted, and 90 operated in the ordinary manner, consist of the usual deckle-straps 11, said straps being supported, as is common, on a pair of pulleys 12 at the end of the machine nearest the couch-rolls and on a pair of pulleys 13 at the breast-roll end of the machine. The pulleys 12 are supported by standards 14, which, as usual in such constructions, are mounted on a stationary part of the machine. In the constructions heretofore known to me the pulleys 13— 105 that is, the pulleys which support the deckle-straps at the breast-roll end of the machine—have been mounted so that they have vibrated with the shaking-section. According to the

present invention these pulleys will be mounted so that they will not move when the shaking-section is vibrated. While the construction by which the deckle-strap pulleys 13 are mounted may be varied within wide limits, in the construction shown there is provided a frame which includes a pair of side bars 15, these side bars being supported and connected by pipes 16. These pipes 16 have slots in their tops and extend through openings formed in bosses 17 in the bars 15. These bosses 17 carry nuts 18, which are connected by webs 19 to the bosses, these webs passing through and lying in the slots in the pipes. Engaging with these nuts 18 are screws 20, said screws passing through collars 21 at the ends of the pipes and being then in the construction shown supported by brackets or standards 22. Outside these brackets or standards 22 the screws are provided with hand-wheels 23. These standards or brackets 22 are adjustably connected in the construction shown by means of bolts 24, which pass through slots 25 in the standards to angle-brackets 26. These brackets 26 are connected to standards 27 by means of screws 28 or in any other suitable manner, these standards 27 forming a part of the main frame of the machine. Set-screws 29 are or may be provided to assist in adjusting and to hold in adjustment the standards 22.

In the construction shown the side bars 15 carry brackets 30, in which brackets are journaled the deckle-pulleys 13, before referred to. With the construction as before described it is apparent that by turning the hand-wheels 23 the screws 20, engaging with the nuts 18, will cause the side bars 15 to be moved toward or away from the edges of making-wire 10, thus positioning the deckle-strap and determining the width of the stream or web of pulp on the making-wire.

The standards 22, before referred to, may in some instances be located outside the side rails of the shaking-section, this construction being illustrated in Figs. 2 and 3. In some instances, however, it may be desirable to provide the side rails of the shaking-section with slots 31 and allow the standards 22 to pass through said slots, this construction being illustrated in Figs. 6 and 7.

In addition to mounting the deckle-pulleys so that they will not receive motion from the shaking-section in the preferred construction the slices will also be mounted so as not to receive motion from the shaking-section. While the slices may be of any desired construction and mounted in any suitable manner to effect this result, in the construction shown each slice is composed of two overlapping blades 32, these overlapping blades having secured to them near their ends brackets 33, through which are tapped set-screws 34, said set-screws resting on the bars 15, before described. These bars 15 are provided with ways 35, in which the slices move when they are vertically adjusted, said vertical adjust-

ment being effected by the screws 34. The blades 32 are held together by clamps, which consist of blocks 36, having downwardly-projecting legs 37 38, the legs 37 being secured to the blades 32 and the legs 38 being provided with tapped openings, through which work the screws 39, said screws serving to force and hold clamping-pads 40 against the blades 32, which are not connected with the legs 37. One of the blades 32 is provided with a rib or side extension 41, against which bears a screw 42, which is tapped through an opening in the block 36. With the construction before described it will be seen that when the side bars 15 are adjusted in or out by turning the hand-wheels 23 the overlapping blades which form the slices will be caused to move in or out.

The machine shown is provided with cleaning-troughs 43 for the deckle-strap, which may be of any usual construction, and these troughs are also mounted, so as not to be affected by the movement of the shaking-section. While the troughs may be mounted in any desired manner, in the preferred construction they will also be carried by the side bars 15, before referred to, and to this end the bars are provided with upwardly-extending forked extensions or yokes 44, in which the troughs are located.

Changes and variations may be made in the construction by which the invention is carried into effect. The invention is not, therefore, to be limited to the precise details of construction hereinbefore described.

What is claimed is—

1. In a paper-making machine, the combination with the making-wire and the shaking-section, of devices for controlling the pulp on the wire, and means independent of the shaking-section for supporting said devices, whereby the shaking-section may be moved without moving the controlling devices, substantially as described.

2. In a paper-making machine, the combination with the making-wire and the shaking-section, of the deckle-pulleys, and supporting means therefor independent of the shaking-section whereby the shaking-section may be moved without moving the deckle-pulleys, substantially as described.

3. In a paper-making machine, the combination with the making-wire and the shaking-section, of the deckle-pulleys and the slices, of means independent of the shaking-section for supporting said deckle-pulleys and slices, whereby the shaking-section may be moved without moving the deckle-pulleys and slices, substantially as described.

4. In a paper-making machine, the combination with the making-wire and the shaking-section, of a frame, deckle-pulleys on the frame, slices also supported on the frame, and means independent of the shaking-section for supporting said frame, substantially as described.

5. In a paper-making machine, the combi-

nation with the making-wire and shaking-section, of a main frame on which the shaking-section is supported and moved, a second frame located above the shaking-section,
5 deckle-pulleys, slices and wash-troughs carried on said second frame, and standards connected to the main frame beneath the shaking-section and operating to support the second frame, whereby the shaking-section may

be moved without moving the second frame, so substantially as described.

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

THOMAS H. SAVERY.

Witnesses:

T. F. KEHOE,
A. WHITE.