

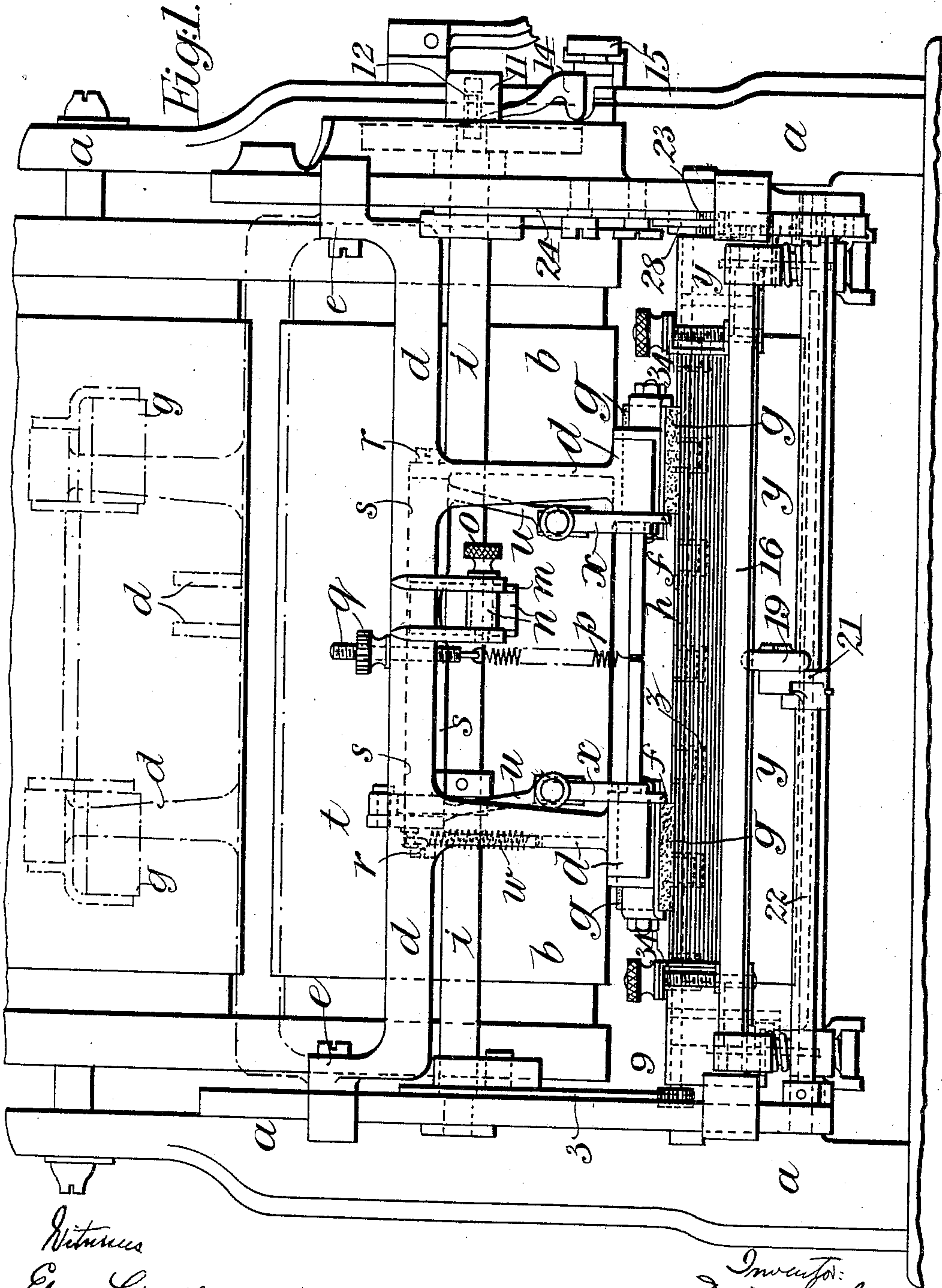
No. 835,303.

PATENTED NOV. 6, 1906.

D. GESTETNER.
STENCIL PRINTING MACHINE.

APPLICATION FILED MAR. 6, 1906.

9 SHEETS--SHEET 1.



Witness
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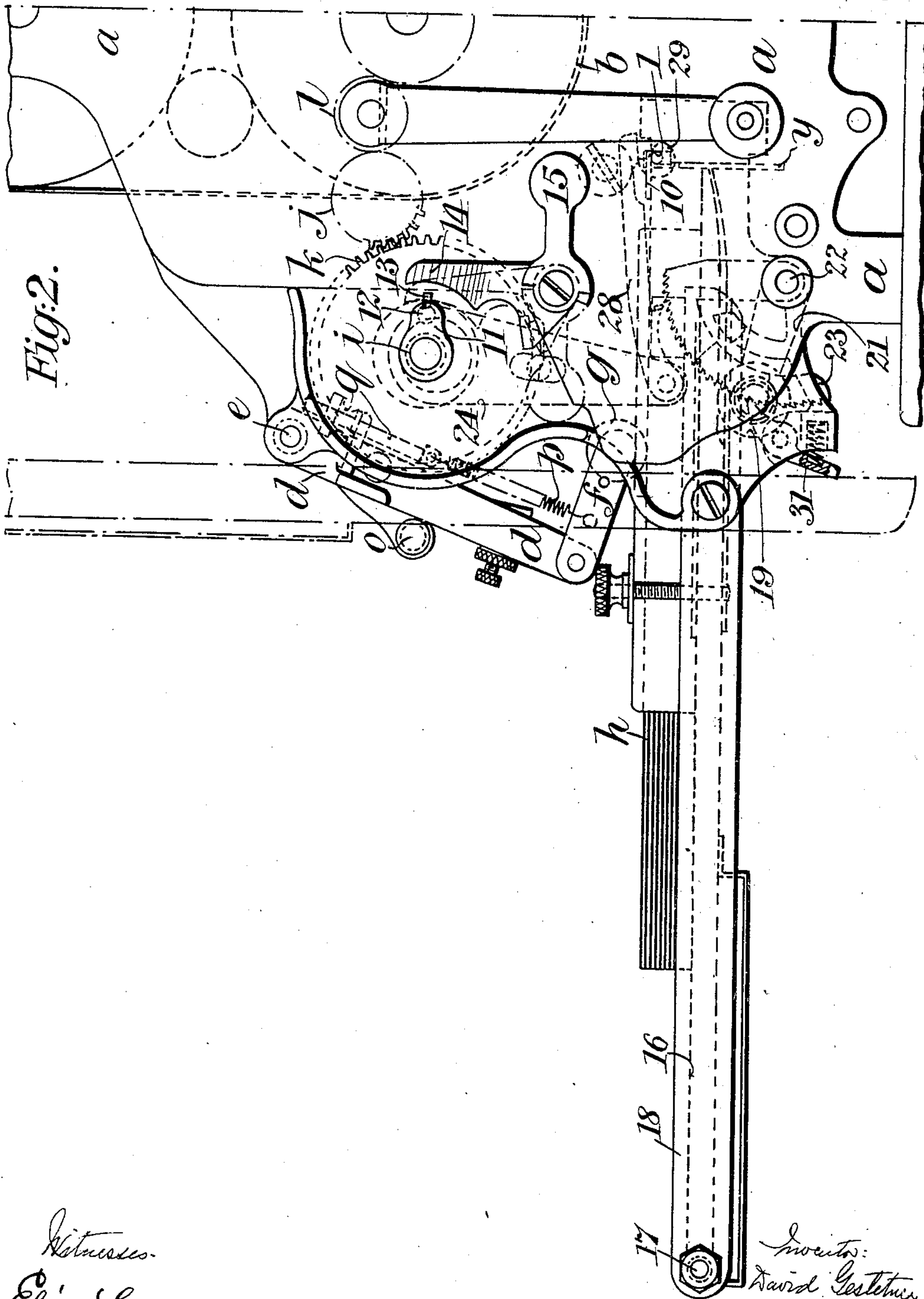
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9 SHEETS—SHEET 2.



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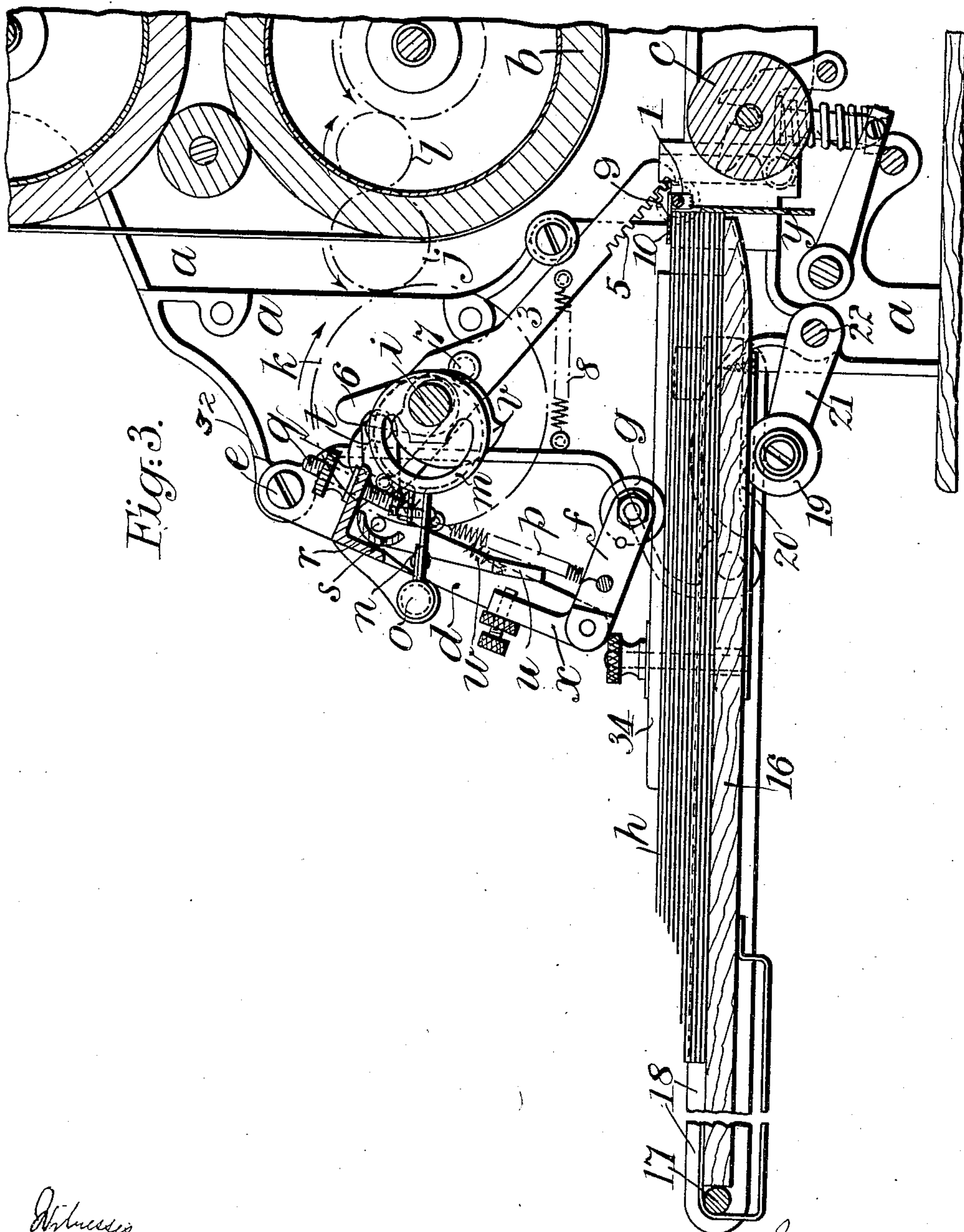
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9 SHEETS—SHEET 3.



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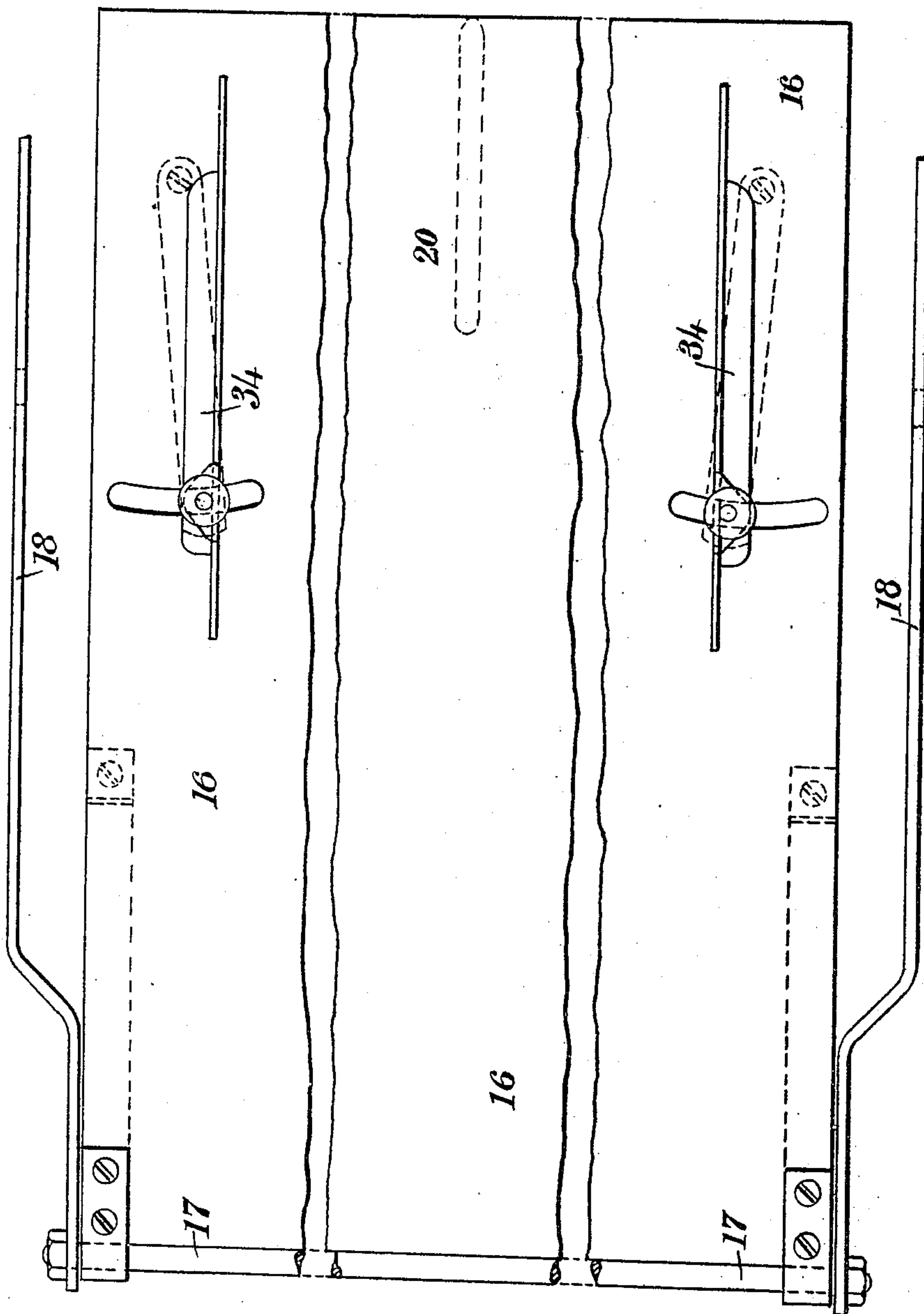
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9 SHEETS—SHEET 5.

Fig. 7.



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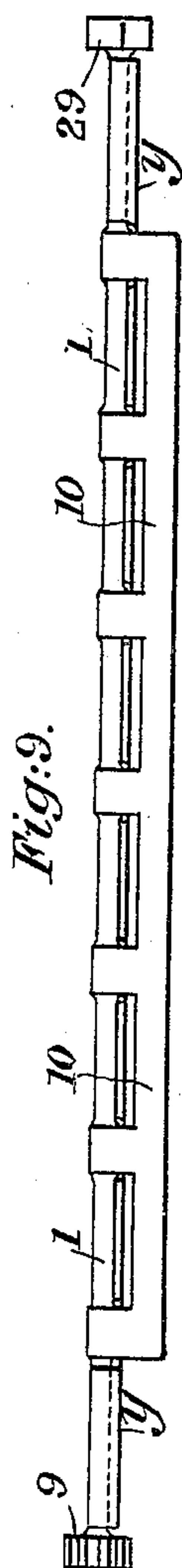
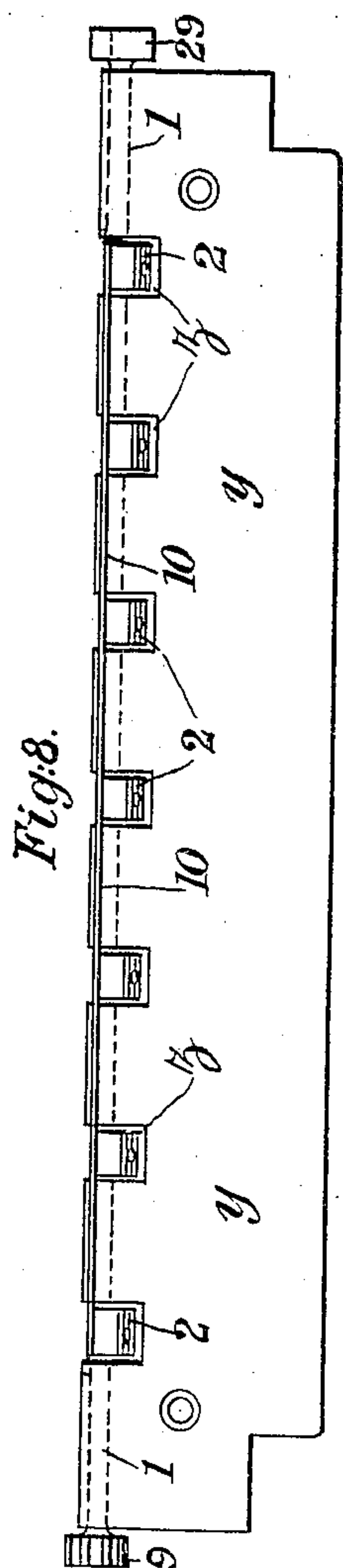
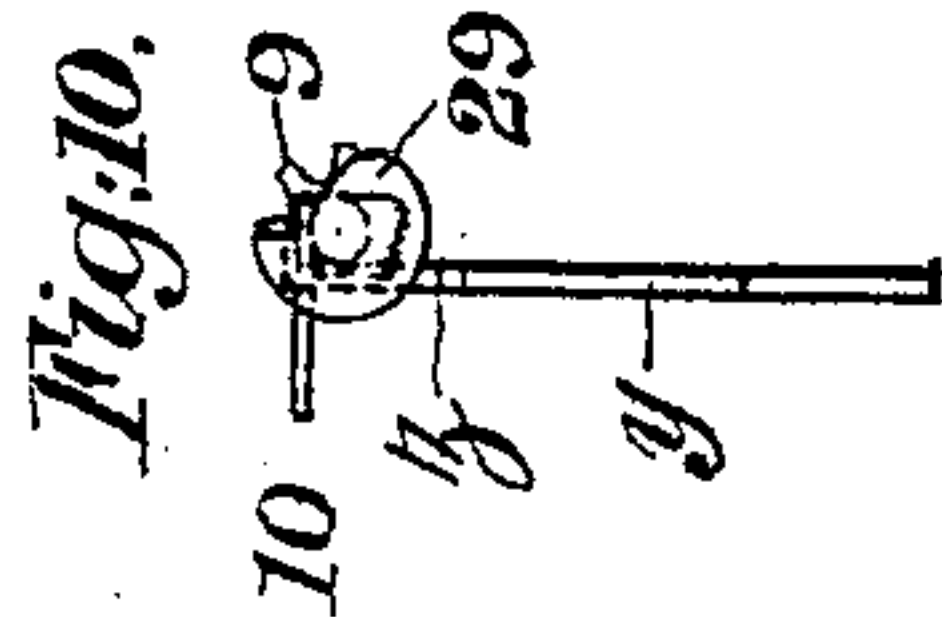
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9 SHEETS—SHEET 6.



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No. 835,303.

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9 SHEETS—SHEET 7.

Fig:11.

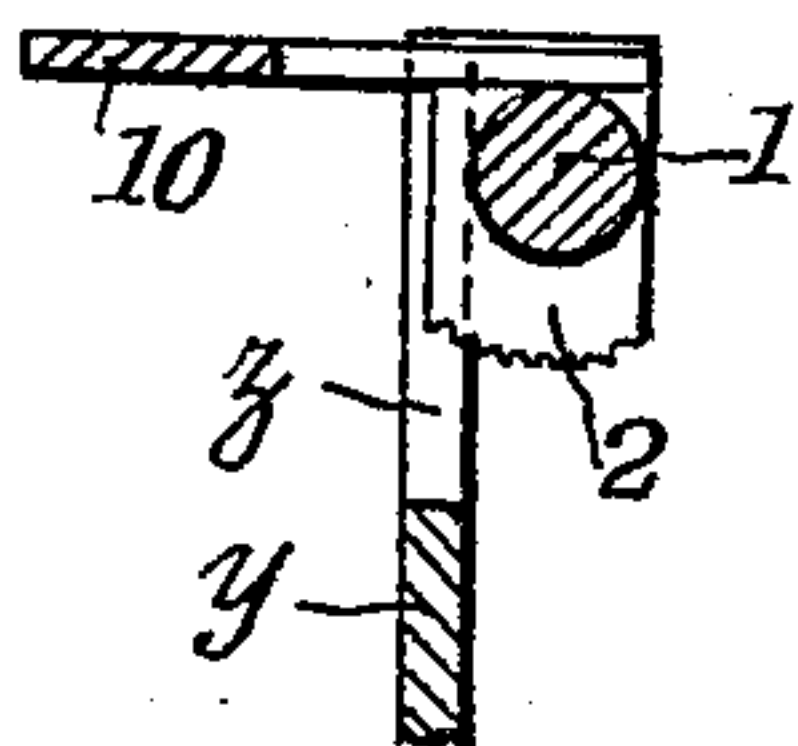
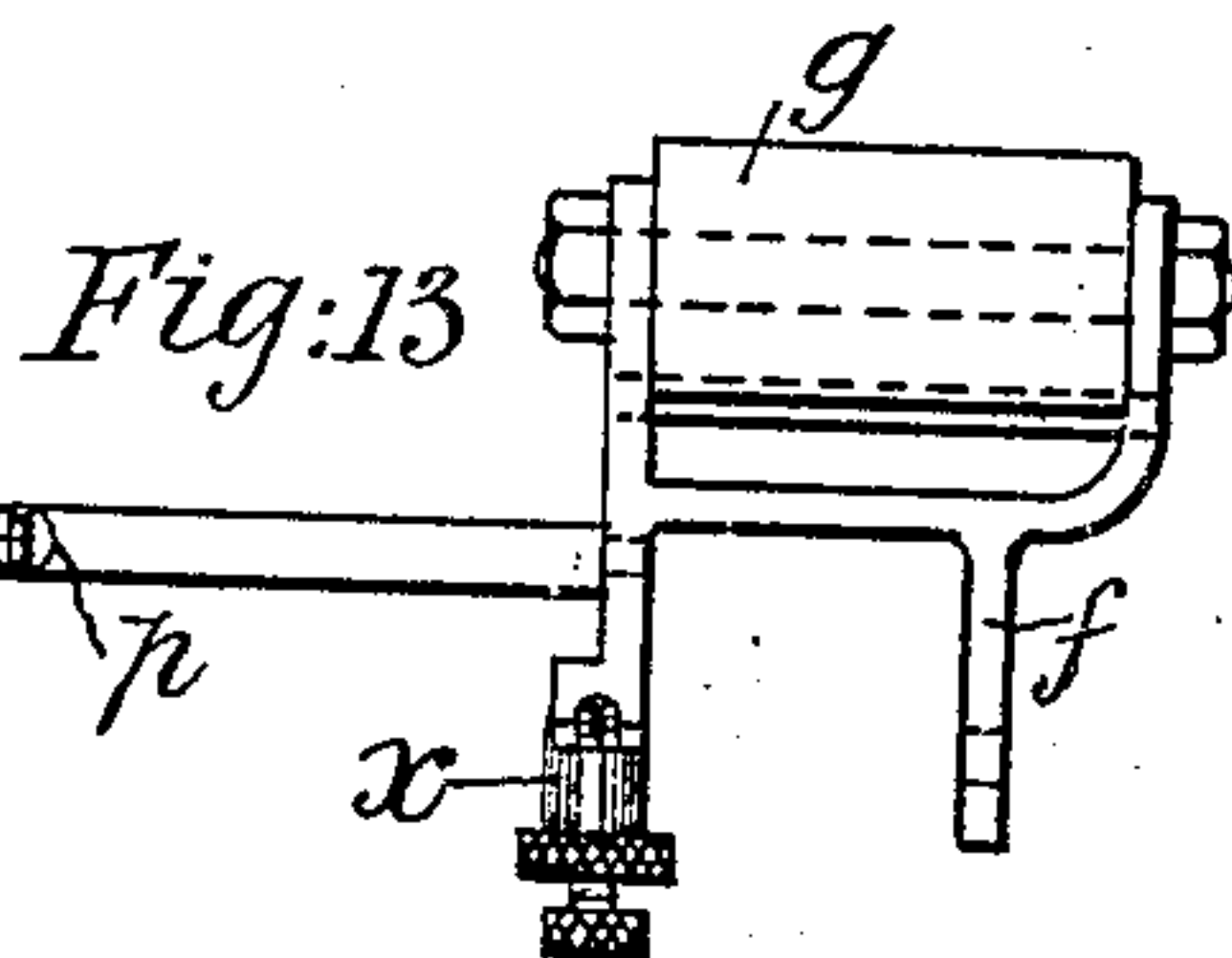
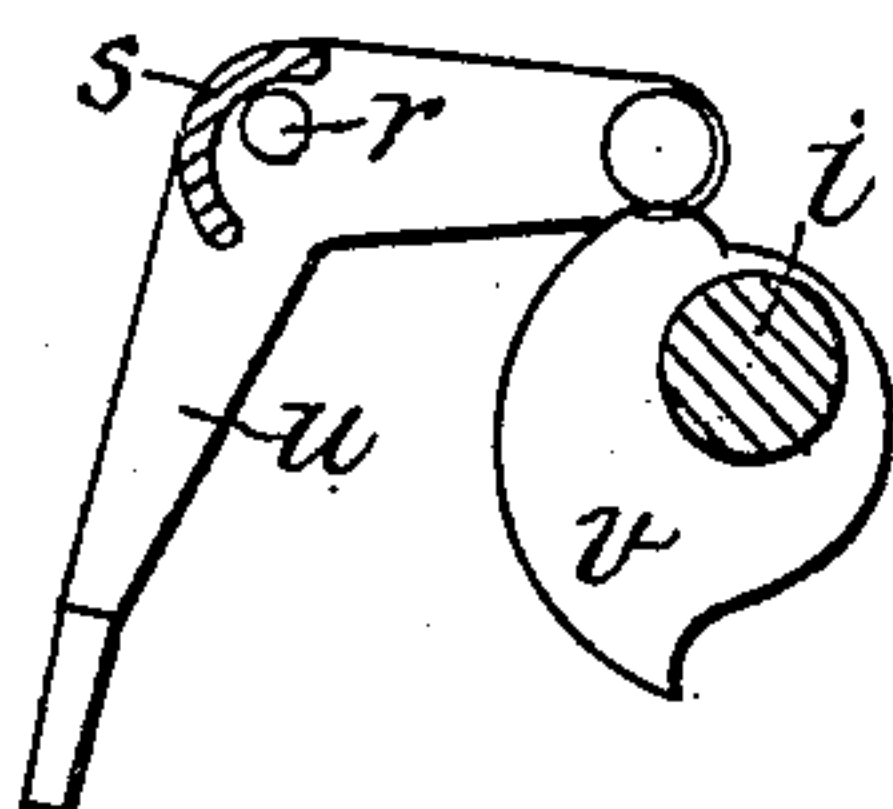


Fig:12.



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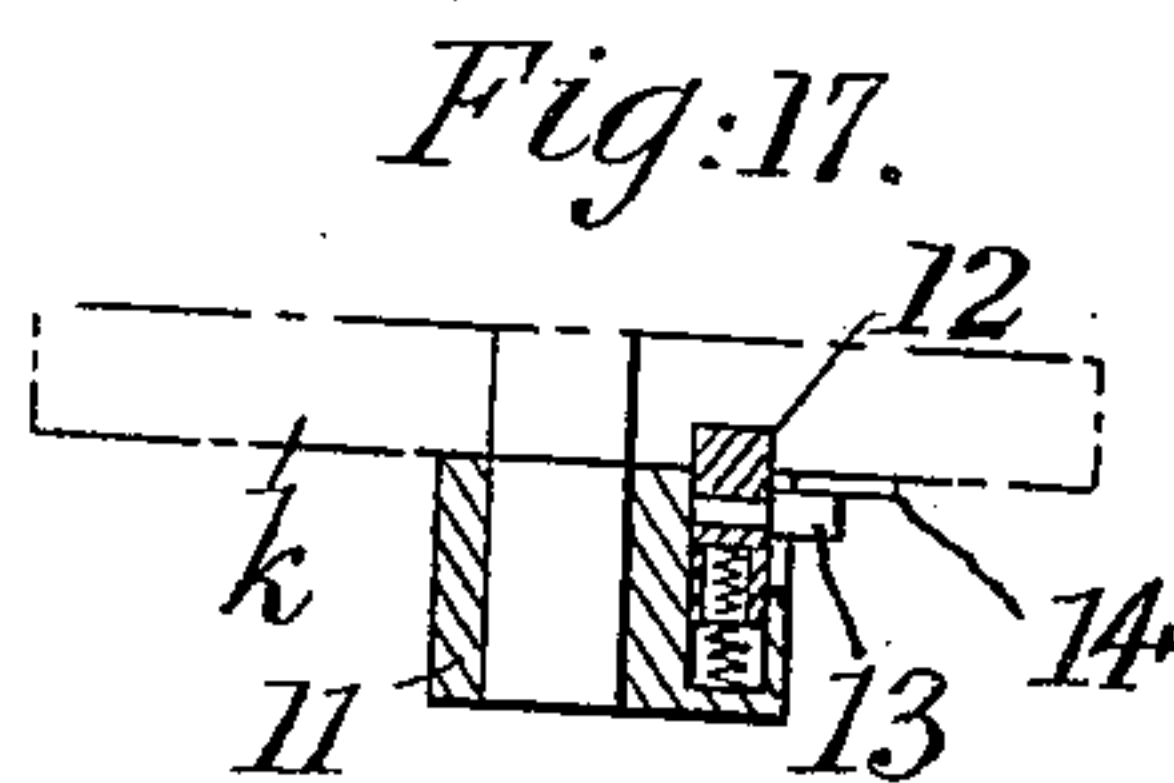
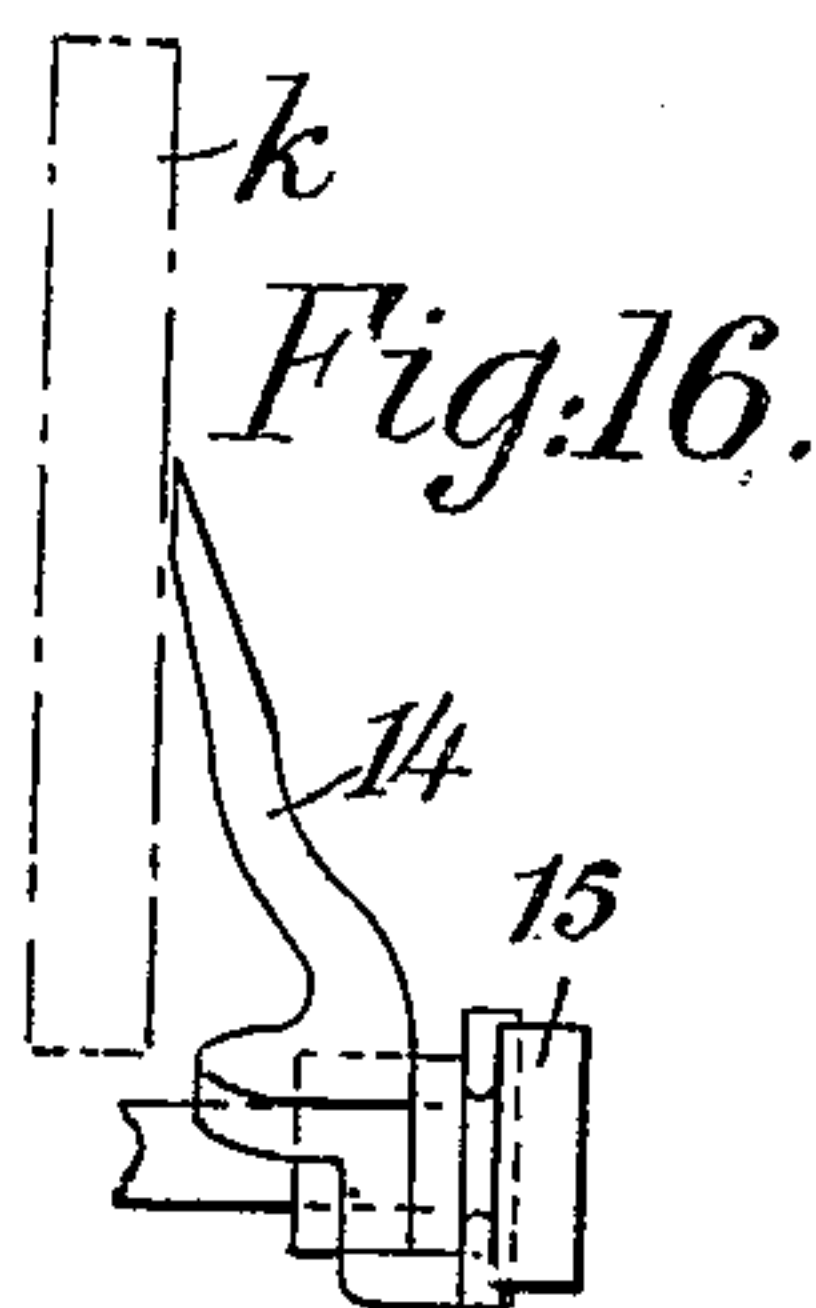
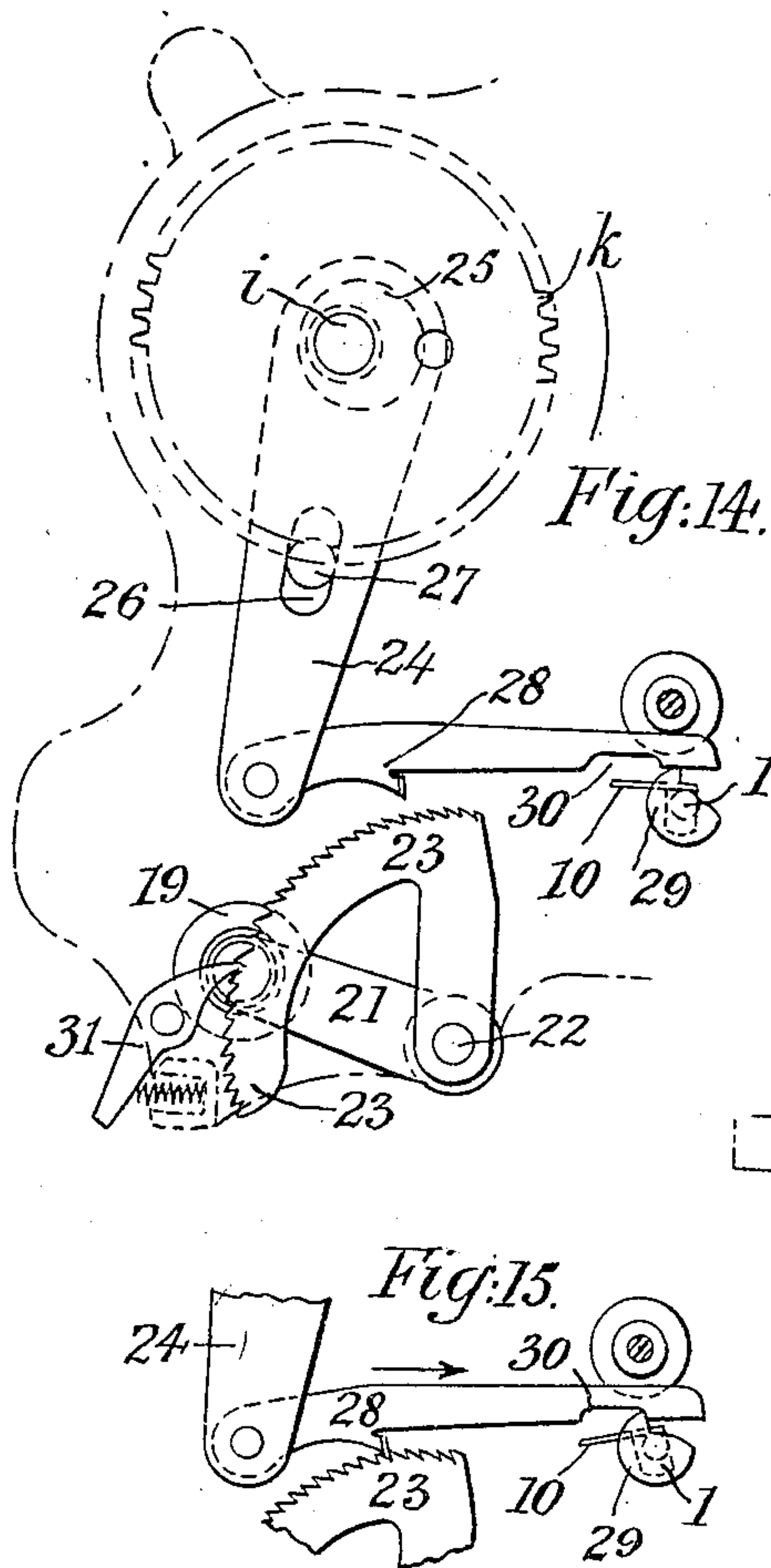
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APPLICATION FILED MAR. 6, 1906.

9 SHEETS—SHEET 8.



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his atty.

No. 835,303.

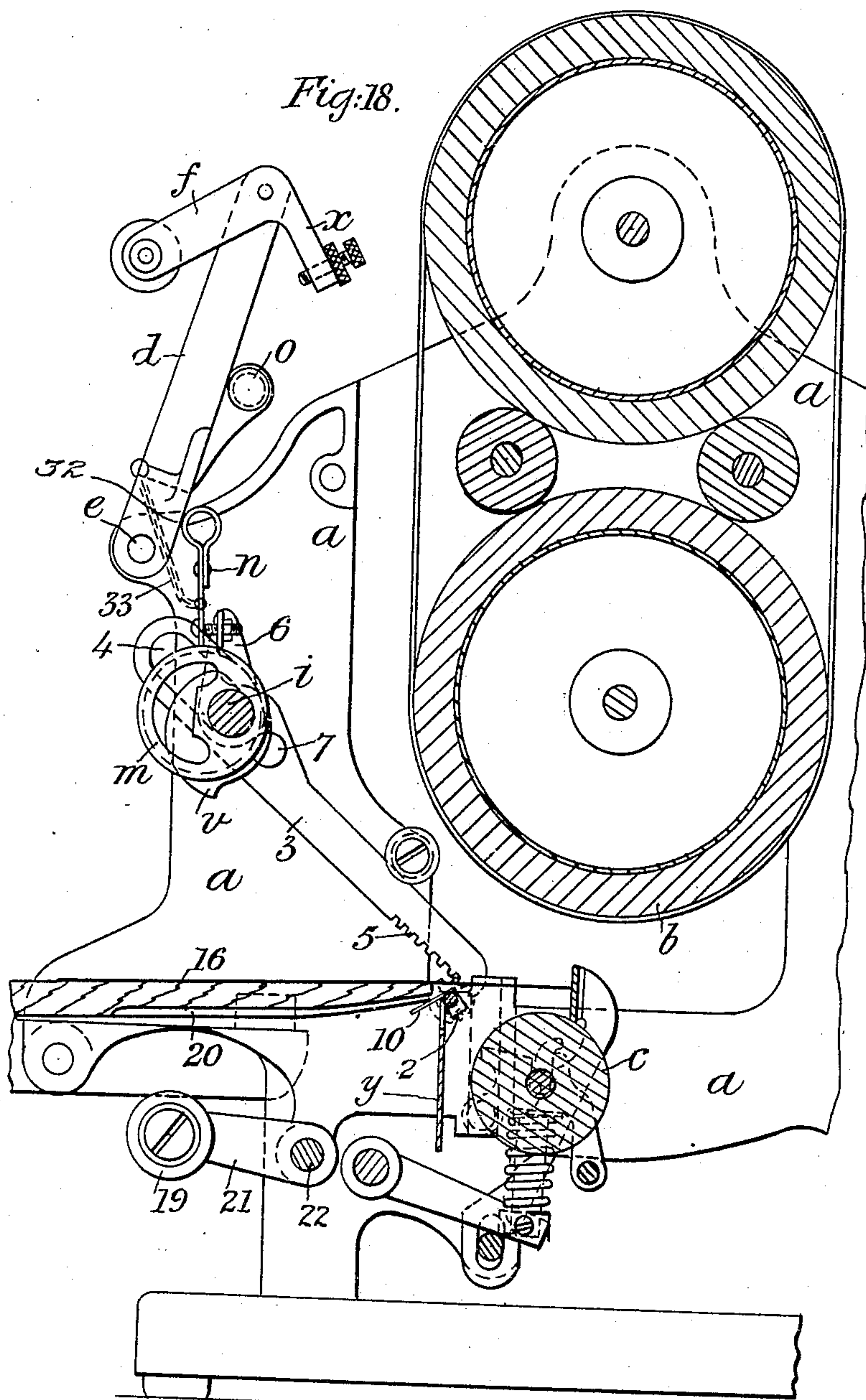
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D. GESTETNER.
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APPLICATION FILED MAR. 6, 1906.

9 SHEETS—SHEET 9.

Fig. 18.



Witness:
Elias Goldberg
Harry Lurie

Inventor
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Att'y.

UNITED STATES PATENT OFFICE.

DAVID GESTETNER, OF LONDON, ENGLAND.

STENCIL-PRINTING MACHINE.

No. 835,303.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed March 6, 1906. Serial No. 304,476.

To all whom it may concern:

Be it known that I, DAVID GESTETNER, a subject of the King of Great Britain, residing at Tottenham Hale, London, England, have invented new and useful Improvements in Stencil-Printing Machines, of which the following is a specification.

The invention relates more particularly to improvements in that class of stencil-printing machine shown and described in the specification of Letters Patent granted to me, dated May 13, 1902, No. 700,031, but is also applicable to other stencil-printing machines; and it consists in the application of improved means for automatically feeding the sheets of material to be printed.

I will describe my invention by the aid of the accompanying drawings, in which—

Figure 1 is a front view, Fig. 2 an end view, and Fig. 3 a cross-section, showing parts of my former machine and my present improvements applied thereto. Figs. 4, 5, and 6 show various positions of the paper-feeding mechanism, following in their order that shown at Figs. 2 and 3. Fig. 7 is a plan of the feed-table. Fig. 8 is an elevation, Fig. 9 a plan, and Fig. 10 an end view, of the paper-stop and parts acting therewith. Fig. 11 is a cross-section, drawn to an enlarged scale, of part of the paper-stop and parts acting therewith. Figs. 12 and 13 are detail views of parts of the feeding mechanism. Figs. 14 and 15 are detail views of parts for maintaining the top sheet of a pile of paper on the feed-board at nearly a uniform level. Figs. 16 and 17 are detail views of parts for throwing the automatic feeding mechanism out of action; and Fig. 18 is an end view of the machine, showing the automatic feeding mechanism disconnected from the feed-table, thereby enabling the latter to be used simply for hand-feeding.

a represents the framing of the machine, *b* the printing-roller, and *c* the impression-roller, which latter rollers are operated in the manner described in my aforesaid specification or in any other convenient way.

d is a feeding-frame which is pin-jointed at *e* to the machine-framing. The lower part of said frame *d* has pivoted thereto two (or more) independent feeding-arms *f* at a convenient distance apart, and the free ends of said arms *f* are each provided with a roller *g*, (or block,) of india-rubber. The feeding-arms *f* are capable of independent motion, and their weight keeps them in contact with

the pile of material *h* during their forward or feeding motion.

i is a shaft which receives rotary motion by gear-wheels *j k* from the driving-pinion *l*. On this shaft *i* is an eccentric *m*, which by strap and link *n* is connected to a pin *o* on the frame *d*, and consequently gives to-and-fro motion to said frame to feed a sheet and to return to feed another sheet. A spring *p*, capable of regulation by the screwed rod and nut *q*, is used to regulate the pressure of the rollers *g* on the pile of paper *h*.

The frame *d* has pivoted therein at *r* a bar *s*, which has fixed thereto an arm *t* and a pair of arms *u*. The arm *t* is acted upon by a cam *v*, fixed on the shaft *i* and by a spring *w* to keep it in contact with said cam. The lower ends of the arms *u* are in position to act against regulating-screws at the ends of arms *x*, fixed to the feeding-arms *f*. By these means when the arms *f* have completed their forward or feeding motion, thereby buckling the forward portion of the sheet against the fixed stop, hereinafter mentioned, and are about to return to feed another sheet, the feeding-arms *f* and rollers *g* are suddenly raised from the pile of paper, and thereby enabled to recede without touching it.

On the forward end of the feed-board I fix a stop *y*, which may be in various sections with spaces between them, or, as shown in Figs. 1 and 8, it may be in one piece and have two or more spaces *z* therein. Against this stop *y* the pile of sheets *h* is arranged. In front of this fixed stop *y* is arranged a bar *1*, on which are fixed or formed as many fingers or projections *2* as there are spaces *z*. These fingers *2* have a frictional or roughened surface and may be made of the same material as the bar *1*, as shown. They may, however, be formed separately from the bar *1* and of different material, such as rubber or leather, having a frictional or roughened surface. These fingers *2* enter the spaces *z* in the stop *y*, and at the required times the bar *1* is caused to partially rotate, so as to cause the frictional fingers *2* to rise, and in doing so to push the edge of the buckled sheet above the top of the fixed stop *y* in order that said sheet may spring forward (see Figs. 5 and 6) and be seized between the impression-roller *c* and printing-roller *b*, after which the bar *1* is caused to partially rotate in the reverse direction, so as to cause the fingers *2* to descend, and thus retire from before the face of the fixed stop *y*, in

readiness to again come through the spaces of said stop to act upon another sheet. This partial rotary motion to the bar 1 may be given in any convenient manner. That shown in the drawings is simple and effective and is arranged as follows: An arm 3, having an elongated slot 4 at one end and a rack 5 at the other end, is mounted on the shaft *i*, the latter passing through the slot 4 and acting to guide the arm 3. On the shaft *i* is fixed a cam 6, which acts against a pin or roller 7, mounted on the arm 3, to give motion to said arm in one direction, while a spring 8, connected by its ends to said arm and to the framing *a*, acts to move the arm 3 in the contrary direction. The rack 5 gears with a pinion 9 on one end of the bar 1 and so gives partial rotary motion to said bar and to the fingers 2.

In order to prevent the premature rising of the buckled sheet above the fixed stop *y*, which might otherwise sometimes occur, I fix to the bar 1 a retaining-plate 10, which partakes of the motion of the bar and is capable of resting on and holding down the front edge of the sheet, as shown at Figs. 2, 3, 4, and of rising to liberate the same, as shown at Figs. 5 and 6.

In order to be enabled temporarily to put the automatic feeding mechanism out of action, I fix on the shaft *i* a block 11, which has a boring containing a spring-pressed clutch-pin 12, which normally enters a hole in the toothed wheel *k*, and thus connects the shaft *i* with such wheel. In order, however, to enable the shaft *i* to be disconnected from the wheel *k*, a pin 13 is fixed to the clutch-pin 12, and such pin 13 stands out beyond the block 11.

A cam-faced lever 14 (see Figs. 1, 2, 16, and 17) is pivoted on the framing *a* and rests against the face of the wheel *k*. A pivoted weighted arm 15 is mounted loosely on the pivot of the lever 14 and when in the position shown by full lines in Fig. 2 acts against a projection on said lever 14 and holds the latter out of the way of the pin 13, as shown, but when the weighted arm 15 is thrown over to the other side it carries the lever 14 with it, as shown by the dotted lines, into position, so that as the pin 13 revolves with the shaft *i* it shall, by passing along the cam-face of the lever 14, move the clutch-pin 12 out of the hole in the wheel *k*, and thereby disconnect the shaft *i* from said wheel.

I will now describe the means I employ for maintaining the top sheet of a pile of paper on the feed-board 16 at nearly a uniform level. For this purpose I pivot the feed-board 16 at its outer end on a rod 17, carried by arms 18, fixed to the framing *a*, and such feed-board is supported on its inner end by a roller 19, located within a groove 20 in the under side of the feed-board. This roller 19 is mounted at the outer end of an arm 21,

fixed to a shaft 22, and the latter has also fixed thereon a ratchet-segment 23, a lever 24, mounted on and operated by an eccentric 25, fixed on the shaft *i*, and guided by a slot 26, working on a fixed pin 27, has pivoted there-to a pawl 28, capable at times of giving motion to the ratchet-segment 23.

The forward end of the pawl 28 when the top sheet on the feed-board 16 is at the proper level rests on the nose of a cam 29, fixed on one end of the bar 1; but as the pile of paper is gradually lowered the retaining-plate 10 follows the level of the paper thereon, and in so doing the bar 1 and cam 29 are partly rotated until the nose of said cam is below the notch 30 in the pawl 28. In such position of the parts as the pawl moves forward it will give motion to the ratchet-segment 23, and thereby raise the feed-board by means of the arm 21 and roller 19. When, however, the front end of the pawl 28 is in the position shown at Fig. 14, the pawl will in its forward motion also fall with its notch 30 onto the cam 29; but it will then fall too late to give motion to the ratchet-segment 23. A retaining-pawl 31 is used to prevent any accidental back motion to the segment 23. By removing the pin *o*, and thereby liberating the link *n* therefrom, the automatic feeding-frame *d* and parts connected thereto may be turned up, as shown at Figs. 1 and 18, against a stop 32, (see Figs. 3 and 18,) in which position of the parts the link *n* is controlled by means of a chain 33, so as to prevent it from injuring any parts of the machine. In such position of the feeding-frame the shaft *i* is unclutched from the wheel *k*, as above described. In this position of the automatic feeding arrangements facility is afforded for using the feed-board 16 for ordinary hand-feeding, said feed-board being at such times supported at its front end on the retaining-plate 10, as shown at Fig. 18.

The feed-board 16 is provided with adjustable fences 34, as shown at Figs. 1, 2, 3, and 7.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In stencil-printing machines, an automatic feeding apparatus consisting of the combination of a reciprocating feeding-frame, independent feeding-arms pivoted to the lower part of said frame, frictional blocks on the outer ends of said feeding-arms, means for permitting said frictional blocks to rest on the paper during the feeding motion and to raise them from the paper just before their return motion, a fixed stop against which the paper is buckled by the frictional blocks in the feeding motion of the said arms, a rocking bar in front of said stop, a retaining-plate on said bar to hold down the front edge of the paper while it is being buckled and frictional fingers on said bar passing through spaces in

the stop and lifting the front edge of the buckled sheet over the top of said stop to enable the sheet to spring forward to be seized between the printing and impression rollers, substantially as herein shown and described.

5 2. In automatic feeding apparatus for stencil-printing machines, the combination of means for buckling sheets of paper in succession against a fixed stop, a rocking bar in
10 front of said stop and frictional fingers on said bar passing through spaces in the fixed stop and lifting the front edge of the buckled sheet over the top of said stop, substantially as herein shown and described.

15 3. In automatic feeding apparatus for stencil-printing machines, the combination

of means for buckling sheets of paper in succession against a fixed stop, a rocking bar in front of said stop, a retaining-plate on said bar to hold down the front edge of the paper during the buckling operation, and frictional fingers on said bar passing through spaces in the fixed stop and lifting the front edge of the buckled sheet over the top of said stop, substantially as herein shown and described.

25 In witness whereof I have hereunto set my hand in presence of two witnesses.

D. GESTETNER.

Witnesses:

B. ANDREWS,
F. SHURE.