

No. 875,630.

PATENTED DEC. 31, 1907.

C. L. SMITH.
PAPER CUTTER.

APPLICATION FILED JULY 2, 1907.

4 SHEETS—SHEET 1.

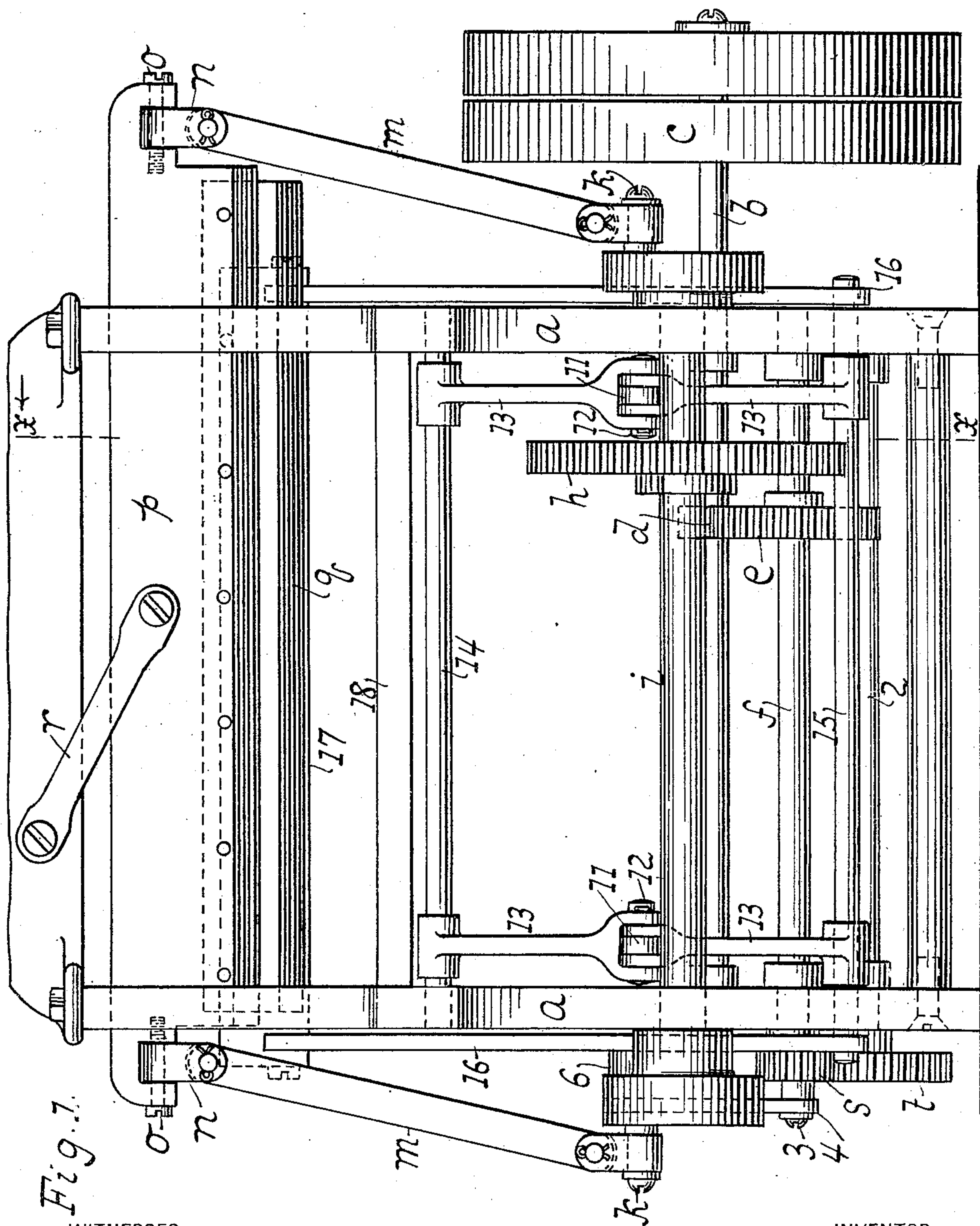


Fig. 1.

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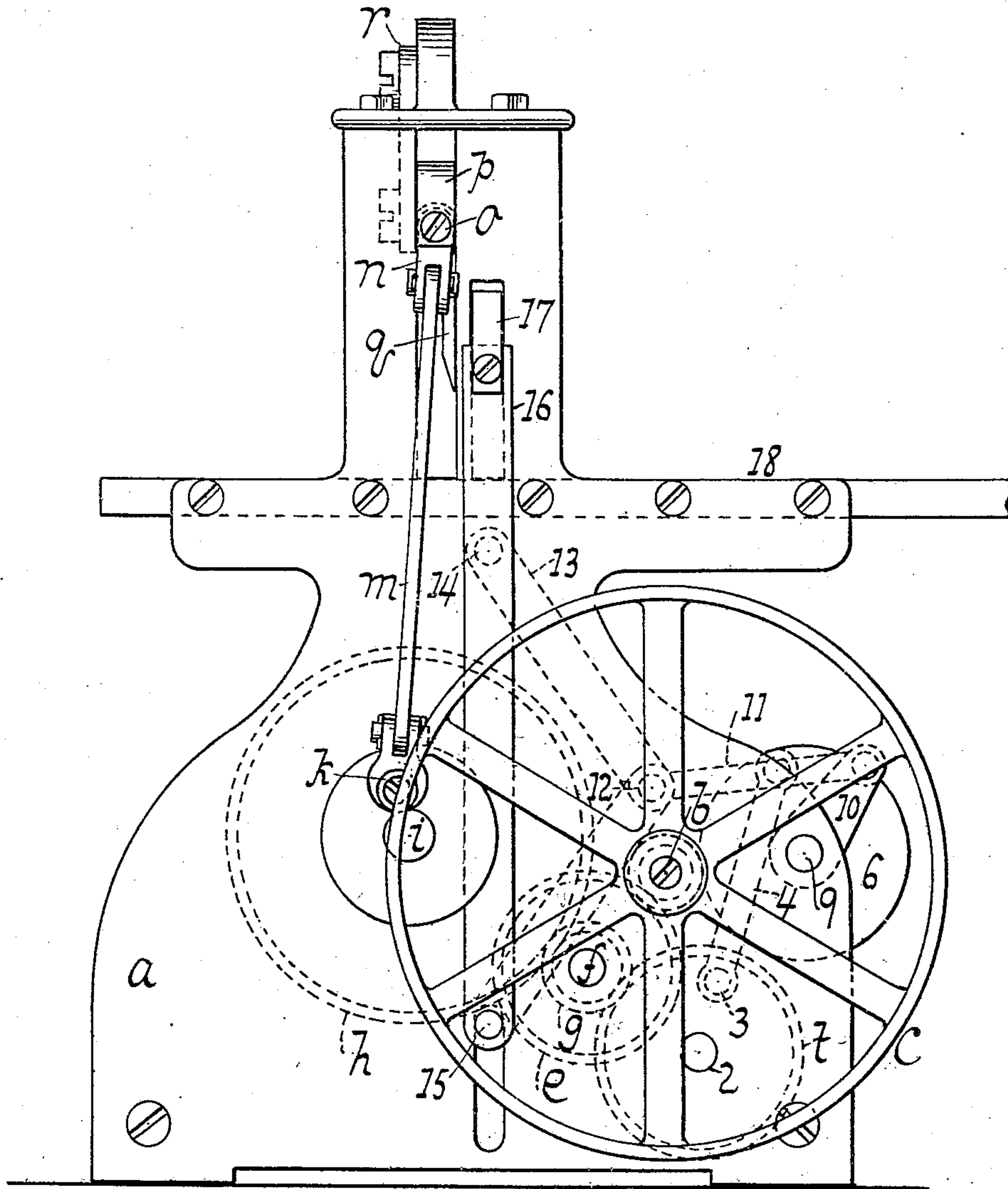
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4 SHEETS—SHEET 2.

Fig. 2.



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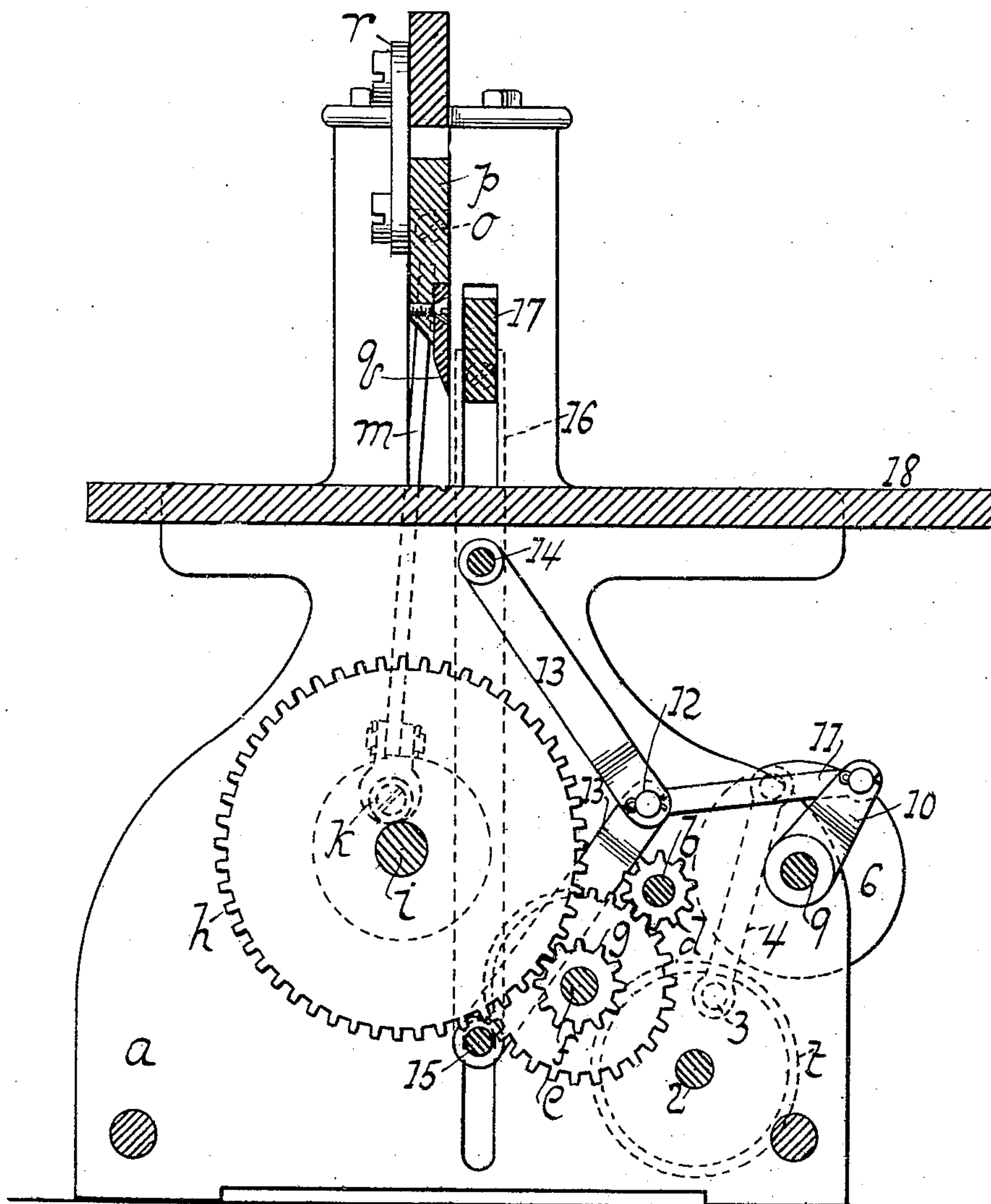
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4 SHEETS—SHEET 3.

Fig. 3.



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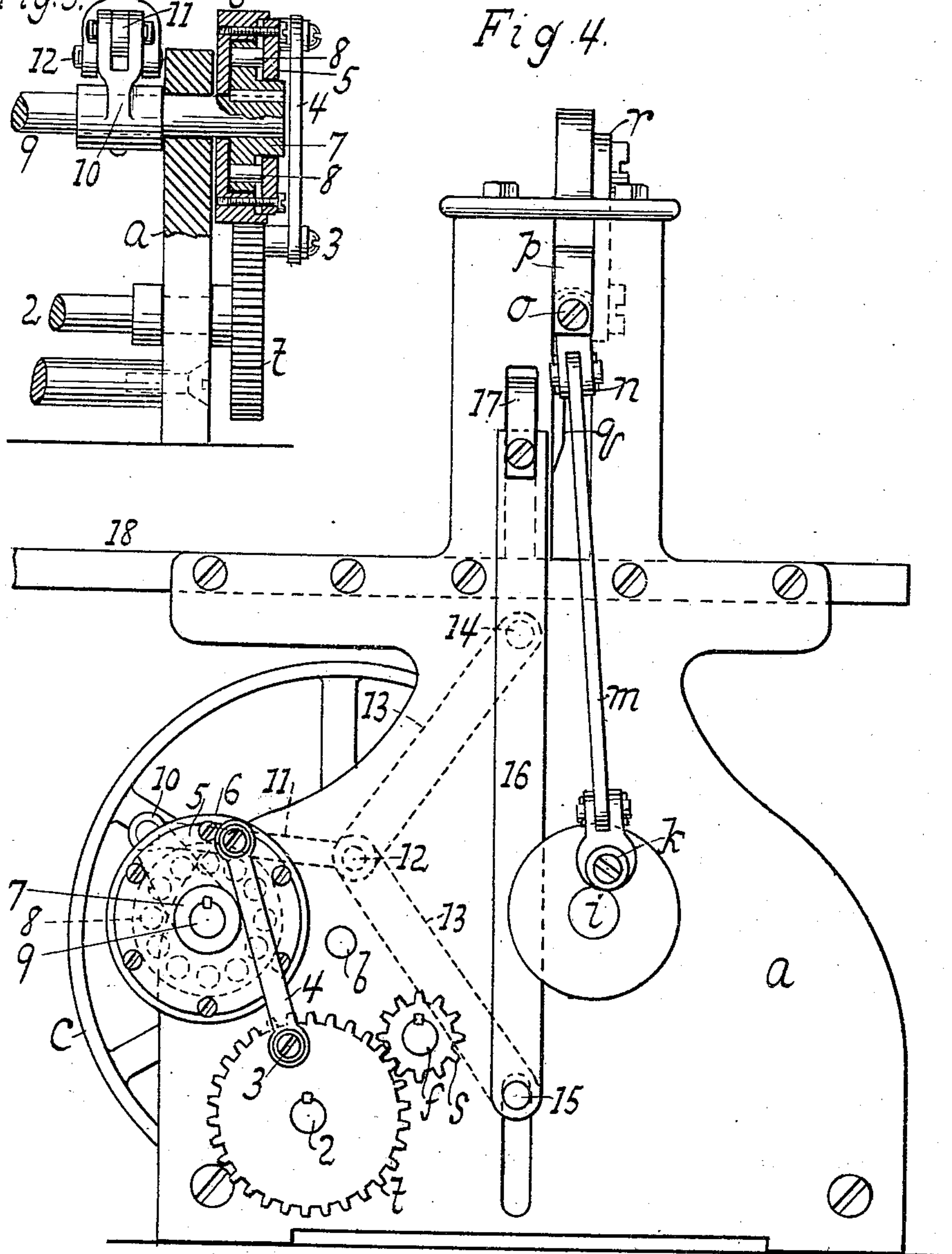
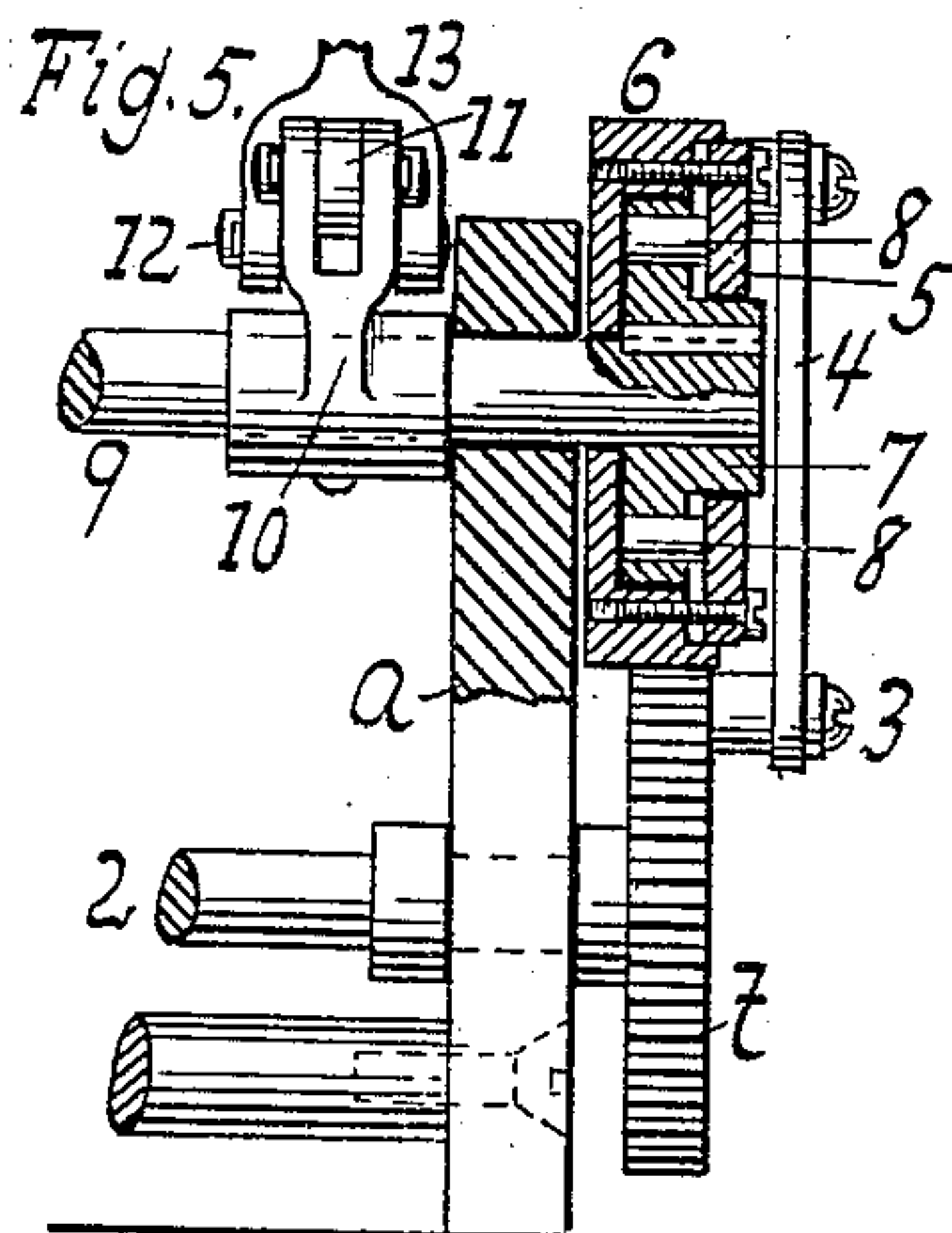
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4 SHEETS—SHEET 4,



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UNITED STATES PATENT OFFICE.

CHARLES L. SMITH, OF NEW YORK, N. Y., ASSIGNOR TO GULLBERG AND SMITH, OF NEW YORK, N. Y., A PARTNERSHIP.

PAPER-CUTTER.

No. 875,630.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed July 2, 1907. Serial No. 381,848.

To all whom it may concern:

Be it known that I, CHARLES L. SMITH, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Paper-Cutters, of which the following is a specification.

This invention resides in certain details of construction.

10 The object of the invention is to provide a simple, efficient and cheap structure.

This invention is set forth in the following specification and claims and illustrated in the annexed drawing, in which:

15 Figure 1 is a front elevation of a machine embodying this invention. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a sectional elevation along line *xx* Fig. 1. Fig. 4 is a view from the opposite side to that exposed in 20 Fig. 2. Fig. 5 is a sectional view of the clutch.

In this drawing is shown a frame *a* with driving shaft *b* having the usual fast and loose pulleys *c*. Shaft *b* has a gear *d* engaging gear *e* on shaft *f* which by gear *g* drives 25 gear *h* and shaft *i*. Shaft *i* carries cranks or eccentric pins *k* to which are jointed or pivoted links *m* pivoted at their upper ends to link pieces *n* which by pivots *o* are jointed to 30 heads *p* of the blade or cutter *q*. The cutter head is hung by a link *r* or suspended from a cross head of the fixed frame *a* so as to descend on an incline or give a draw cut action to the blade *q* as usual. The shaft *f* also has 35 a gear *s* engaging gear *t* on a shaft 2. This gear *t* actuates a crank pin 3 which connects by links 4 with a cap piece or cover plate 5 of a clutch box 6. The plate or cover disk 5 is screwed tight onto box 6 in which box is a 40 plate 7 having perforations for seating plugs 8 of wood or the like. This plate 7 can be of any desired shape so long as it serves as a carrier for plugs or friction pieces 8.

45 The plate 7 is keyed to a shaft 9. The clutch 5 and 6 is loose on such shaft. The plate or cover 5 being drawn by the fastening screws tight to box 6 will clamp or compress the blocks 8 of the friction disk or carrier 7. The plate 5 and box 6 are thus united to be 50 practically one piece and the link 4 on the rotation of the crank pin 3 oscillates the box 5

and 6 back and forth. The grip or friction of the clutch on the block or friction plate 7 or its blocks 8 causes the oscillation of the clutch to be imparted to plate 7 and to the 55 shaft 9 to which plate 7 is keyed. The rocking movement of shaft 9 is imparted to arms 10 keyed to said shaft 9. To the free ends of arms 10 are pivoted links 11 engaging the pivots 12 of toggle arms 13. One arm or one 60 pair of arms 13 of the toggle joints swing on a fixed point or shaft 14 and the lower arms engage a bar 15 which can move up and down in vertical slots or guides in the frame. As the arm 10 rocks the toggle joints 13 are 65 flexed or extended to cause bar 15 with the links 16 to reciprocate and move the clamp 17 to and from the table 18.

The operation is readily explained. The shaft *b* by the gearing mentioned rotates 70 shaft *i* with crank pin *k* so as to reciprocate the cutter *q*. The shaft *b* also by means of shaft *f* and gearing *s t* rotates crank 3 and by links 4 oscillates the clutch 5 and 6 to cause the toggles to press the clamp bar 17 to the 75 work. When the work is compressed so that the clamp can not descend further the clutch 5 if not at the end of its stroke will slip idly over plate 7.

The toggle arrangement has been found to 80 multiply or increase the pressure or efficiency so that the energy exerted on the link 11 is increased by the toggles 13 to give a more powerful pressure or result at the clamp 17. 85

Now what I claim is:

1. In a paper cutting apparatus a blade with a rotary shaft and crank connections for actuating the blade, gears actuated by the rotary shaft, reciprocating arms actuated 90 by the gears, a toggle actuated by the arms, and a clamp actuated by the toggle.

2. In a paper cutting apparatus a blade with actuating means, a clamp, a toggle for actuating the clamp, a rock shaft for ac- 95 tuating the toggle, a friction device on the shaft, and a rotary shaft linked to the friction device.

3. In a paper cutting apparatus a blade, a shaft with an eccentric and links for actuat- 100 ing the blade, a second shaft having gear connections with the shaft of the eccentric, a

friction device and a rock shaft oscillated by
the second shaft, a toggle joint actuated by
the rock shaft and a clamp actuated by the
toggle joint, the friction device forming a
5 slip connection on the rock shaft to allow
motion to the cutter when the clamp is ar-
rested.

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

CHARLES L. SMITH.

Witnesses:

CHRISTIAN ALMSTAEDT,
EDWARD WIESNER.