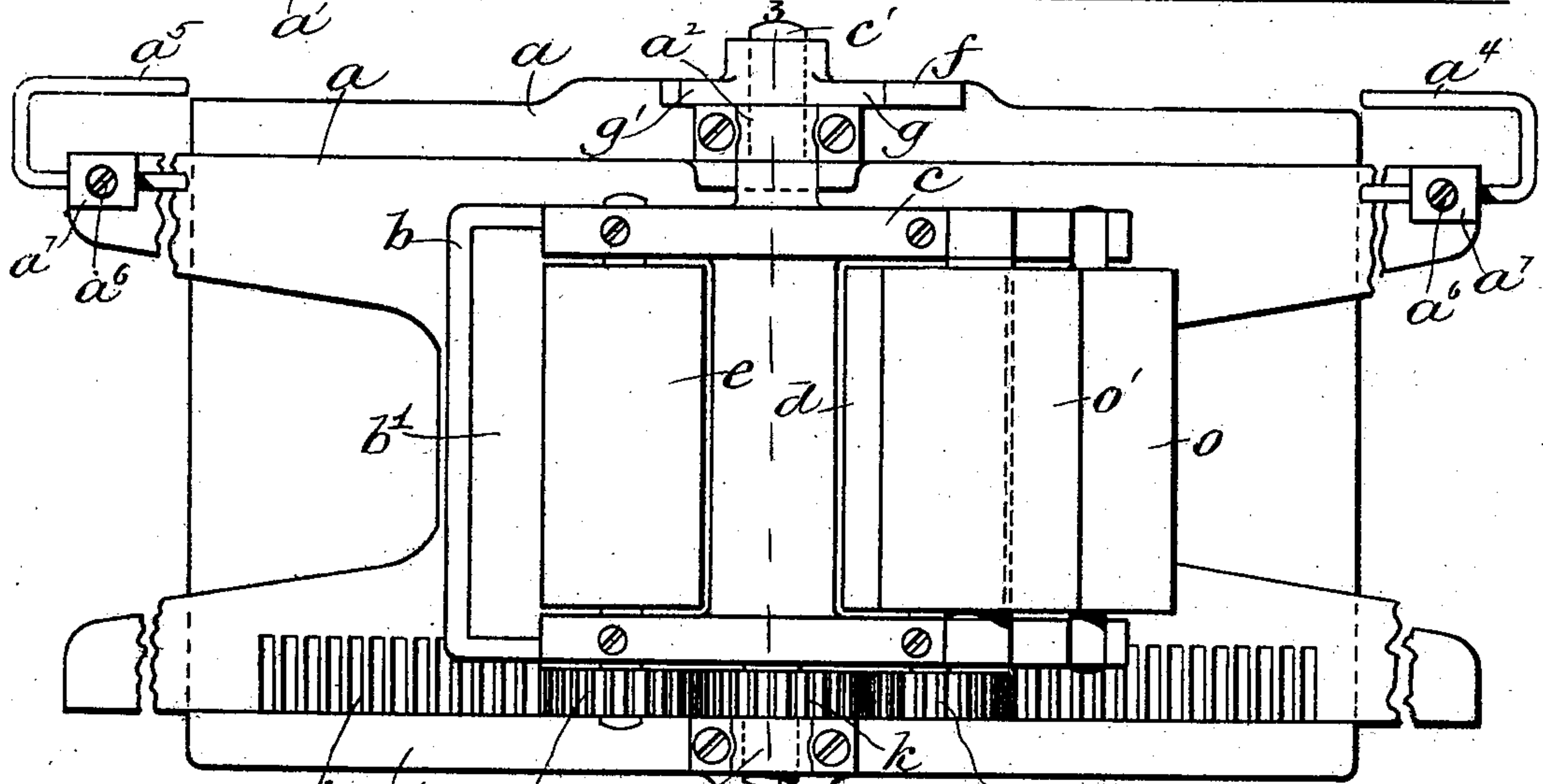
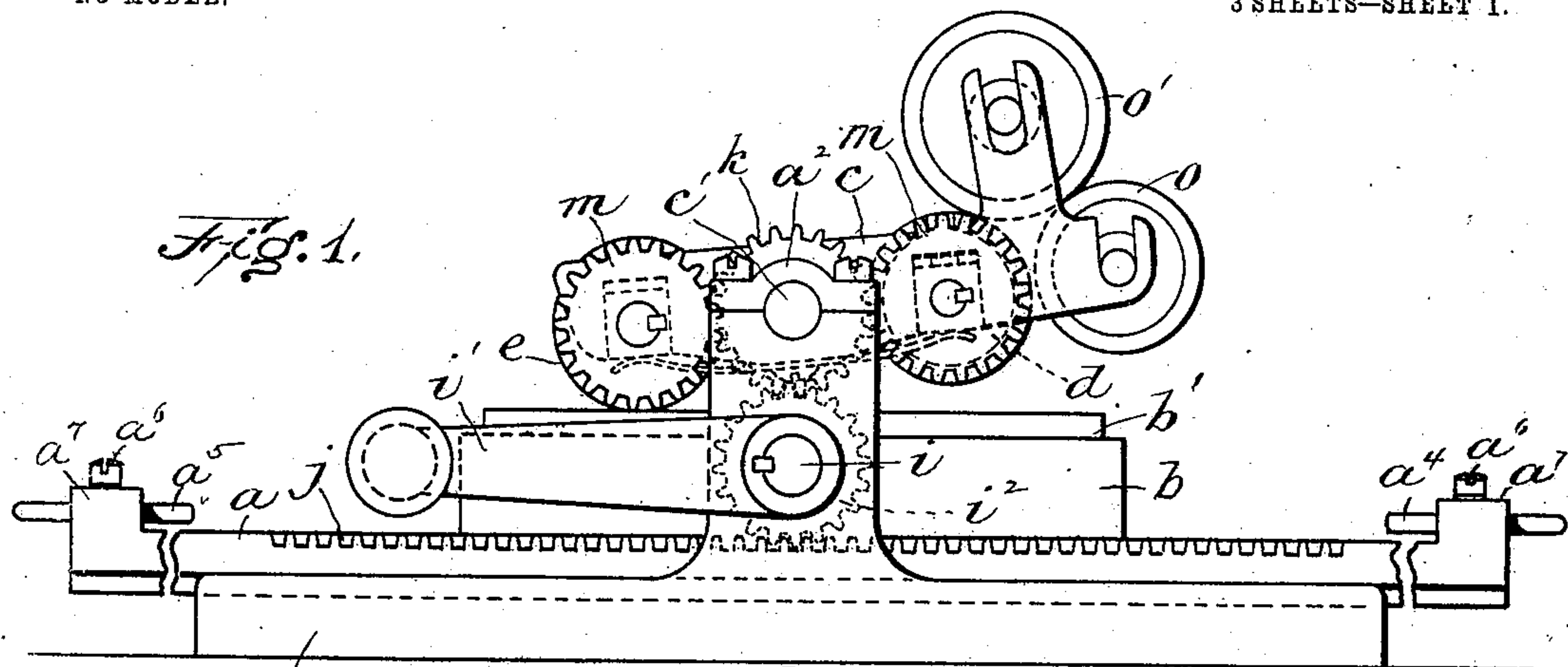


A. W. PROCTOR.  
PRINTING PRESS.

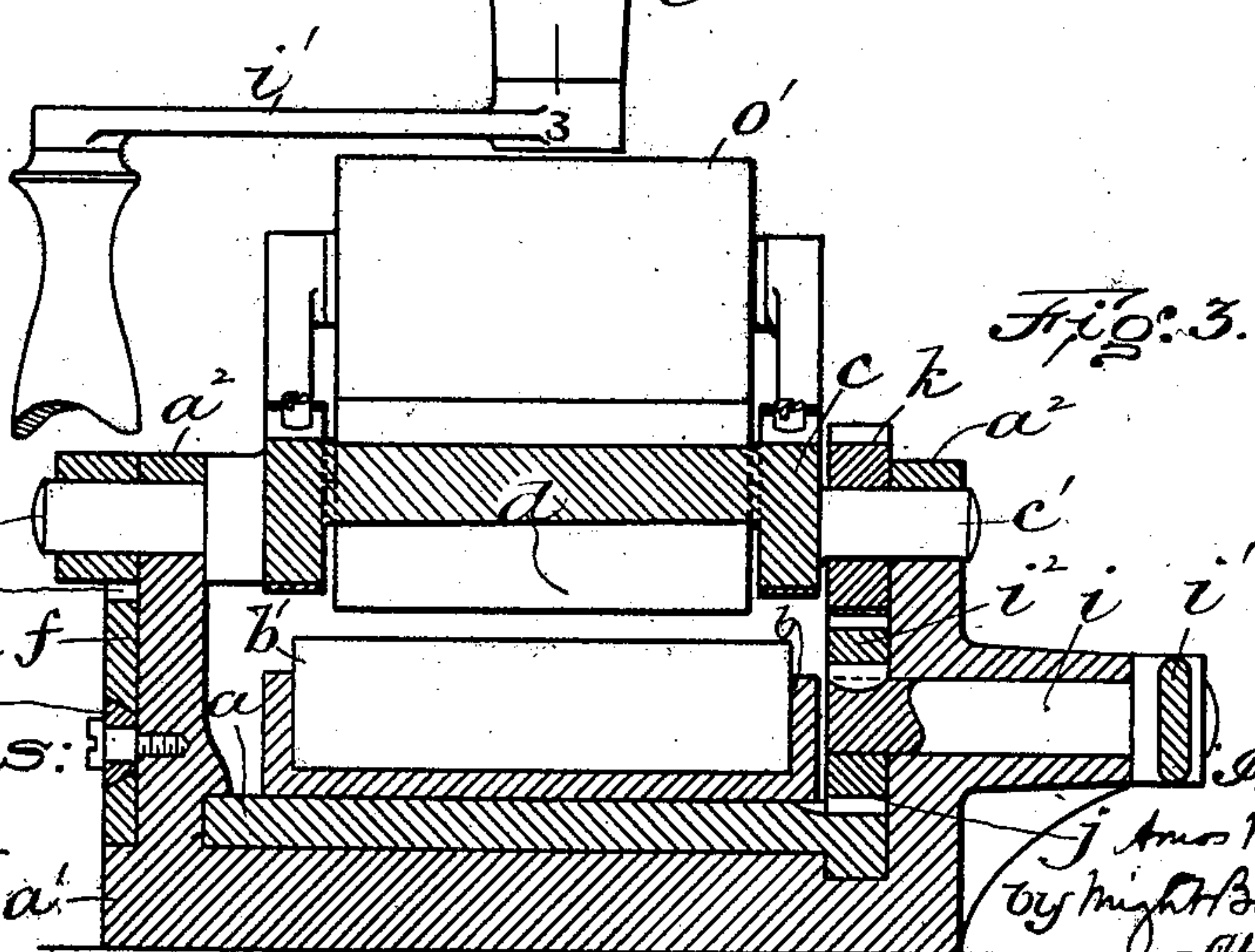
APPLICATION FILED FEB. 15, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



*Fig. 2.*



Witnesses:

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E. Baeholder

Inventor  
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No. 773,766.

PATENTED NOV. 1, 1904.

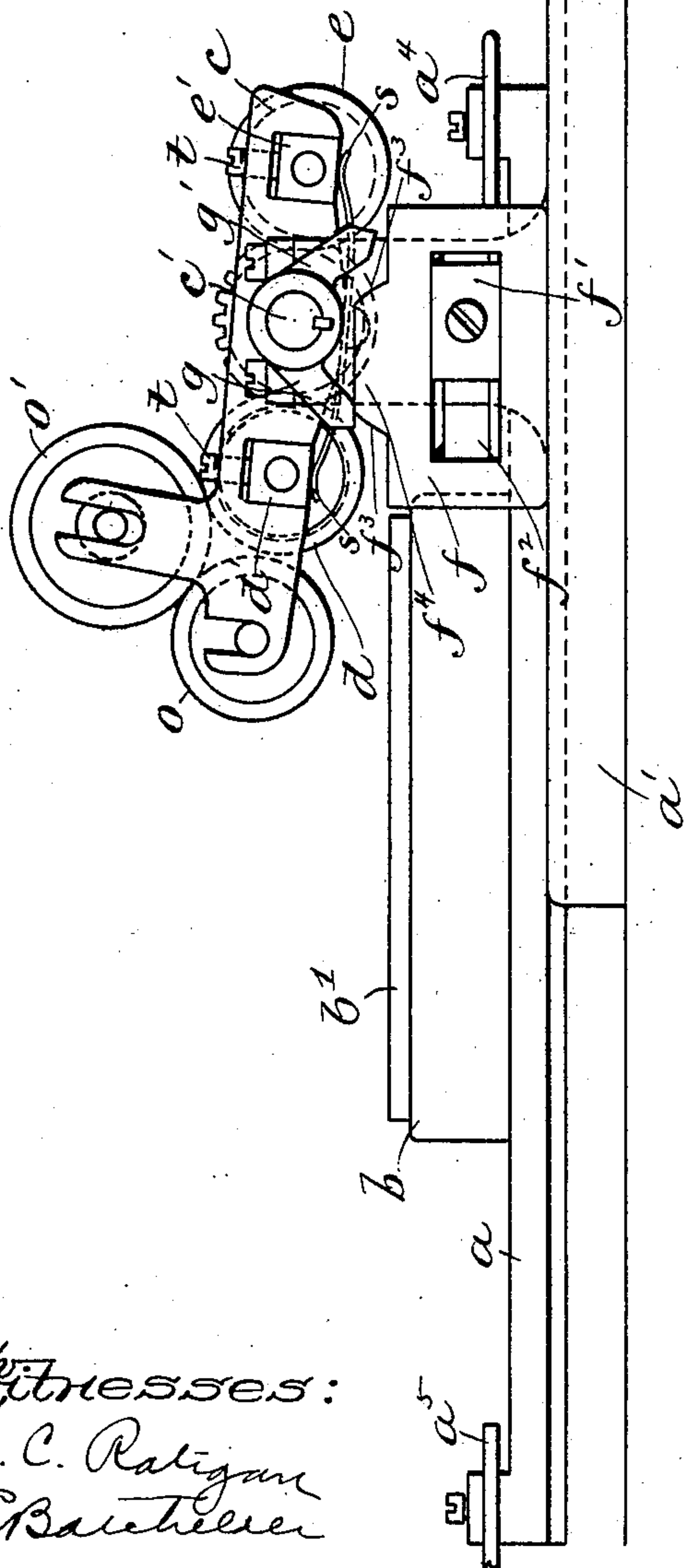
A. W. PROCTOR.  
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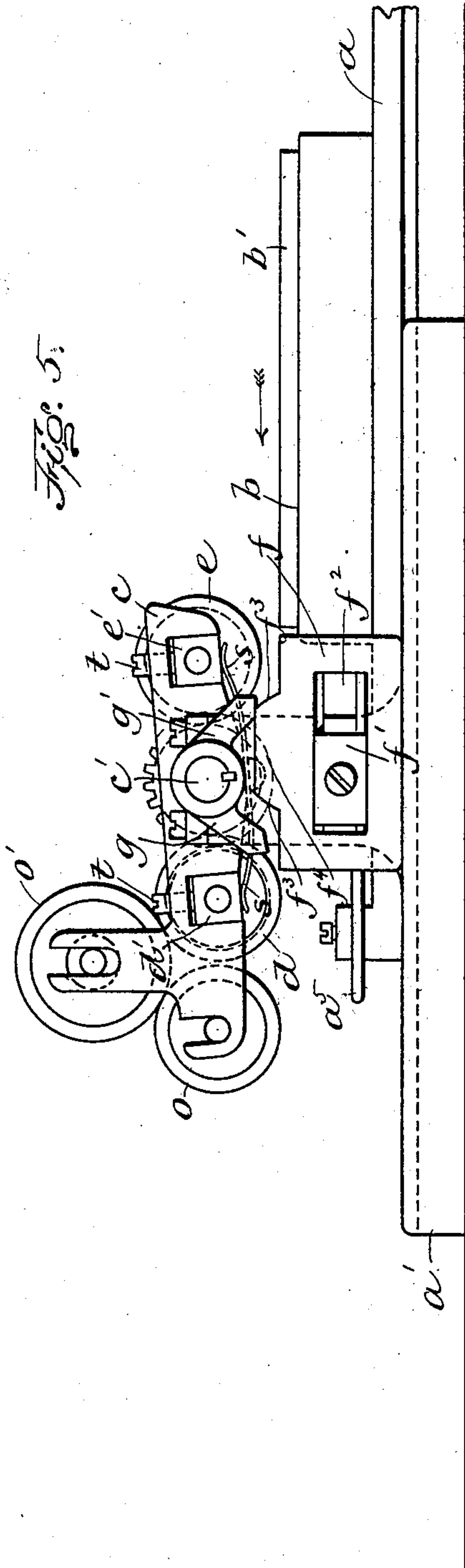
3 SHEETS—SHEET 2.

Fig. 4.



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Fig. 5.



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APPLICATION FILED FEB. 15, 1904.

NO MODEL.

3 SHEETS—SHEET 3.

Fig. 6.

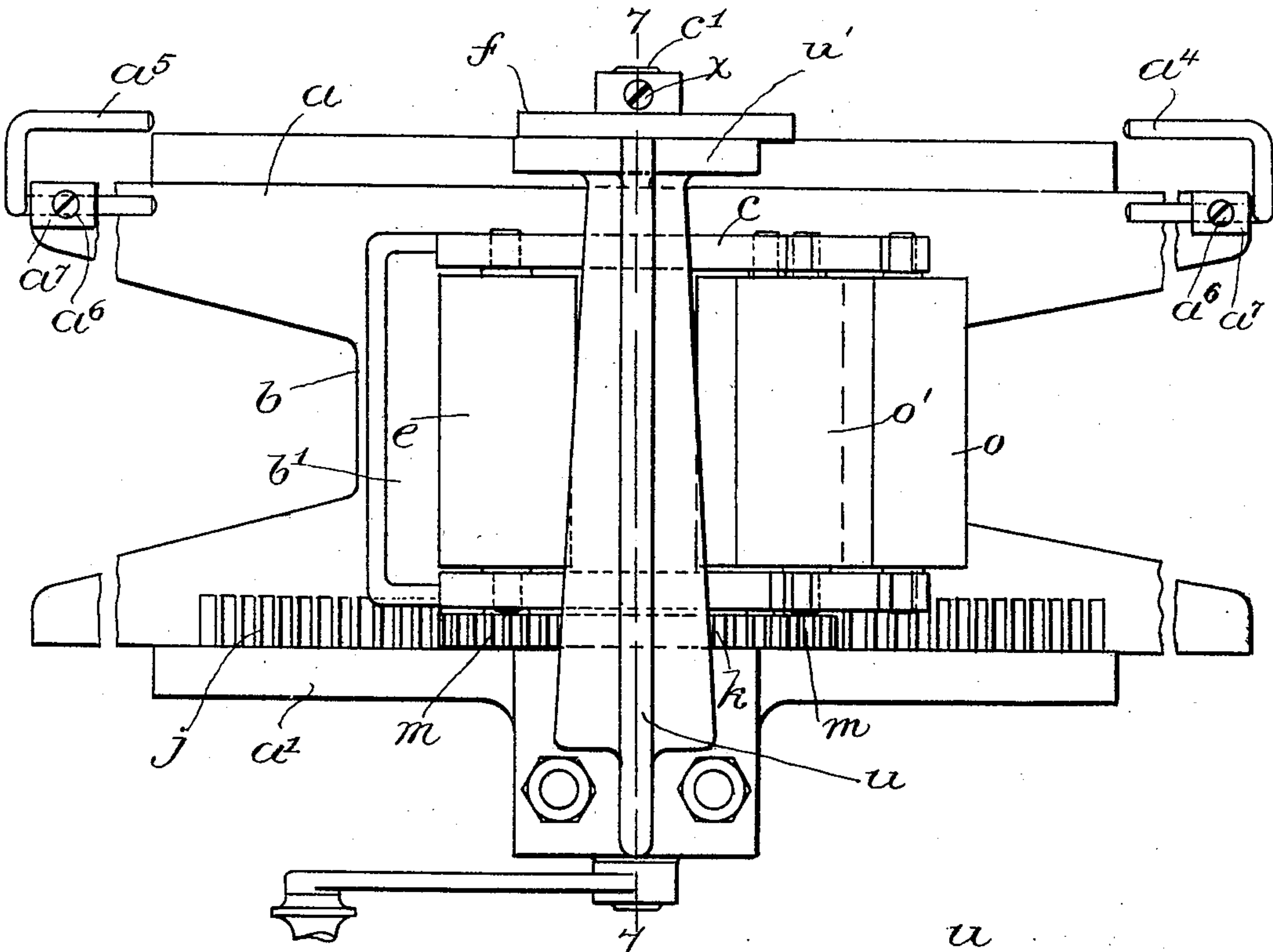
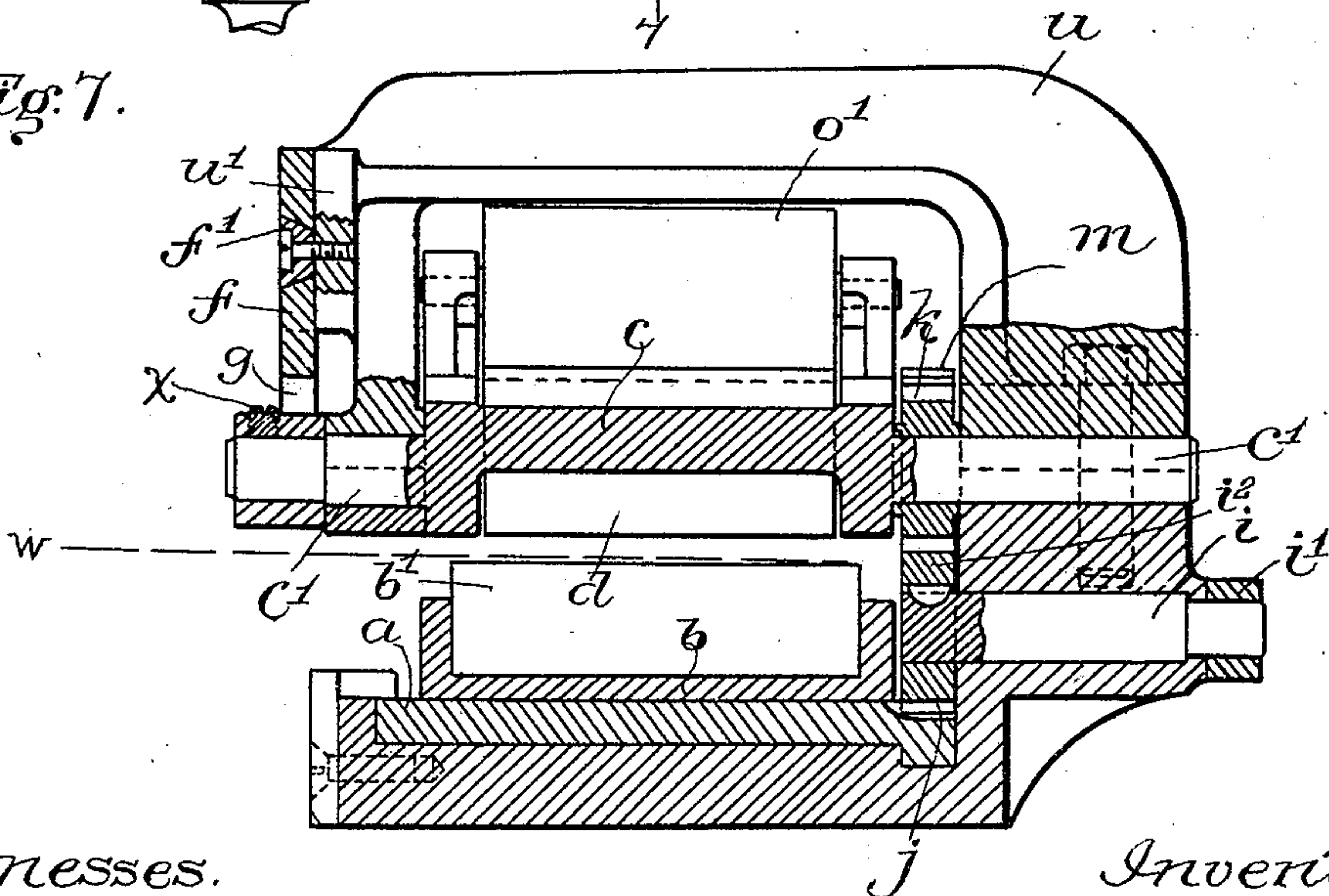


Fig. 7.



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# UNITED STATES PATENT OFFICE.

AMOS W. PROCTOR, OF BILLERICA, MASSACHUSETTS.

## PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 773,766, dated November 1, 1904.

Application filed February 15, 1904. Serial No. 193,563. (No model.)

*To all whom it may concern:*

Be it known that I, AMOS W. PROCTOR, of Billerica, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Printing-Presses, of which the following is a specification.

This invention relates to printing-presses adapted particularly for printing menu-cards and other relatively small sheets and to be operated by hand.

The invention has for its object to provide a simple and effective printing-press adapted to be operated with satisfactory rapidity and to operate efficiently.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side view of a press embodying my invention. Fig. 2 represents a plan view of the same. Fig. 3 represents a section on line 3 3 of Fig. 2. Figs. 4 and 5 represent elevations of the opposite side of the machine from that shown in Fig. 1. Fig. 6 represents a plan view of a modification hereinafter described. Fig. 7 represents a section on line 7 7 of Fig. 6.

The same reference characters indicate the same parts in all the figures.

In the drawings, *a* represents a slide or carriage movable in guides on a base or support *a'*. To the slide is affixed a form *b*, which in practice is provided with movable type *b'*, from which the impression is made when the machine is operated.

*c* represents a frame which is provided with trunnions *c'*, journaled in bearings *a''* on the base *a'*. The frame *c* is provided with an inking-roller *d* and an impression-roller *e* and is adapted to tilt or oscillate and cause the rolls *d* and *e* to coöperate alternately with the form, the inking-roll *d* applying ink to the type when the form is moving in one direction, while the impression-roll *e* acts to press the paper against the inked type when the form is moving in the opposite direction. When the frame is in the position shown in Fig. 5, the inking-roll is depressed and is in

position to ink the type, the impression-roll being elevated. When the frame is in the position shown in Figs. 1 and 4, the impression-roll is depressed in position to coöperate with the form in effecting an impression on a sheet of paper, the inking-roller being raised. When the carriage reaches one end of its movement, the frame *c* is automatically tipped to one of the positions above described, and when the carriage reaches the opposite end of its movement the said frame is automatically tipped to the other position. The means shown for automatically tipping the frame in this embodiment of my invention comprise a slide *f*, which is supported by the base *a'* and has a limited independent endwise movement permitted by a block *f'*, affixed to the base and occupying a slot *f''* in the slide *f*, said block being shorter than the slot, while the upper and lower walls of the slot are adapted to slide on the block. The slide *f* is provided with an ear *f''*, having two inclined faces *f'''* *f'''*.

*g g'* represent arms affixed to one of the trunnions of the frame *c* and arranged to coöperate with the ear *f''*, as hereinafter described. When the carriage is at the end of its movement, (shown in Fig. 5,) the arm *g* projects below the top of the ear *f''*, the arm *g'* being raised above said ear. The inking-roll is therefore in position to coöperate with the form when the latter is moved in the direction indicated by the arrow on Fig. 5. When the form approaches the opposite end of the last-mentioned or printing movement, a finger *a''* on the carriage strikes the slide *f* and moves the latter to the position shown in Fig. 4. This movement of the slide causes the arm *g* to swing upwardly, thus tilting the frame *c* to the position shown in Figs 1 and 4, the arm *g'* being depressed. The impression-roll is now in position to coöperate with the form during the opposite or printing movement of the form. When the form nearly reaches the end of its printing movement, a finger *a'''* on the carriage *a* strikes the slide *f* and moves the latter to the position shown in Fig. 5, so that the arm *g'* is raised and the frame is returned to the position



shown in Fig. 5, the inking-roll being thus depressed and the impression-roll raised. It will be seen, therefore, that at the end of each movement of the carriage one of the rollers is moved into and the other out of its operative relation to the form; but while the carriage is moving the frame carrying the rollers is locked in its tilted position by the arms  $g$  and  $g'$ , which rest alternately upon the top of the slide  $f$  at each side of the machine, such arm resting upon the end of the upper surface of the slide, as shown in Figs. 4 and 5.

The carriage  $a$  is reciprocated by a shaft  $i$ , journaled in a bearing affixed to the base, said shaft being provided with an operating crank or handle  $i'$  and with a gear  $i''$ , meshing with rack-teeth  $j$ , formed on the carriage. The rotation of the shaft  $i$  causes the carriage to move endwise.

The rolls  $d$  and  $e$  are positively rotated by means of a gear  $k$ , mounted to rotate on one of the trunnions  $c'$  and meshing with the gear  $i''$ , and gears  $m$   $m$ , affixed to the shafts of the rolls  $d$   $e$  and meshing with the gear  $k$ .

$o$   $o'$  represent ink-distributing rolls which are supported by bearings in the frame  $c$ , the roll  $o'$  being in contact with the inking-roll.

The shafts of the rolls  $d$  and  $e$  are preferably journaled in boxes or bearing-blocks  $d'$   $e'$ , which are adjustable vertically in slots or guides formed for their reception in the frame  $c$ . Said blocks may be yieldingly supported by springs  $s$   $s$ , attached to the frame  $c$  and holding the blocks against stop-screws  $t$   $t$ , which are adjustable vertically in the frame  $c$ . Provision is thus made for vertically adjusting the rolls  $d$  and  $e$  and regulating their pressure on the form and on the paper, respectively.

The slide-operating fingers or projections  $a^4$   $a^5$  are preferably U-shaped wire rods, one arm of each rod being adjustably secured by a set-screw  $a^6$  to an ear  $a^7$  on the carriage, the other arm being offset from the carriage, as shown in Fig. 2. The slide  $f$  is located in the path in which the said offset arms move.

In the machine represented in Figs. 1 to 5, inclusive, the bearings  $a^2$ , rising from both sides of the base  $a'$ , will necessarily restrict the width of the card or sheet that is printed. I therefore propose to embody my invention in a machine having a main frame of a somewhat different form, as indicated in Figs. 6 and 7. In said figures the frame is shown as provided with an overhanging arm  $u$ , having a depending front portion or bracket  $u'$ , the lower portion of which has a bearing for the outer trunnion  $c'$  of the frame  $c$ . It will also be seen that in this form the arms  $g$   $g'$  extend upward instead of downward from the trunnion  $c'$  and the block  $f'$  and slide  $f$  are carried by the face of the bracket  $u'$ . It will be understood that in this form the ends of the fingers  $a^4$   $a^5$  will be in a plane sufficiently elevated to be struck by the slide  $f$ . This construction enables a sheet of paper of any length to be inserted on the line  $w$ .

I claim—

1. A printing-press comprising a movable form-supporting carriage, a fixed support therefor, an oscillatory frame pivoted to said support and having an inking-roll and an impression-roll located at opposite sides of the center of oscillation of the frame, and means operated by movements of the carriage for tilting the frame to make the inking-roll and the impression-roll alternately operative, means being provided for locking said frame against oscillation during its movement relatively to the form.

2. A printing-press comprising a movable form-supporting carriage having operating fingers or projections, a fixed support for said carriage, an oscillatory frame pivoted to said support and having an inking-roll and an impression-roll located at opposite sides of the center of oscillation of the frame, arms affixed to the frame and located at opposite sides of said center, and an ear having a limited independent movement on the fixed support and located in the path of movement of said projections, the said ear being movable by said projections and adapted to act alternately on said arms to tilt the frame.

3. A printing-press comprising a movable form-supporting carriage, a fixed support therefor, an oscillatory frame pivoted to said support and having an inking-roll and an impression-roll located at opposite sides of the center of oscillation of the frame, an operating-shaft journaled in said support, connections between the shaft and the carriage whereby rotation of the shaft is caused to move the carriage, and means operated by movements of the carriage for tilting the frame, means being provided for locking said frame against oscillation during its movement relatively to the form.

4. A printing-press comprising a movable form-supporting carriage, a fixed support therefor, an oscillatory frame pivoted to said support and having an inking-roll and an impression-roll located at opposite sides of the center of oscillation of the frame, an operating-shaft journaled in said support, means for imparting rectilinear motion from the shaft to the carriage, means for imparting positive rotary motion directly from the shaft to the rolls, and means operated by movements of the carriage for tilting the frame, means being provided for locking said frame against oscillation during its movement relatively to the form.

5. A printing-press comprising a movable form-supporting carriage, a fixed support therefor, an oscillatory frame pivoted to said support and having an inking-roll and an impression-roll located at opposite sides of the center of oscillation of the frame, an operating-shaft journaled in said support, a gear



affixed to the shaft, a rack on the carriage meshing with said gear, gears affixed to the shafts of said rolls, an intermediate gear meshing with the gears on the roll-shaft and with the gear on the operating-shaft, and means operated by movements of the carriage for tilting the frame.

6. A printing-press comprising a movable form-supporting bed, a fixed support therefor, an arm overhanging said bed and support and having its outer end above the plane of the form to permit the sheet of paper being printed to extend beyond the side of the press, and an inking-roll and impression-roll supported in said overhanging arm.

7. A printing-press comprising a movable form-supporting bed, a fixed support there-

for, an arm overhanging said bed and support and having its outer end above the plane of the form to permit the sheet of paper being printed to extend beyond the side of the press, an oscillatory frame pivoted in said overhanging arm and having an inking-roll and an impression-roll located at opposite sides of the center of oscillation of the frame, and means operated by movements of the carriage for tilting the frame to make the inking-roll and the impression-roll alternately operative.

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

AMOS W. PROCTOR.

Witnesses:

C. F. BROWN,

A. W. HARRISON.