

No. 622,541.

Patented Apr. 4, 1899.

C. M. RUNYAN & J. L. SULLIVAN.
COMBINED PRINTING AND ADDRESSING MACHINE.

(Application filed Apr. 28, 1898.)

(No Model.)

3 Sheets—Sheet 1.

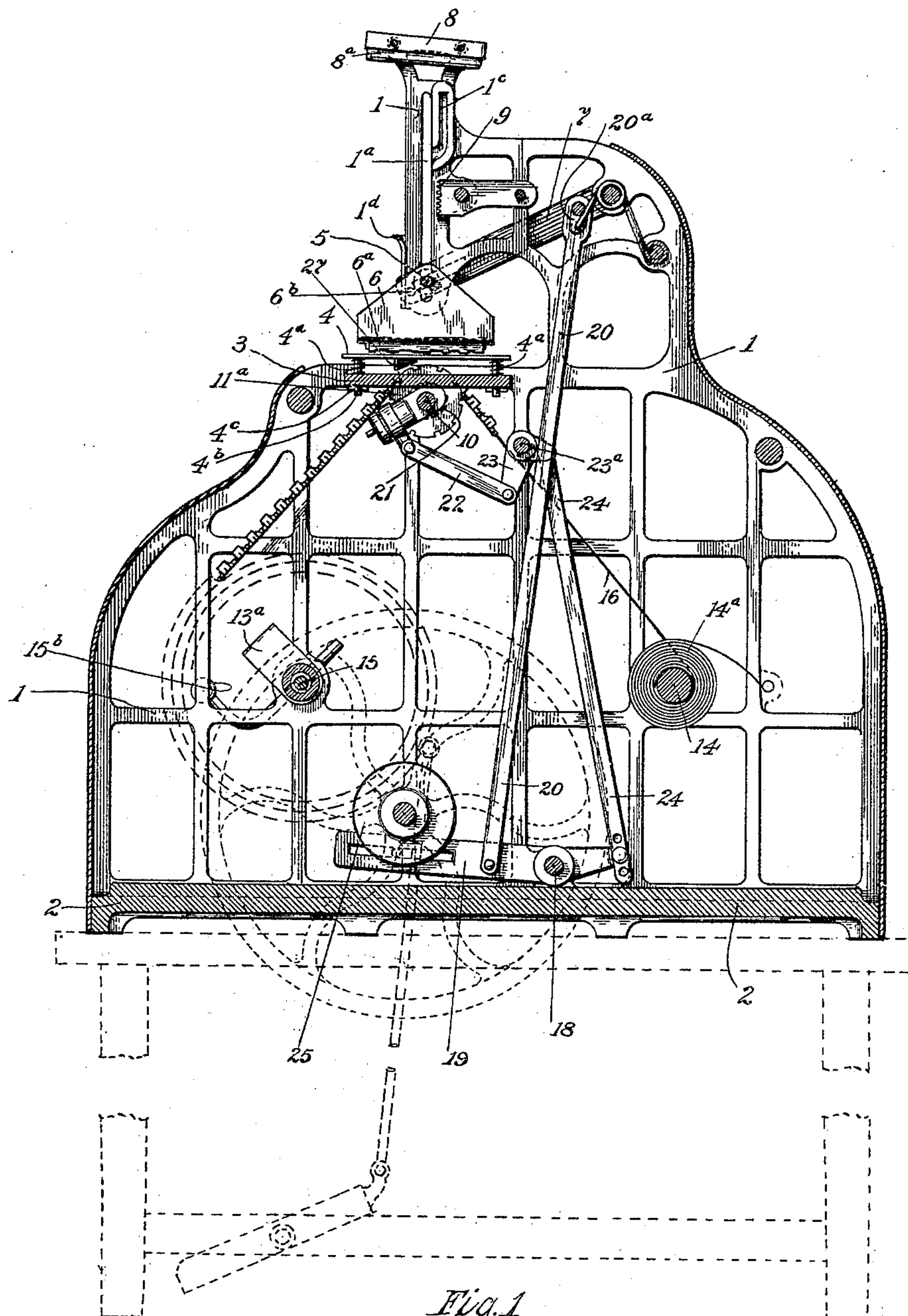


Fig. 1

Witnesses
Harry L. Marsh
Wm. C. Ashlee

Inventors
Clay M. Runyan & Josiah L. Sullivan,
By their Attorneys
Finckel & Finckel.

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3 Sheets—Sheet 2.

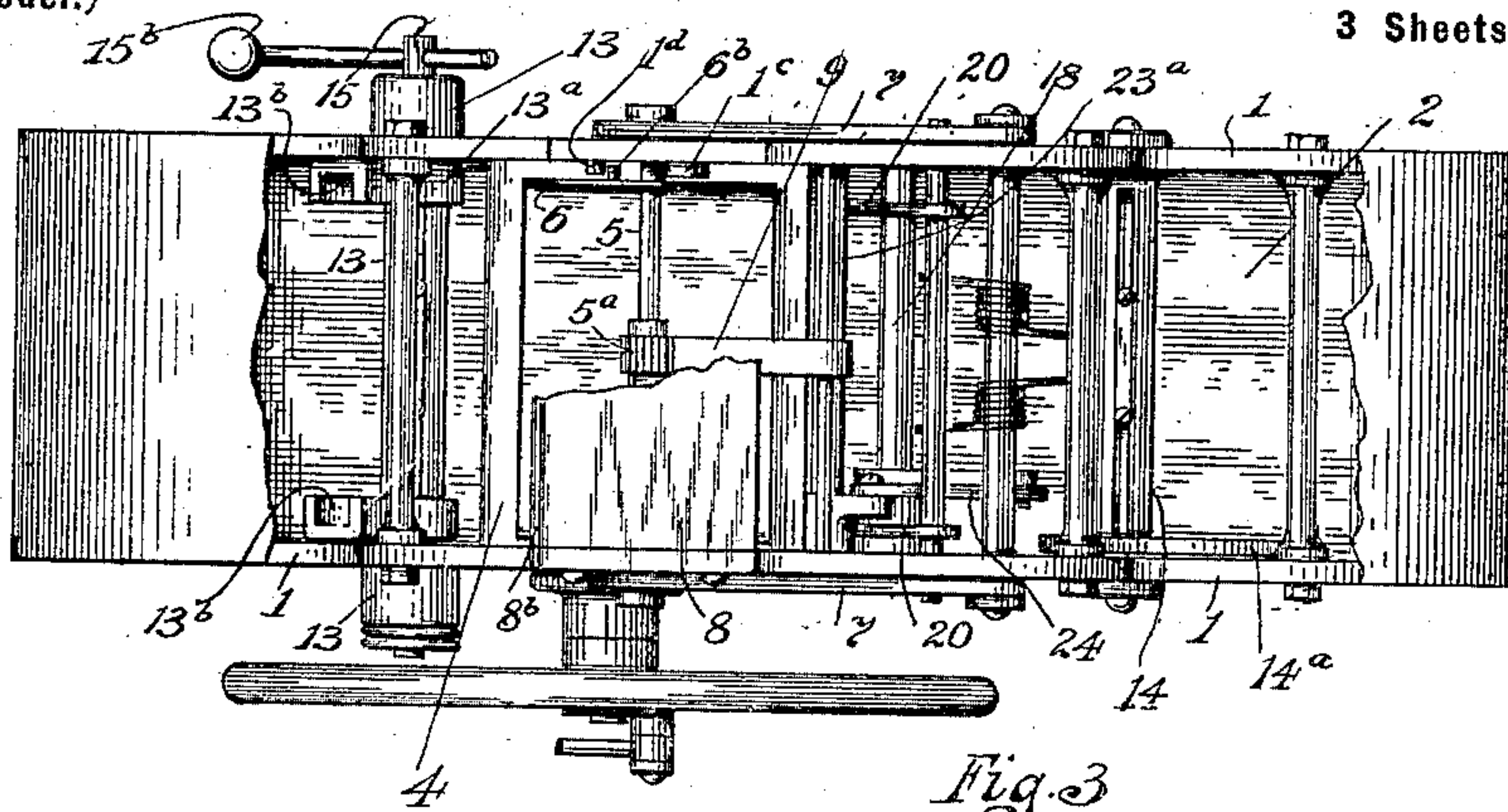


Fig. 3

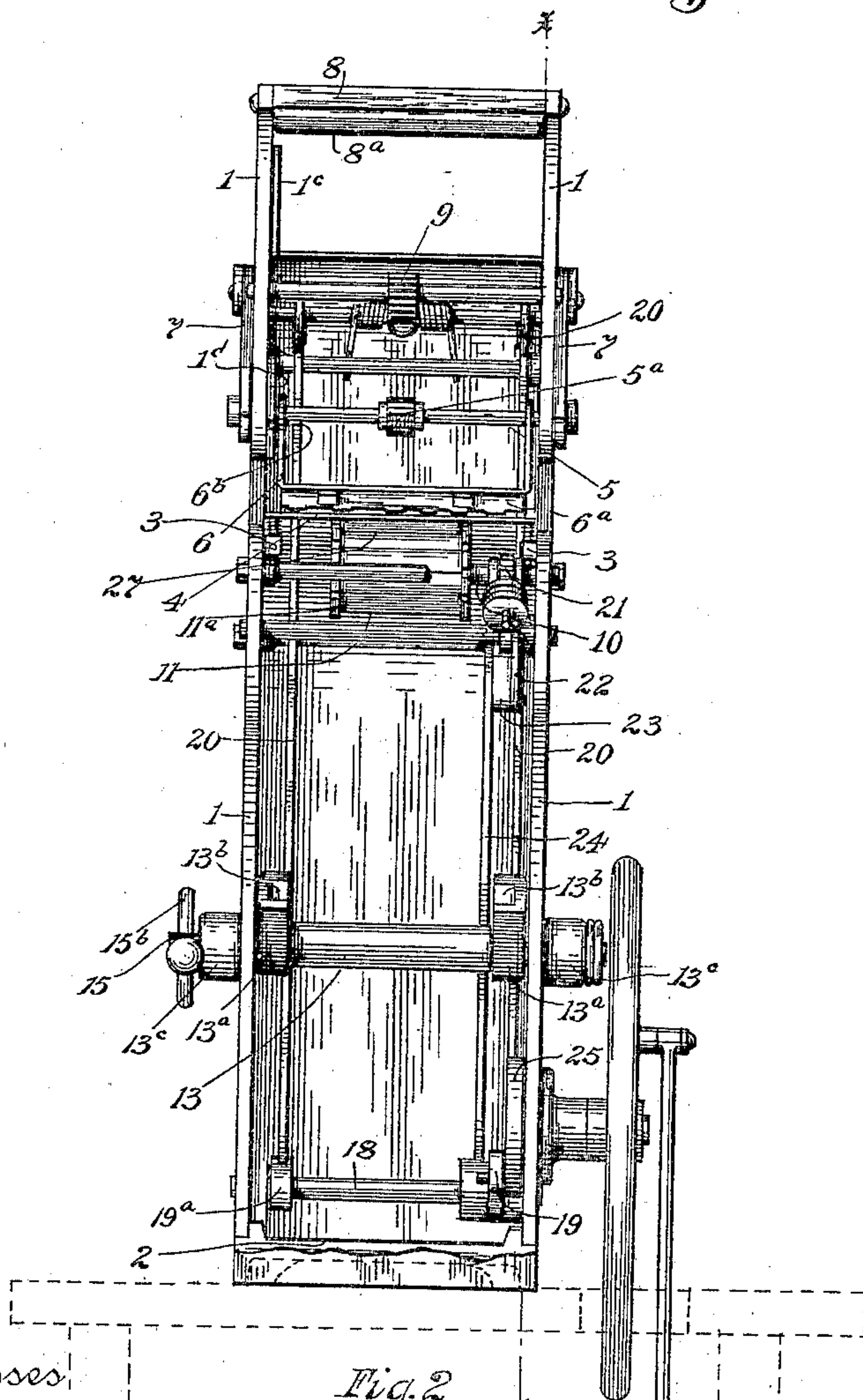


Fig. 2

Witnesses
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3 Sheets—Sheet 3.

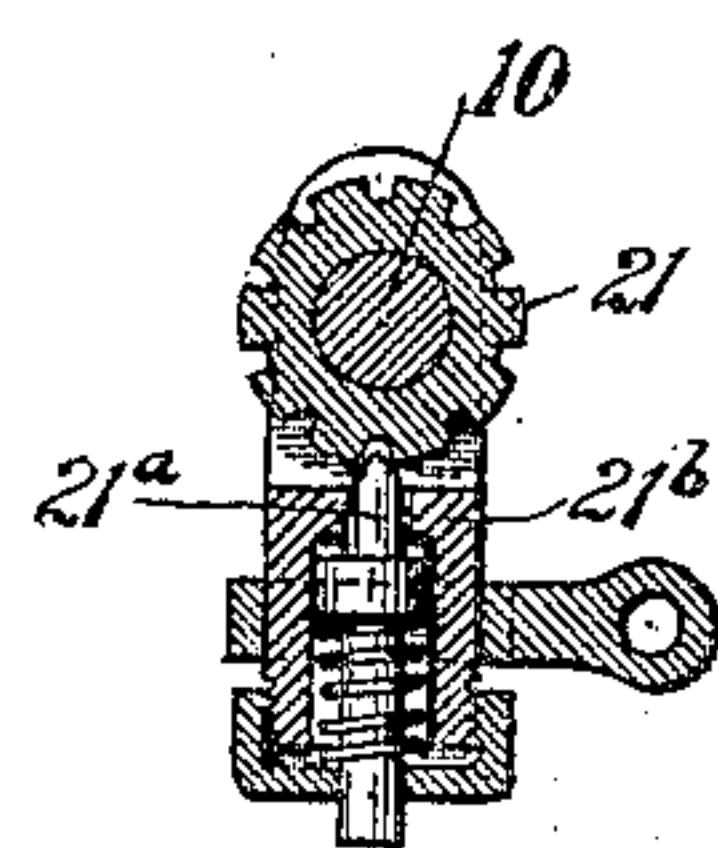
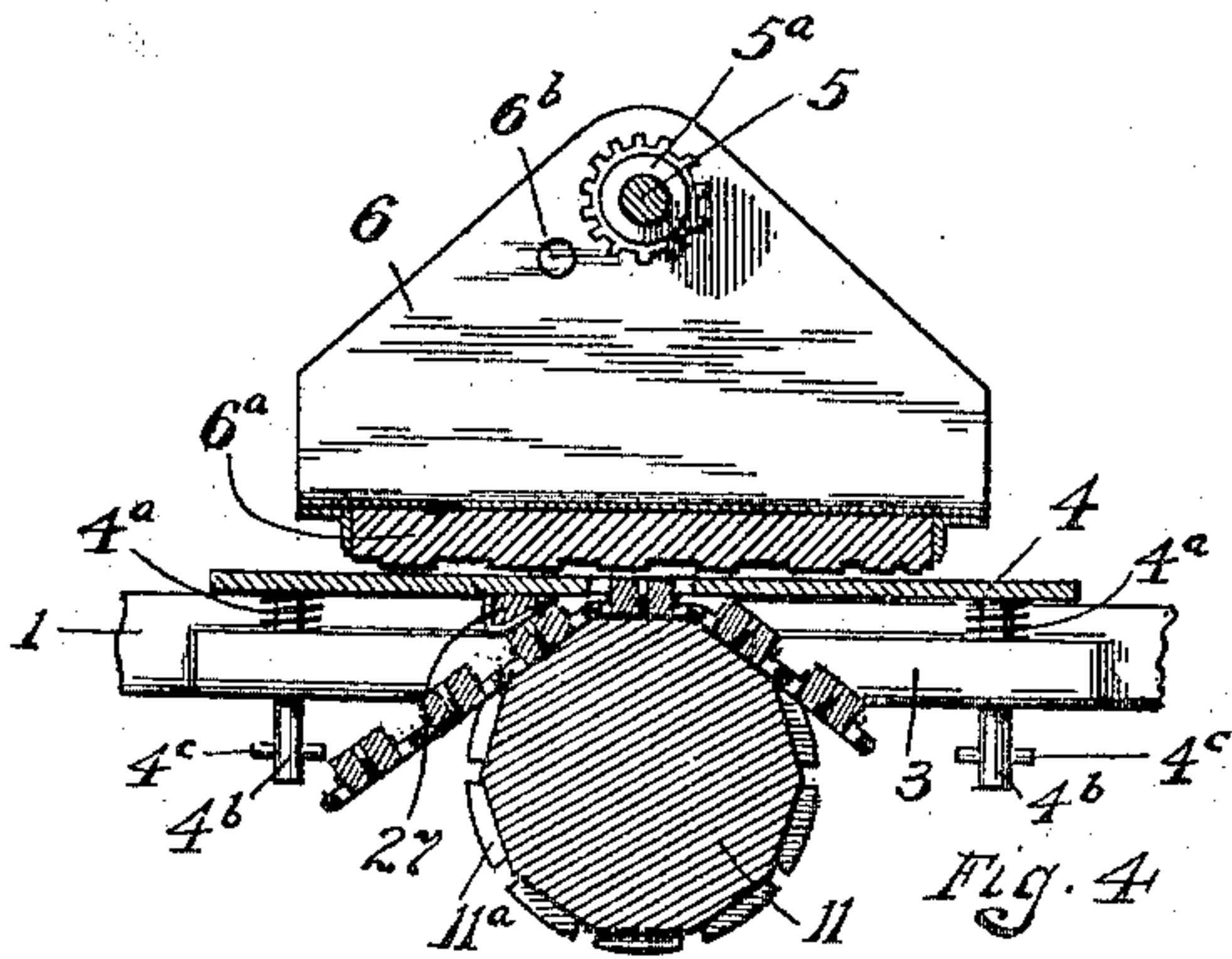


Fig. 6

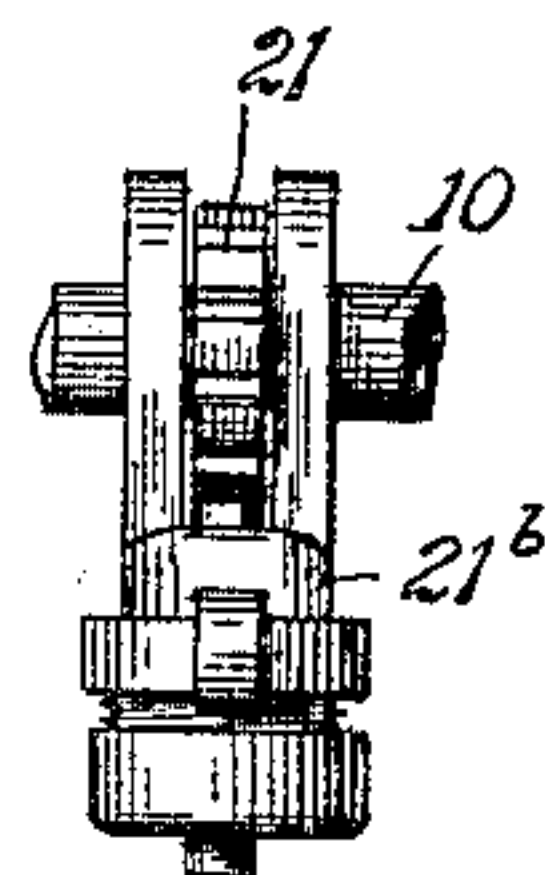


Fig. 7

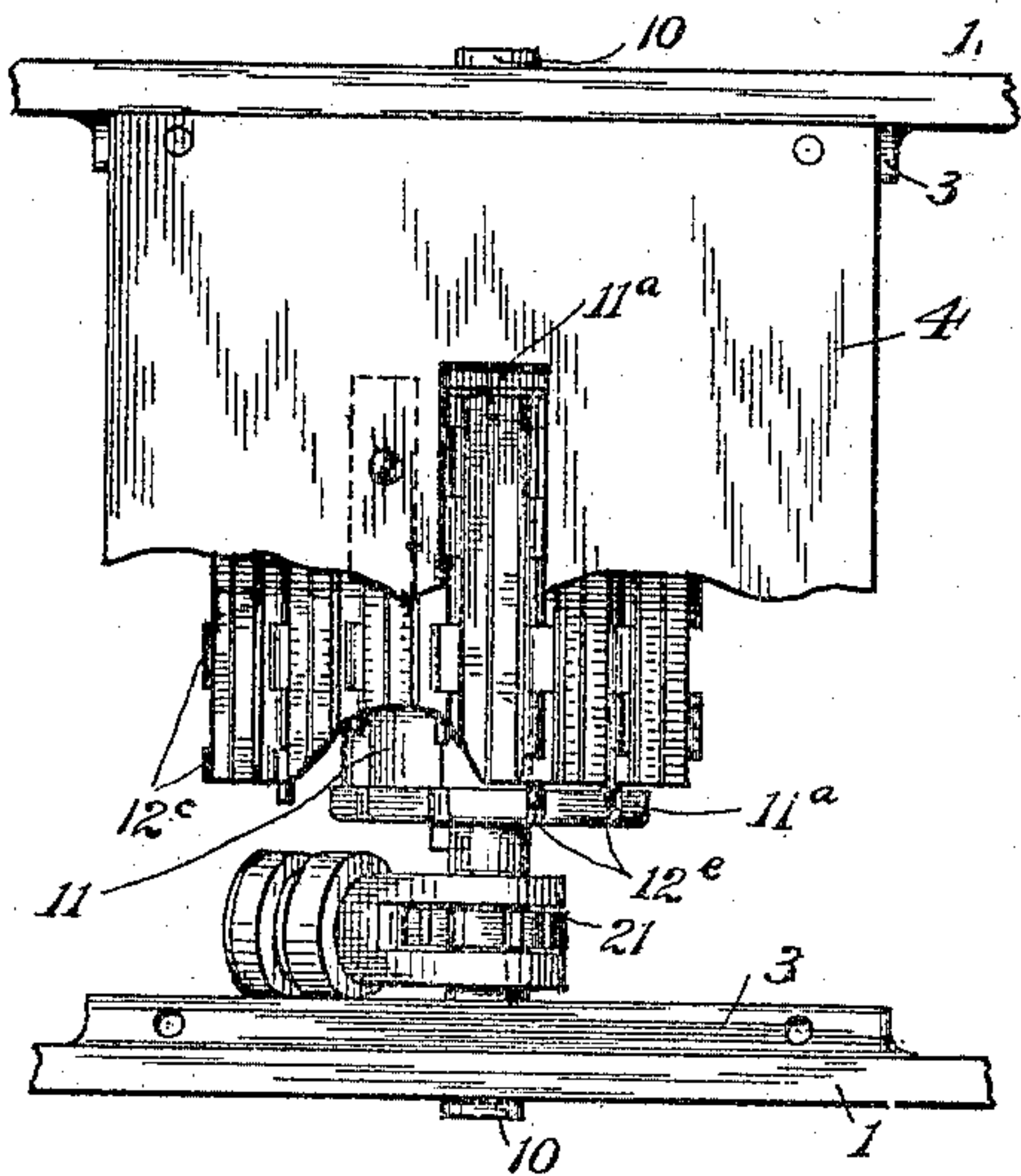


Fig. 5

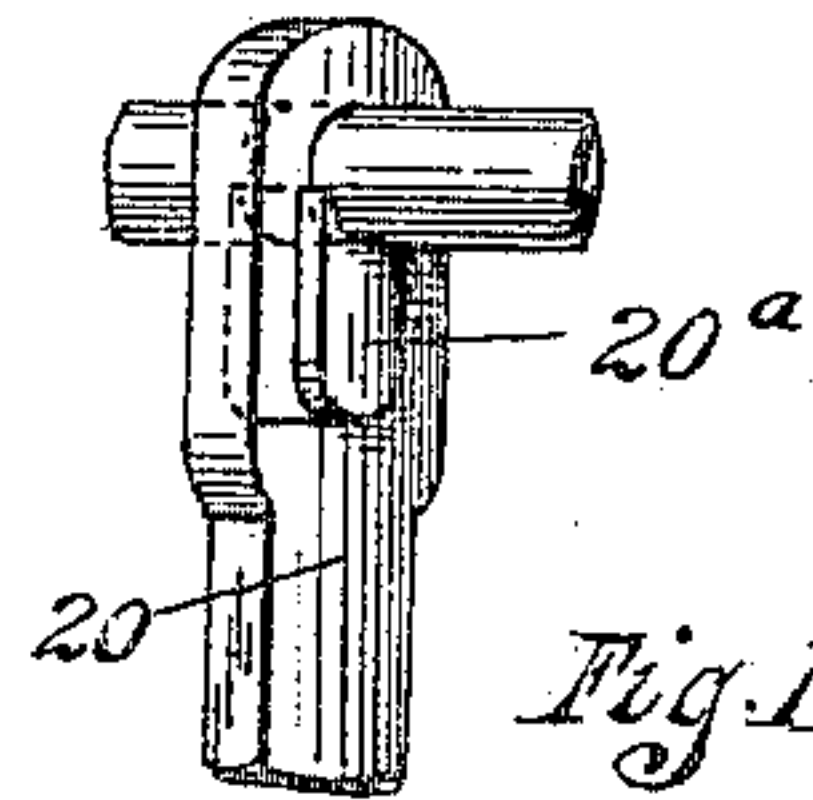


Fig. 11

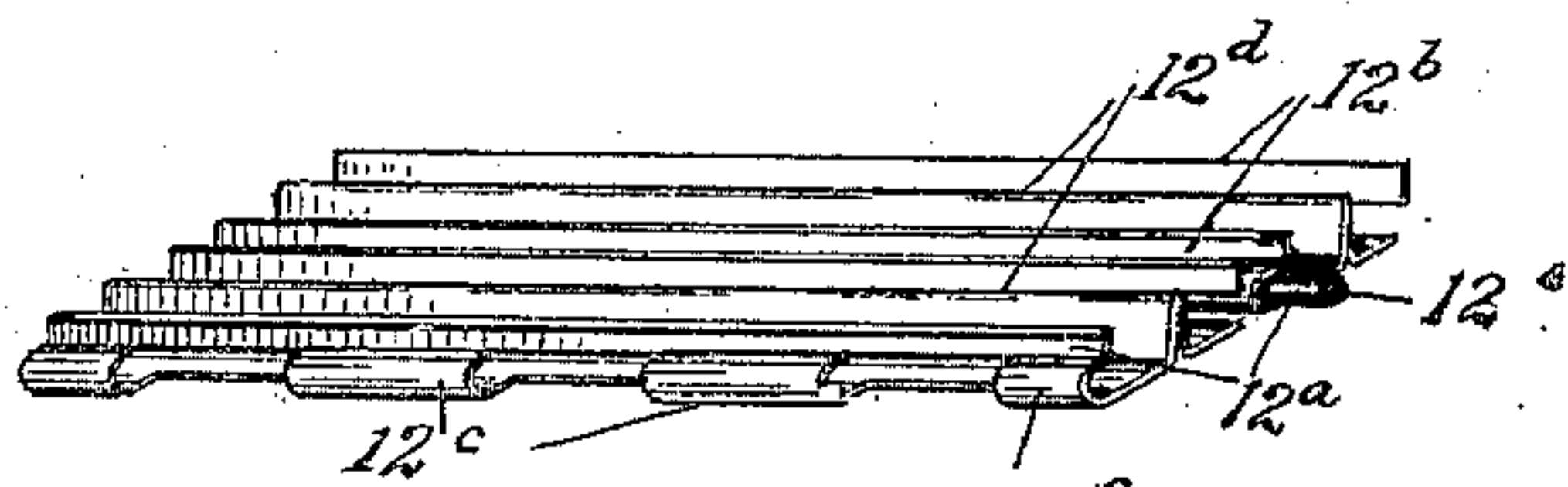


Fig. 10

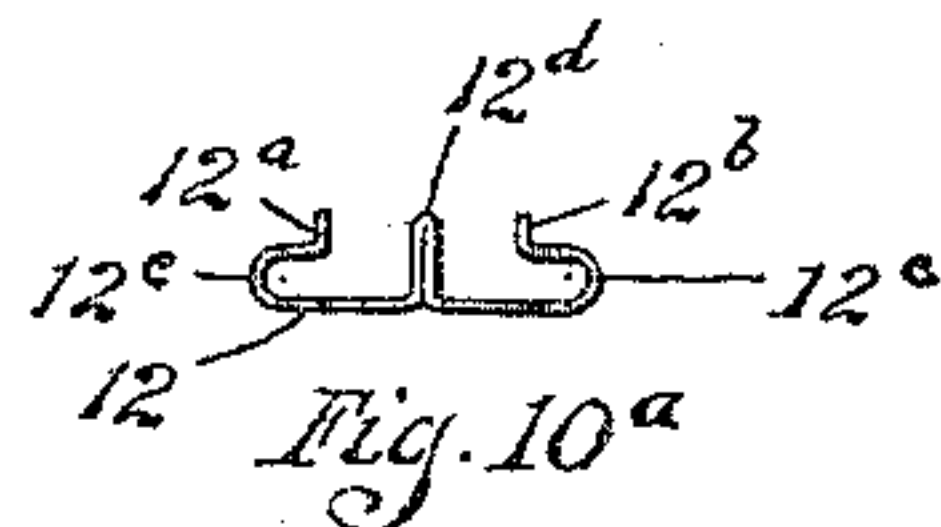


Fig. 10a

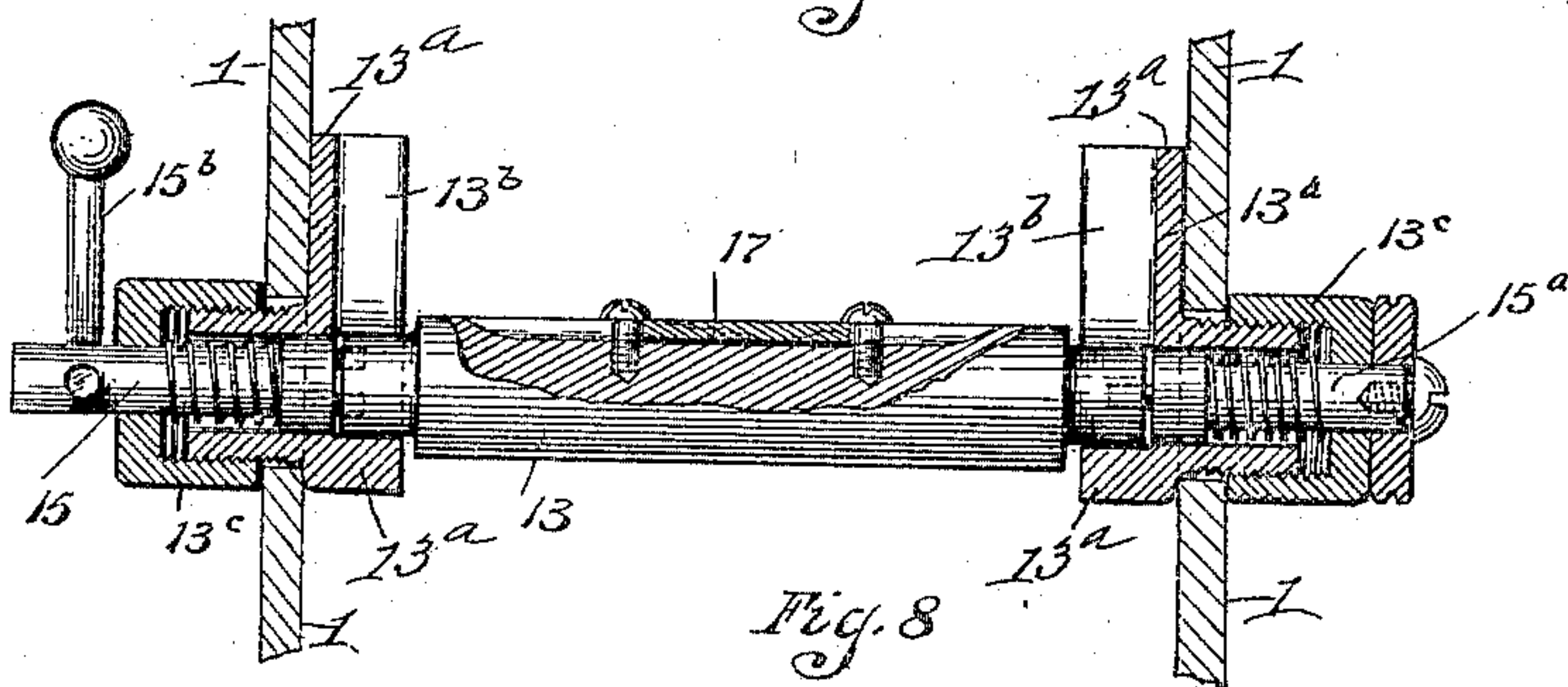


Fig. 8

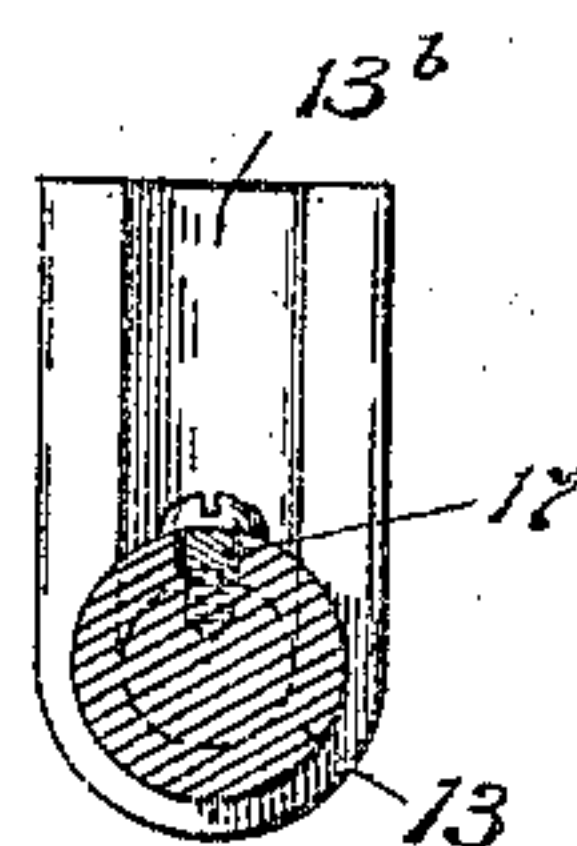


Fig. 9

Witnesses
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By their Attorneys
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UNITED STATES PATENT OFFICE.

CLAY M. RUNYAN AND JOSIAH L. SULLIVAN, OF COLUMBUS, OHIO.

COMBINED PRINTING AND ADDRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 622,541, dated April 4, 1899.

Application filed April 28, 1898. Serial No. 679,080. (No model.)

To all whom it may concern:

Be it known that we, CLAY M. RUNYAN and JOSIAH L. SULLIVAN, citizens of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in a Combined Printing and Addressing Machine; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

There are many businesses requiring the periodical sending of notices, quotations, or communications to a large number of the same individuals. As now practiced in some large businesses the notice or communication is printed on cards at a printer's shop and the addresses afterward written or printed in the office of the establishment sending out the notices or communications. Machines for addressing alone, comprising a series of "sticks" or type-holders containing the type of the addresses, said type-holders being connected, like the links of some belts or chains, with means for automatically feeding the chain, are now on the market.

The object of our invention is to provide a machine in which the communication or notice and the addresses may be printed simultaneously—the address upon one side and the notice or communication upon the opposite side of the card.

Our invention is embodied in the construction hereinafter set forth and claimed.

In the accompanying drawings, in which we have illustrated one embodiment of our invention, Figure 1 is a vertical sectional view taken on the line *xx* of Fig. 2, the position of the driving-wheel being indicated by dotted lines. Fig. 2 is a front elevation, the front wall or casing being broken out and omitted. Fig. 3 is a top plan view, parts being broken away to illustrate details. Fig. 4 is a detail in sectional view and on a larger scale, showing the forms and platen as they appear in the act of printing. Fig. 5 is a detail in plan view of the platen, the address belt or chain, and the ratchet and pawl for imparting the step-by-step movement of the belt over the sprocket on which the belt is supported. Figs. 6 and 7 are sectional and

elevational views, respectively, of the ratchet and pawl referred to in the description of Fig. 5. Fig. 8 is a detail view illustrating the shaft or spool that is to contain the address belt or chain and from which the chain is unwound in the printing operation. Fig. 9 is a transverse sectional through the shaft or spool referred to in Fig. 8. Fig. 10 is a perspective view of a small fraction of the address-belt, showing the form of the stick. Fig. 10^a is an end view of one of the sticks. Fig. 11 is a detail perspective view of the upper end of the rod that operates the upper printing-form.

1 designates the side pieces of the frame, which are of suitable form to receive the various parts of the machine. They are shown to be arranged and connected to stand parallel to each other, with an interposed bottom piece 2.

Arranged horizontally and formed rigidly with the side pieces in the upper part of the machine are shelves or brackets 3, upon which is supported a platen 4. This platen 4 is shown to be supported upon springs 4^a, encircling pins or legs 4^b on the under side of the platen, that pass through holes in the brackets 3, stop-pins 4^c being passed through the legs to limit the upward movement of the platen under the action of the springs.

In the upper portions of the side pieces 1 are vertical slots 1^a, into which the ends of a shaft or bar 5 project. To this shaft is fixed a yoke-like frame 6, the lower face of which is formed to receive the type 6^a of the matter to be printed on the upper side of the card. The ends of the bar 5 are shown to project beyond the outer sides of the side pieces 1, and these are engaged by the slotted ends of levers 7, pivoted near the rear of the upper part of the frame. When the levers are oscillated, the type-holder 6, is reciprocated vertically in the slots 1^a.

Arranged at the under side of a plate or bar 8, extending between the side pieces above the ends of the slots 1, is an inking-pad 8^a, from which the type-form 6^a takes its ink. To accomplish this automatically, the shaft or bar 5 has fixed to it a toothed or gear wheel 5^a, that engages a short rack 9, placed securely in the frame in the path of said gear or toothed wheel. When the type-holder 6 is

raised, the rack by its engagement with the gear 5 turns the holder completely over, so as to stand face up. Immediately upon passing the rack laterally-projecting pins 6^b enter guide-slots 1^c, which sustain the form in its upturned position and direct it to the inking-pad. In its downward movement the position of the form is again reversed—that is, turned with its face downward—and the pins 6^b, acting against guides 1^d, hold the form in horizontal position for making the impression upon the upper side of a card or sheet placed upon the platen.

Secured upon a shaft 10, extending between the side pieces of the frame below the platen 4, is a spool-like drum 11, having notched or sprocketed heads 11^a, and over this drum passes the chain or belt of sticks, chases, or type-holders containing the type to print addresses. In Fig. 11 we have indicated how these sticks or chases are made and connected together. As shown, each stick consists of a strip of sheet metal bent to form a bottom portion 12 and walls 12^a and 12^b, with a central spacing portion 12^d and grooved portions cut out to form tongues 12^c, which intermesh with corresponding recesses in an adjoining stick or holder, making an opening, through which a pin 12^e may be passed, uniting them after the manner of an ordinary butt-hinge. These sticks are made of a size abundant for the reception of type for an ordinary address and to fit between the heads 11^a of the drum or spool by which the belt is fed or carried, and the pins 12^e are of such length as to project beyond the edge of the belt into the notches in the heads 11^a, thus insuring the proper positioning and movement of the sticks or forms.

The address-belt may be composed of any desirable number of the sticks or chases for addresses, and the machine will be constructed for the reception and printing of as many addresses as are likely to be used in ordinary businesses; but the capacity of an ordinary machine may be indefinitely increased by the employment of extra belts or chains, which may be readily put into place in the machine. The ends of the address belt or chain are attached to the shafts 13 and 14, arranged below and on either side of the sprocketed drum 11. The forward shaft 13 is preferably made removable, as indicated in Fig. 8, so that the belt may be wound thereon and placed in the machine ready for operation. The bearing for this front shaft is at the bottom of pieces 13^a, having channels 13^b, said pieces being clamped by cap-nuts 13^c in the side parts 1 of the frame. The ends of the shaft are engaged and held in place by pins on the ends of spring-actuated bars or rods 15 and 15^a, said pins entering holes in the ends of the shaft, as clearly indicated in Fig. 8, and to enable the rewinding of the addressing-belt on this shaft the outer end of the one of the bars containing pin or pins for engaging one end of the shaft may be furnished with finger-piece 15^b.

The addressing-belt composed of the sticks

or chases, as aforesaid, may be attached to the shaft by means of a tape 16, of woven fabric, which may be attached to the under side of the entire belt or to a few of the sticks at each end of the belt and to the shafts by means of a strip of metal 17, (see Fig. 8,) clamped to the shaft by screws. The rear shaft 14 may have attached to it a spring 14^a to hold the belt taut.

Journaled between the side pieces 1, in the lower part of the machine, is a shaft 18, to which levers 19 and 19^a are keyed, and rods 20 are connected to said levers 19 and 19^a and with the arms 7, so that the rocking of the said levers shall cause the said arms to oscillate and the upper printing-form to rise and fall to perform the functions of inking and printing.

As it may be desired to use the addressing apparatus alone, the upper ends of the rods 20 are made with elongated slots at the place of connection with arms 7, so that upon the removal of a block 20^a (see Fig. 11) said arms shall effect only a partial raising of the frame 6, or sufficient to allow a card or other article upon which an address is to be printed to be placed on the platen.

The means for imparting a step-by-step movement of the addressing chain or belt consists of a ratchet 21, fixed on the shaft 10, engaged by a spring-actuated pawl 21^a, carried in a small frame 21^b, oscillated on and independently of the shaft 10. The frame is linked by means of a bar 22 to a bell-crank lever 23, journaled on a stud or shaft 23^a in a side piece 1, and this bell-crank lever is in turn connected by means of a rod 24 with the rear end of the lever 19.

The lever 19 is rocked by means of a power-wheel 25, having a crank-pin that engages a slot in the forward end of the lever 19. The power-wheel may be turned by hand, foot, or other power, and we have indicated by broken lines how a fly-wheel may be employed and operated by a treadle.

The type in the address-belt may be inked by means of a small inking-pad 27, placed in the under side of the yielding platen 4, the face of the pad being shown to be arranged at the proper inclination to touch the face of the type in the stick preceding that which is printing.

What we claim, and desire to secure by Letters Patent, is—

1. In a printing-machine, the combination of a support for a type-holding chain or belt adapted to print upon one side of a card, an independent type-holder for printing upon the opposite side of said card, an inking device for said independent type-holder, a platen or card-support having an opening 11^a arranged between the faces of the two kinds of type-holders when in the printing position, and mechanism for moving said chain or belt support and simultaneously inking the type of said independent type-holder, substantially as described.

2. In a printing-machine, the combination of a support for a type-holding chain or belt adapted to print upon one side of a card, means for imparting a step-by-step movement to said support, an independent type-holder 6 and an inking-pad 8^a therefor, a platen or card-support 4 having an opening 11^a arranged between the printing-faces of the type-holding chain or belt and type-holder 6, arms 7, rods 20 and 24, and levers 19 arranged to simultaneously move the chain-holding support and the type-holder 6 to ink type in the latter, substantially as described.

3. In a printing-machine, the combination of a support for a type-holding chain or belt adapted to print upon one side of a card, means for imparting a step-by-step movement to said support, an independent type-holder 6, and an inking-pad 8^a therefor, a platen or card-support 4 having an opening 11^a arranged between the printing-faces of the type-holding chain and type-holder 6, arms 7, rods 20 having removable blocks 20^a, rod 24, and a lever 19 arranged to simultaneously

move the chain-holding support and the type-holder 6 to ink the same, substantially as described.

4. In a machine of the kind described, a chain or belt containing a series of sticks or type-holders with laterally-projecting pins, a support for said chain or belt having heads notched to receive the laterally-projecting pins, substantially as described.

5. In a machine of the kind described, a belt or chain of type-holders, a removable shaft upon which the same may be wound, a support for said chain when printing and a spring-actuated shaft onto which said chain or belt is to be wound from the removable shaft, substantially as described.

In witness whereof we have hereunto set our hands this 22d day of April, 1898.

CLAY M. RUNYAN.
JOSIAH L. SULLIVAN.

Witnesses:

THEODORE WEYANT,
GEORGE M. FINCKEL.