

(No Model.)

3 Sheets—Sheet 1.

R. J. WYNKOOP & J. M. KEMP.
PHOTOGRAPHIC PRINTING APPARATUS.

No. 500,180.

Patented June 27, 1893.

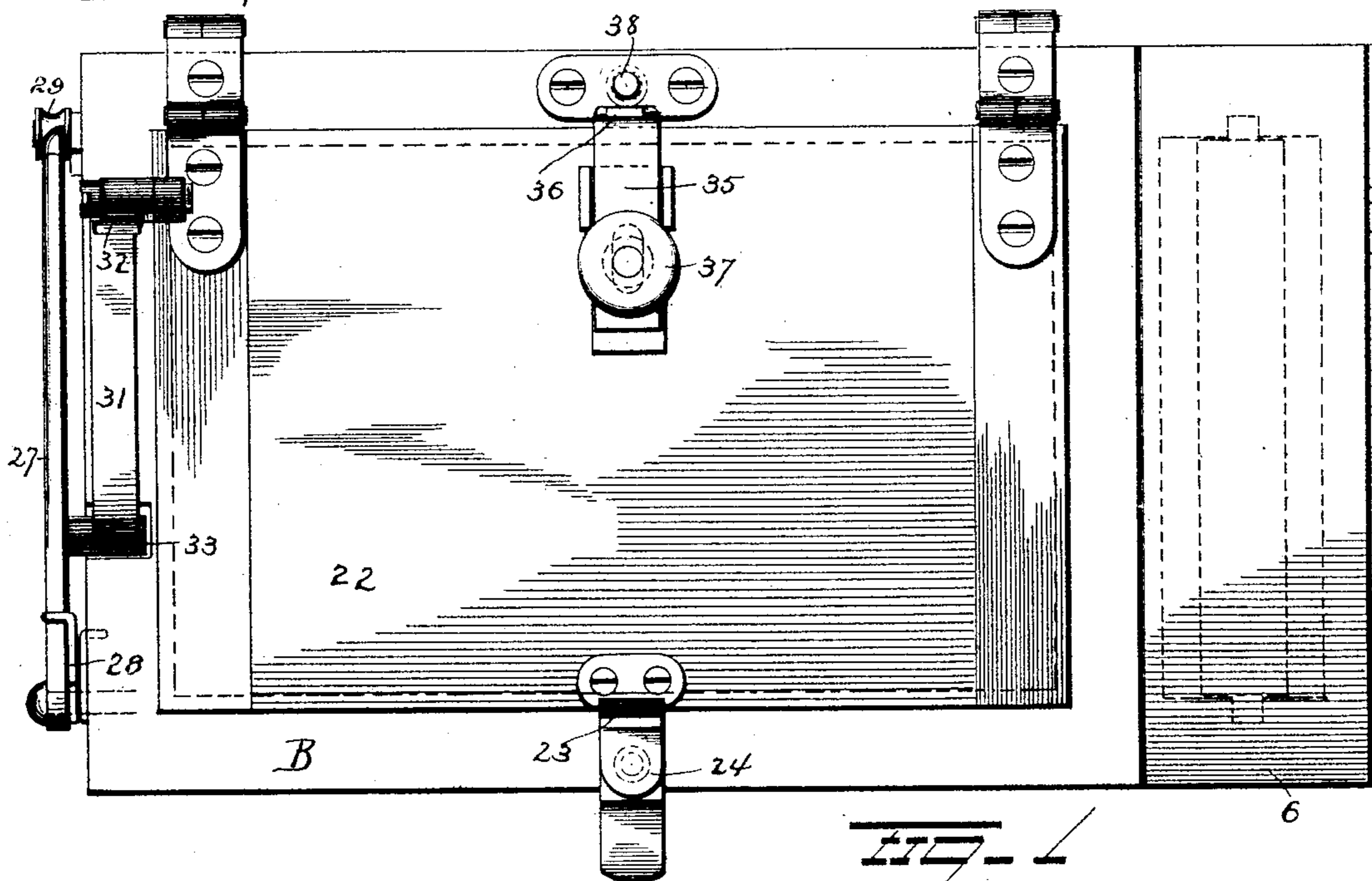
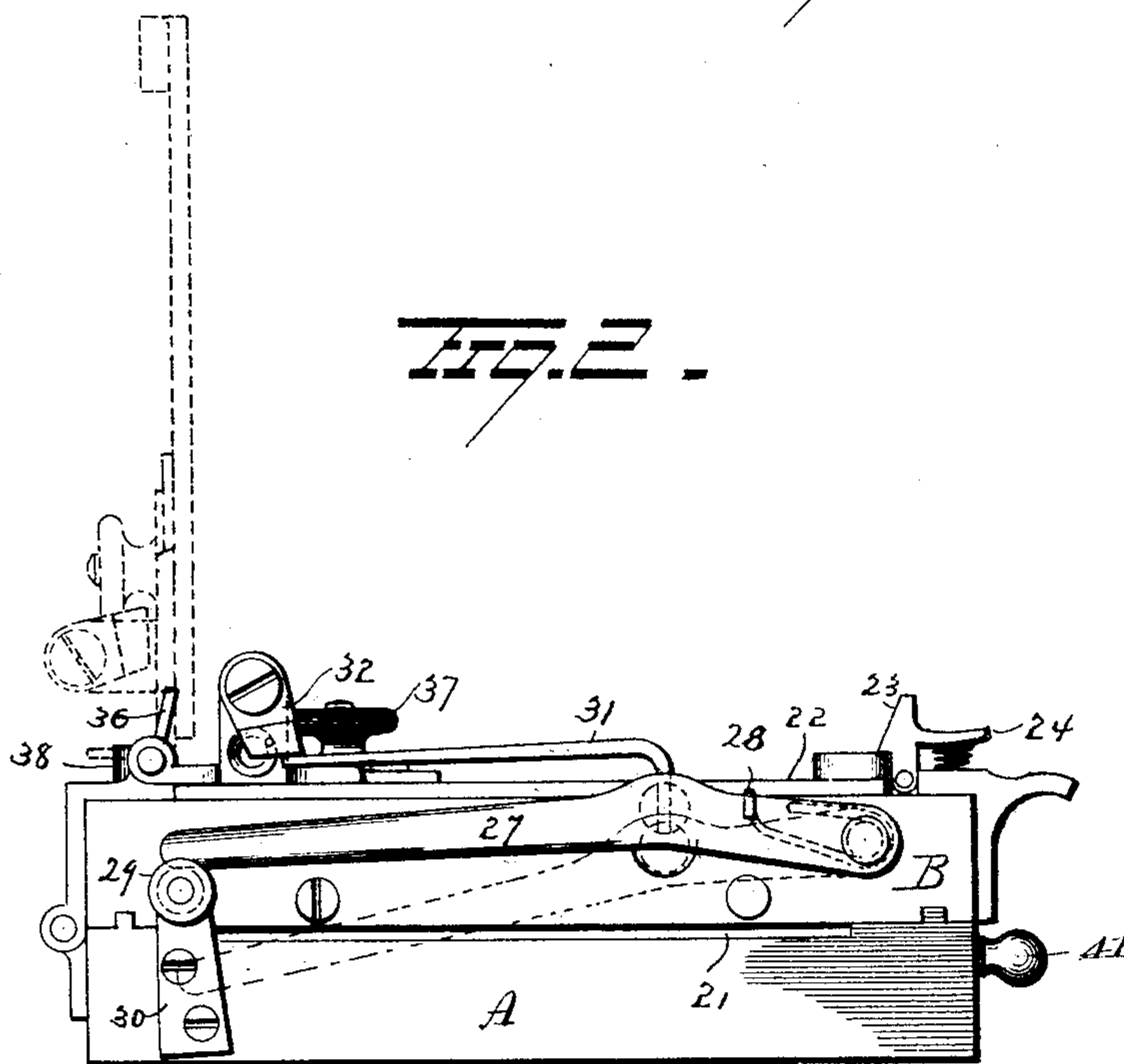


FIG. 2.



Witnesses

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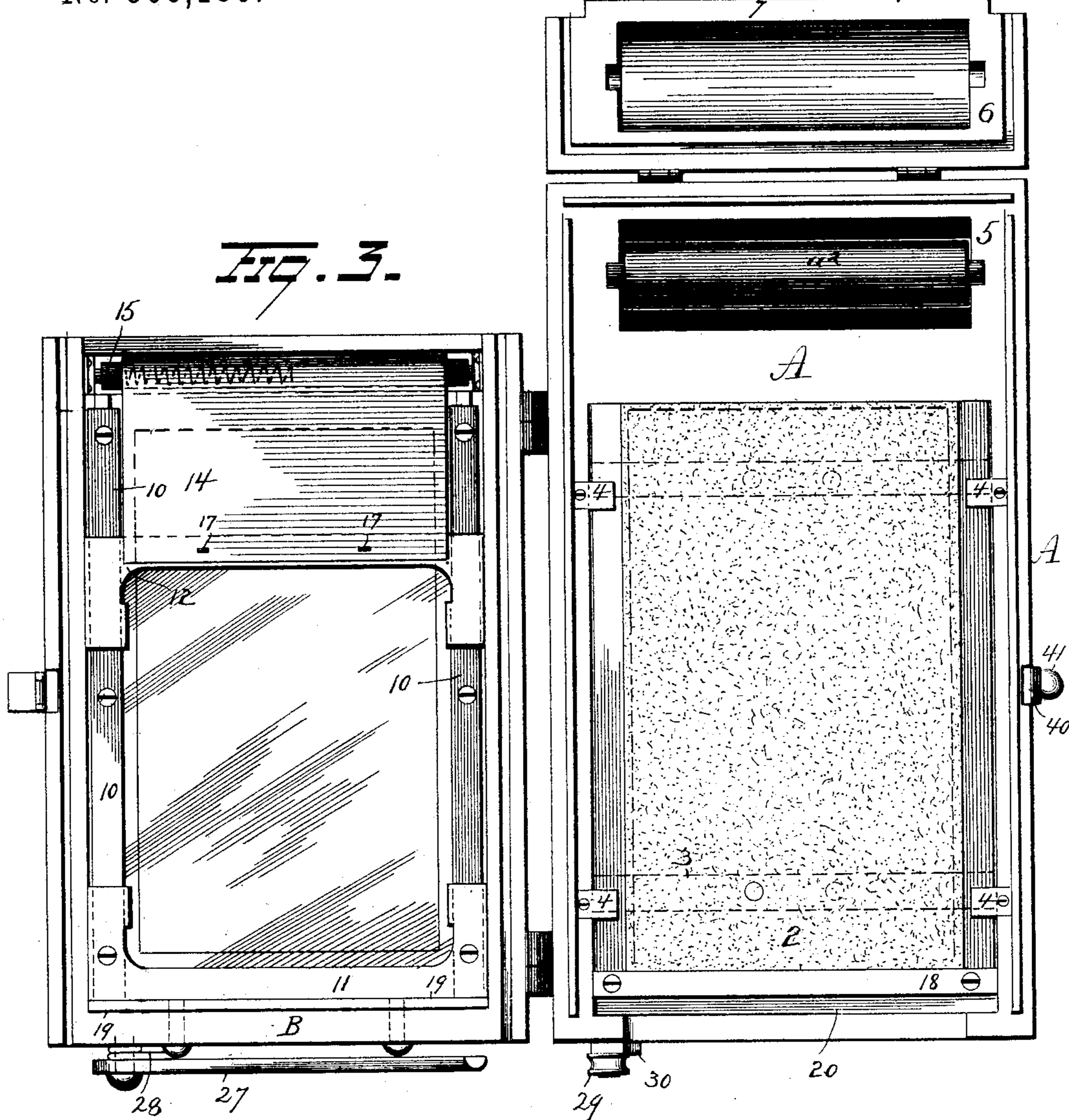
J. M. Kemp

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Witnesses

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(No Model.)

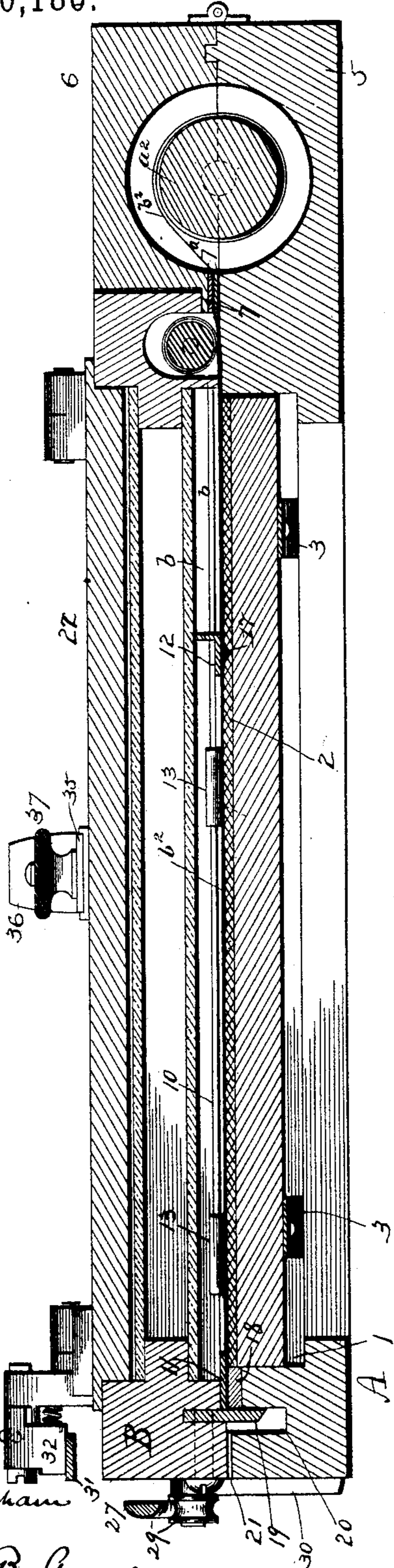
3 Sheets—Sheet 3.

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Fig. 5-



Witnesses
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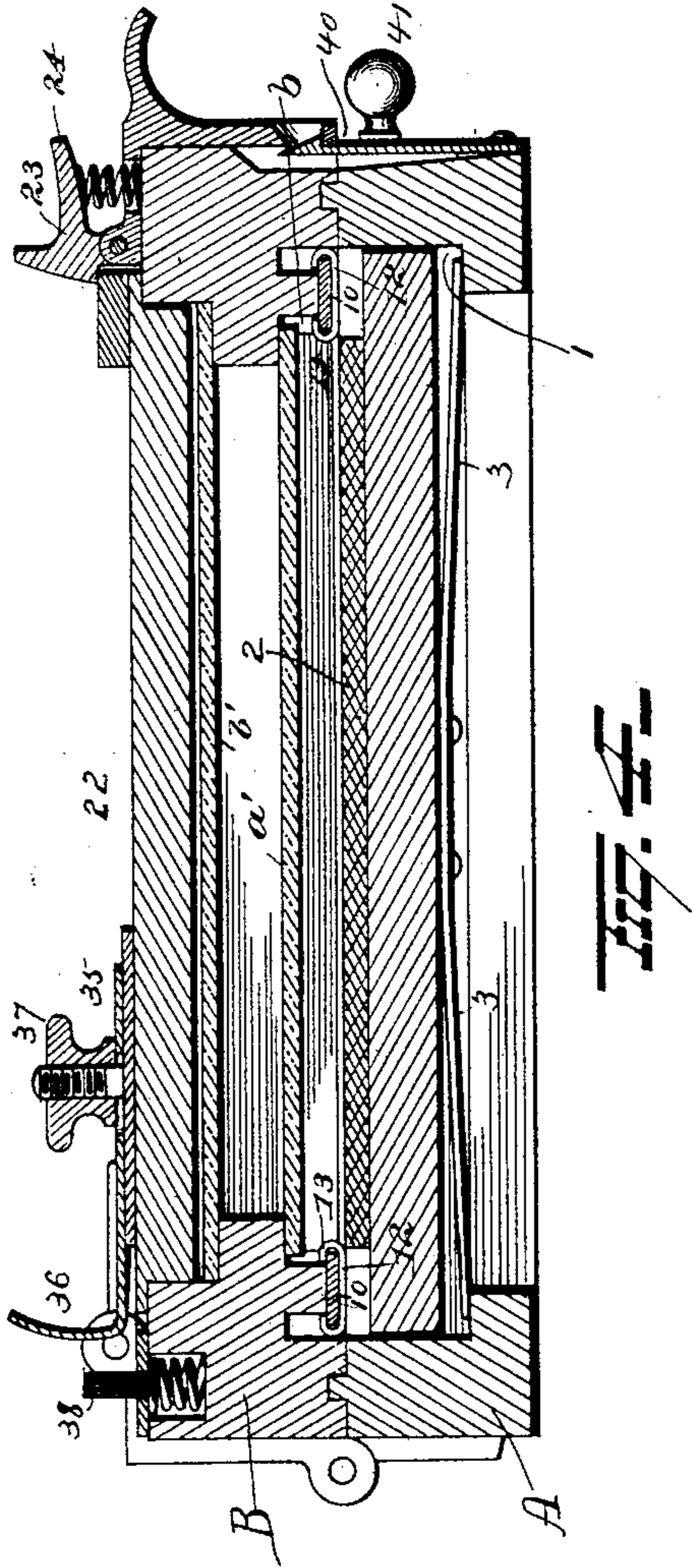


Fig. 6-

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UNITED STATES PATENT OFFICE.

RICHARD JOHN WYNKOOP AND JOHN MORIS KEMP, OF PATERSON, NEW JERSEY.

PHOTOGRAPHIC-PRINTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 500,180, dated June 27, 1893.

Application filed June 21, 1892. Serial No. 437,538. (No model.)

To all whom it may concern:

Be it known that we, RICHARD JOHN WYNKOOP and JOHN MORIS KEMP, of Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Photographers' Printing Apparatus; 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.

Our invention relates to an improvement in photographic printing apparatus, the object being to provide a device adapted more particularly for the use of amateur photographers and to this end it comprises few parts, is simple and inexpensive, and above all is devoid of complexity so that only ordinary skill is required in its manipulation.

In the accompanying drawings, Figure 1 is a plan view of the apparatus showing it in its closed position. Fig. 2, is a view in end elevation showing the parts closed in full lines and the shutter opened in dotted lines. Fig. 3 is a plan showing the apparatus open. Fig. 4 is a view in transverse section and Fig. 5 is a longitudinal section.

A represents the base or main frame of the apparatus. This base or frame is provided with an opening 1 and in this opening a pad 2 is yieldingly supported by means of springs 3, 3, stops 4, 4, being secured over the edges of the pad to retain it in the opening. At one end of the base a roll box or receptacle 5 is formed and in this the roll a^2 containing the sensitized film b^2 upon which the printing is to be done is contained. The cover 6 for inclosing this roll is hinged at one end of the base and adapted to fold inwardly toward the pad. Lip 7 is formed on the inner edge of the cover beneath which the paper is drawn and over which one edge of the negative frame rests when the latter is closed. This lip and the frame below are lined with felt 7^a to exclude light from the roll.

B represents the negative frame having an opening b corresponding with the opening in the base. This frame is hinged preferably at one edge to the corresponding edge of the base or main frame and it is adapted when closed to cover the main portion of the base

or all that portion not covered by the roll holder cover 6. The usual number of glass plates, transparent and ground are held in this negative frame on the inner and outer surfaces as at a' and b' and on its inner surface, the negative frame is furnished with an adjustable negative holder. Said holder is usually formed in the following manner: Narrow strips 10, 10 are secured at the opposite edges of the opening b and at one end of these strips a plate 11 is secured beneath which one end of the negative is adapted to be held. The plate 12 which holds the opposite end of the negative in place corresponds substantially with plate 11 but instead of being secured in place in the negative-frame, is constructed to slide on the strips 10, 10. A simple construction for accomplishing this is the one shown in which the plate 12 is provided with overlapping projections 13, 13, which loosely embrace the edges of the guide strips 10, 10 so that the plate may be slid thereon to different positions.

In order to exclude light from that portion of the paper lying across the pad in excess of that covered by the negative, a curtain 14 is employed. This is secured at one edge to the sliding plate 12 and its opposite end is secured to and rolled over a spring roller 15 after the manner of an ordinary window curtain, the spring acting to always hold the curtain taut and to thus roll up the slack just as fast as it is created by enlarging the negative holder, also on the other hand its tension should not be sufficient to slide the plate 12 automatically.

From the foregoing it will be seen that the holder is adjusted to the size of the negative, the negative having first been placed in the holder. The plate 12 is provided with pins 17, 17, which penetrate the paper when the apparatus is closed for the purpose of holding it in place and also the perforations formed indicate about where the paper is to be cut by the knife. The knife referred to comprises the two blades 18 and 19. These are located at the end farthest from the roll, one blade being secured to the base and the other to the negative frame so that each time the parts are closed the paper coming between the blades is cut. The blade 18 is practically flush with the inner face of the base and the blade 19

preferably projects inward some distance beyond the face of the negative frame and a recess 20 is formed for it in the base just outside of blade 18. In this manner the blade 5 acts as a tongue in addition to its main function as a cutter, with recess 20 as its groove thus excluding light at this point. Beyond the groove, the edge of the base is cut away a trifle at 21 to allow the paper to pass through. 10 The opening *b* in the negative frame is kept closed by a shutter 22. This shutter is hinged by preference at the same edge of the negative frame that the frame itself is hinged and as shown if desired the hinges may be so constructed to both join the negative frame to 15 the base, and the shutter to the negative frame. In other words the most approved form of hinges for the purpose are compound hinges, although this construction is not at all necessary. 20 The shutter is held closed by a pivoted spring-actuated latch 23 which is provided with an inclining inner face whereby it is forced back out of the way when the shutter is closed, the spring acting to throw it instantly in engagement with the shutter when 25 the latter falls into position. The latch is provided with a thumb-piece 24 by which it is depressed in order to unlock the shutter.

The shutter is opened and closed and the 30 negative frame is swung on its hinges when unlocked, by the following means. A spring arm 27 is pivoted at one end to one end of the negative frame, it being held normally depressed by means of a spring 28 at its pivot. 35 The location and shape of this arm is such that its free end strikes a roller 29 on an arm 30 projecting from the base. This arm is also furnished with a stiff spring 31 secured to a lateral projection 33 the free end of which spring 40 is adapted to engage a hanger 32 depending from one of the shutter hinges. This hanger is provided with shoulders to confine its vibrations within certain prescribed limits, and it has a spring which throws it normally forward far enough to be engaged by the spring 45 31. When the frame is closed and the spring 31 and hanger 32 are in engagement with each other, the spring 31 is under its greatest tension and the tendency is to throw the shutter open, and the moment the shutter is 50 unlocked it flies open in consequence. But it is necessary that it should fly shut promptly also. For this purpose, we provide an adjustable stop 35. This consists of a slotted 55 plate having an outwardly bent toe 36 at one end in position to strike a yielding abutment 38 on the edge of the negative frame. The stop is set outward or inward in order to increase or diminish the speed of the shutter 60 by means of a thumb nut 37. A spring latch 40 is provided for locking the negative frame and the base together and this latch has a knob or handle 41 as a convenient means for operating it.

65 The adjustment and operation of the parts is as follows:—To open the frame the operator takes the handle and the knob 41 be-

tween his thumb and fore finger pressing the two together slightly until unlocked. The negative frame is then swung open just long 70 enough to adjust the paper. In doing this, the shutter mechanism is automatically adjusted for operation. In other words when the negative frame is swung upward say to an angle of about forty-five degrees the free 75 end of spring 31 due to the relative positions of the parts will have pushed the hanger 32 aside and descended to the frame. The spring in the hanger then causes this hanger to swing back to its normal position. Now 80 as the negative frame is closed, the arm 27 striking the roller 29 forces the arm upward and the spring 31 is prevented from passing by the hanger, so that in this way tension is given the spring which has the effect of open- 85 ing the shutter when allowed to expend its energy which it does the moment the shutter is unlocked. When the parts are in this position the tendency also is to hold the negative frame up so that a slight pressure is nec- 90 essary to close it.

To effectually exclude light from the interior of the apparatus when closed the inner surfaces of all these parts are painted black in the usual manner and further they are 95 furnished with tongues and grooves at the edges so far as possible in order to form light-tight joints all around the paper.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is— 100

1. In a photographic printing apparatus the combination with a negative frame constructed to receive and hold the usual glass plates, of an adjustable negative holder, and a curtain 105 connected with one of the parts of the holder and adapted to exclude light from that portion of the sensitized paper which is not to be printed upon, substantially as set forth.

2. In a photographic printing apparatus the 110 combination with a negative frame, of a negative holder comprising a stationary and a movable part, the movable part having pins adapted to penetrate and hold the paper being printed upon, a curtain connected with this 115 movable part of the holder and a spring roller for holding this curtain and keeping it taut, substantially as set forth.

3. In a photographic printing apparatus the combination with a main frame or base having a yielding pad supported therein, a roll holder at one end of this frame or base, and a hinged cover for the roll holder, of a negative 120 frame hinged to the main-frame or base, said negative frame adapted to lock the roll holder 125 cover closed when it is closed itself and means for fastening this negative frame closed, substantially as set forth.

4. In a photographic printing apparatus the combination with a main frame or base, the 130 latter having a roll holder formed at one end, a cover hinged at the outer edge of this roll holder, said cover provided with a lip along its free edge, of a negative frame hinged to

one edge of the main frame or base, this negative frame constructed to overlap the lip when closed and the two frames and cover having tongue and groove joints formed around their edges, substantially as set forth.

5 In a photographic printing apparatus the combination with a main frame or base, of a negative frame hinged to the base, these parts having tongue and groove joints formed at
10 one or more of their edges, to exclude light, and cutters comprising a pair of blades, one secured to the base and one to the negative frame, one blade adapted to project into a groove in the base to form a tongue and groove
15 joint at this point, substantially as set forth.

6. In a photographic printing apparatus the combination with a main frame or base, and a negative frame hinged thereto, of an adjustable negative holder in one of these parts, said
20 holder having means thereon for holding the sensitized paper in position, and cutting blades, one secured to the base and one to the negative frame, substantially as set forth.

7. In a photographic printing apparatus, the
25 combination with two frames hinged together, and a shutter hinged to one of these frames,

of a shutter operating mechanism pivoted to one frame and bearing outwardly against the other frame and against the shutter at the end opposite the pivot when the parts are closed, 30 said parts automatically set in these positions by the outward swinging movement of one of the frames, substantially as set forth.

8. In a photographic printing apparatus, the combination with a pair of frames hinged together, and a shutter hinged to one of the frames, of a shutter operating mechanism comprising an arm or lever pivoted at one end to one frame, the other end bearing upon the other frame, said arm or lever having a spring 40 thereon the outer end of which bears upon the shutter, said parts automatically set by the opening and closing of the apparatus, substantially as set forth.

In testimony whereof we have signed this 45 specification in the presence of two subscribing witnesses.

RICHARD JOHN WYNKOOP.

JOHN MORIS KEMP.

Witnesses:

W. F. LANIGAN,
JAMES D. GRAY.