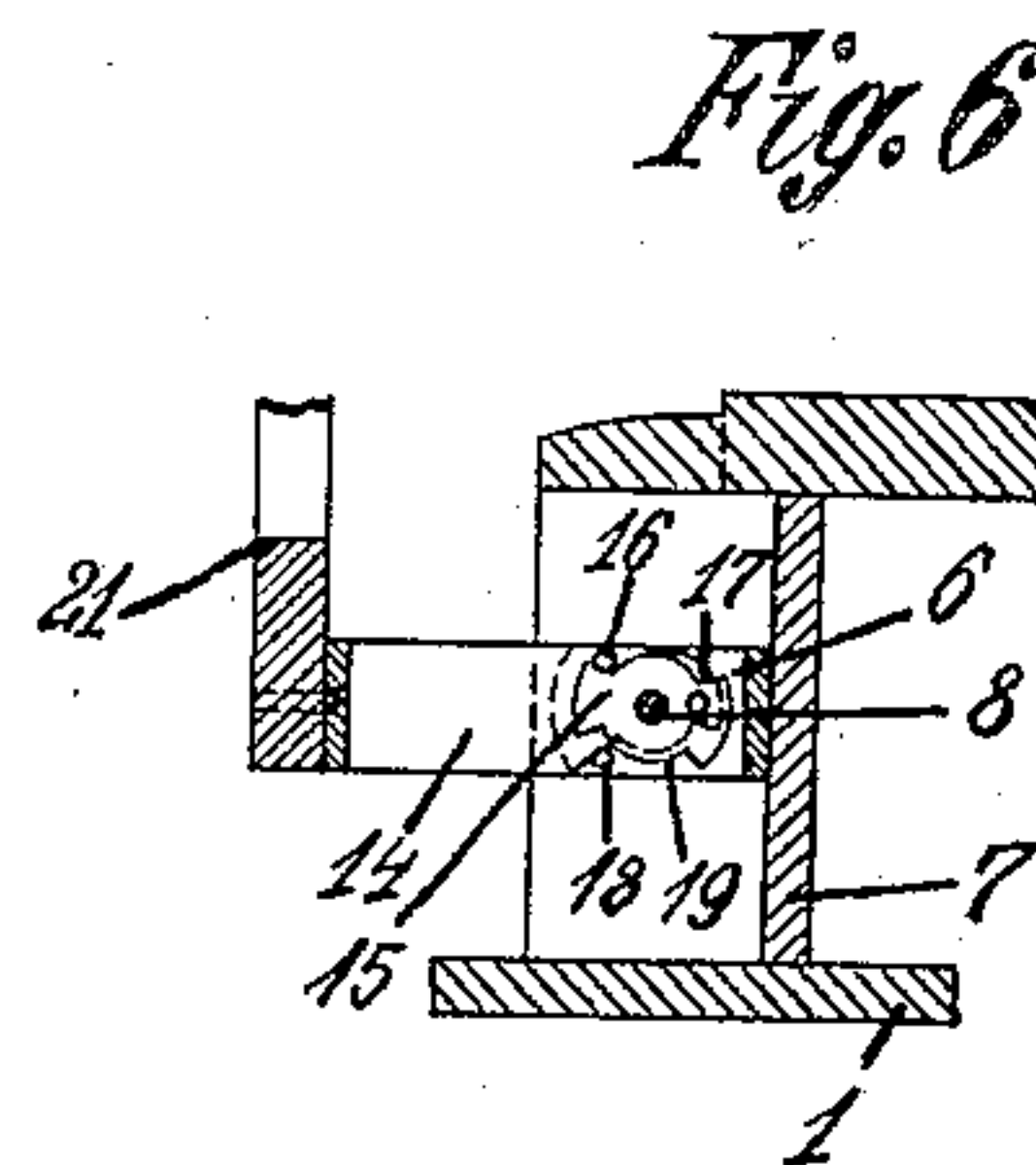
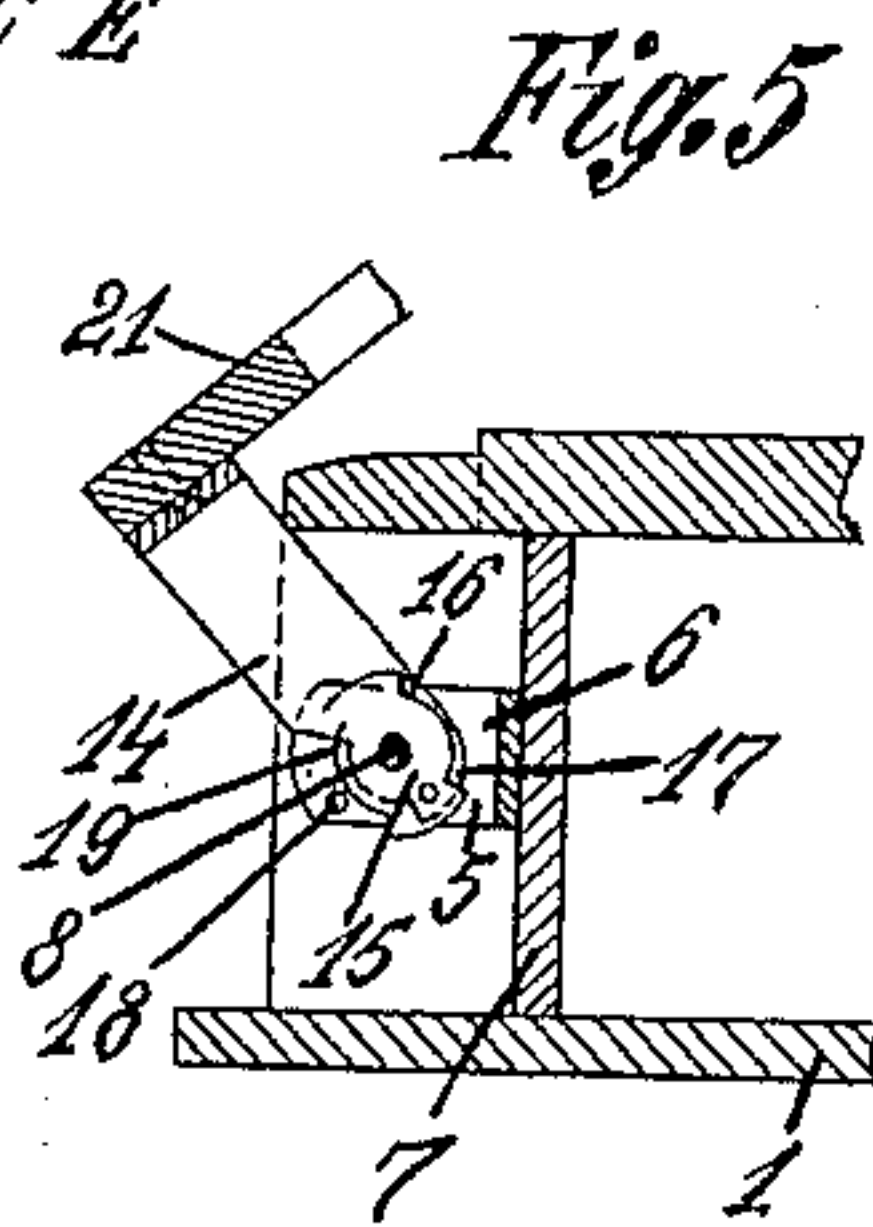
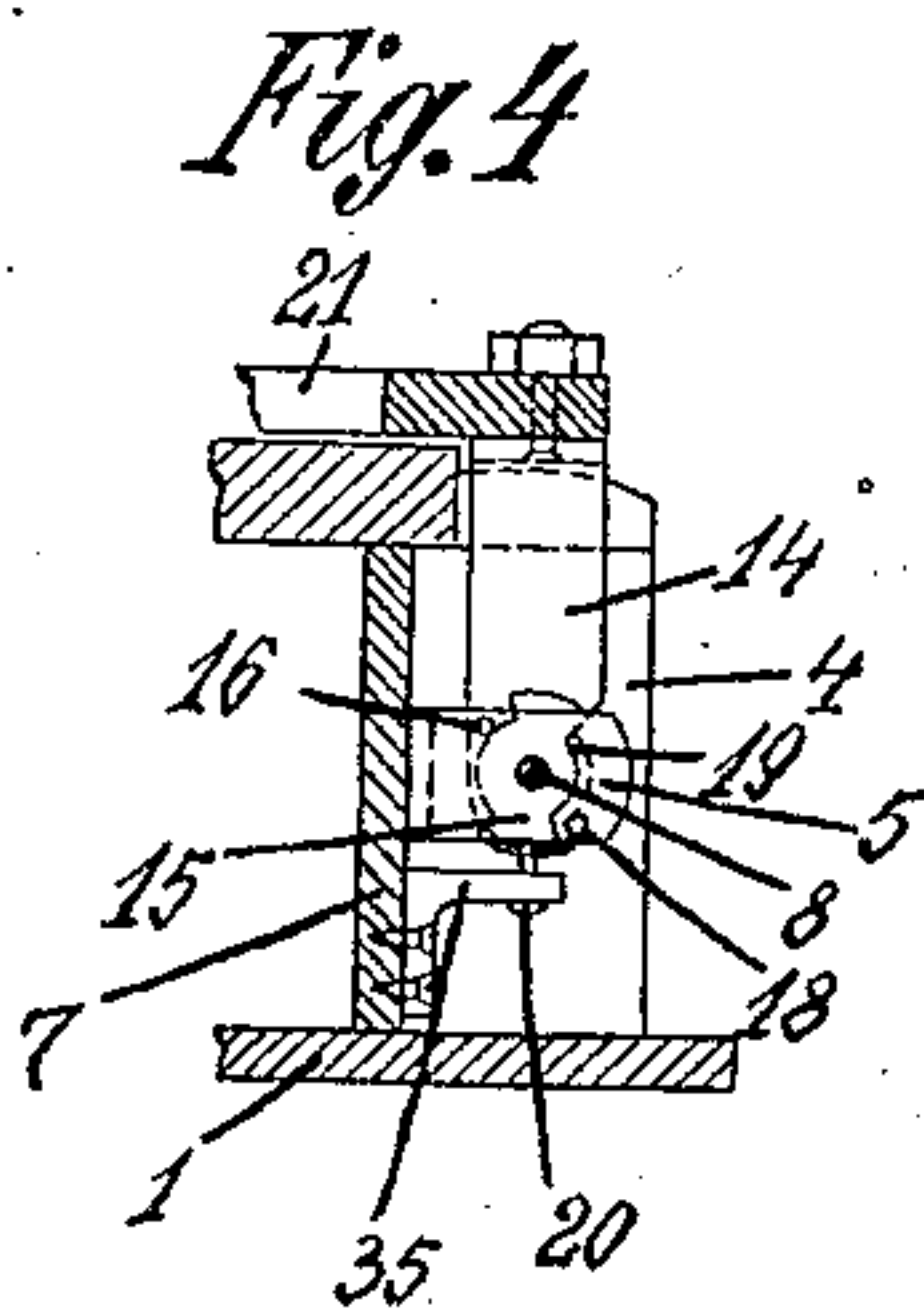
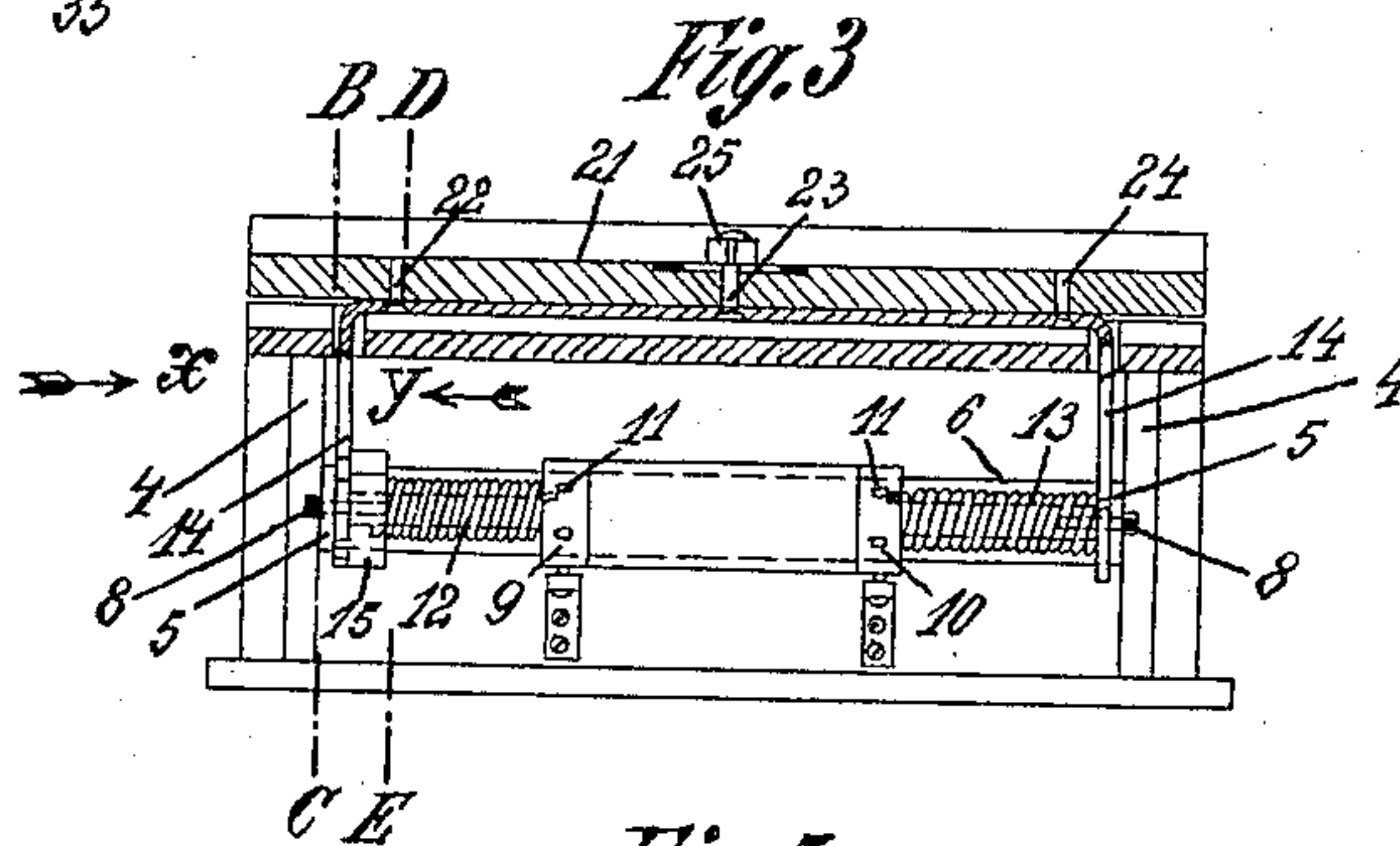
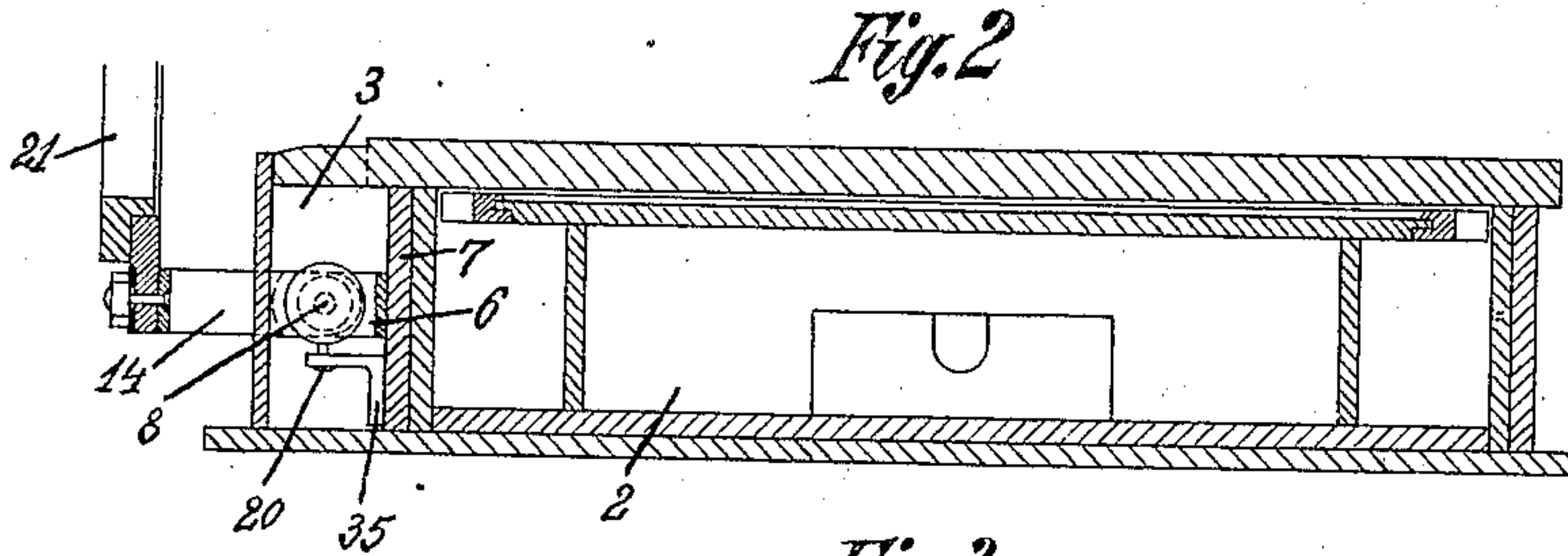
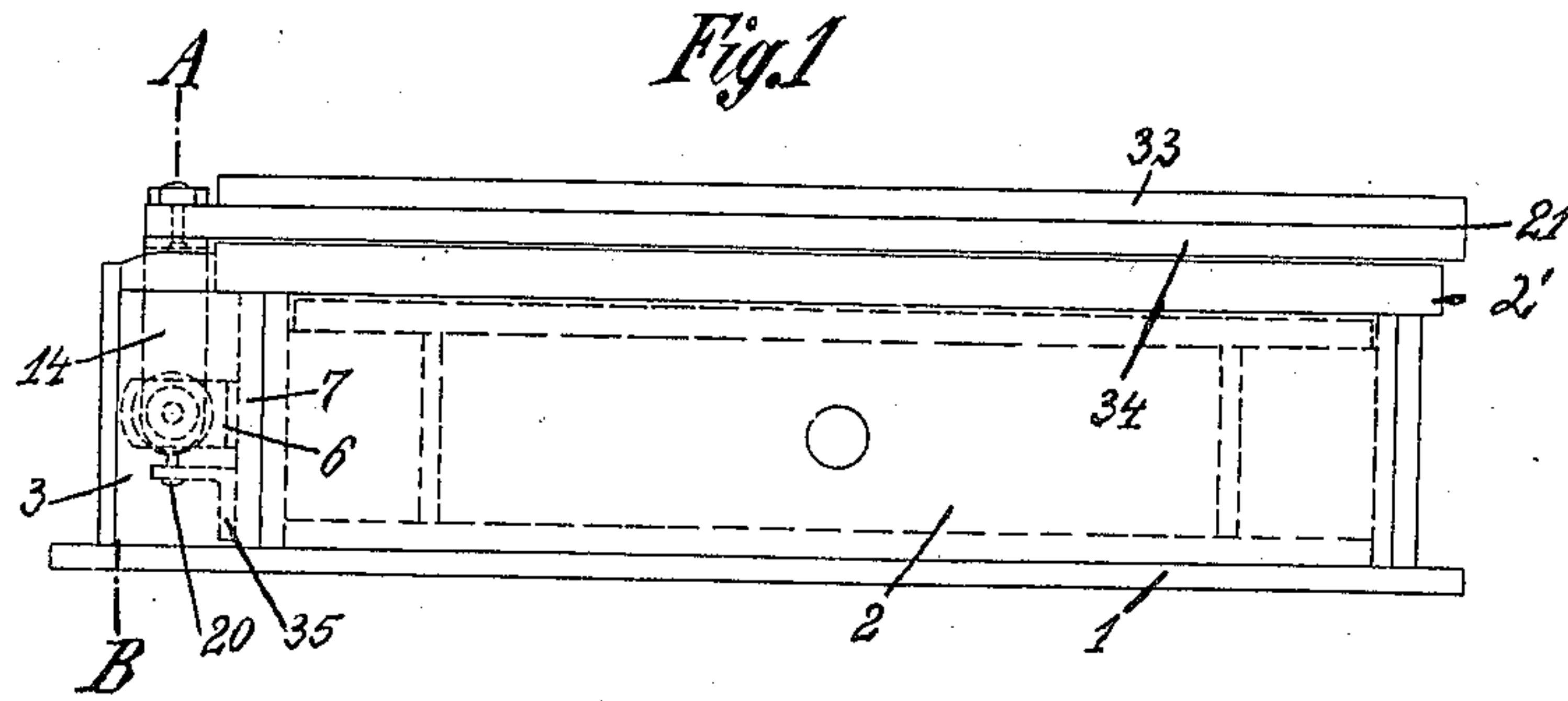


No. 836,814.

PATENTED NOV. 27, 1906.

M. KLACZKO.  
DUPLICATING DEVICE.  
APPLICATION FILED APR. 30, 1906.

2 SHEETS—SHEET 1.



Witnesses.  
*Max Sommer*  
*W. H. Rhodes*

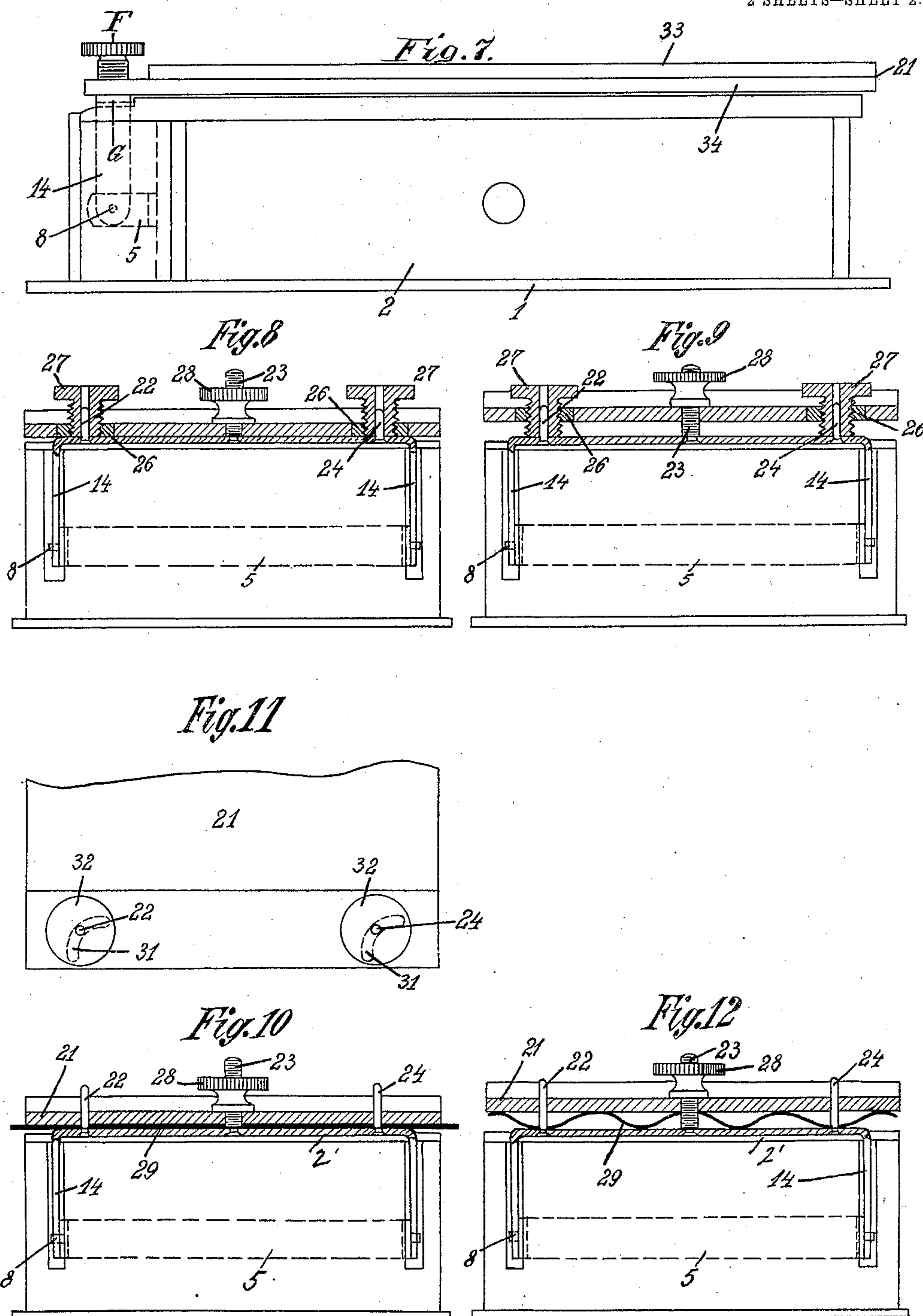
Inventor.  
*Max Klaczko*  
per *J. H. Rhodes*  
Attorney

No. 836,814.

PATENTED NOV. 27, 1906.

M. KLACZKO.  
DUPLICATING DEVICE.  
APPLICATION FILED APR. 30, 1906.

2 SHEETS—SHEET 2.



Witnesses.  
J. P. Sommer  
W. W. H. H. H.

Inventor.  
Max Klaczyko  
per J. H. Rhodes  
Attorney



# UNITED STATES PATENT OFFICE.

MAX KLACZKO, OF RIGA, RUSSIA.

## DUPLICATING DEVICE.

No. 836,814.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed April 30, 1906. Serial No. 314,599.

*To all whom it may concern:*

Be it known that I, MAX KLACZKO, a subject of the Emperor of Russia, residing at Riga, in the Baltic Provinces, Russian Empire, have invented certain new and useful Improvements in Duplicating Devices, of which the following is a specification.

My invention relates to duplicating devices of the class in which the impression is produced by means of a wax stencil and a flat printing-surface. In duplicating devices of this class it is desirable that the frame which carries the stencil, after an impression has been made, should not be raised from the printing-surface too suddenly or thrown backward too far by hand, otherwise the resultant air-pressure may destroy the stencil. It is also desirable that the method of attachment of the stencil-frame to the printing-frame should be such that the stencil-frame cannot only easily be removed, but that it can also be adjusted both vertically and horizontally, so that the sheets to be printed can be placed in a pile on the printing-surface instead of having to be fed singly by hand, while on the other hand the stencil can be adjusted to the sheets instead of the sheets having to be adjusted to the stencil, and which permits of the use of fixed stops or guides on the printing-surface for the sheet to be printed.

To attain these several ends, I have devised the construction forming the subject-matter of my present invention, as hereinafter explained, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a duplicating device in accordance with my said invention. Fig. 2 is a longitudinal section of Fig. 1 with the stencil-frame open and partly removed. Fig. 3 is a cross-section of Fig. 2 on line A B. Fig. 4 is a part sectional elevation on line B C of Fig. 3, seen in the direction of the arrow X. Fig. 5 is a part-sectional elevation on line D E of Fig. 3, seen in the direction of the arrow Y. Fig. 6 is a similar sectional elevation to Figs. 4 and 5 and shows the parts in another position. Fig. 7 is a side elevation of a duplicating device according to my invention, the stencil-frame of which is connected to the printing-frame by means of a detachable and adjustable fastening. Fig. 8 is a sectional elevation on line F G of Fig. 1.

Fig. 9 is a similar elevation to Fig. 8 and shows the stencil-frame raised. Fig. 10 is a sectional elevation showing a modified form of detachable fastening for the stencil-frame, the latter being in a closed position. Fig. 11 is a view from above of part of a stencil-frame adjustable horizontally. Fig. 12 is a similar sectional elevation to Fig. 10 and shows the stencil-frame raised.

The duplicating-box 1, with the usual drawer 2 and printing-plate 2', is provided at its one end with a chamber 3, in which supports 4 are located. Attached to these supports are bearing-plates 5, which can be rigidly connected with each other by means of a dog 6, screwed or otherwise fastened to the wall 7. In the bearing-plates 5 is journaled a spindle 8, whose center portion has a larger diameter than its ends and carries two rings 9 and 10. Loosely turning on the spindle 8 is a dog 14, serving as a carrier for the stencil-frame 21. The latter consists of two frames 33 and 34, superposed and held together by clips, (not shown,) the stencil being clamped between them. Part of the end of the frame 33 is cut away, as shown, and the exposed part of the frame 34 is provided with openings, into which, in the construction shown in Figs. 1 to 6, pins 22, 23, and 24 enter, which are secured to the dog or carrier 14, the center pin being provided with a rotary thumb-piece 25, which serves as fastening for the frame 34 to the carrier by being turned after having been thrust through the center opening. The movements of the carrier 14 for the stencil-frame are controlled by two spiral springs 12 and 13, both located on the spindle 8, one at each end, the inner end of the spring 12 being secured to the ring 9 and that of the spring 13 to ring 10. The outer end of the spring 13 is secured to the carrier 14 in such way that movement of the said carrier toward the printing-plate pulls the end of the spring with it and compresses same. The outer end of the spring 12, on the other hand, is secured to a clutch 15, turning loosely on the spindle 8 in such way that the turning of the clutch away from the printing-plate takes the end of the spring with it and compresses the same. To turn the clutch 15, the inner side of the particular arm of the carrier 14 is provided with a pin 16, which projects into the slot 17 of the clutch, so that when the



carrier is pulled outward the pin takes the clutch with it under tension of the spring until the clutch is held against further movement by the fixed stop 18 on the bearing-plate 5. For putting and keeping the springs 12 and 13 under proper tension the rings 9 and 10 are provided with holes 11, whereby they can be turned forward by means of a pin or the like, any backward turning of the spindle being prevented by screws 20, secured in brackets 21', fastened to the wall 7 and engaging in the holes 11. The action of this part of the invention is as follows: In moving the carrier 14 inward from its normal position, as shown in Fig. 5, to press the stencil-frame 21 to the printing-plate 2', the spring 13, owing to the pull on its outer end by the carrier, is put under tension, so that when the impression is made and the stencil-frame released the latter is brought back by the spring to its normal position, in which the pin 16 on the other side of the carrier just comes into contact with the clutch 15. The clutch not having been turned in this movement, the spring 12 is not affected. If the carrier with the stencil-frame is now turned in the reverse direction—that is, away from the printing-plate—the pin 16 forces the clutch 15, carrying the end of spring 12 to rotate, thus putting the spring under tension and braking the outward movement of the carrier until the rotation of the clutch is arrested by the fixed stop 18, Fig. 6. In this way if the stencil-frame after being released flies back to beyond its normal position it is brought back to this position automatically by means of the differential action of the two springs.

In the modification shown in Figs. 8 and 9 the openings in the frame 34 are provided with nuts 26, in which hollow screws 27 are screwed, the hollow centers of these screws being adapted to receive the pins 22 and 24 of the carrier 14 to hold the stencil-frame in alinement with the printing-plate. By screwing the hollow screws against the carrier the stencil-frame can be raised or lowered, as desired, and is then held in its adjusted position by the threaded pin 23 and finger-nut 28.

Instead of using the nuts 26 with screws 27, the construction shown in Figs. 10 and 11 can be used. In this construction the raising of the stencil-frame is effected by a suitably-bent spring 29, placed between the carrier 14 and the stencil-frame 21, the lowering of the latter being effected by screwing down the nut 28.

In order to adjust the stencil-frame horizontally to the sheet to be printed and thus enable fixed stops to be used on the printing-plate, the openings 30 for the pins 22 24 can consist of curved slots 31, Fig. 11. In this case the pins are threaded and provided with

finger-nuts 32, which firmly hold the stencil-frame in the adjusted position.

The cutting away of a portion of the frame 33 prevents the frames 33 and 34 from being forced apart by the pressure of the nut 28.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In duplicating devices having a flat printing-surface, the combination with the duplicating-box and stencil-frame, of a carrier for the latter adapted to rotate on a spindle within said duplicating-box, a clutch adapted to be rotated on said spindle by the carrier, two spiral springs forming an attachment between spindle and carrier and spindle and clutch and adapted to be placed alternately under tension according to the direction of movement of the carrier, with means for regulating the tension of the springs and for fastening the stencil-frame to the carrier substantially as and for the purpose described and illustrated.

2. In duplicating devices having a flat printing-surface, the combination with a duplicating-box, a stencil-frame, a carrier for said frame with means for fastening the frame to the carrier and putting the latter under spring tension in each direction of its rotary movement, of openings in the stencil-frame, pins or screws on the carrier adapted to enter such openings and secure the stencil-frame in alinement with the printing-plate substantially as and for the purpose described and illustrated.

3. In duplicating devices having a flat printing-surface, the combination with a duplicating-box, a stencil-frame, a carrier for said frame with means for fastening the frame to the carrier and putting the latter under spring tension in each direction of its movement, of a spring located between carrier and stencil-frame, with means to limit the movements of the stencil-frame in a vertical direction substantially as and for the purpose described and illustrated.

4. In duplicating devices having a flat printing-surface, the combination with a duplicating-box, a stencil-frame, a carrier for said frame with means for fastening the frame to the carrier and putting the latter under spring tension in each direction of its movement, of threaded openings in the stencil-frame, screws engaging in said threaded openings, hollow centers in said screws adapted to receive pins secured to the carrier with means for limiting the movement of the stencil-frame in a vertical direction substantially as and for the purpose described and illustrated.

5. In duplicating devices having a flat printing-surface, the combination with a duplicating-box, a stencil-frame, a carrier for said frame with means for fastening the



frame to the carrier and putting the latter  
under spring tension in each direction of its  
movement of curved openings in the stencil-  
frame for the pins on the carrier with means  
5 for holding the stencil-frame in the adjusted  
position substantially as and for the purpose  
described and illustrated.

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

MAX KLACZKO.

Witnesses:

SAMUEL HULME RHODES,  
ANNA SOMMER.