

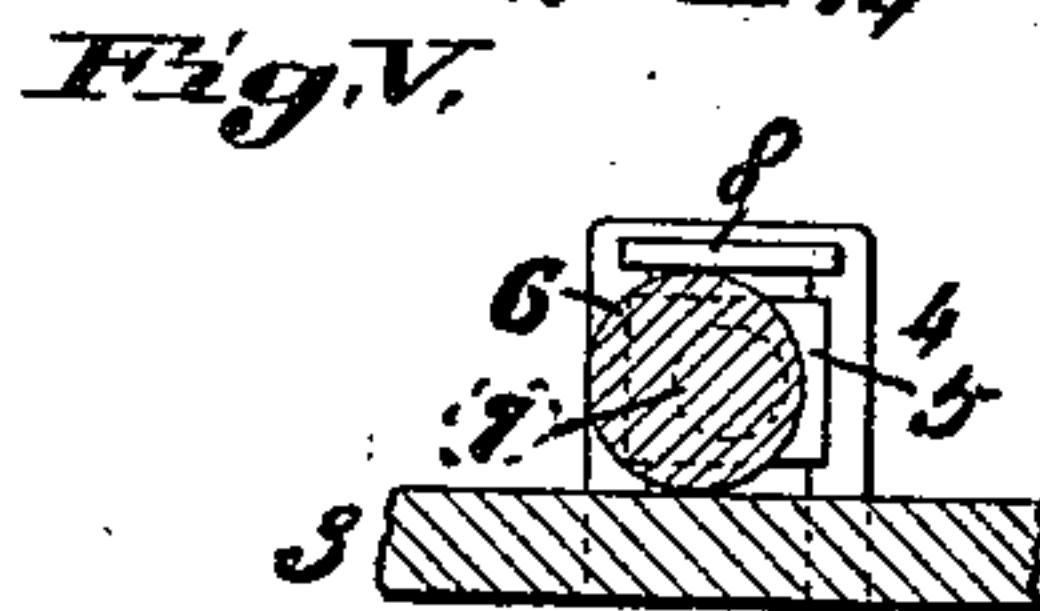
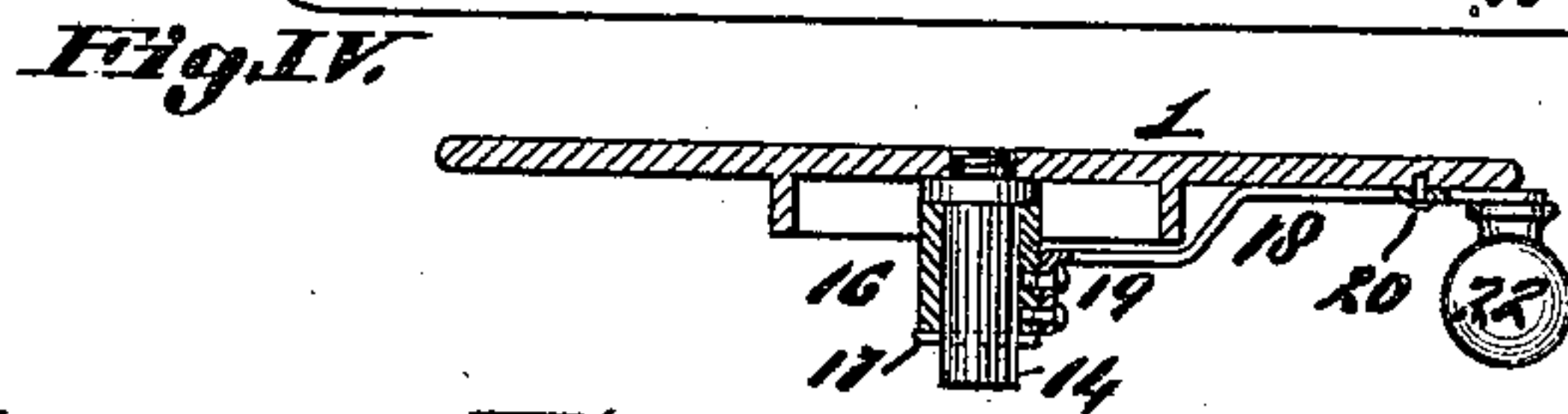
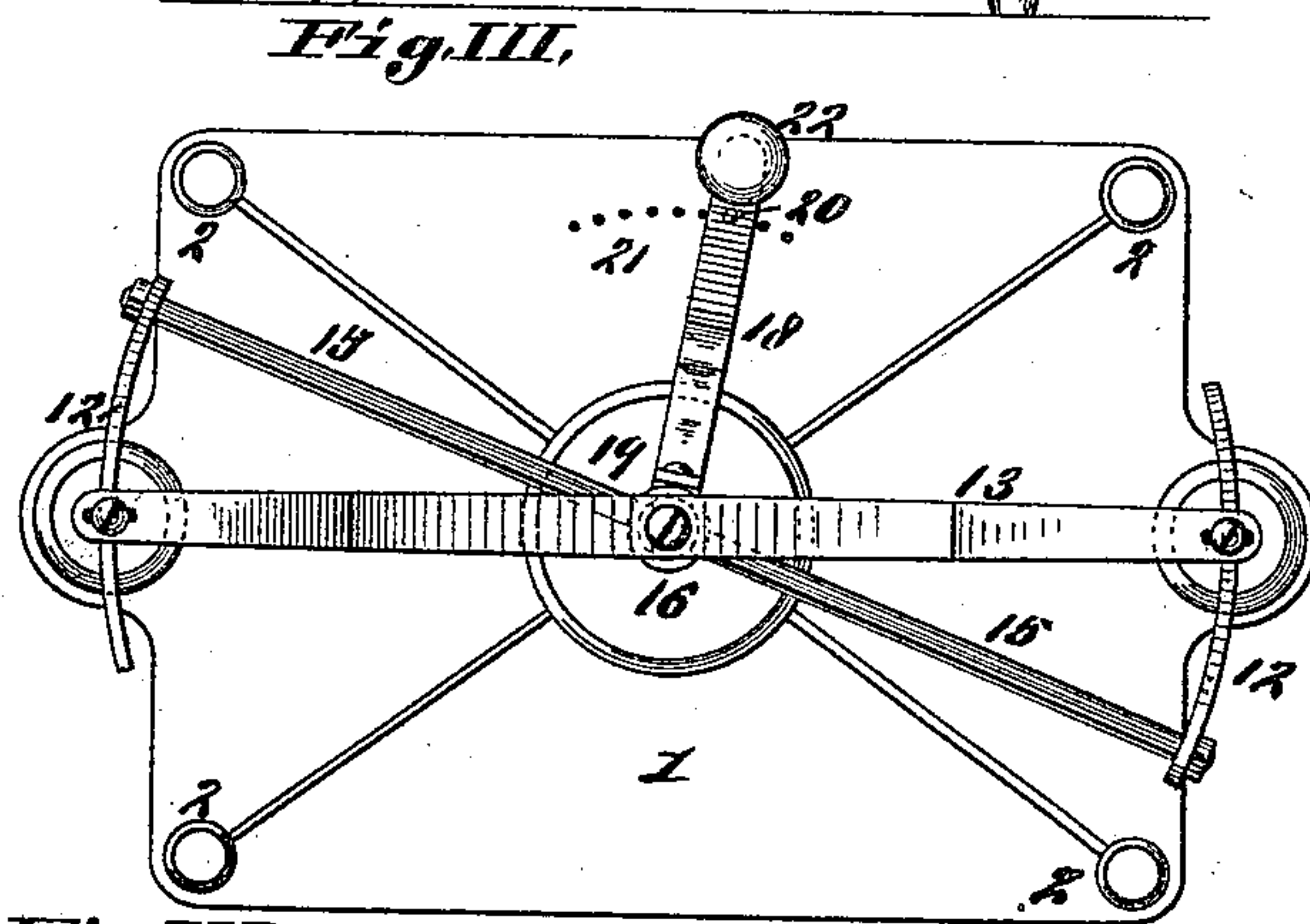
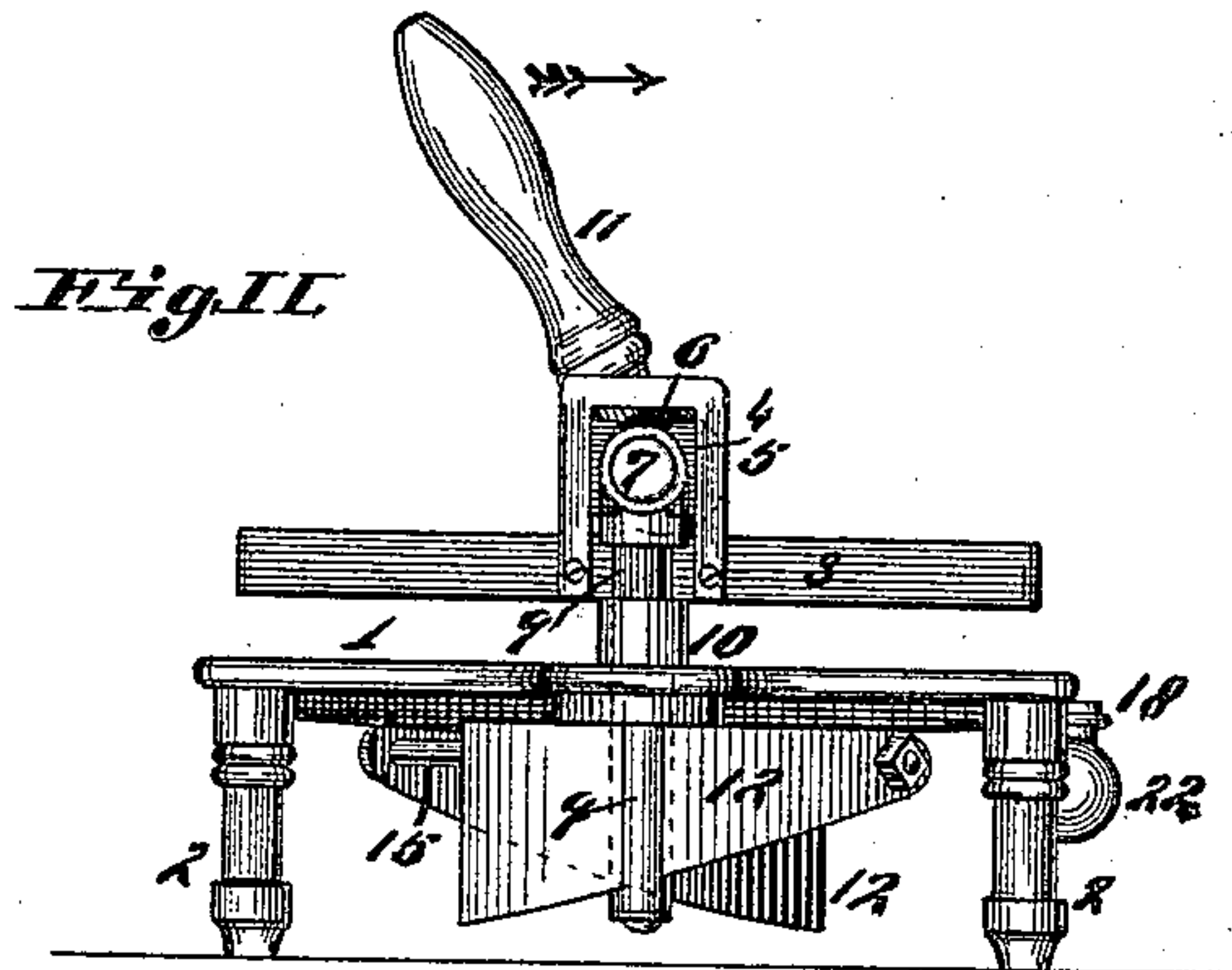
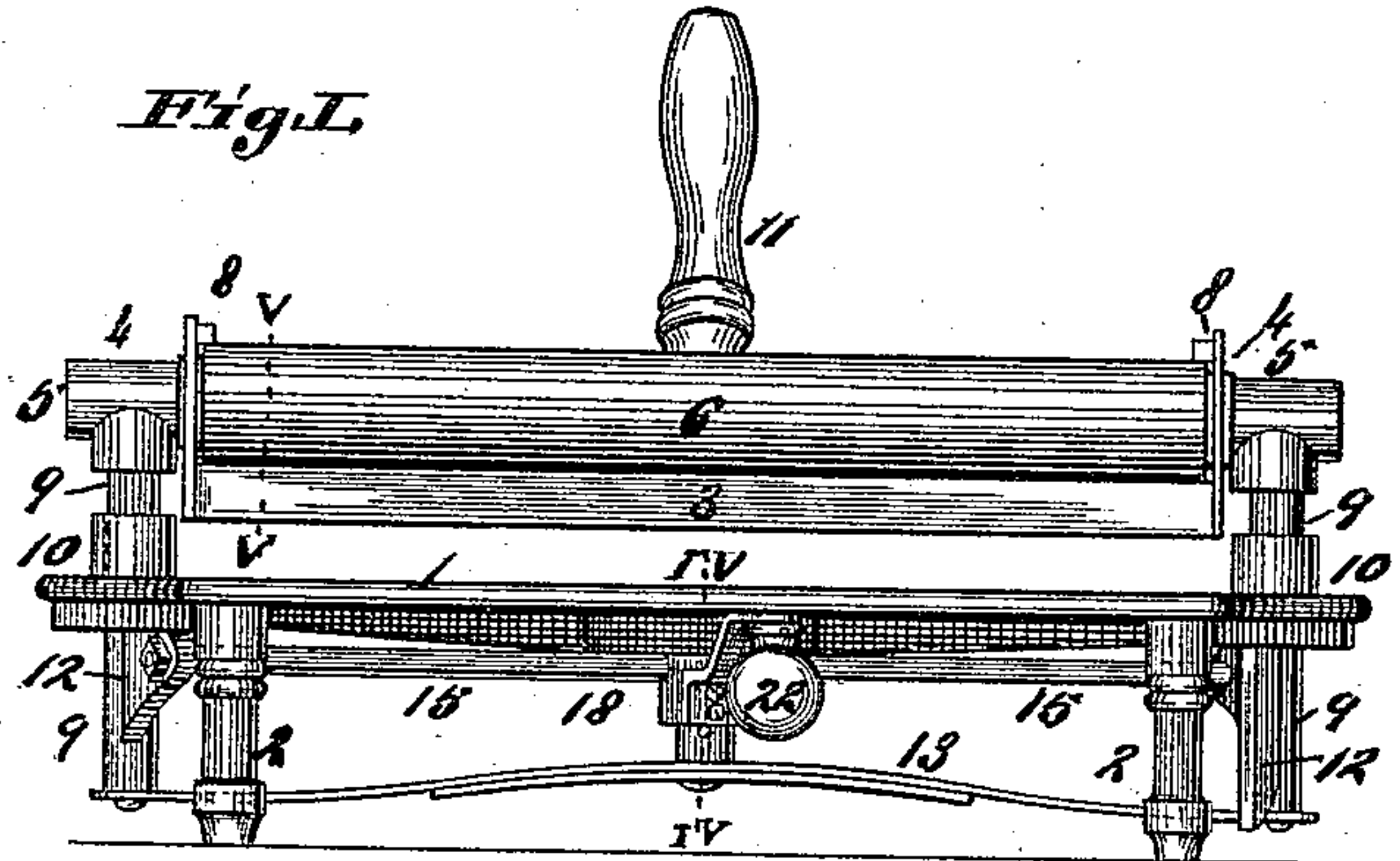
(No Model.)

2 Sheets—Sheet 1.

L. EHRlich.  
COPYING PRESS.

No. 450,563.

Patented Apr. 14, 1891.



Attest,  
E. Arthur  
E. B. Knight.

Inventor,  
Leo Ehrlich  
By Knight Bros  
Attys

(No Model.)

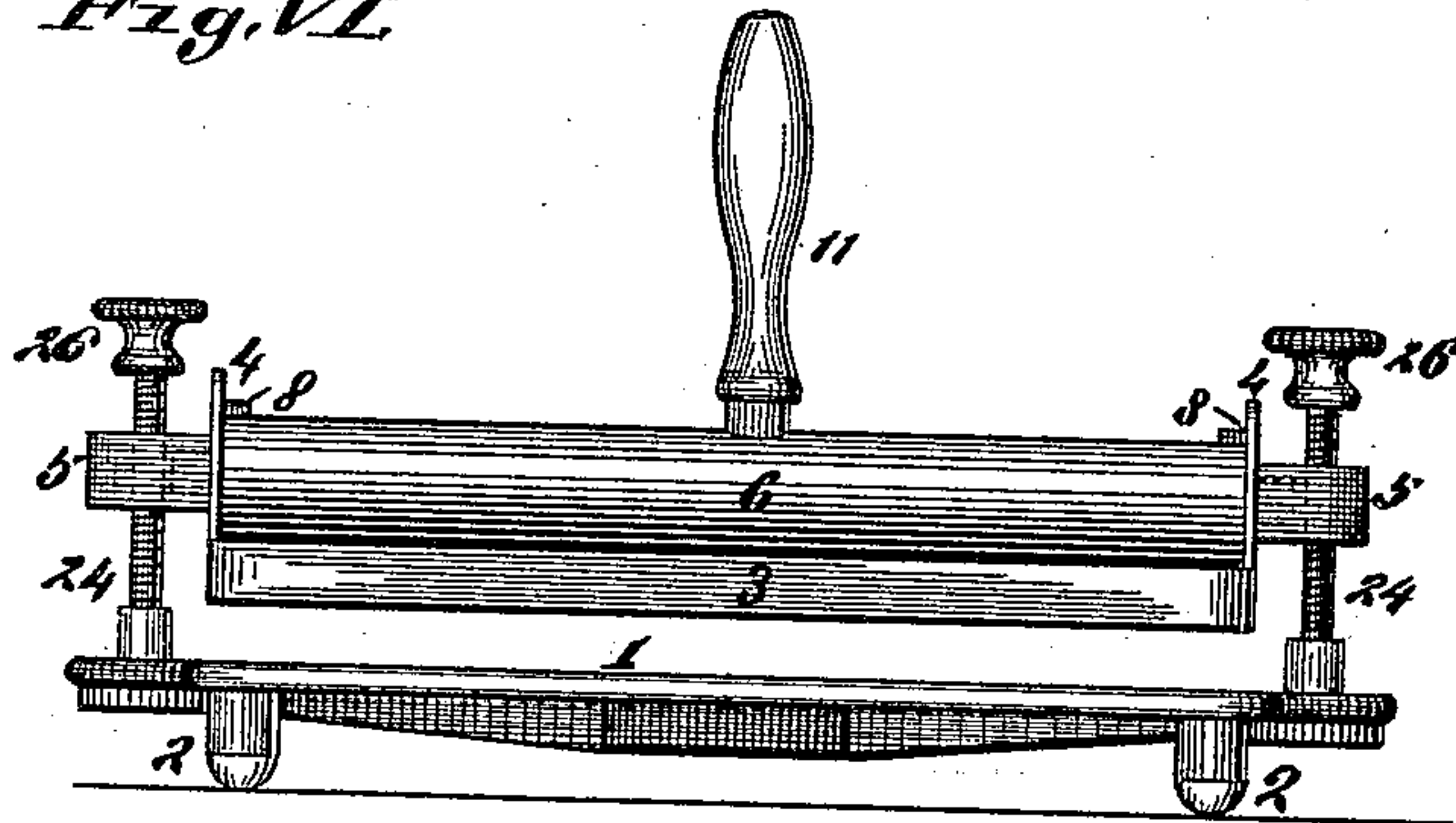
2 Sheets—Sheet 2.

L. EHRLICH.  
COPYING PRESS.

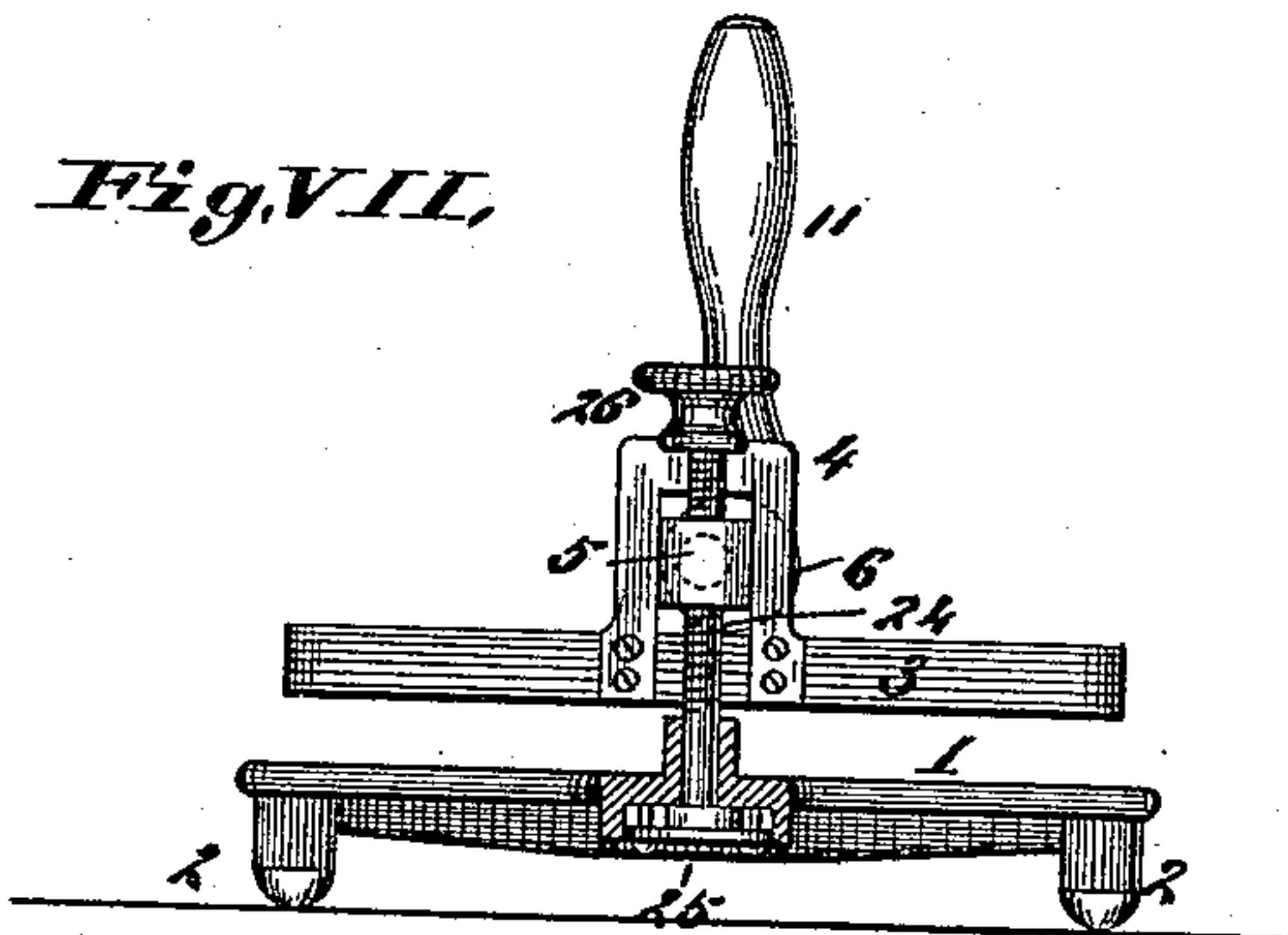
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*Fig. VI.*



*Fig. VII.*



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# UNITED STATES PATENT OFFICE.

LEO EHRLICH, OF ST. LOUIS, MISSOURI.

## COPYING-PRESS.

SPECIFICATION forming part of Letters Patent No. 450,563, dated April 14, 1891.

Application filed July 9, 1890. Serial No. 358,165. (No model.)

*To all whom it may concern:*

Be it known that I, LEO EHRLICH, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Copying-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improved copying-press, the principal object in view being to make a cheap and effective article; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a front elevation of my improved press. Fig. II is a side view. Fig. III is a bottom view. Fig. IV is a vertical transverse section taken on line IV IV, Fig. I, with the spring removed. Fig. V is a detail vertical section taken on line V V, Fig. I. Fig. VI is a front elevation showing a modification. Fig. VII is a side view thereof.

Referring to the drawings, 1 represents a suitable base or platen, which may be supported on legs 2.

3 represents a pressure-plate having end guides 4, (see Figs. I and V,) in which fit sliding boxes 5.

6 represents an eccentric having reduced ends 7 journaled in the boxes 5, as shown in Fig. II and by dotted lines in Fig. V. The guides 4 extend above the eccentric 6 and are provided with lips 8, projecting over the eccentric, as shown clearly in Fig. I. The lower part or surface of the eccentric rests on the pressure-plate 3. The upper part or surface of the eccentric rests against the lips 8. The boxes 5 are formed on the upper ends of rods 9, which extend down through the base or platen 1, and the base or platen is preferably provided with hollow necks 10, through which the rods 9 also pass. It will be seen that by holding the rods 9 from upward movement the eccentric may be turned by the use of a handle or other suitable means 11, and the pressure-plate 3 will be raised and lowered. By moving the handle in the direction of the arrow, Fig. II, the pressure-plate will be lowered, and by moving it in the other direction the pressure-plate will be raised.

The matter to be copied is placed on the base or platen 1, and the handle is then moved

in the direction of the arrow, bringing the pressure-plate 3 down forcibly upon the matter to be copied, and when the pressure has remained on a sufficient length of time the turning of the handle in the other direction will lift the pressure-plate.

For the purpose of making the press available for the use of different-sized books or other copying-matter I make the connection between the pressure-plate and the base adjustable in height, and my preferred way of doing it is to slot the lower ends of the rods 9 to receive wedge-shaped cams 12, the lower edges of which bear against the lower ends of the rods and the upper edges of which bear against the under side of the base 1. It will be seen that by moving these cams in the proper direction the normal position of the pressure-plate will be changed and its elevation relatively to the base regulated. If the matter to be copied is very thin, the cams will be moved to bring their wide parts or ends within the slots of the rods, so as to pull the pressure-plate 3 down quite close to the base, and if the matter to be copied is thick the cams will be moved to bring their narrow parts or ends within the slots of the rods, thus permitting the pressure-plate 3 to be elevated some distance above the base. It will be understood that this adjustment of the pressure-plate does not produce the pressure for the copying. The pressure-plate is adjusted to admit the book or other matter to be copied, and then the pressure to produce the copying is applied by the eccentric, as explained.

To elevate the pressure-plate automatically as the cams are moved to bring their narrower portions within the slots of the bolts, I employ a spring 13, having a bearing on a pin 14, depending from the base, the outer ends of the springs being connected to the lower ends of the rods 9. The action of the spring is to lift the rods and pressure-plate, as their upward movement is permitted by adjusting the cams 12. Thus the pressure-plate is held at the highest elevation permitted by the position of the cams 12. I prefer to operate the cams through means of a rod 15, to which they are connected, and which is on the central pin 14, by means of a hub 16, held from vertical movement by a stem 17.

18 represents a lever secured to the hub of



the rod at 19, (see Fig. IV,) and which may be provided with a projection or pin 20, adapted to enter perforations 21 in the under side of the base 1. The lever is provided with a handle or knob 22. By taking hold of the handle or knob of the lever and pressing it down to disengage the pin 20 from the perforations 21 it may be moved in either direction, and its movement will shift the cams 12 to raise or lower the plate 3 relatively to the base.

In Figs. VI and VII, I have shown a slight modification, where the pressure-plate is made adjustable through means of rods or screws 24, held to the base by means of heads 25, and which have threaded connection with the extended ends of the boxes 5. The upper ends of the screws or threaded rods are provided with thumb-nuts 26, by which the rods may be turned to raise or lower the pressure-plate relatively to the bottom or base.

I claim as my invention—

1. The combination, with a base or platen, of the unyielding adjustable supports secured to the ends thereof, the pressure-plate having the end guides provided with lips, the end boxes connecting the end guides with the supports, and the eccentric having reduced ends journaled in the boxes, substantially as described.

2. In a copying-press, the combination of the base, a pressure-plate, means, substantially as described, for applying pressure to the plate, rods carrying the pressure-plate, and wedge-shaped cams working on the rods to adjust the plate relatively to the base, substantially as set forth.

3. In a copying-press, the combination of a base, a pressure-plate, means, substantially as described, for applying pressure to the plate, rods carrying the plate and having slotted lower ends, wedge-shaped cams fitting in the slots of the rods, a rod connecting the cams, and a lever provided with a catch for shifting the cams, substantially as set forth.

4. In a copying-press, the combination of the base, a pressure-plate having guides with inwardly-extending lips, boxes fitting in said guides, eccentrics fitting between said plate and lips and provided with a suitable handle, rods projecting from said boxes down to said base and having slotted lower ends, cams fitting in the slots of the rods, means for moving the cams, and a spring 13, all substantially as and for the purpose set forth.

LEO EHRLICH.

In presence of—

A. M. EBERSOLE,  
THOS. KNIGHT.