

B. F. BERRY.
GRIPPER FOR PRINTING PRESSES.
APPLICATION FILED OCT. 23, 1905.

916,412.

Patented Mar. 30, 1909.

Fig. I.

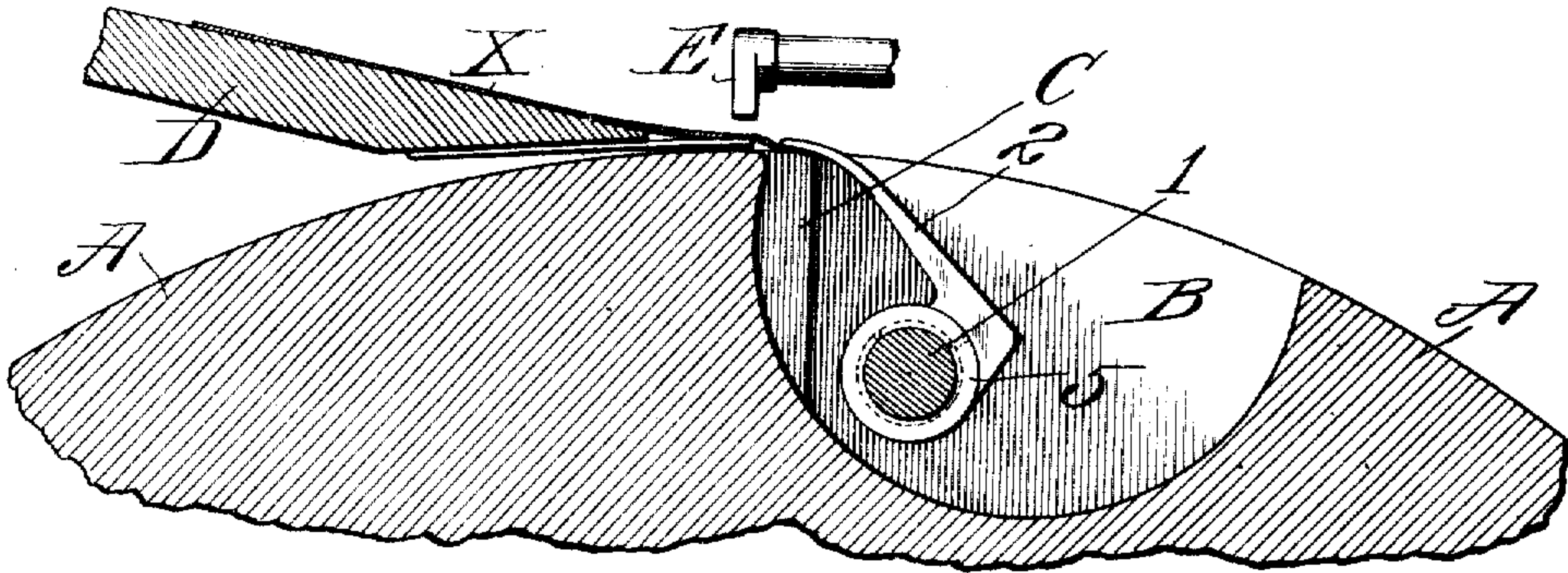


Fig. II.

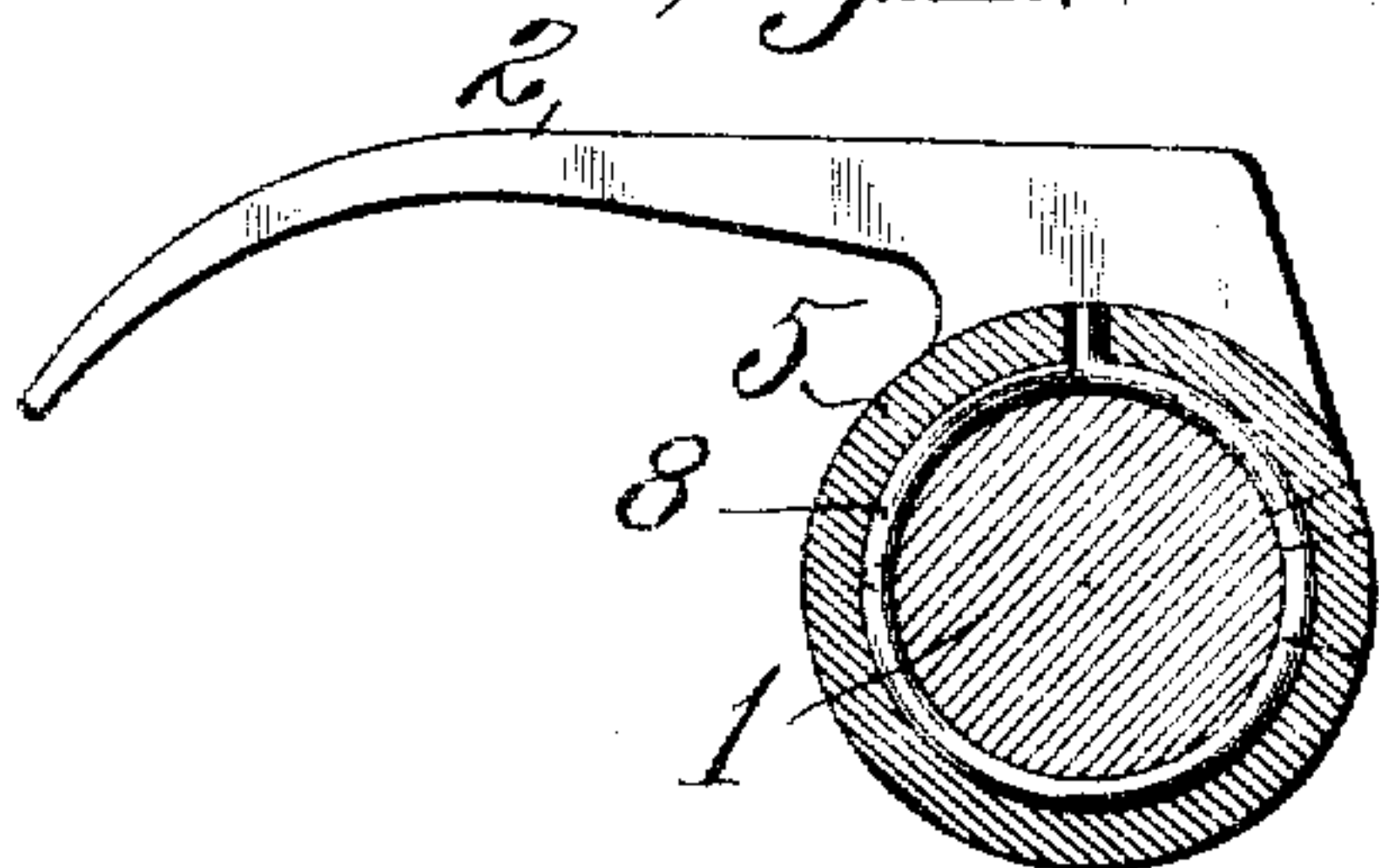


Fig. III.

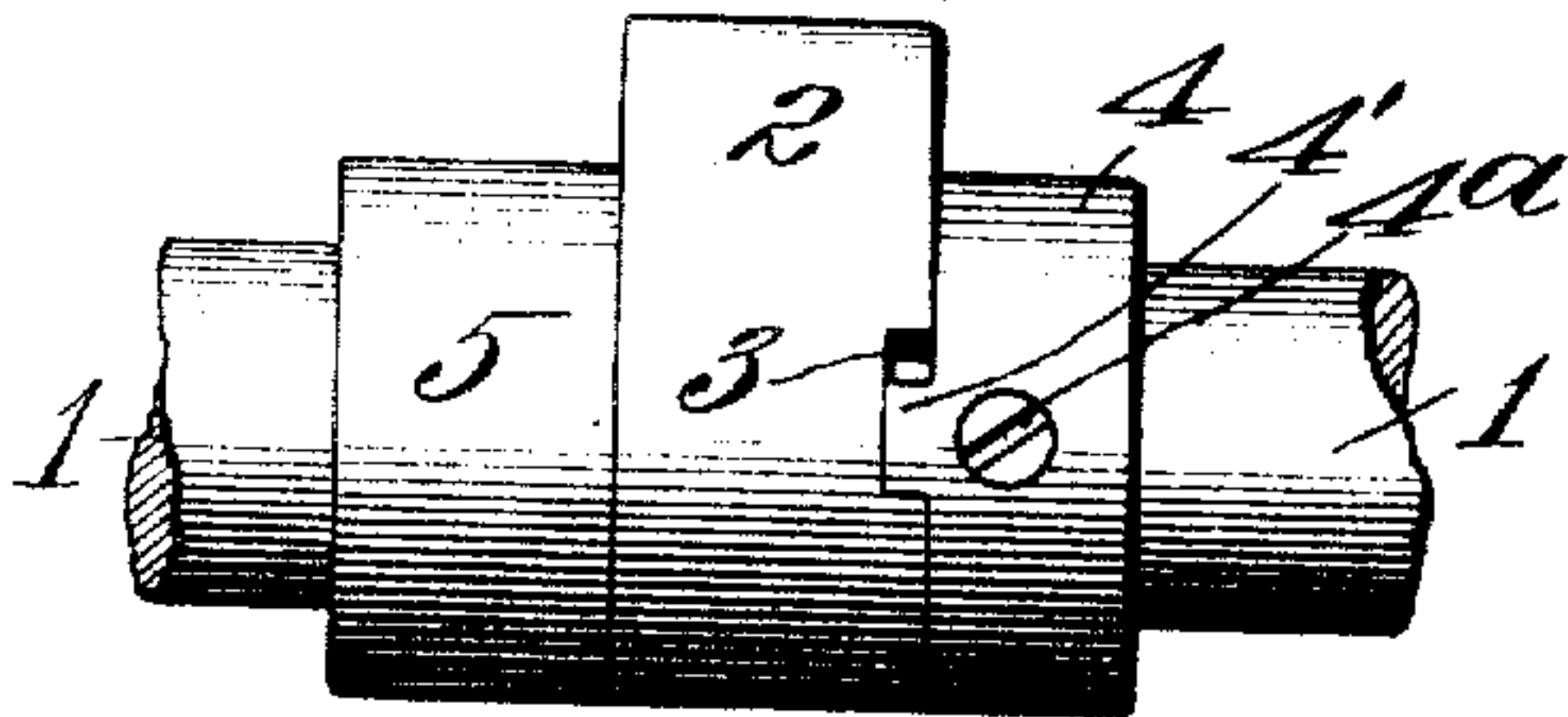


Fig. IV.

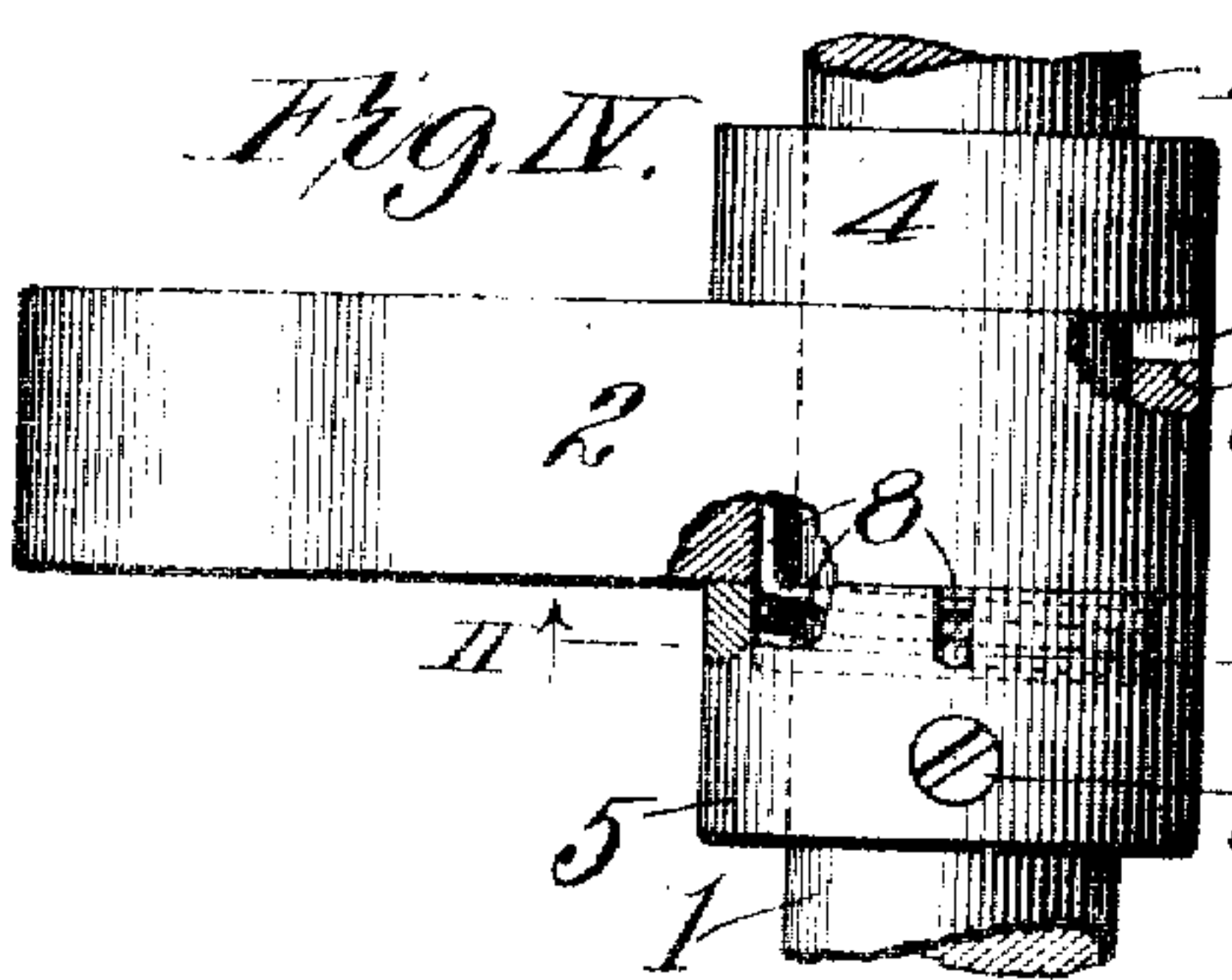


Fig. V.

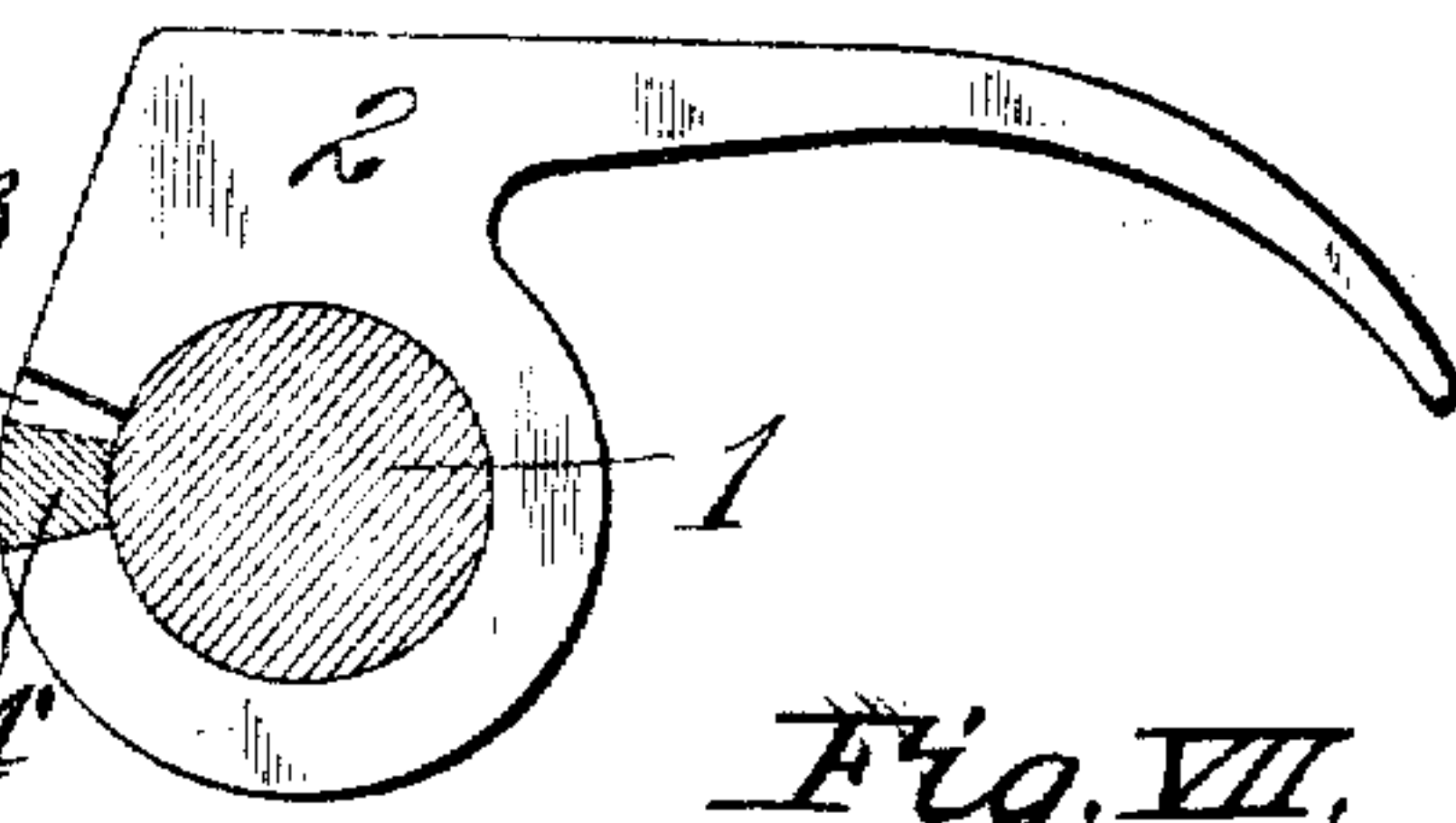


Fig. VII.

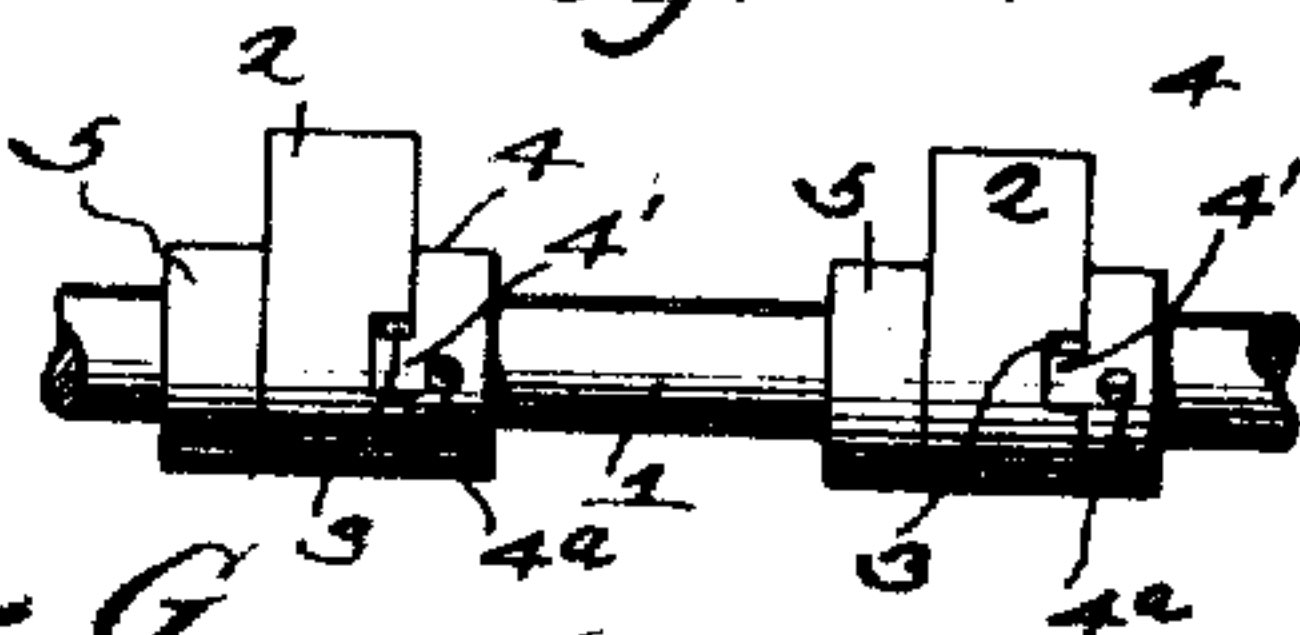
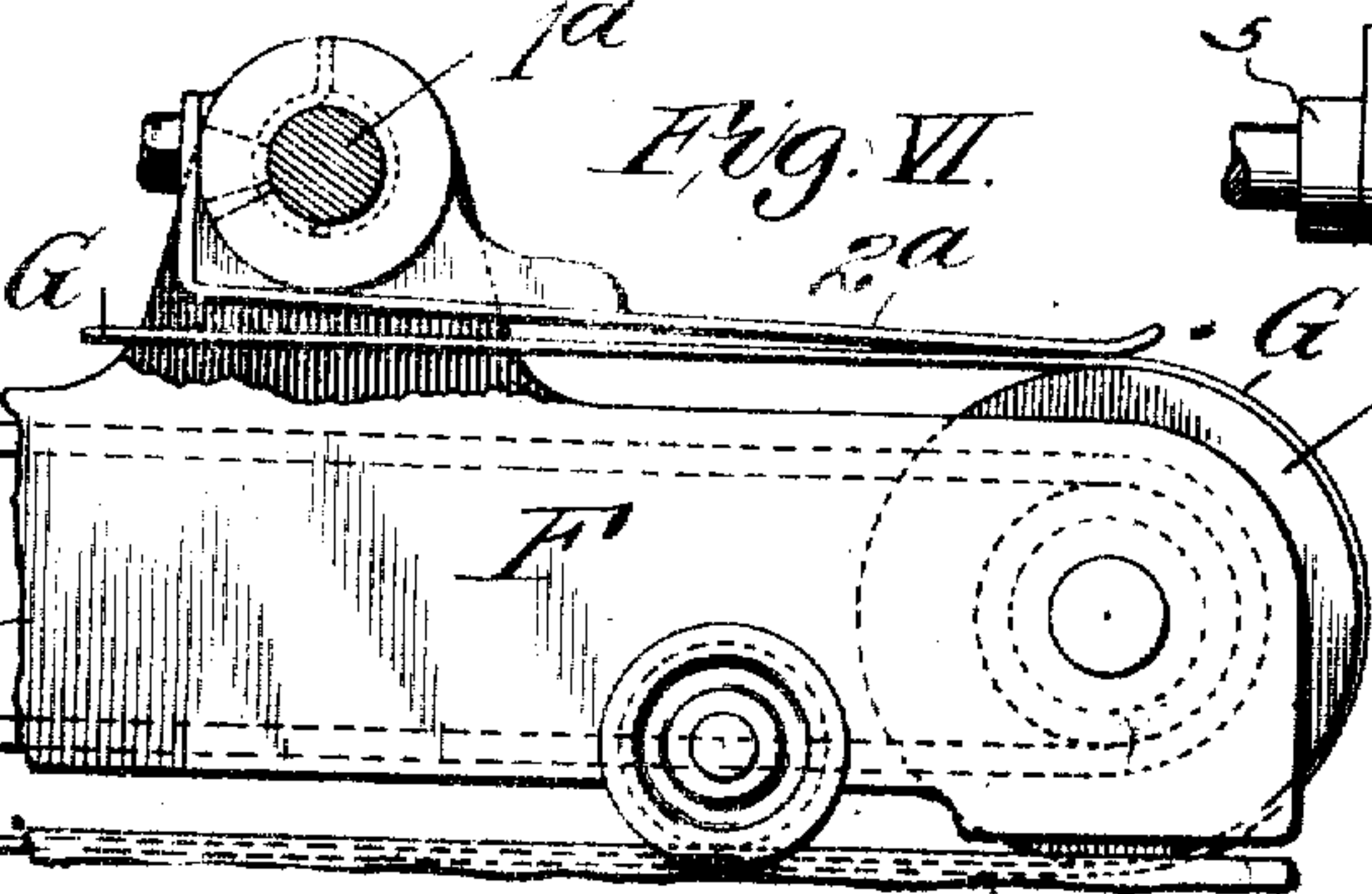


Fig. VI.



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UNITED STATES PATENT OFFICE.

BENJAMIN F. BERRY, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WALTER SCOTT, OF PLAINFIELD, NEW JERSEY; ISABELLA SCOTT AND DAVID JOHN SCOTT EXECUTORS OF SAID WALTER SCOTT, DECEASED.

GRIPPER FOR PRINTING-PRESSES.

No. 916,412.

Specification of Letters Patent.

Patented March 30, 1909.

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To all whom it may concern:

Be it known that I, BENJAMIN F. BERRY, a citizen of the United States, residing in the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Sheet-Grippers, of which the following is a specification.

The present invention relates to sheet grippers, and has more particularly reference to sheet grippers used in printing or similar machines.

The object of the invention is to produce a simple and efficient structure of gripper mechanism in which the gripper finger or fingers are capable of automatically and individually compensating for unevenness in the thickness of the paper or irregularities of adjustment.

A further object resides in making a gripper mechanism of this character adjustable both circumferentially and laterally.

To this end the invention consists of the hereinafter described features of construction, combination of parts and arrangement of elements.

In the accompanying drawings the invention is embodied in a concrete and preferred form, but changes of construction may be made without departing from the intended scope of the invention.

In the said drawings: Figure I. is a cross-sectional view through a portion of an impression cylinder and feed board, showing the invention applied to a printing machine, the gripper shaft being in cross section and one of the gripper fingers being shown in elevation. Fig. II. is a cross-sectional view taken on the line II.—II. of Fig. IV. showing one of the gripper fingers in elevation. Fig. III. is an elevation of a fragment of the gripper shaft showing one of the gripper fingers, its operating means and the rearward stop for the same. Fig. IV. is a plan view of the parts shown in Fig. II. with parts broken away. Fig. V. is a cross-sectional view on the line V—V of Fig. III. with the gripper finger shown in elevation. Fig. VI. is an elevation showing the improvement applied in a reciprocating sheet feeding or delivery mechanism. Fig. VII. is a plan view showing several gripper fingers mounted on a rockshaft or support.

Similar characters of reference indicate corresponding parts in the several views.

A designates a fragment of the impression cylinder of a printing machine, provided with the usual cavity B in which the gripper mechanism is arranged.

D is the usual feed board on which a sheet of paper as X is fed, and E indicates a conventional representation of a gage or stop.

C indicates a fixed member in the form of a shoulder against which the movable member or gripper finger 2 is adapted to press in seizing the sheet. In accordance with the practice common in the art, there may be any required number of these gripper fingers. The said movable member or gripper finger is loosely mounted on the rockshaft or supporting member 1 and is adjustable both circumferentially and laterally. The rockshaft 1 is properly supported in the impression cylinder A in a well known manner and by its oscillation serves to open and close the grippers.

Interposed between the rockshaft or support and the movable member or gripper finger is a spring connection in the present instance taking the form of an operating member or collar 5 adjustable circumferentially and laterally on the said shaft and held in position by means of a set-screw 6, and a spring 8 which latter preferably surrounds the shaft 1 within the collar 5 and is fitted to said collar and gripper finger in any suitable manner as by entering into notches or recesses therein as most clearly seen in Figs. II. and IV. A suitable stop is further provided for preventing undue movement of the gripper fingers in a direction away from the fixed member. This stop will preferably take the form of a collar 4, having a lug 4' adapted to enter into the recess 3 on the movable member. This lug 4' is of a width less than the said recess so as to permit the movable member to oscillate within a limited degree. The collar 4 is adjustable both circumferentially and laterally and is held in position by means of the set screw 4". By adjusting the collars 4 and 5 the loosely mounted gripper may likewise be adjusted circumferentially or laterally as may be required.

When the movable member or gripper finger descends upon the sheet, it will, if any discrepancy exists, automatically yield in the act of seizing the sheet and hold the same properly, thereby compensating for

any variations in adjustment etc., and in fact, obviates the necessity of fine adjustment. If a plurality of gripper fingers are used, each gripper finger is capable of individually and automatically yielding to a different degree as circumstances may require in the act of seizing the sheet.

In Fig. VI. I have shown my improvement applied to a reciprocating type of sheet feeding or delivery mechanism. In this modification F is a reciprocating carriage, G is an apron on which the sheets of paper are carried and H one of the rollers on which said apron operates. 1^a is the rockshaft to which the spring controlled or spring actuated collars of the gripper fingers 2^a are fitted to oscillate independently of each other in the same manner as that previously described. The operation of the gripper fingers in this modification will be obvious from the previous description and further mention is deemed unnecessary.

While I have described my grippers as used in connection with a printing machine, I wish it understood that I do not limit myself to their use upon this particular class of machinery as I am aware that they may be used on various other mechanisms.

What is claimed is:

1. In a sheet gripper mechanism, the combination of a fixed member, a plurality of gripper fingers, a rockshaft on which the said gripper fingers are loosely mounted, a plurality of operating members, also on the said rockshaft for imparting the motion of the said rockshaft to the gripper fingers, springs interposed between the operating members and the gripper fingers capacitated to allow the said gripper fingers to automatically and individually yield in a direction away from the fixed member when in the act of seizing a sheet, means for individually adjusting the said operating members and gripper fingers both circumferentially and laterally on the rockshaft.

2. In a sheet gripper mechanism, the combination of a fixed member, a plurality of gripper fingers, a rockshaft on which the said gripper fingers are loosely mounted, a plurality of operating members, also on the said rockshaft for imparting the motion of the said rockshaft to the gripper fingers, springs interposed between the operating members and the gripper fingers capacitated to allow the said gripper fingers to automatically and individually yield in a direction away from the fixed member when in the act of seizing a sheet, means for individually adjusting the said operating members and gripper fingers both circumferentially and laterally on the rockshaft, and means for limiting the movement of the gripper fingers in a direction away from the fixed member.

3. In a sheet gripper mechanism, the com-

bination of a fixed member, a rockshaft, an oscillatory spring actuated gripper finger loosely mounted on the said shaft, and a collar on said shaft fitted to said gripper finger and arranged to restrict its oscillatory movement away from the fixed member.

4. In a sheet gripper mechanism, the combination of a rockshaft, an oscillatory spring actuated gripper finger loosely mounted on said shaft, and a rotatably adjustable collar on said shaft fitted to said gripper finger and arranged to restrict its oscillatory movement.

5. In a sheet gripper mechanism, the combination of a rock shaft, an oscillatory spring actuated gripper finger, loosely mounted on said shaft and provided with a recess, and a collar mounted on said shaft and having a lug seated in said recess to restrict the degree of oscillation of said gripper finger.

6. In a sheet gripper mechanism, the combination of a rockshaft, an oscillatory spring actuated gripper finger loosely mounted on said shaft, and a collar mounted on said shaft, one of said members mounted on said shaft being provided with a lug and the other of said members being provided with a recess to receive said lug, whereby the degree of oscillation of said gripper finger is restricted.

7. In a sheet gripper mechanism, the combination of a rock shaft, an oscillating sheet gripper finger loosely mounted on said shaft, a collar fixed to said shaft adjacent to said finger, and a spring surrounding said shaft and having its ends fitted to said finger and to said collar to yieldingly hold said finger.

8. In a sheet gripper mechanism, the combination of a fixed member, a movable member, a rock-shaft on which the said movable member is loosely mounted, and an operating member mounted fast on the said rockshaft but in a different plane transversely from that of the movable member for imparting the motion of the said rock-shaft to the movable member, and means for adjusting the said operating member and movable member both circumferentially and laterally on the rock-shaft.

9. In a sheet gripper mechanism, the combination of a fixed member, a movable member, a rock-shaft on which the said movable member is loosely mounted, an operating member mounted fast on the said rockshaft but in a different plane transversely from that of the movable member for imparting the motion of the said rockshaft to the movable member, and a spring interposed between the operating member and the movable member capacitated to allow the said movable member to automatically yield in the direction away from the fixed member when in the act of seizing a sheet, and means for adjusting the said op-

erating member and movable member both circumferentially and laterally on the rock-shaft.

10. In a sheet gripper mechanism, the combination of a fixed member, a movable member, a rock-shaft on which the said movable member is loosely mounted, and an operating member mounted fast on the said rock-shaft but in a different plane transversely from that of the movable member for imparting the motion of the said rock-shaft to the movable member, and a stop for limiting the movement of the movable member in a direction away from the fixed member, and means for adjusting the said operating member and movable member both circumferentially and laterally on the rock-shaft.

11. In a sheet gripper mechanism, the com-

bination of a fixed member, a movable member, a rock-shaft on which the said movable member is loosely mounted, and an operating member mounted fast on the said rock-shaft but in a different plane transversely from that of the movable member for imparting the motion of the said rock-shaft to the movable member, and a stop for limiting the movement of the movable member in a direction away from the fixed member, and means for adjusting the said operating member and movable member both circumferentially and laterally on the rock-shaft.

BENJAMIN F. BERRY.

In presence of—

WM. H. SCOTT,

BLANCHE HOGAN.