

No. 667,772.

Patented Feb. 12, 1901.

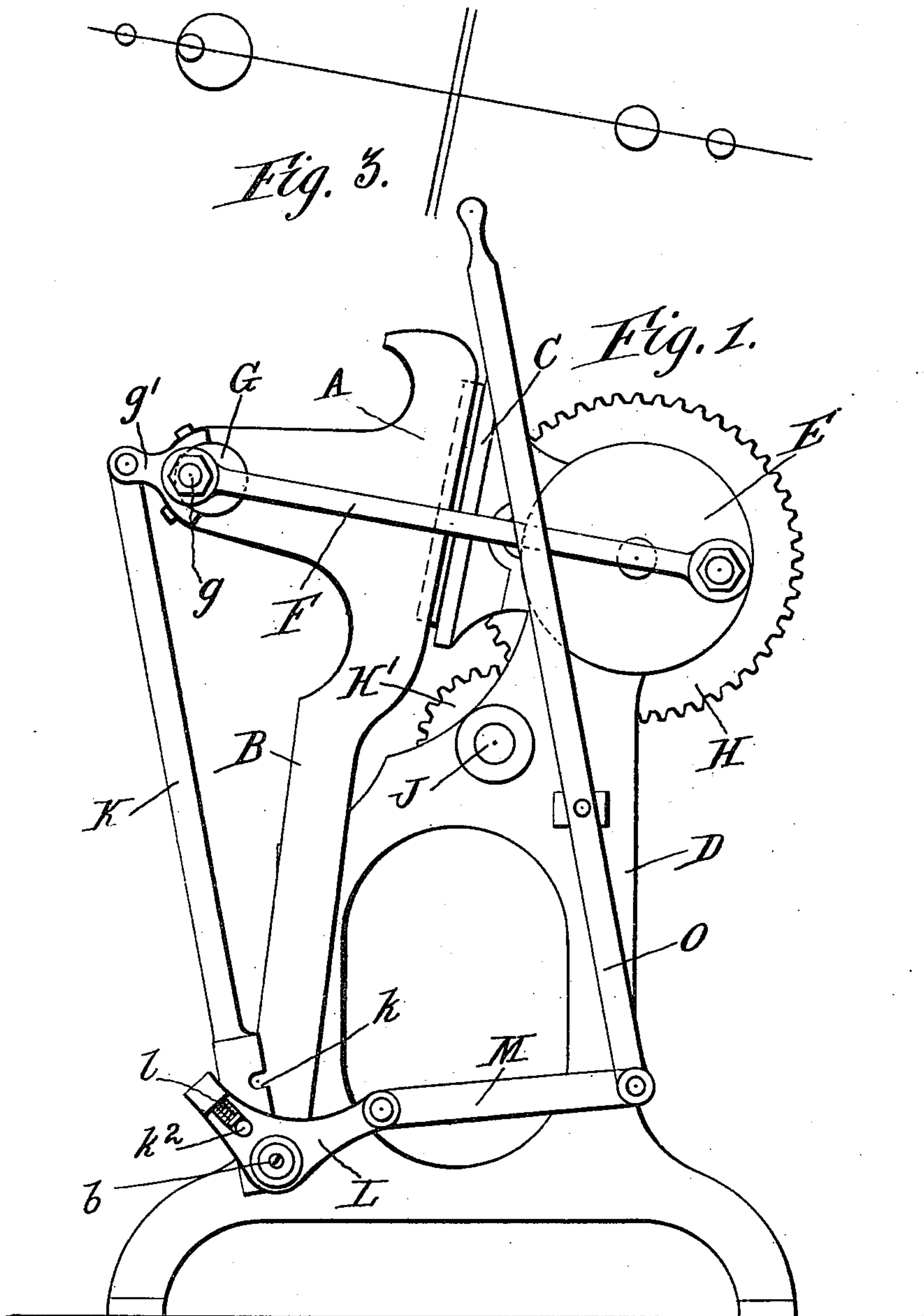
S. HALVORSON.

THROW-OFF ATTACHMENT FOR PRINTING PRESSES.

(Application filed Aug. 15, 1900.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:

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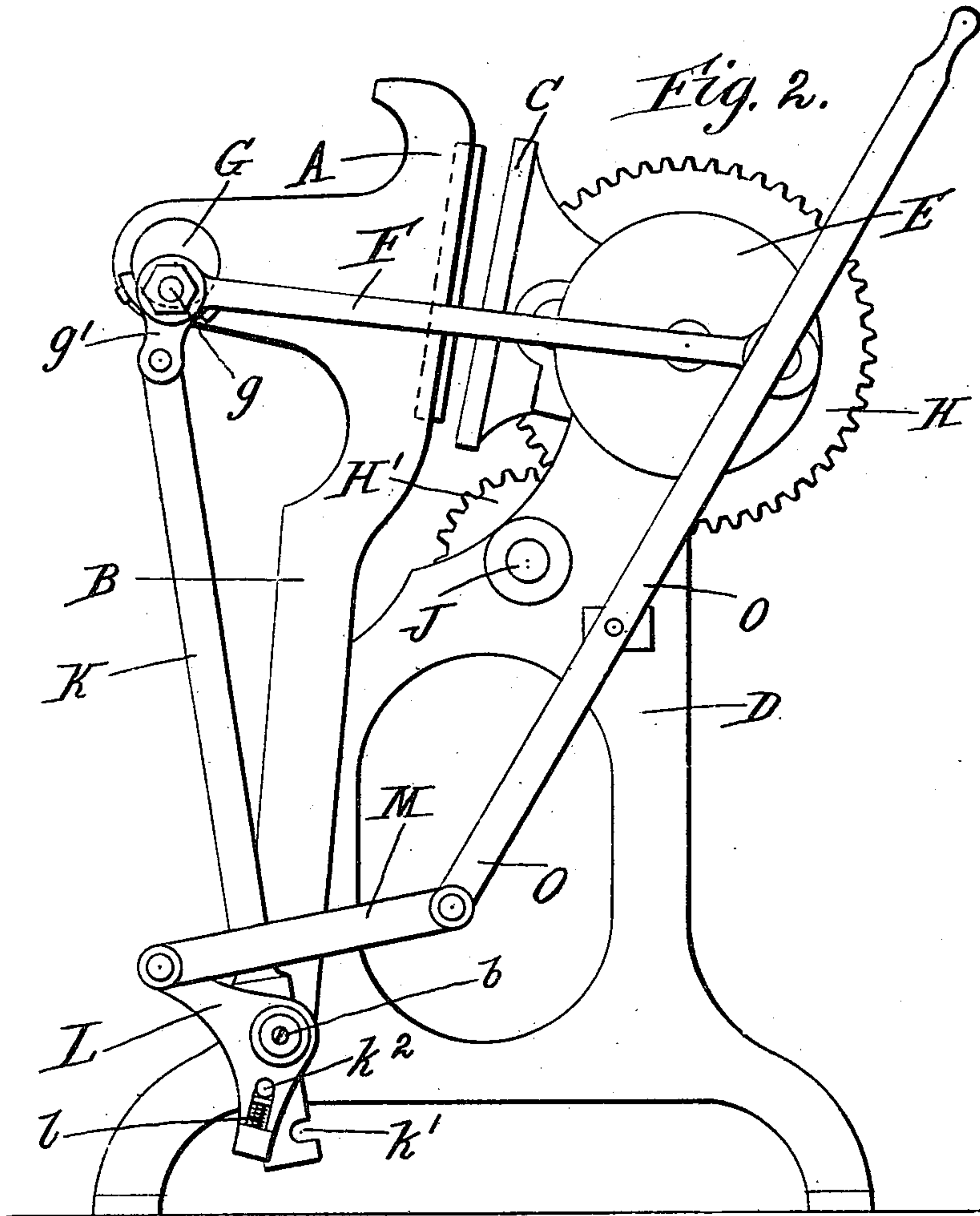
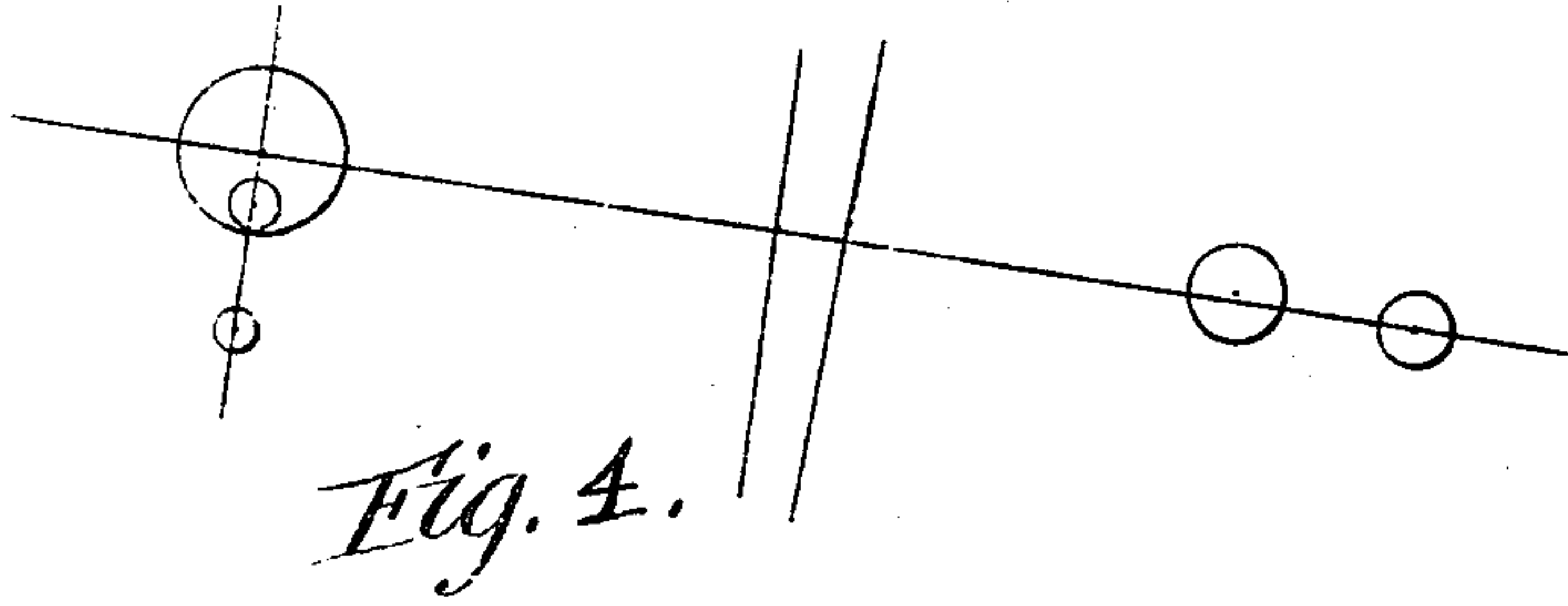
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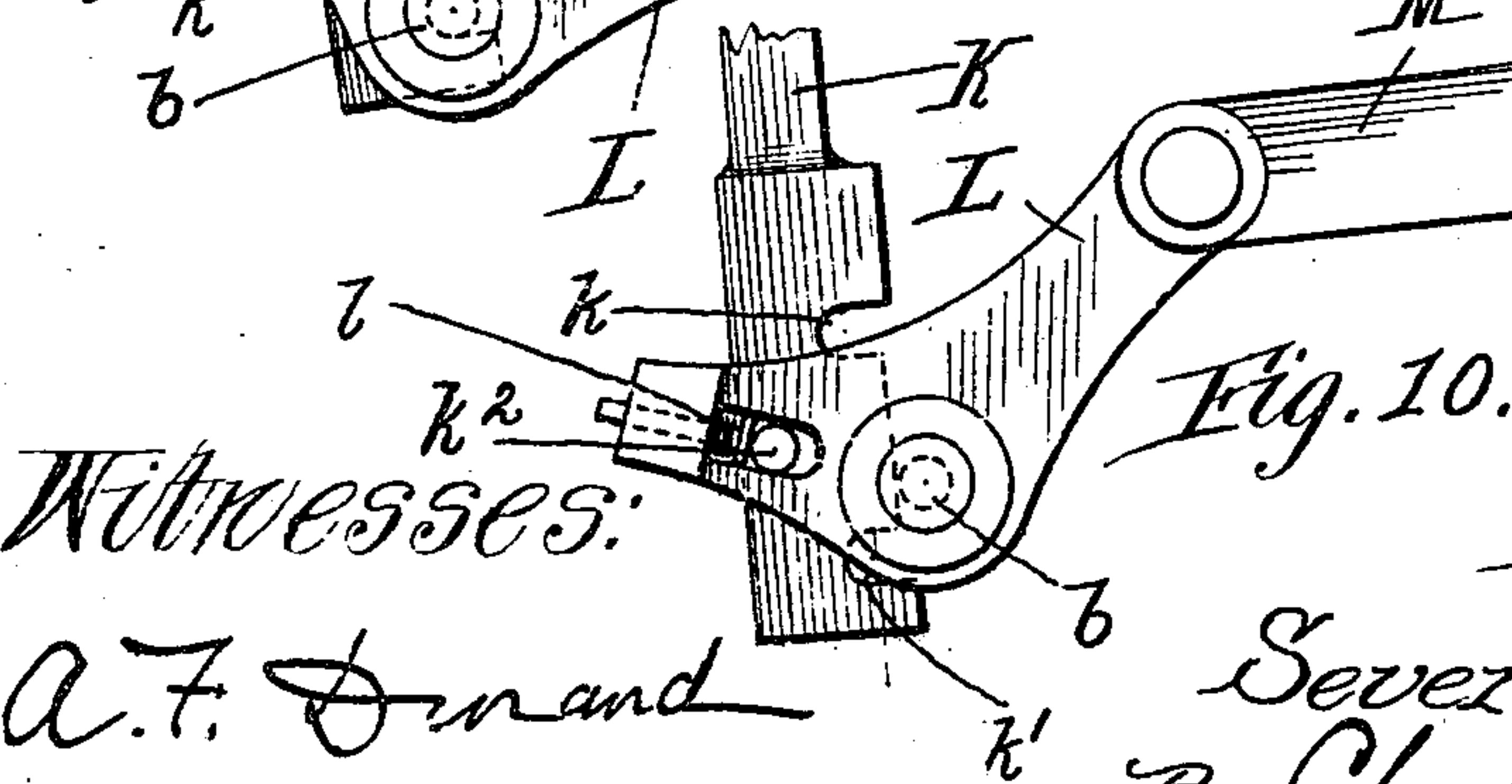
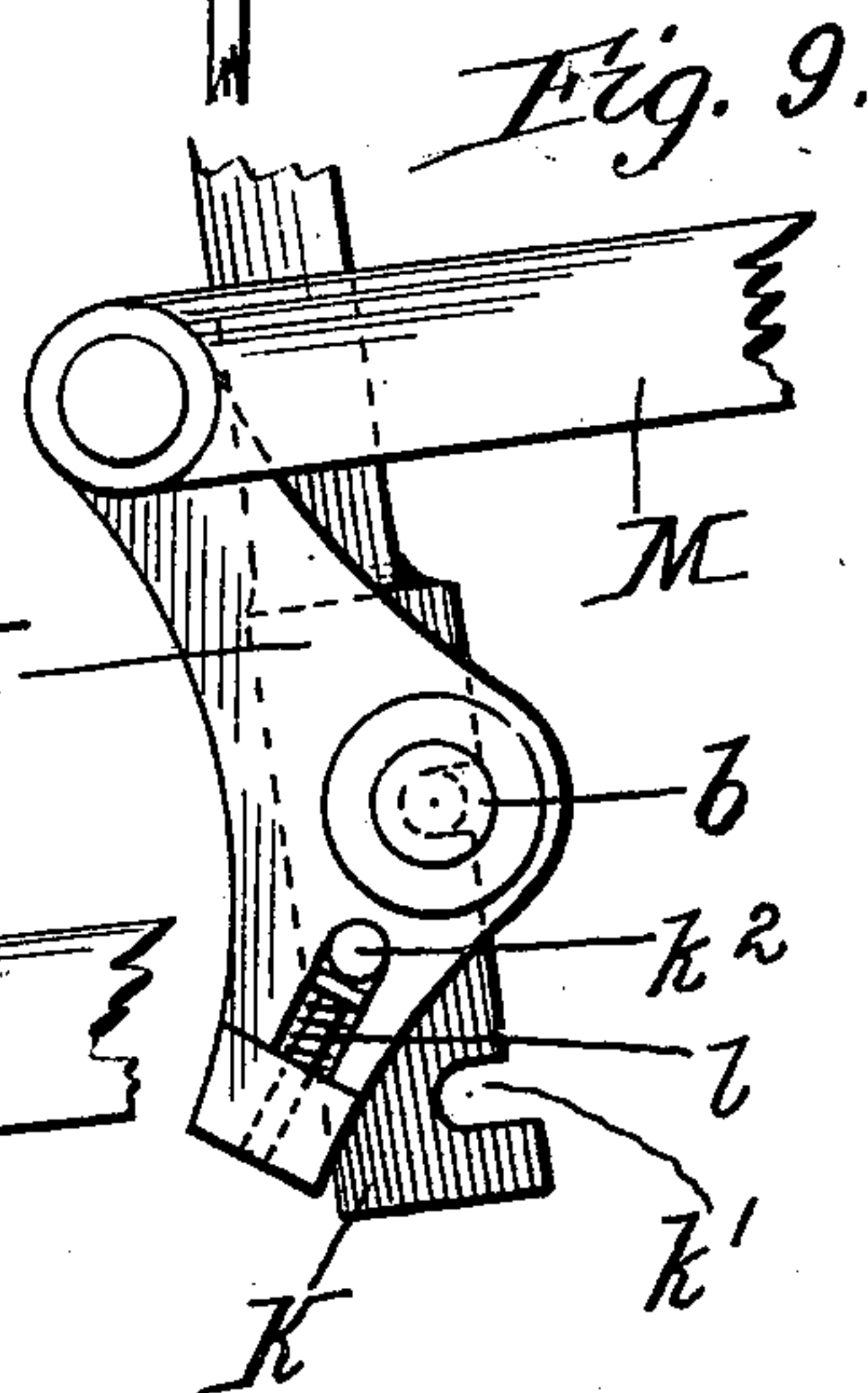
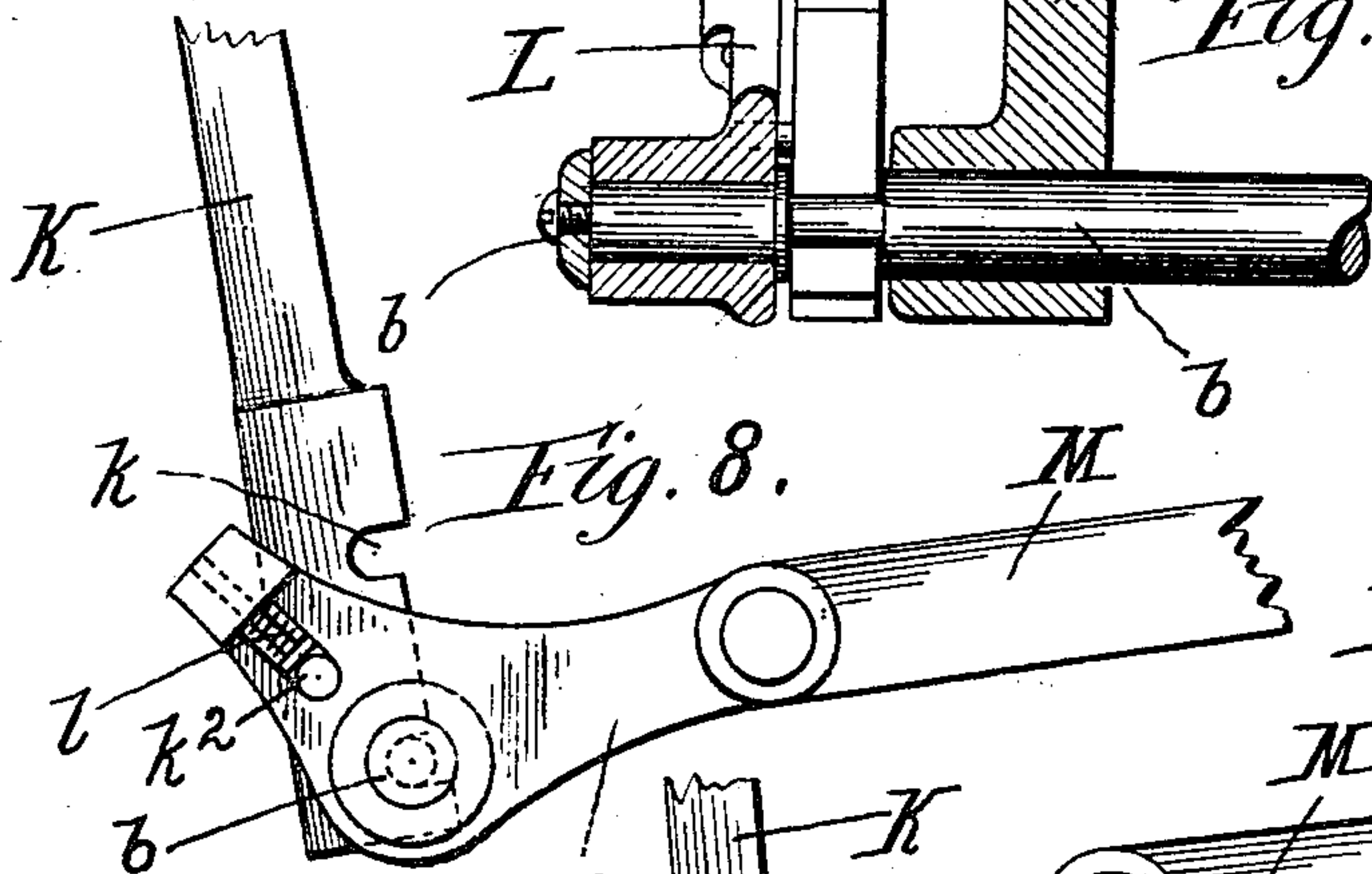
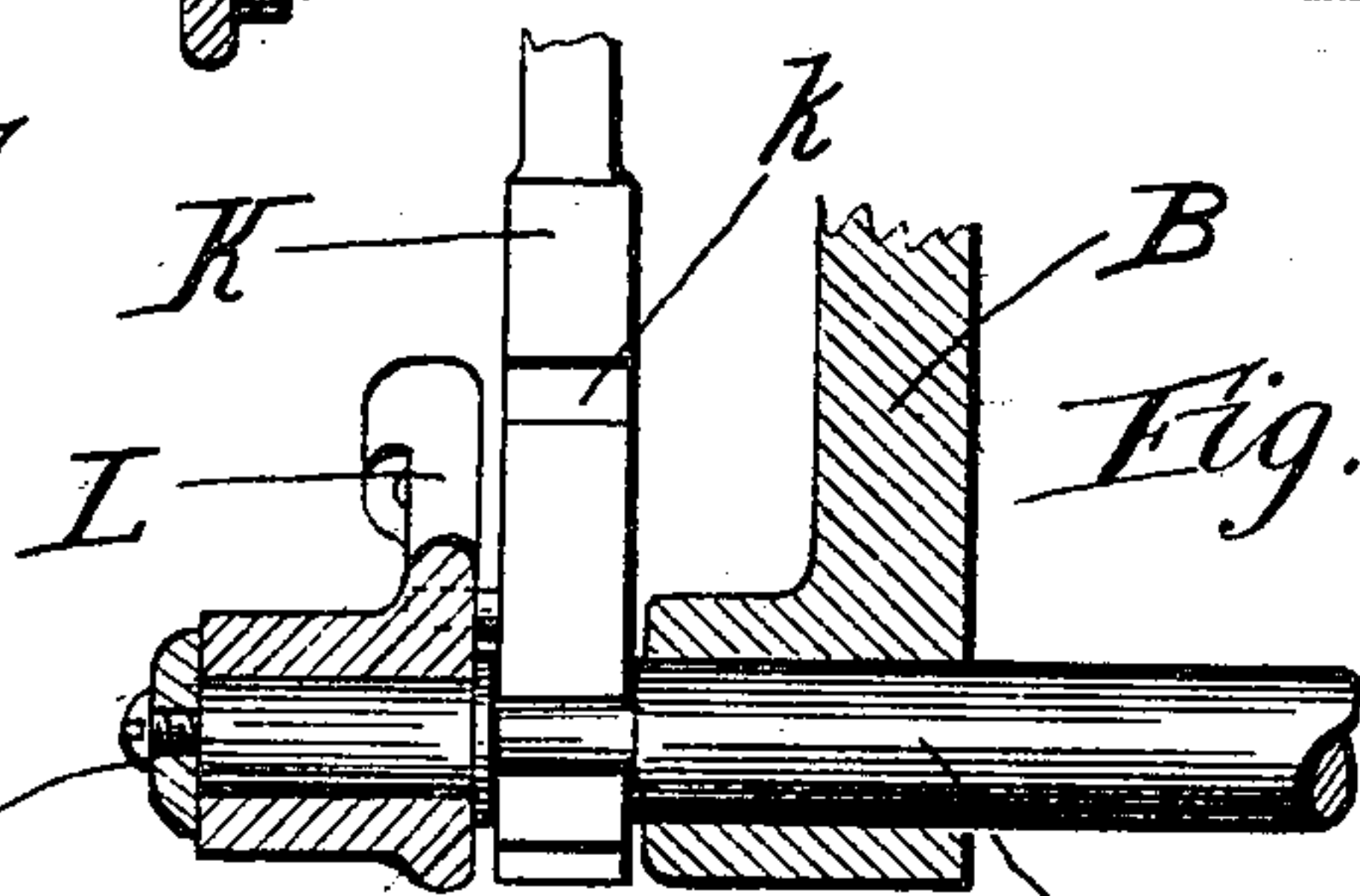
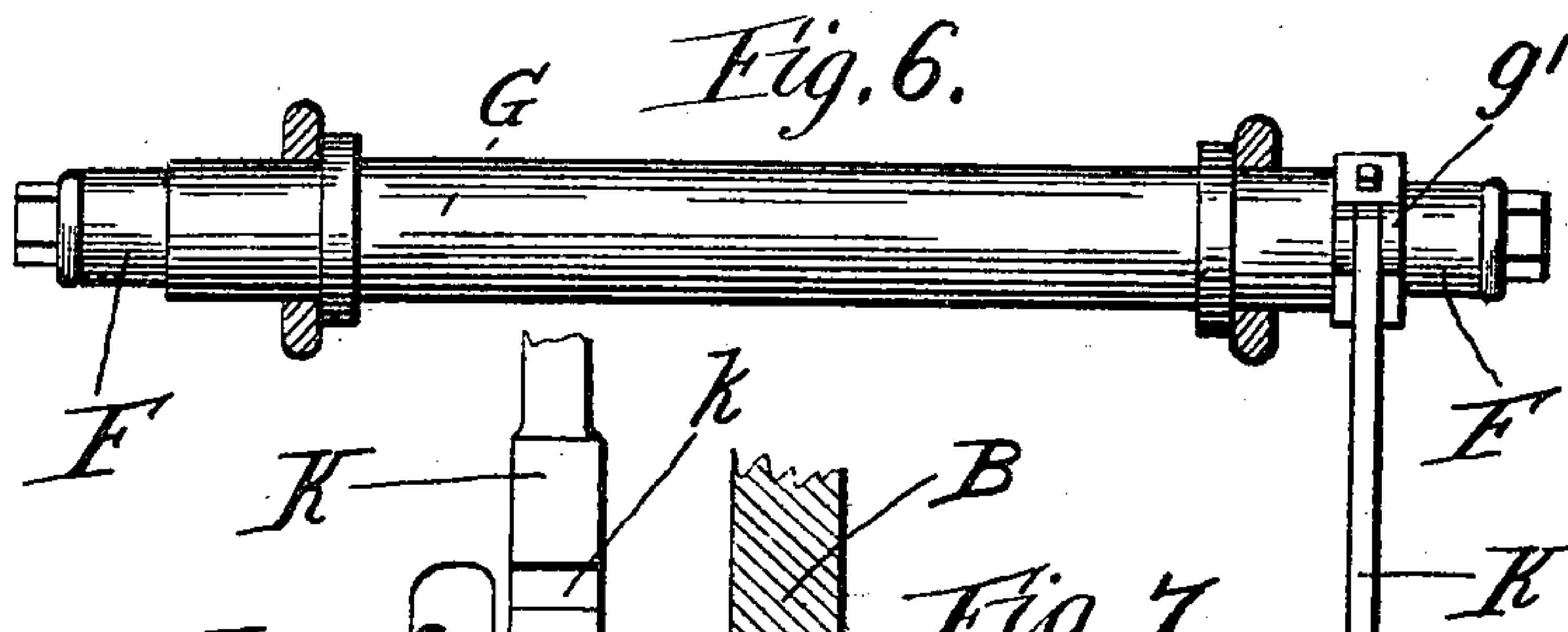
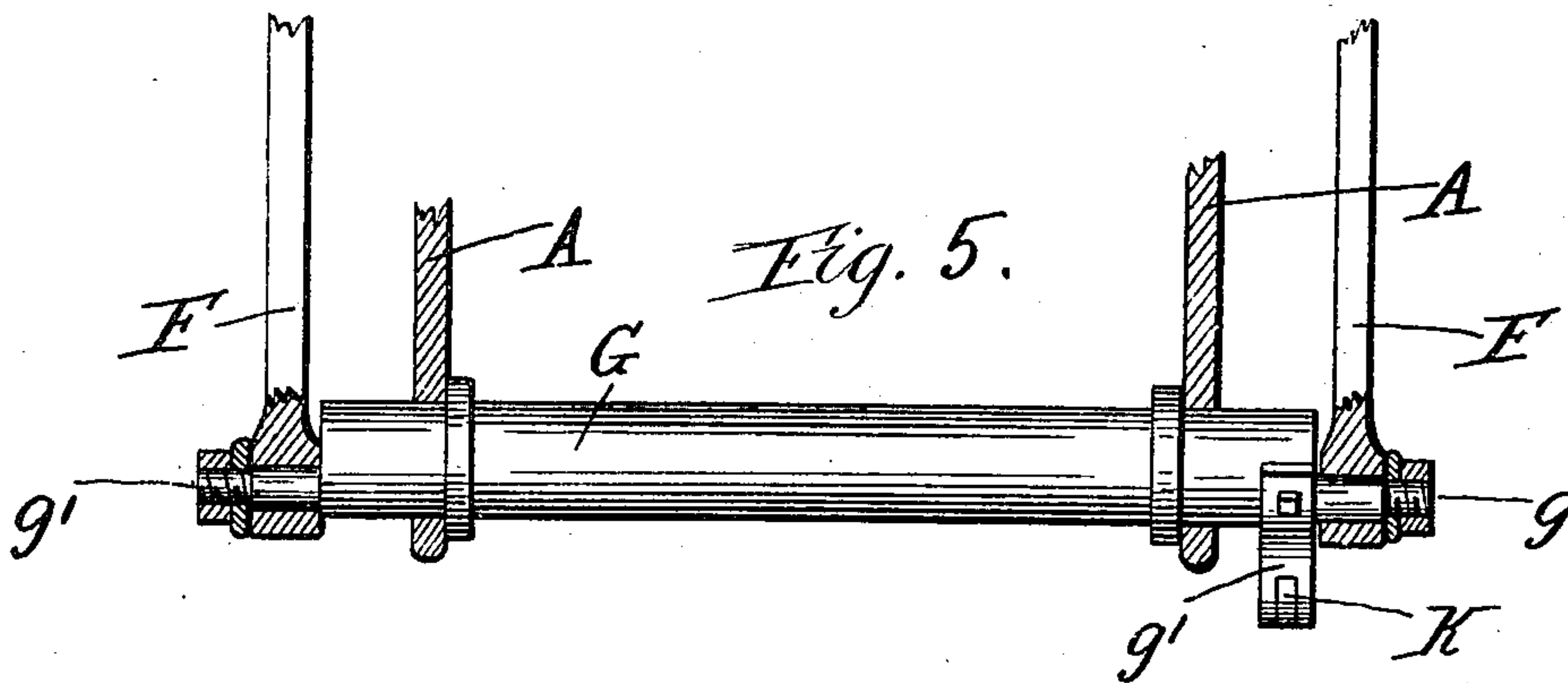
S. HALVORSON.

THROW-OFF ATTACHMENT FOR PRINTING PRESSES.

(Application filed Aug. 15, 1900.)

(No Model.)

3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

SEVERIN HALVORSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE BARNHART BROTHERS & SPINDLER, OF SAME PLACE.

THROW-OFF ATTACHMENT FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 667,772, dated February 12, 1901.

Application filed August 15, 1900. Serial No. 26,990 (No model.)

To all whom it may concern:

Be it known that I, SEVERIN HALVORSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Throw-Off Attachments for Printing-Presses, (Case No. 1,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to throw-off mechanism for printing-presses—that is, to mechanism by which a printing-press can be so arranged that it may operate for any given time without causing the taking of impressions. In mechanisms of this kind the bed-operating mechanism in a movable-bed press is arranged in such a way that for any desired period of time the bed will not be moved quite far enough to the platen to cause an impression to be made upon the paper held by the latter. The bed will therefore be reciprocated toward and away from the platen in the usual way; but the stroke will be in the rear of its previous or normal path of travel, so that the form carried by the bed fails to reach the platen by about an eighth or a quarter of an inch, as the case may be.

The object of my invention is to provide a simple, practical, and improved mechanism of this kind.

To the attainment of this and other desired ends, my invention consists in matter herein-after set forth.

In the accompanying drawings, Figure 1 is a side elevation of a printing-press provided with an attachment embodying my invention, only so much of the press being shown as is necessary to illustrate its operation and it being shown in its normal condition, so as to operate to take impressions. Fig. 2 is a similar side elevation with the attachment operated or thrown off so as to cause the press to operate without taking impressions. Figs. 3 and 4 are diagrams illustrating the effect of the throw-off mechanism upon the stroke of the bed; and Figs. 5 to 10, inclusive, are views of details of construction.

The printing-press illustrated in the drawings comprises a bed A, which is arranged at

the upper end of the swinging block or member B and is understood to carry the form. The member B is arranged for swinging movement, as by being supported by a pivot axis or shaft *b*, extended through its lower end. The bed A is thus enabled to swing back and forth toward and away from the platen C, which is arranged at the upper end of the frame D. The mechanism illustrated for reciprocating the swinging bed toward and away from the platen comprises rotary disks E E, one being understood to be arranged on each side of the machine, links F F, having their forward ends connected to cranks on the disks E E, and a rotary or rock shaft G, arranged in the rear of the bed A and adapted for connection at its opposite ends with the rear ends of the links F F. The rotary disks E E can be rotated in any suitable way, as by meshing gear-wheels H and H', the gear H' being on the main driving-shaft J. In this way a continual rotation of the disks E E causes a continual reciprocation of the bed A toward and away from the platen C, and this reciprocation is such as to cause the bed to press the form against the paper or other material carried by the platen. In the diagram forming Fig. 3 the two straight lines in the middle of the diagram illustrate the way in which the bed comes close and parallel to the platen.

Of course my improved attachment can be applied to any other press. The press herein shown is illustrated merely as an example.

In accordance with my invention the rock-shaft G in the rear of the swinging bed A is provided with eccentric pins or cranks *g*, and the rods F F are connected with these pins or cranks. The shaft G is also provided with a rear extension *g'*, whose outer end is connected with a link K, which extends downwardly toward the fixed end of the swinging member B. The rod or link K is provided with two notches *k k'*, each of which is adapted to engage with the pivotal shaft *b* of the swinging member B. In this way it will be seen that when the lower notch *k'* of the rod K is in engagement with the pivotal shaft *b* the rock-shaft G will be in its normal position and the press will operate so as to take an impression at each stroke. When, how-

ever, the rod K is drawn down, so as to cause its upper notch *k* to engage with the pivoted shaft *b*, it will swing or rotate the rock-shaft G, and thereby throw the bed slightly to the front or away from the platen. The swinging of the swinging member B will therefore cause the bed A to reciprocate toward and away from the platen, as before, but the entire throw will be in advance of the normal throw, so that the bed will fail to reach the platen. This is illustrated in Fig. 4, in which the two substantially vertical middle lines represent, respectively, the platen in the position in which the former approaches most closely to the latter.

It will be seen that by having the pivotal point of the rod or link K coincident with the pivot of the swinging member B, which supports the bed, all of the parts swing or rotate about a common axis, so that when the press is operating the throw-off mechanism will not cause any rotation of the shaft G, as would be the case if the link K were pivoted eccentrically to the pivot-shaft *b* of the swinging member B.

As an arrangement for shifting the rod or link K so as to place either one or the other of its notches in engagement with the shaft *b* I have shown a bell-crank L arranged upon the shaft *b* and having one of its arms provided with a slot or guideway and the link K provided with a pin carrying a thimble K², which fits into the slot in the bell-crank arm. The slot or guideway is provided with a spring-actuated plunger *l*, arranged to normally press inwardly upon the thimble *k*², and thereby hold the same normally at the base of the slot. The other end of the bell-crank L is connected with a link M, and this in turn is connected with the lower end of a hand-operated throw-off lever O, which is pivotally connected to the machine-frame D. By such arrangement a movement of the hand-lever O to its forward position, as shown in Fig. 2, will cause the bell-crank to swing downwardly, and thereby lift the end of the link K out of engagement with the pivoted shaft *b* and swing it downwardly, so as to cause the bed to occupy a backward position and the press to operate with the bed thrown off. When the hand-lever O is swung in the opposite direction, so as to occupy the position shown in Fig. 1, it will swing the bell-crank L in the opposite direction, and thereby cause the end of the link K to be disengaged from the pivoted shaft *b*, and then upwardly, so that its lower notch *k'* will engage the shaft. In this way the platen will be restored to its normal position and the press will operate to take impressions.

The operation of the bell-crank L, in connection with the link K, is illustrated in detail in Figs. 8, 9, and 10. In Fig. 8 the link K is illustrated in its elevated position. In Fig. 9 it is shown in its lower position, and in Fig. 10 it is shown disengaged from the pivoted shaft *b* and passing from one position to the

other. It will be seen that my invention is simple and involves but a minimum number of parts. It will also be seen that it can be readily added to the printing-presses constructed without the throw-off arrangement, as well as embodied in new printing-presses. In fact, this latter is one great feature of novelty and utility in the attachment, for the reason that it can be so easily applied to old presses. It will also be seen that the attachment is effective and efficient in its operation and involves the smallest possible amount of wear and tear upon the parts.

What I claim is—

1. The combination with the platen and the pivoted swinging member which supports the bed, of means for reciprocating said swinging member, a link connected with the bed-reciprocating mechanism for varying the stroke of the same, a bell-crank having one of its arms in engagement with said link, whereby by the movement of the bell-crank the link can be adjusted longitudinally, and means for operating the bell-crank so as to swing the same from one to the other of two positions, in one of which the reciprocating mechanism operates the bed so as to take impressions, and in the other of which the reciprocating mechanism fails to bring the bed to the platen, the bell-crank being arranged so that in both of said positions the link extends radially from the pivotal point of the swinging member, and an elastic connection between the link and the bell-crank, whereby the link can swing about such pivotal point of the swinging member instead of about its connection with the bell-crank, substantially as described.

2. The combination with the platen and the pivoted swinging member which supports the bed, of mechanism for reciprocating said swinging member, a link connected with said bed-reciprocating mechanism for varying the stroke of the same, the said link having its lower end provided with means for engaging the pivot-shaft of the swinging member at two different points, a bell-crank having one of its arms in engagement with said link, whereby when the bell-crank is rotated the link will be adjusted longitudinally so as to cause its engagement with the pivot-shaft at one or the other of said two points, and means for swinging the bell-crank, substantially as described.

3. The combination with the platen and a swinging member which supports the bed; of means for reciprocating the bed toward and away from the platen; a rock-shaft to which said reciprocating means are eccentrically connected; a rod extending from an extension or projection on the rock-shaft, and having two notches, each adapted to engage the pivotal shaft of the swinging member, and also having a pin arranged to project laterally from between said notches and carrying a thimble; a bell-crank having a slot adapted to receive said thimble and provided

with spring means for forcing the same to the bottom of the slot; a link connected to the other end of said bell-crank; and a hand-lever pivotally connected with the other end
5 of said link, substantially as described.

4. The combination of the link having a couple of notches adapted to engage a shaft; a bell-crank having one of its arms provided with a slot adapted to engage a projection on
10 said link; spring means acting inwardly upon said pin; and means for swinging the bell-crank, substantially as described.

5. The combination with the link adapted to engage a shaft or pin at two different points;

a bell-crank having one of its arms slotted so
15 as to receive a projection arranged upon said link; spring means normally pressing inwardly upon said projection; a link connected with the other arm of the bell-crank; and a lever pivotally connected with said link, sub-
20 stantially as described.

In witness whereof I hereunto subscribe my name this 7th day of August, A. D. 1900.

SEVERIN HALVORSON.

Witnesses:

A. MILLER BELFIELD,
GEORGE L. CRAGG.