

(No Model.)

2 Sheets—Sheet 1.

J. J. BOYER.
TYPE WRITING MACHINE.

No. 414,187.

Patented Nov. 5, 1889.

Fig. 1.

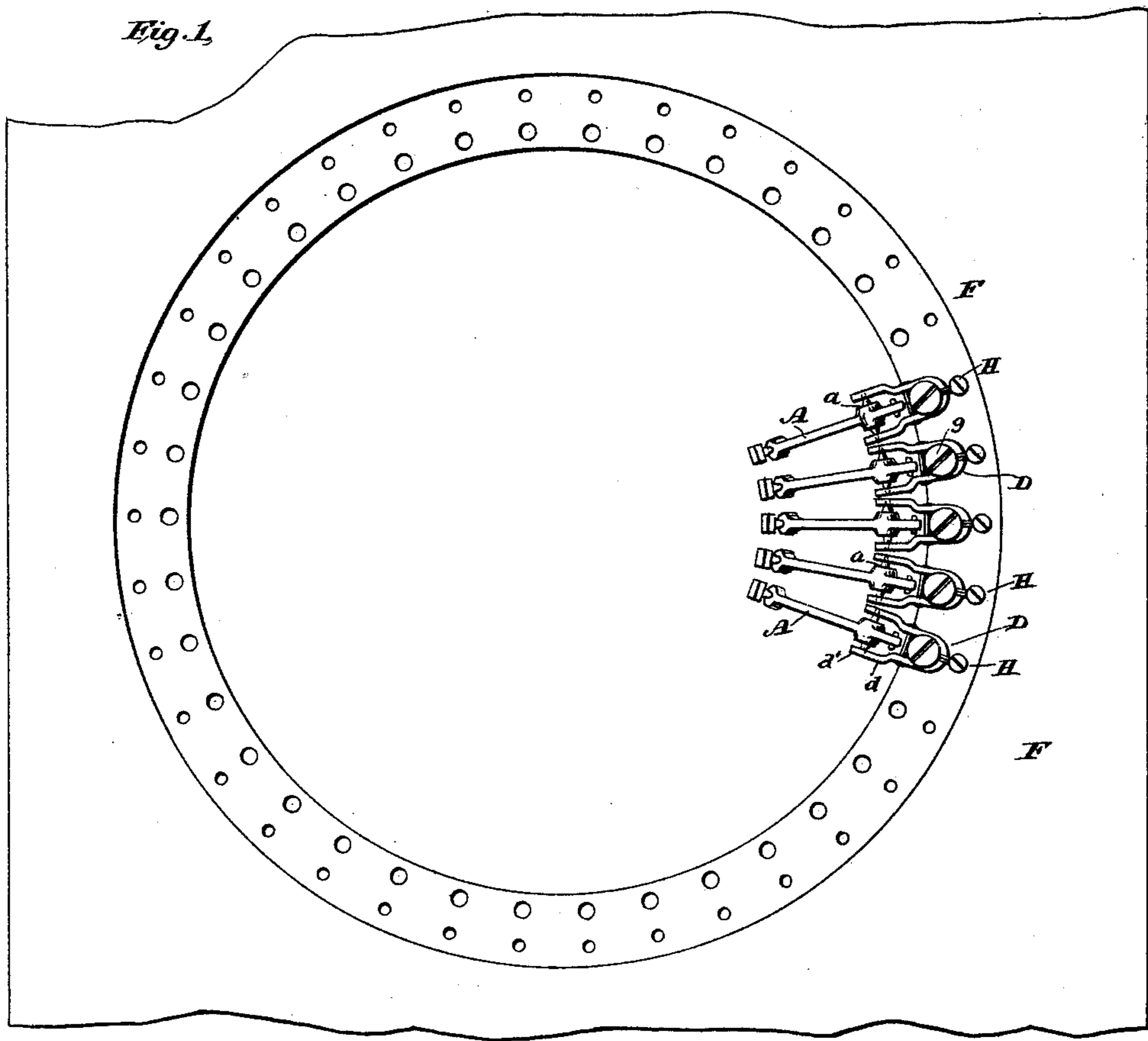
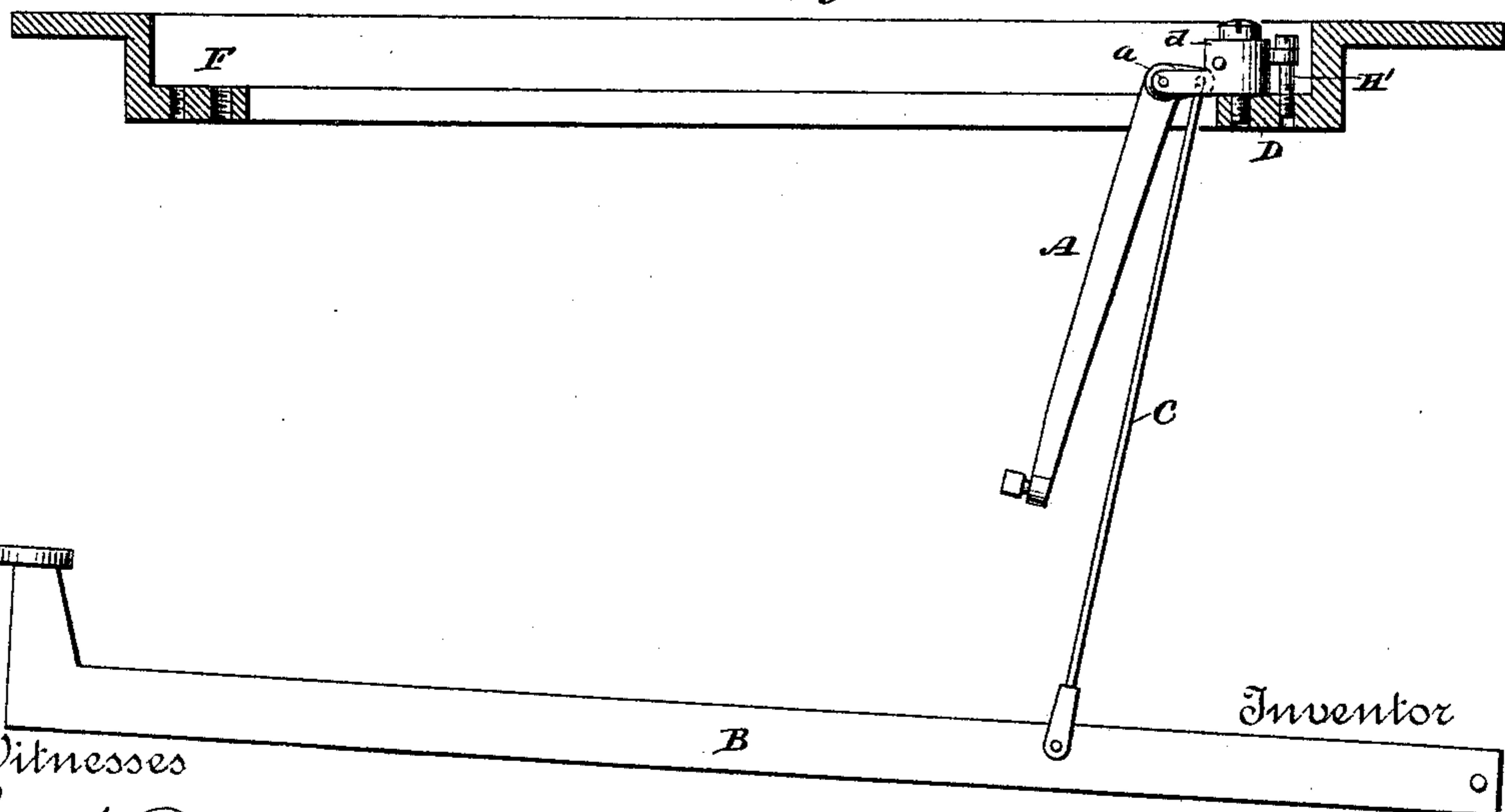


Fig. 2.



Witnesses
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By his Attorney *John J. Boyer*
Jacob Felbel

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

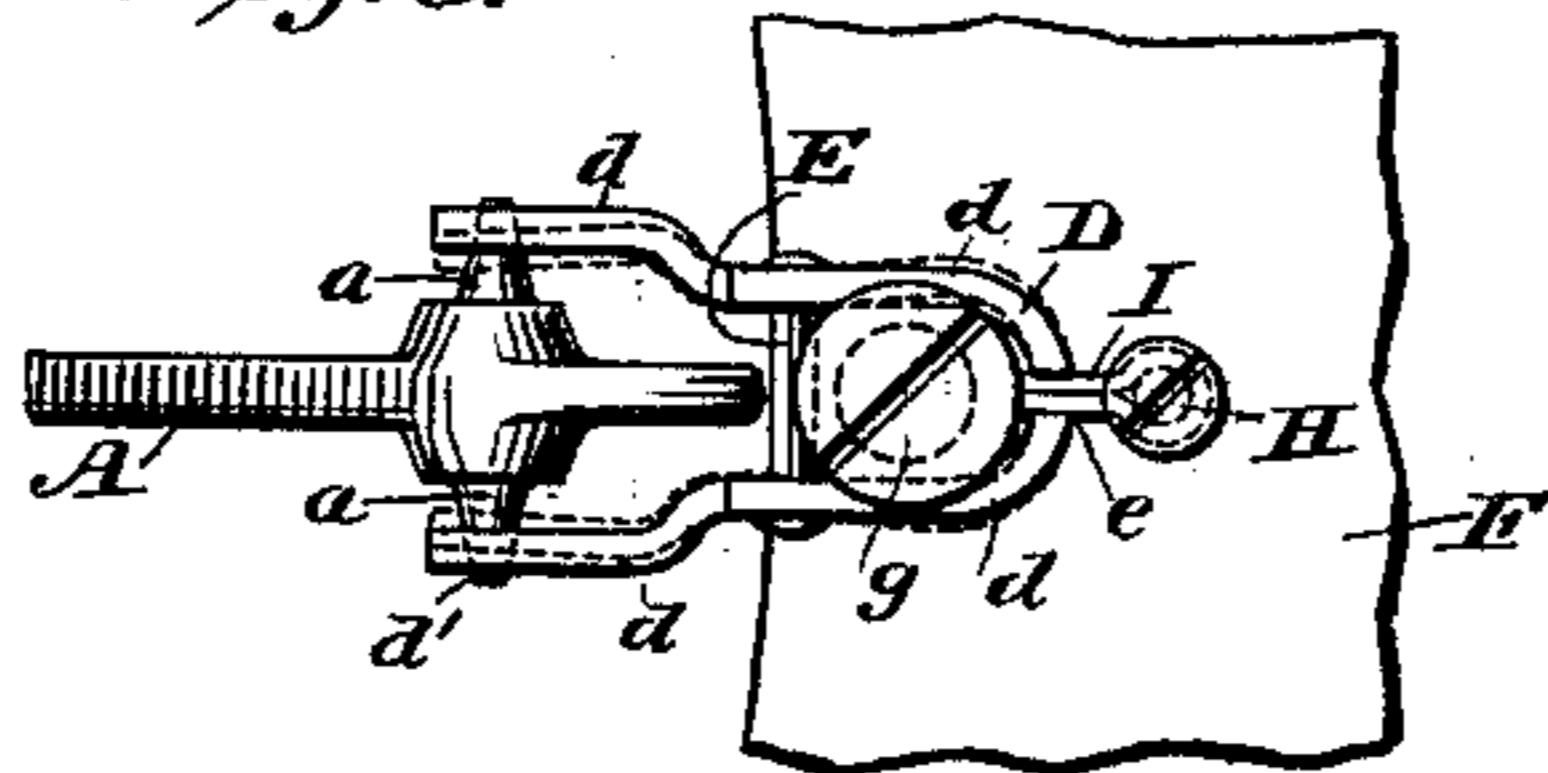


Fig. 4.

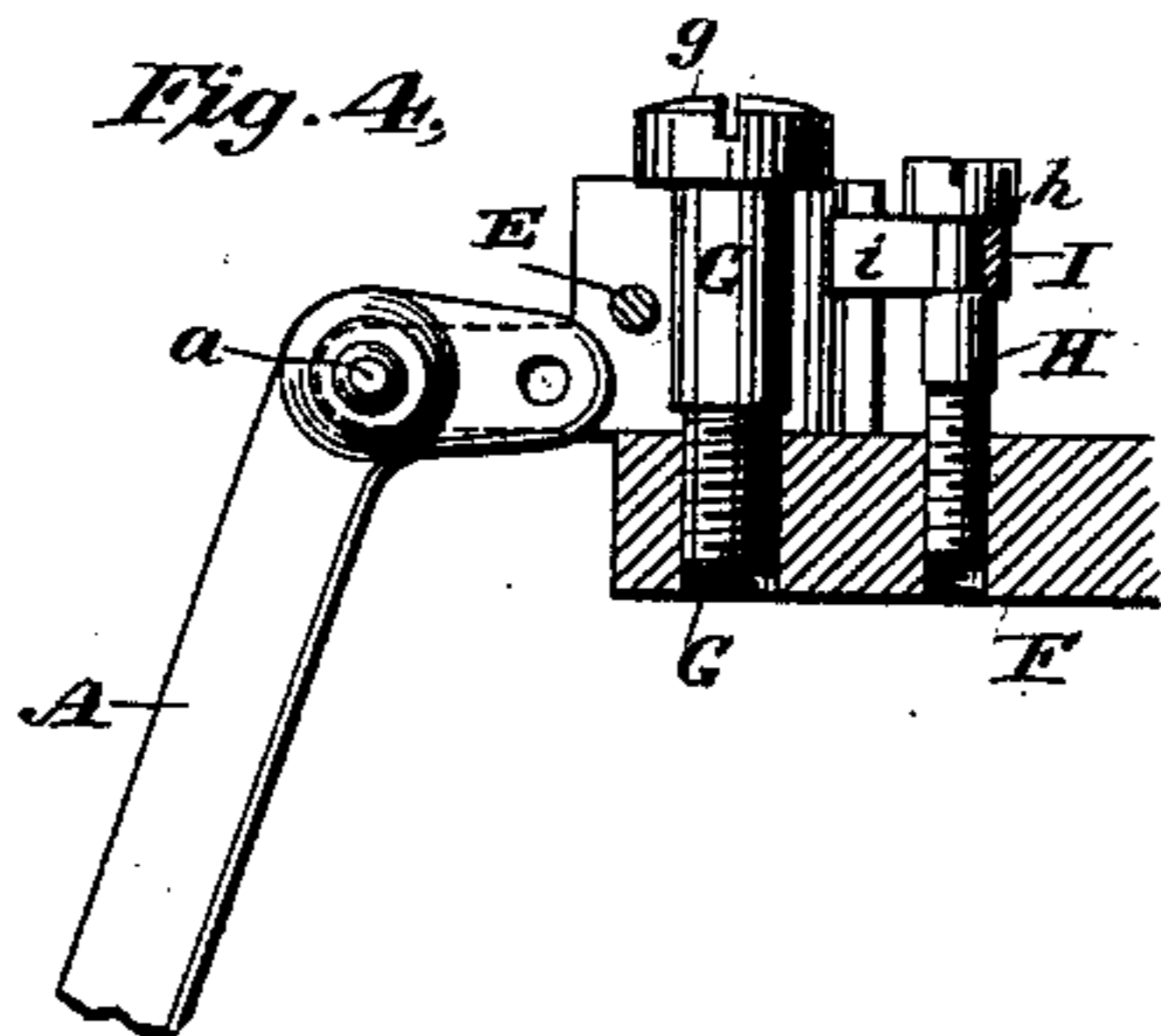


Fig. 5.

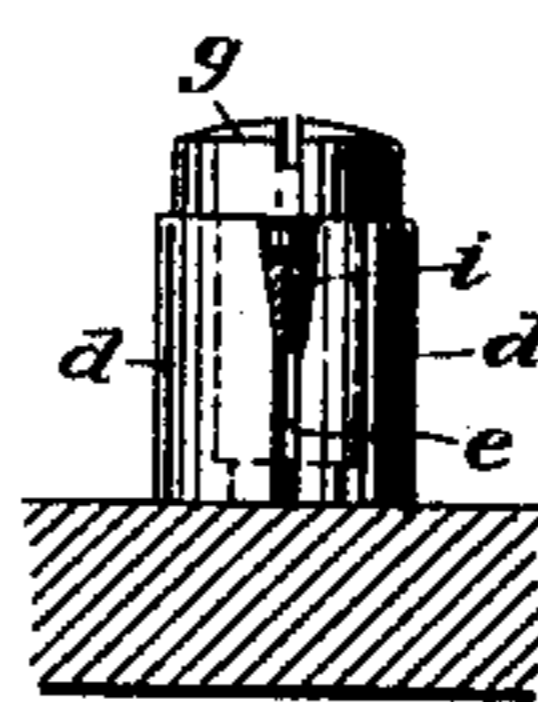


Fig. 6.

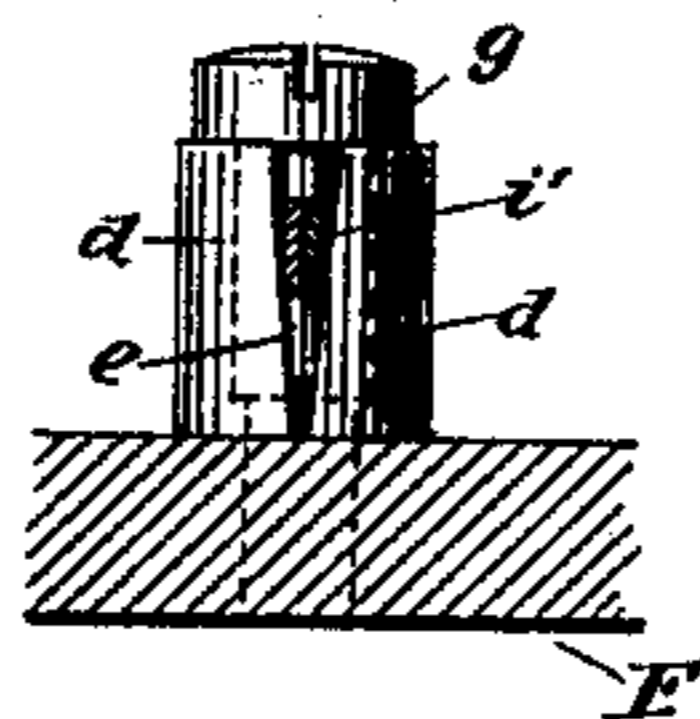


Fig. 7.

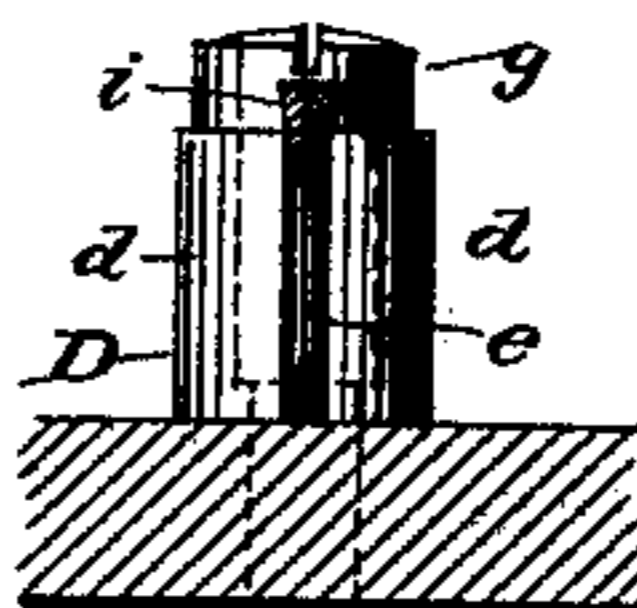


Fig. 8.

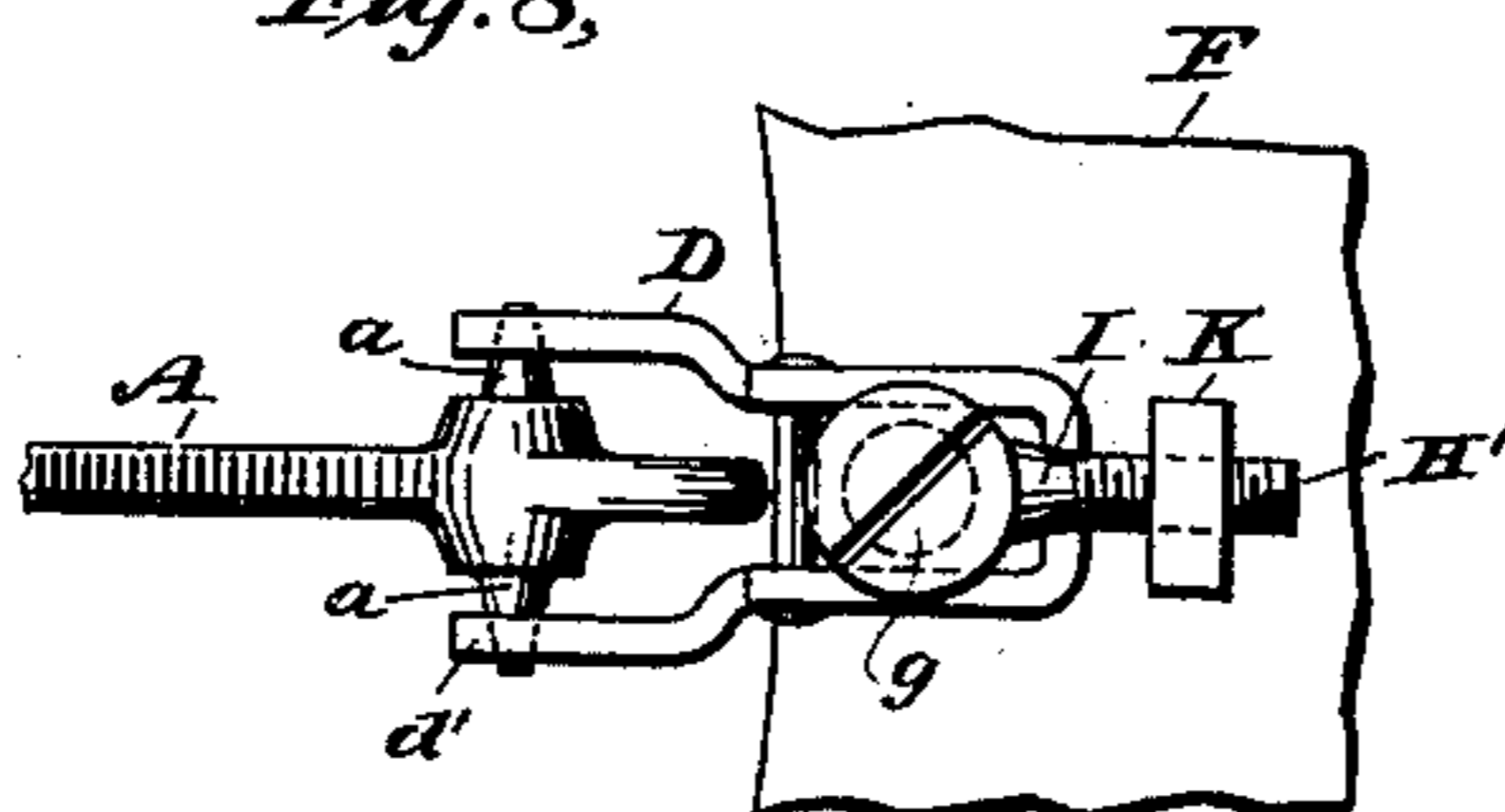
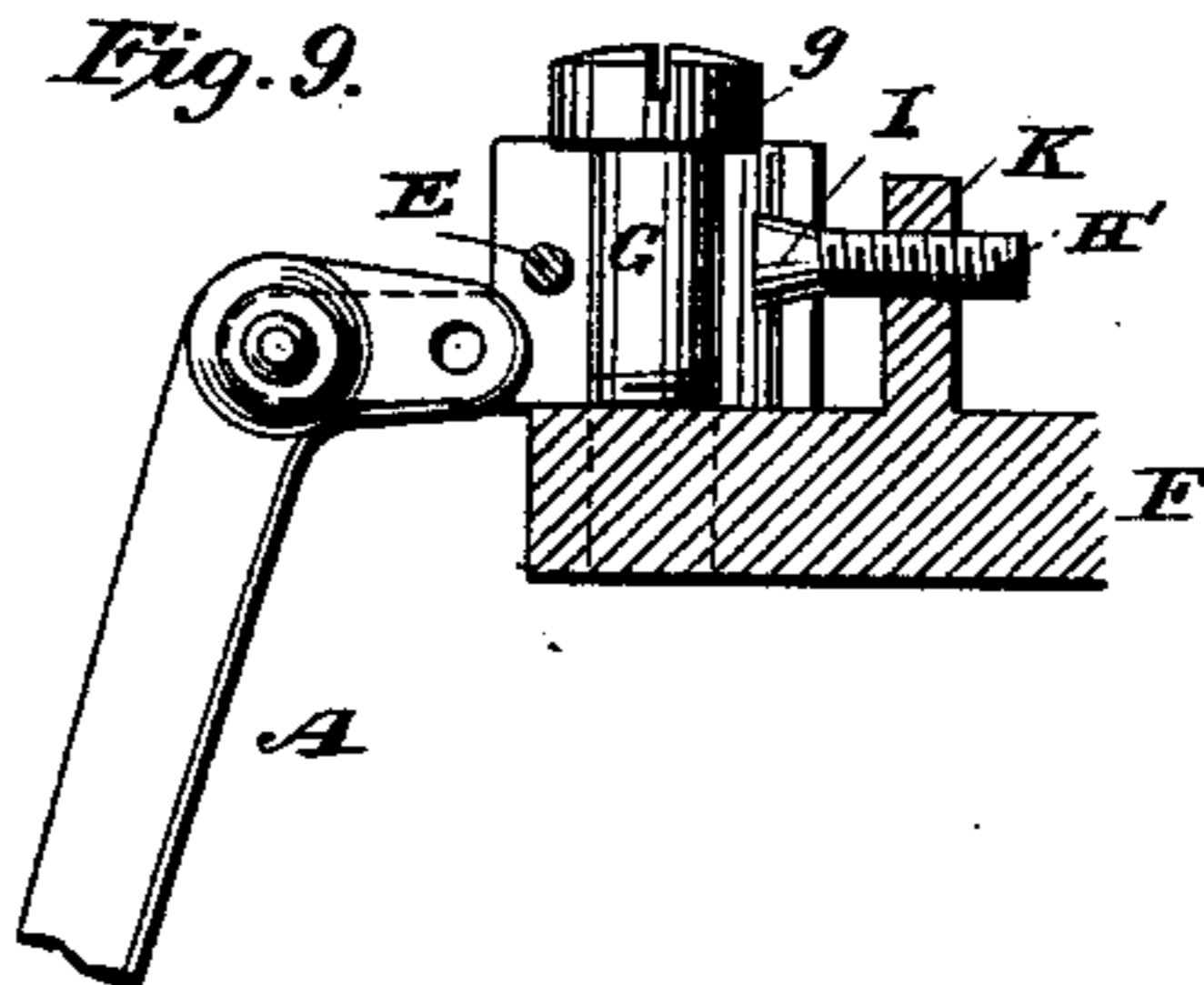


Fig. 9.



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Inventor
John J. Boyer
By his Attorney Jacob Felbel

UNITED STATES PATENT OFFICE.

JOHN J. BOYER, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE AMERICAN
WRITING MACHINE COMPANY, OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 414,187, dated November 5, 1889.

Application filed December 8, 1888. Serial No. 292,988. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. BOYER, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to the hangers of type-writing machines in which the type bars or carriers are journaled or fulcrumed. It is of importance that such hangers should be capable of radial adjustment relatively to the center of the type-ring upon which they are mounted, and also of a lateral adjustment with reference to the journals of the type-carriers, and the means for effecting the last-mentioned adjustment should be of such character as to avoid the removal of the hanger from the machine.

My invention has for its main objects to provide a construction whereby the hangers are adapted to be adjusted radially to bring the type to position to strike in line with the printing-point and to be adjusted to the journals of the type-carriers to take up lost motion therein due to imperfect construction or wear of the parts in use, and thus insure the striking of the type at the printing or impression point, or, in other words, provide for securing perfect alignment in the printing.

To these ends my invention consists, primarily, in a hanger having an opening in its back, combined with a spreader to widen said opening and thereby cause the forward or inner ends of the jaws of the hanger to approach each other and clasp more tightly the journals of the type-carrier, and, secondarily, in certain other features of construction and combinations of parts, all as will be hereinafter more fully described, and particularly pointed out in the appended claims.

I have fully illustrated my invention and several modifications in the accompanying drawings, wherein—

Figure 1 is a plan view of the top ring or plate of a type-writing machine having mounted thereon by means of my improved hanger several type bars or carriers. Fig. 2 is a vertical section through said top ring, showing a single type-bar and its operating-

lever and connecting-rod. Fig. 3 is an enlarged plan view of my improved hanger, showing a portion of the type-bar and top ring of the machine. Fig. 4 is a vertical section through the same. Fig. 5 is a rear elevation of the same. Figs. 6 and 7 are rear elevations showing modifications of my invention. Fig. 8 is a plan view of the hanger enlarged, showing a still further modification; and Fig. 9 is a vertical section through the hanger shown at Fig. 8.

A is a type bar or carrier of the common form, provided with tapering or conical truncations or journals *a a*.

B is the operating or key lever, and C the connecting-rod through which motion is communicated from the key-lever to the type-bar.

D is a hanger composed of two arms or bars *d d*, preferably of metal and of the form shown, and provided with conical seats or bearings *d'* for the journals of the type-bar. The two sides or members *d* of the hanger are securely joined about midway of their length by a cross tie or rivet E, in a manner such as to leave an opening or space *e* between them at the rear ends.

The hanger is secured to the top ring F of the machine by means of the screw G, having a head *g* large enough to span over and bear down upon the parallel sides of the hanger.

H is a vertically-arranged screw working into a threaded hole in the top plate F, immediately in rear of the hanger D, and carrying a spreader I, reaching within the slot or opening *e* of the hanger. This spreader may be formed from a flat strip of metal of such length as to fit within a groove *h* in the screw and extend within the rear jaws of the hanger, as shown. The sides of the spreader may be made beveled or wedge-shaped, as seen at *i*, or they may be made straight, as seen at *i'*. With a spreader having wedge-shaped sides a hanger having a straight or parallel sided opening may be used, as seen at Fig. 7, or one having a wedge-shaped opening, or one having a combined wedge and straight opening, as seen at Fig. 5. With a spreader having straight sides a wedge-opening may be used, as seen at Fig. 6. It will be seen from these views that if the carrier-screw be

turned in a downward direction the spreader will act to force apart the rear jaws of the hanger and cause the front jaws to approach each other, as illustrated by the dotted lines of Fig. 3, thereby taking up any lost motion at the journals of the type-bar.

At Figs. 8 and 9 the spreader and the carrier-screw are made in one piece and arranged in a horizontal direction. The screw H' is provided at its front end with a wedge-shaped spreader I, extending between the rear jaws of the hanger D, and is mounted in a threaded perforation in a vertical flange or support K of the top plate F. By turning the screw outwardly the rear jaws of the hanger may be spread and the front jaws thereof be forced toward each other, in the manner hereinbefore explained.

The wedge or spreader I (shown at Figs. 8 and 9) may be formed in reverse direction to that shown, so that by screwing in the carrier the rear jaws of the hanger may be spread or further separated.

It will be seen that the hangers may be adjusted radially by loosening the retaining-screw G, as heretofore, and it will be further seen that by my invention is provided a means whereby the journal-bearing ends of the hangers may be adjusted to the trunnions of the type-bar in a simple and expeditious manner and without removing the hanger from the machine.

Many further modifications may be made without departing from the spirit of my invention, the gist of which rests in wedging or spreading the rear ends of the hanger, and thereby causing their front ends to move toward each other.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine, a hanger having a split or bifurcated rear extremity, in combination with a spreader and a type-carrier.

2. In a type-writing machine, a hanger composed of two bars or members united by a cross-tie and having an opening at the back, in combination with a spreader and a type-carrier.

3. In a type-writing machine, a hanger composed of two bars or members united by a cross-tie and having an opening at the back and conical journal-bearings at the front, in combination with a spreader and a type-carrier having lateral conical journals.

4. In a type-writing machine, a hanger composed of two bars or members united by a cross-tie and having a wedge-shaped opening at the back, in combination with a spreader and a type-carrier.

5. In a type-writing machine, a hanger having a split or bifurcated rear extremity, in combination with a type-carrier, a spreader, and a carrier-screw.

6. In a type-writing machine, the combination of the split-back hanger, the wedge-shaped spreader, the carrier-screw, and the type-carrier.

Signed at New York, in the county of New York and State of New York, this 29th day of September, A. D. 1888.

JOHN J. BOYER.

Witnesses:

JACOB FELBEL,
MARTIN LAYDEN.