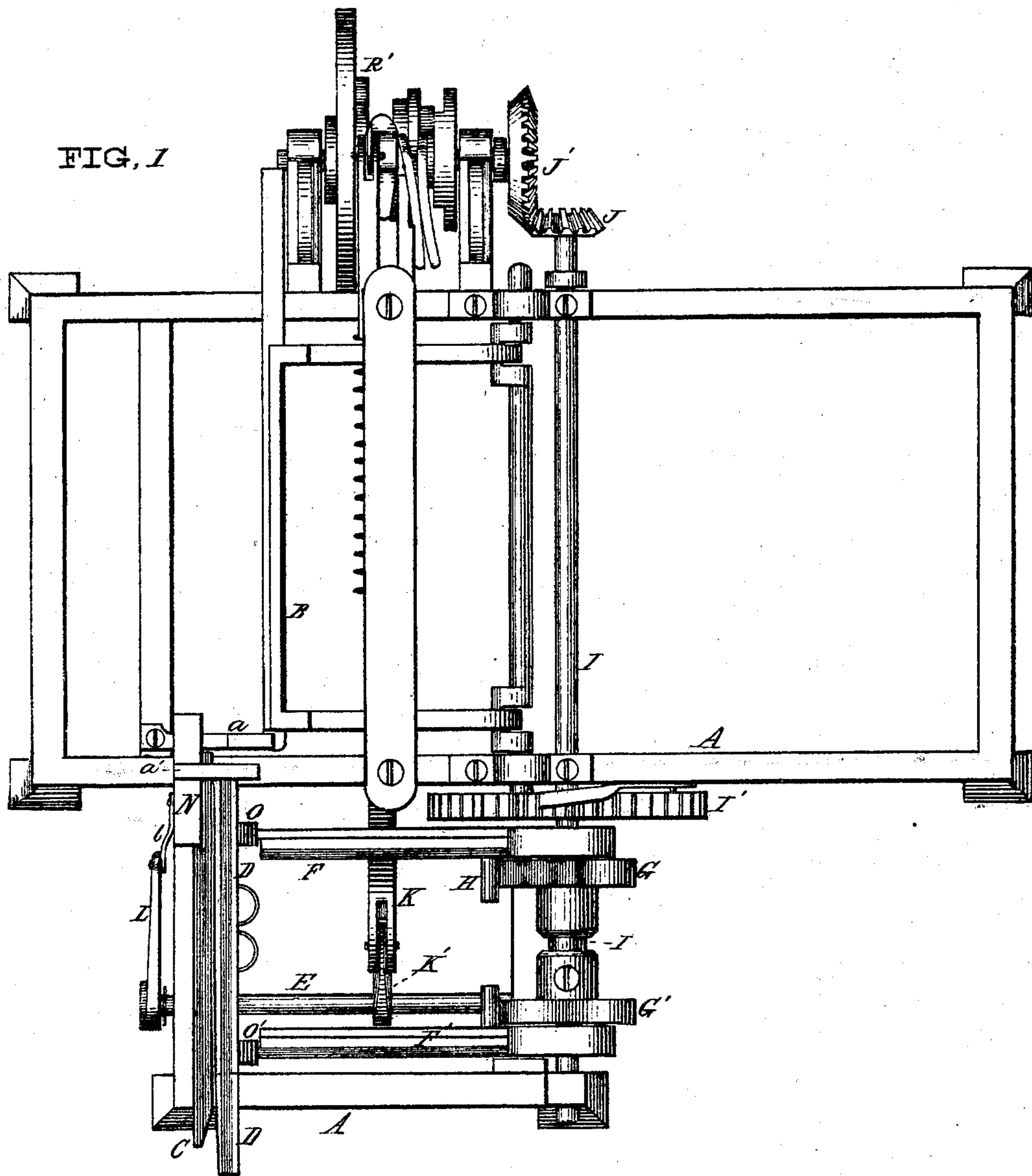


JAMES WADE.

Improvement in Looms.

No. 122,976.

Patented Jan. 23, 1872.



Witnesses,

Charles Beverland,
Charles E. Friess

James Wade, Inventor
By T. A. Curtis, his Atty.

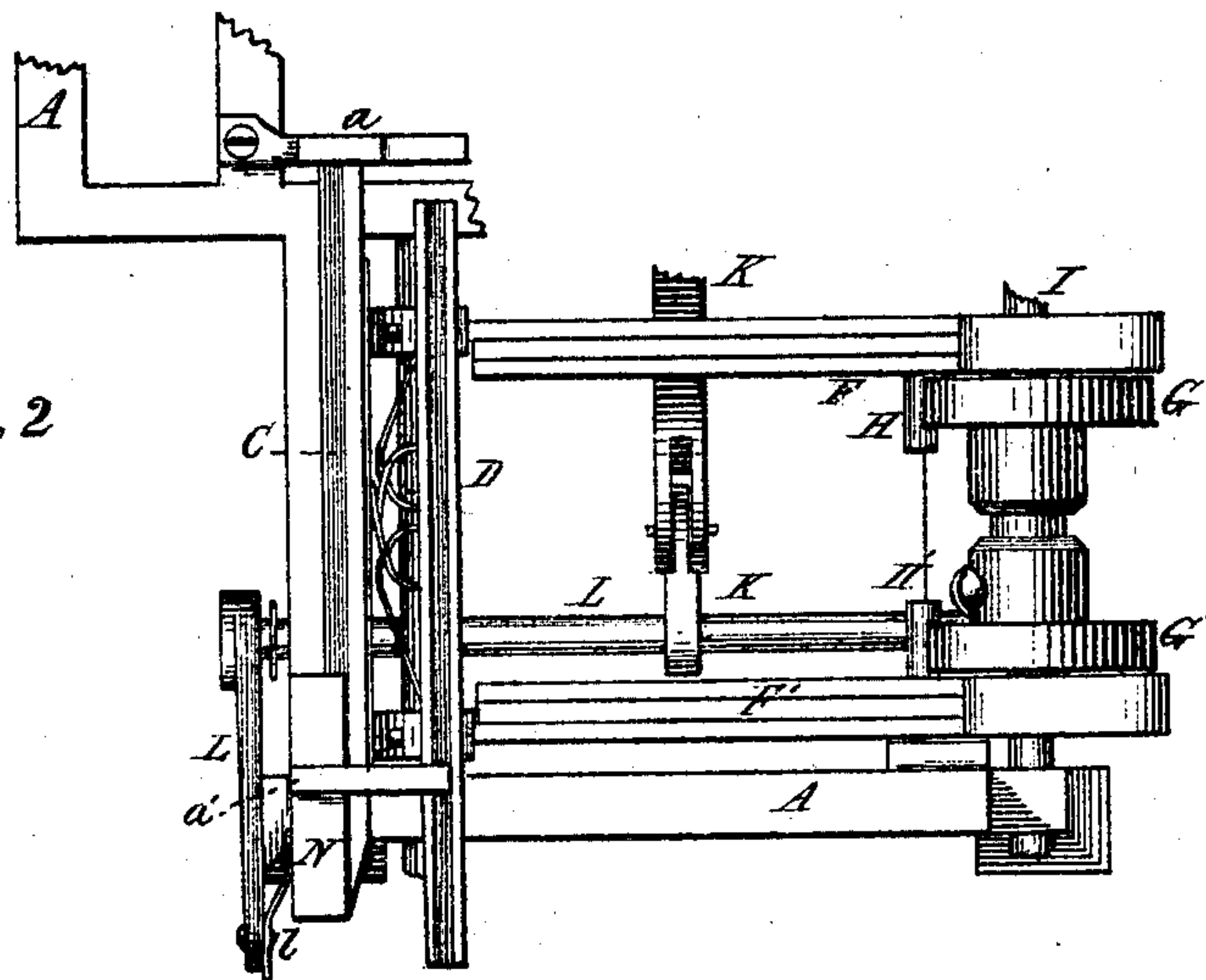
JAMES WADE.

Improvement in Looms.

No. 122,976.

Patented Jan. 23, 1872.

FIG. 2



Witnesses,
Clarence Buckland,
Clarence E. Howard

James Wade, Inventor,
By J. A. Curtis, his Atty.

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No. 122,976.

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FIG. 3

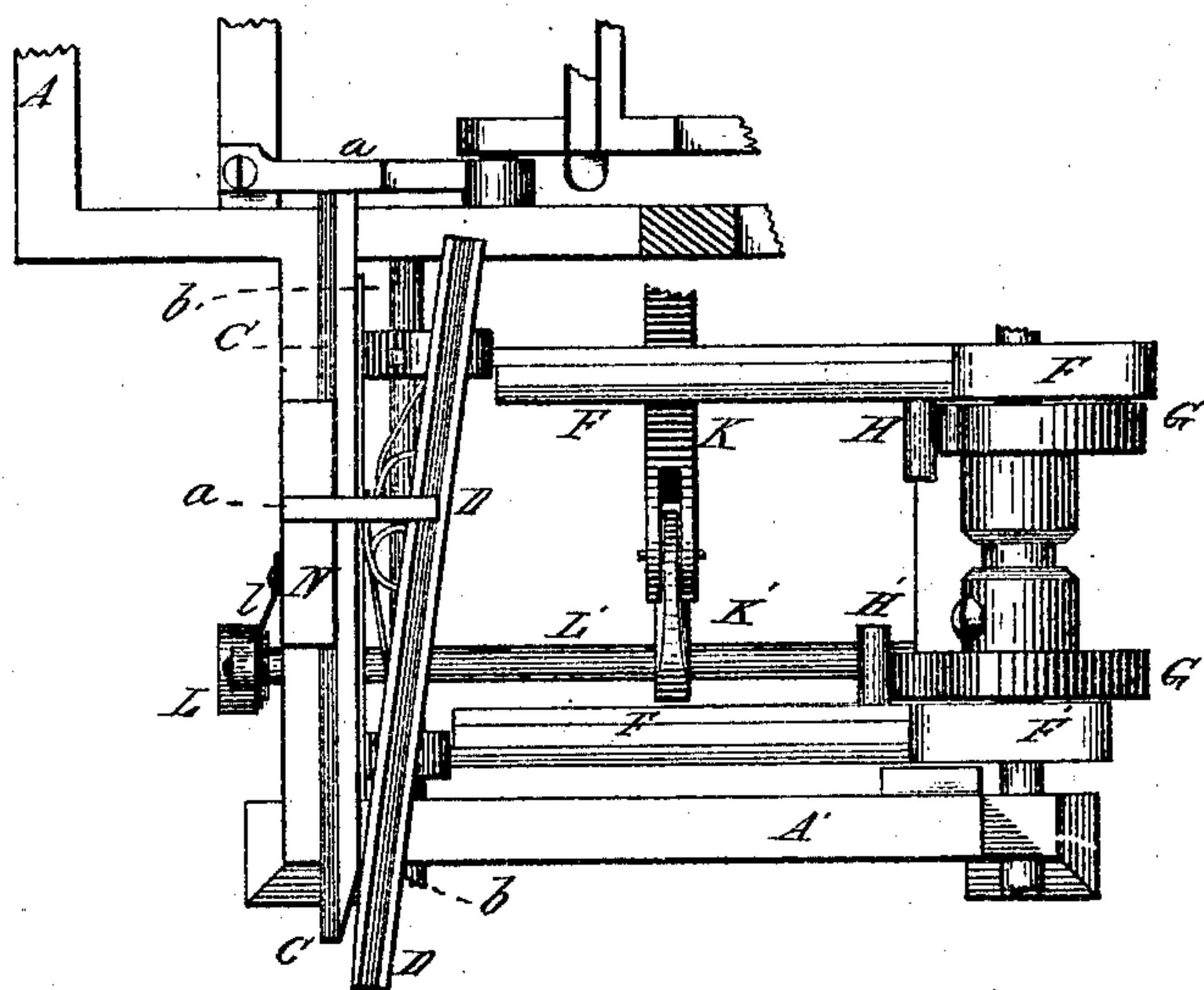
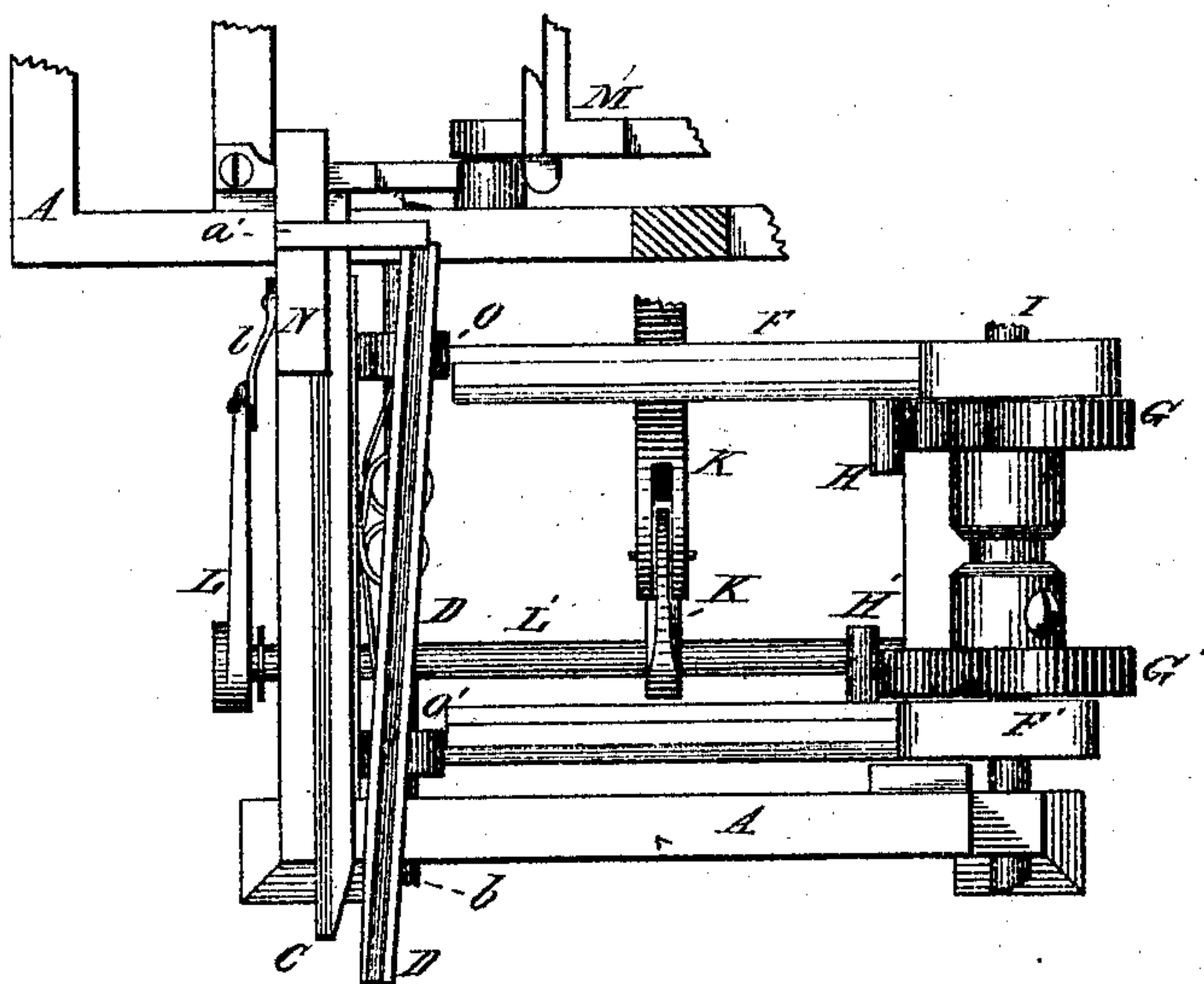


FIG. 4



Witnesses,
 Clarence Buckland,
 Charles E. Hunt

James Wade, Inventor,
 By L. A. Curtis,
 his atty

JAMES WADE.

Improvement in Looms.

No. 122,976.

Patented Jan. 23, 1872.

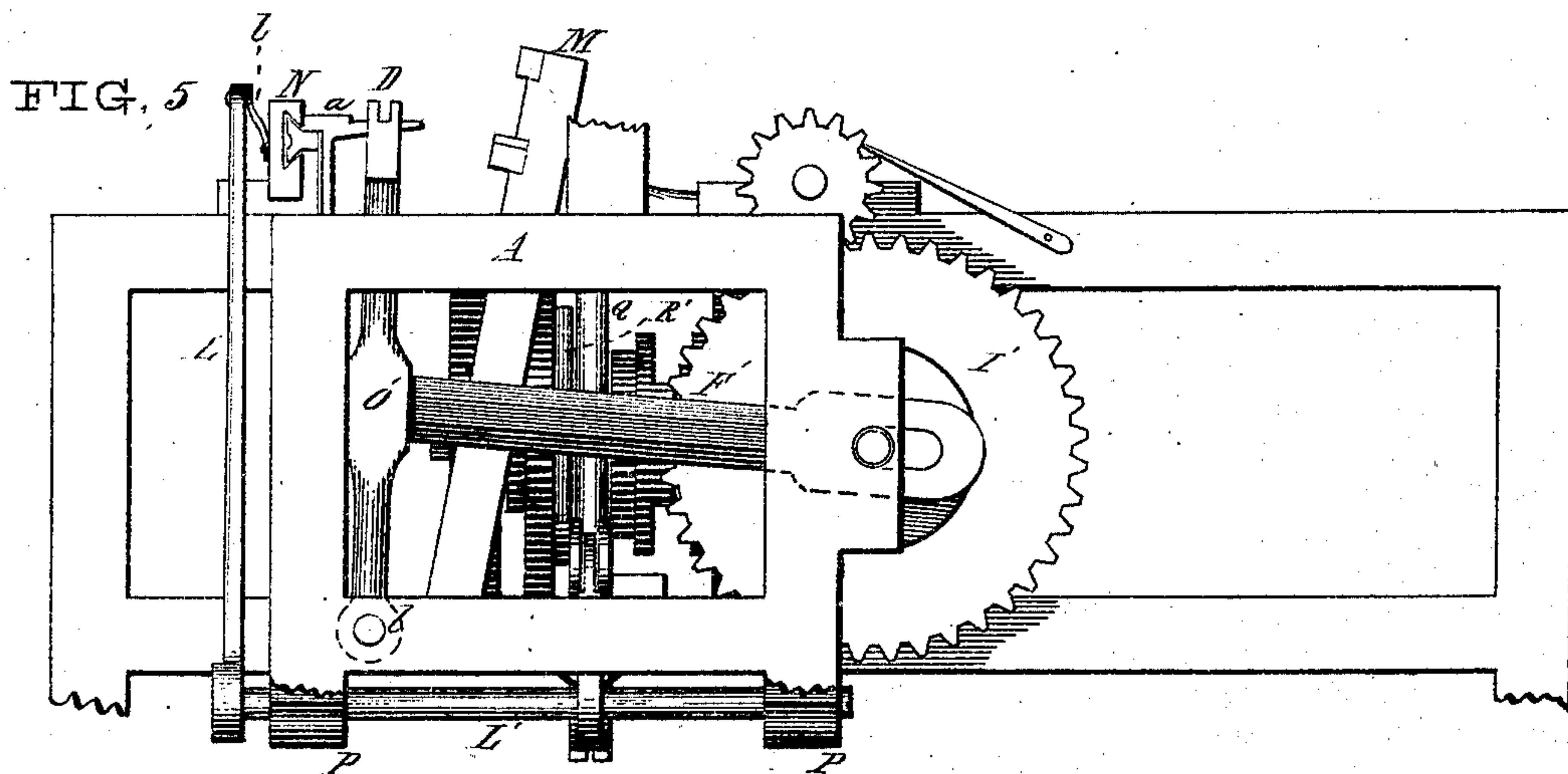


FIG. 6

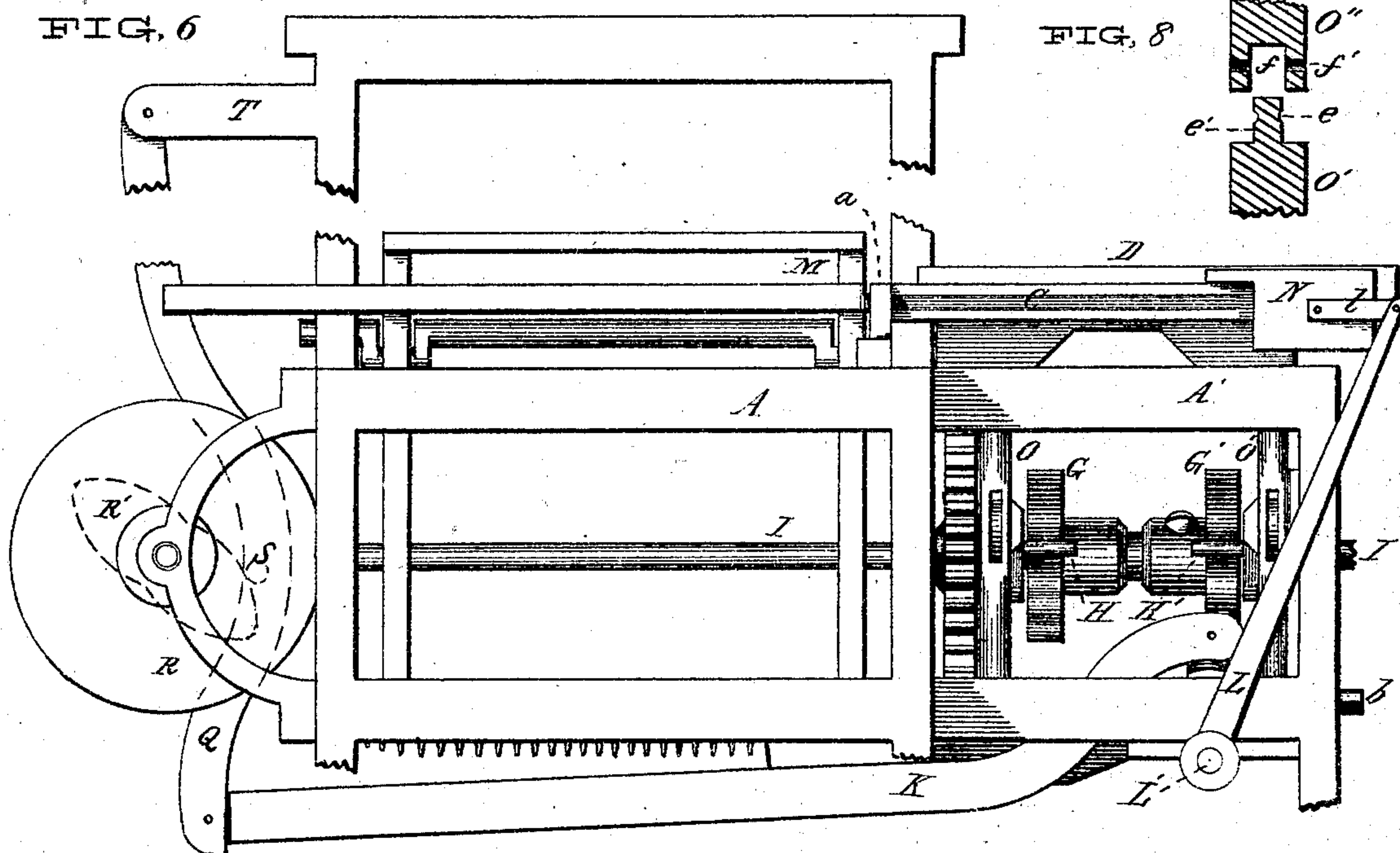


FIG. 8

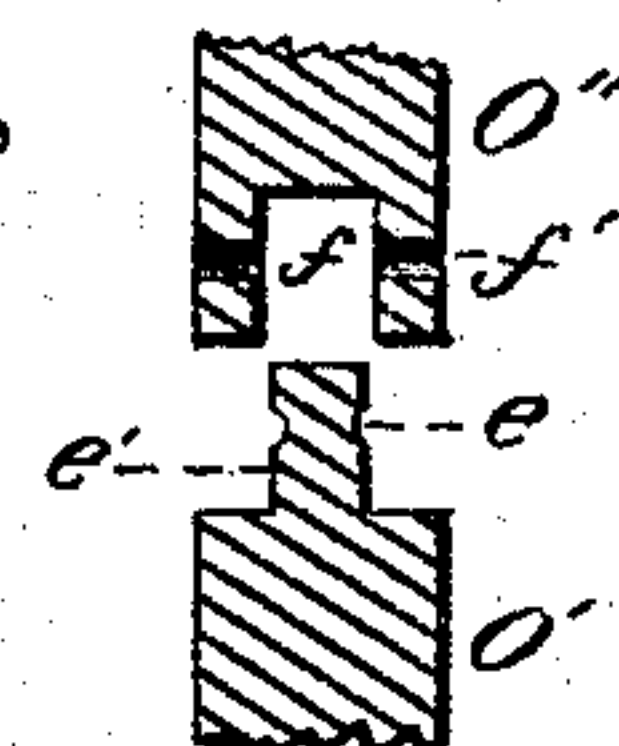
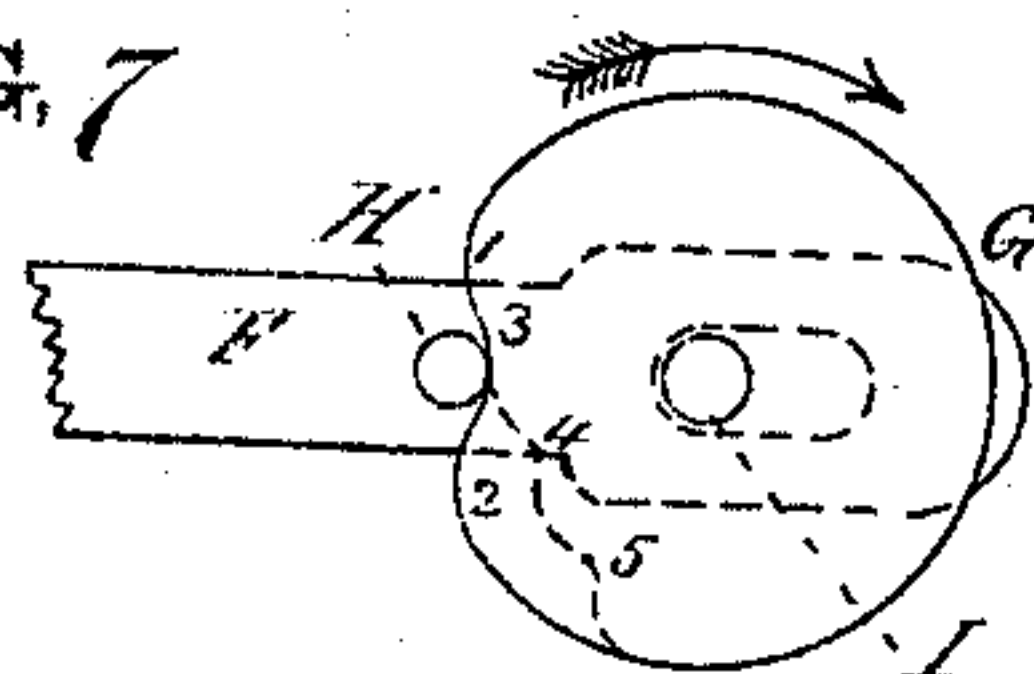


FIG. 7



Witnesses,

Clarence Buckland,
Charles E. Knapp

Inventor,
James Wade,
By T. A. Curtis,
his atty.

UNITED STATES PATENT OFFICE.

JAMES WADE, OF PALMER, MASSACHUSETTS, ASSIGNOR TO THE PARKS & WADE CARPET COMPANY, OF SAME PLACE.

IMPROVEMENT IN LOOMS.

Specification forming part of Letters Patent No. 122,976, dated January 23, 1872.

To all whom it may concern:

Be it known that I, JAMES WADE, of Palmer, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Looms for weaving Brussels or tapestry carpets or other pile fabrics; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification and to the letters of reference marked thereon, in which—

Figure 1 is a plan view of a loom for weaving Brussels or tapestry carpets or other pile fabric, having my invention applied, and showing the wire trough in a position close to the slide, and ready to have a wire drawn from its place in the fabric back into the trough. Fig. 2 is a plan view of so much of the loom as relates to my invention, showing the wire trough as having made its first movement from and parallel with the slide in the operation of transferring a wire from the fabric to the shed. Fig. 3 is a plan view of the same, showing the wire trough as having made its next movement with the outer end thrown back toward the slide and the inner end thrown toward the lathe. Fig. 4 is a plan view of the same, showing the wire trough as having made its next movement with the inner end thrown back again toward the slide. Fig. 5 is an end view of so much of the loom as relates to my invention. Fig. 6 is a front view of a loom having my invention applied. Fig. 7 is a side view of the cams and levers or arms which actuate the wire trough, showing their relative position; and Fig. 8 is a sectional view of the jointed rod attached to one end of the wire trough, the upper part of which forms one of the fulcrums upon which the wire trough moves.

My invention relates to that portion of a loom for weaving Brussels or tapestry carpets or other pile fabrics, which operates to transfer the wires from the woven fabric to the open shed; and it consists of a trough placed upon the top of two upright levers which are pivoted upon a rock-shaft at their lower ends, and which are operated to and fro by means of cams, each of which actuates a rod or arm attached to each pivoted lever, and these are so arranged as to give the wire trough a move-

ment to and from the slide, said movement being partially parallel and partially oblique with reference to the slide. One or both of the pivoted levers is swiveled to the wire trough to permit of this irregular movement; and another upright lever, also pivoted to a rock-shaft at the lower end, is caused, by means of another cam and arm, to move the carriage to and fro upon the slide in the operation of transferring the wire from the woven fabric to the shed, the carriage or the slide, however, forming no part of my invention, except in combination with the wire trough having the partially parallel and partially oblique movement.

That others skilled in the art may be able to make and use my invention, I will proceed to describe its construction and its operation.

In the drawing, A represents the frame of a Brussels-carpet loom, and A' represents the frame which supports the several parts of my apparatus, and which is attached to the main portion of the loom. D represents the wire trough, which is placed upon the upper ends of two upright levers, O and O', which levers are attached at their lower ends to the rock-shaft b. Midway in the length of these levers are attached the two arms F and F', the arm F being attached to the lever O and the arm F' to the lever O', these arms being supported by the shaft I or in any convenient manner. The arm F has a projection, H, thereon, and the arm F' the projection H', which projections are held in contact with the cams G and G', preferably by means of springs or weights. These cams are firmly secured to the rotating shaft I, and their form and relative position with each other are shown clearly in Fig. 8, the irregular form of the cam G being shown at the dotted line and by the numerals 1, 3, 4, and 5, and the irregular form of the cam G' by the continuous line and the numerals 1, 3, and 2, the remaining portions of both cams being similar in form. C represents the slide, along which moves the carriage N, to which is secured any desirable device for withdrawing and inserting the wire. This carriage is caused to move to and fro along the slide C by means of the upright lever L secured at the lower end to a rock-shaft, L', to which motion is communicated by means of

the short arm K' attached to said shaft, the longer arms K and Q and the cam R' operating against the projection s. Both of the latter are shown in dotted lines in Fig. 1. This oscillating movement of the rock-shaft L' may be given in any other desirable manner. M represents the position of the reeds in the lathe. The upright lever O is swiveled to the wire trough D, preferably by means of a joint shown in Fig. 8, in which O'' represents the upper part of the lever O', having a cylindrical recess, f, therein, and a transverse hole, f', opening into the side of the recess. The upper end of the lower part of the lever O' has a projection, e', of a proper size to fit and turn freely in the recess f, and the said projection has an annular groove, e, thereon, so that, when the projection e' is inserted within its recess f and a pin inserted through the hole f' passing into the annular groove e, the two parts O and O'' are connected together, and yet so that the part O'', to which is fixed the wire trough D, may turn upon its fulcrum O'. Any desirable form of swiveled joint will answer the same purpose that will give the wire trough the desired irregular movement.

Having thus described the construction of my invention, I will proceed to describe its operation. Motion being given to the rotating shaft I, the cams G and G' being attached thereto, they rotate in the direction indicated by the arrows in Figs. 5 and 7, and motion is also given at the same time to the rock-shaft L', and the lever L attached thereto, by means of the tappet R' and the connecting-arms Q K and K'. When a wire is to be drawn from the fabric into the trough D the position of the trough is in close proximity to the slide C, and the carriage N, with the device for moving the wire attached thereto, is close to the wire-box a. As the lever L and carriage N move out the device for withdrawing the wire impinges against a wire head and draws the wire from the fabric into the trough, and the position of the carriage N is then at the outer end of the slide. As the cams revolve the projections H and H', both, are forced back by springs or weights into the recesses marked 3, as shown, Fig. 7, and thus far, as both cams are alike, the arms F and F' both recede alike, and the trough D is caused to move back into a position parallel with the slide, as shown in Fig. 2. As the cams continue to revolve the projection H falls back still further into the deeper recess marked 4 in the cam G, while the projection H' is forced in the other direction by the point marked 2 on the other cam G', and the trough is thus brought into the oblique position shown in Fig. 3, with the inner end carried still further, the slide and the outer end carried nearer to it; and at the same time that the trough commences this oblique movement the lever L commences to move inward, moving the carriage N along the slide, and the

finger a', which projects over the trough, and which here illustrates the device for moving the wire in inserting it into the shed, impinges against a wire head, forcing the wire along also, the point of the wire being directed in an oblique direction, by the position of the trough, into the open part of the shed. As the carriage with its finger a' passes along it is necessary that the trough should move still further back to be within reach of the finger, and as the cams G and G' revolve the projection H is thrown forward into the recess marked 5, which is not so deep as that marked 4, and the trough is thus brought to the position shown in Fig. 4 while the carriage N is finishing its movement toward the wire box a. The wire being now thrown into the shed, as the cams revolve the projection H is forced forward again from the recess 5 to the extreme circumference of the cam, and the trough is thus brought to its former position, shown in Fig. 1, ready to receive the next wire drawn from the fabric. It will be seen that by giving this parallel and oblique movement to the wire trough I am enabled to direct the wire into the more open part of the shed and still have the trough stand at such an angle during the operation of transferring the wire from the fabric to the shed as to give the carriage the least amount of work in moving the wire and decreasing the friction of the wire against the sides of the trough as it moves therein, and, at the same time, to have the trough within reach of the device for moving the wire, thus preventing an increased amount of friction and wear and tear of machinery; and this is the object of my invention.

I am aware that various devices have heretofore been used to throw the wire into the open part of the shed; and I do not claim the attainment of that object irrespective of my arrangement of the wire trough having its parallel and oblique movement, and also its movement in connection with the movement of the carriage.

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

1. The combination of the carriage N with the wire trough D, having a partially parallel and partially oblique movement in the operation of transferring a wire from the fabric to the open shed, substantially as described.

2. I claim the wire trough D, moving upon two fulcrums O and O', and operated by means of the cams G and G', whereby a parallel and oblique movement of the said trough is attained in the operation of transferring the wire from the fabric to the shed, substantially as described.

JAMES WADE.

Witnesses:

CHARLES L. GARDNER,
J. S. LOOMIS.