

No. 754,636.

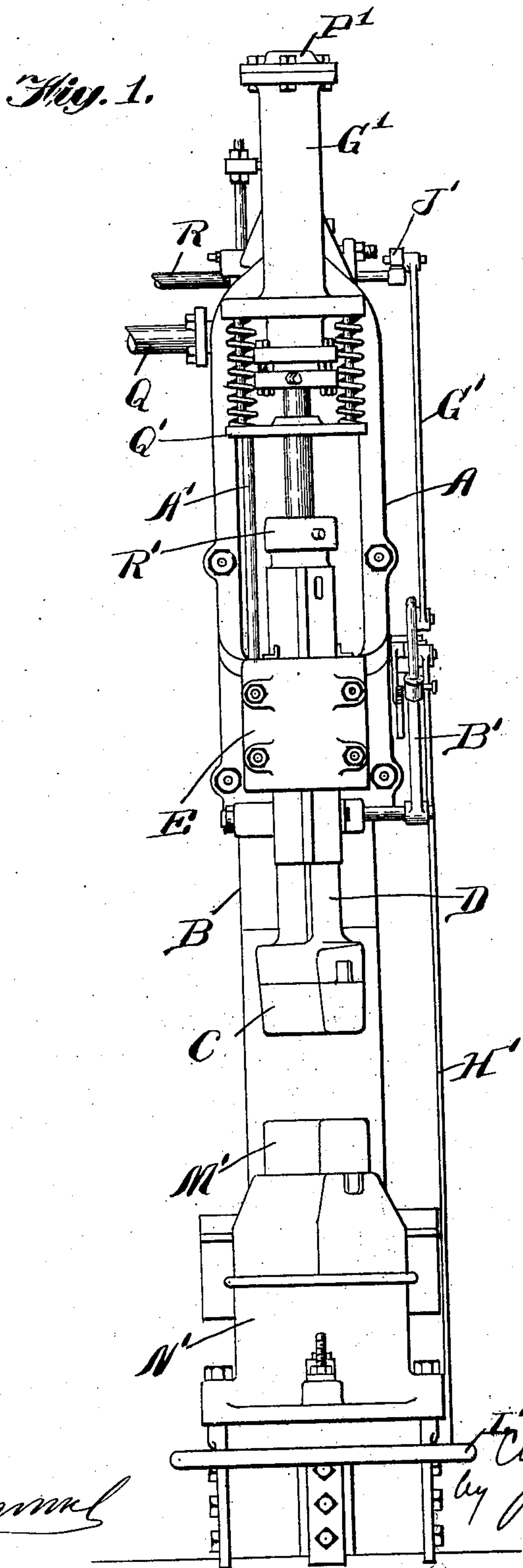
PATENTED MAR. 15, 1904.

C. E. BILLIN.
STEAM HAMMER.

APPLICATION FILED AUG. 12, 1902.

NO. MODEL.

4 SHEETS—SHEET 1.



Witnesses:

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J. M. Hornum

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No. 754,636.

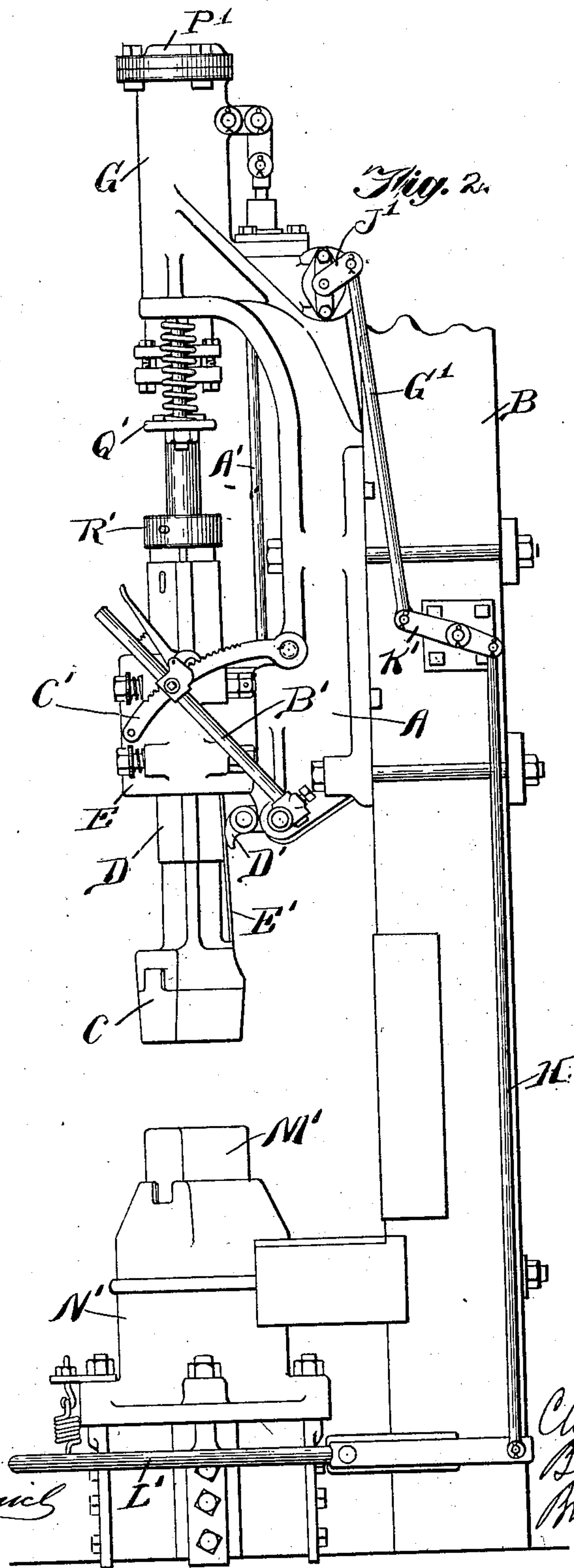
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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

NO MODEL.

Fig. 3.

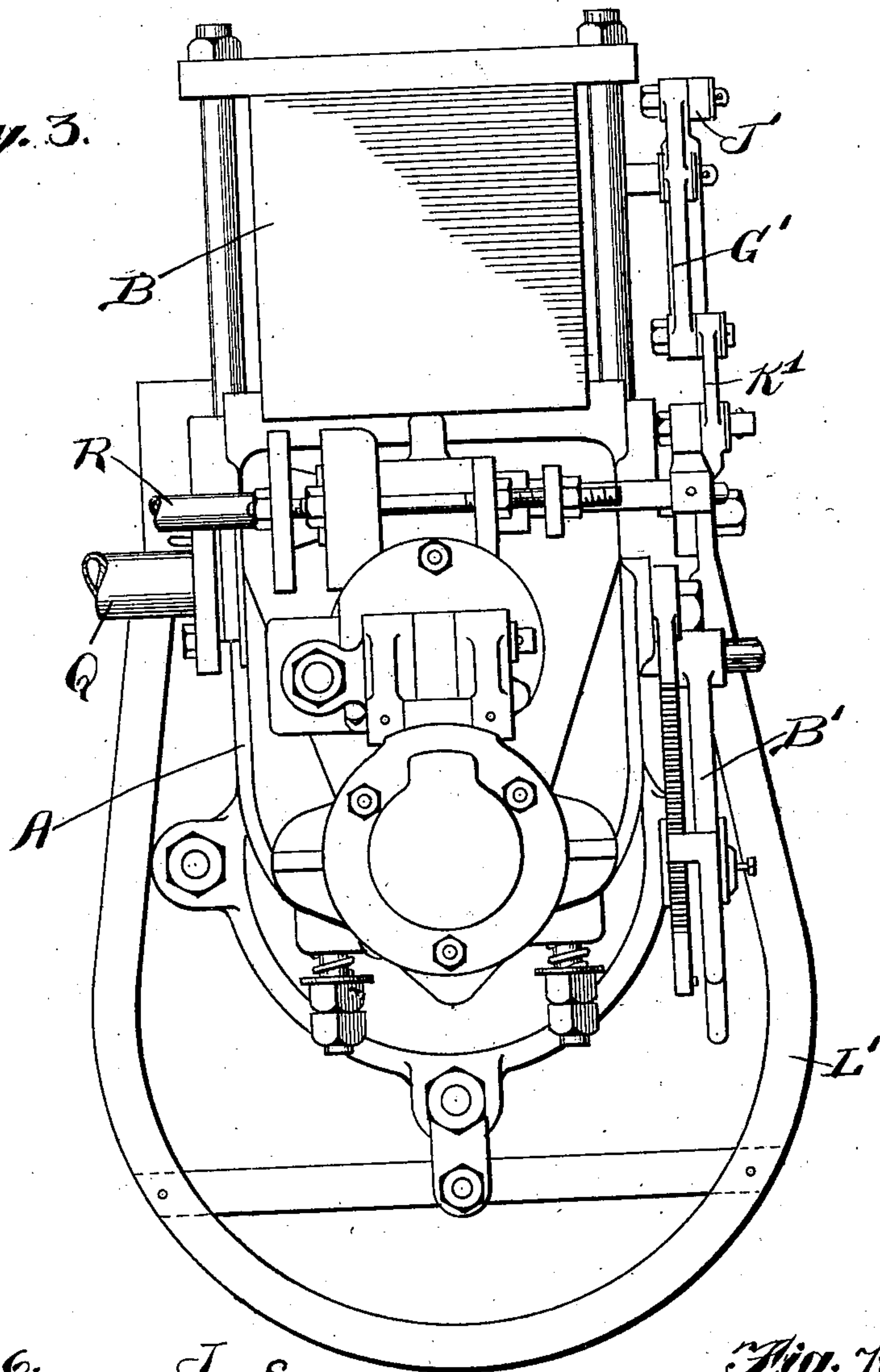


Fig. 6.

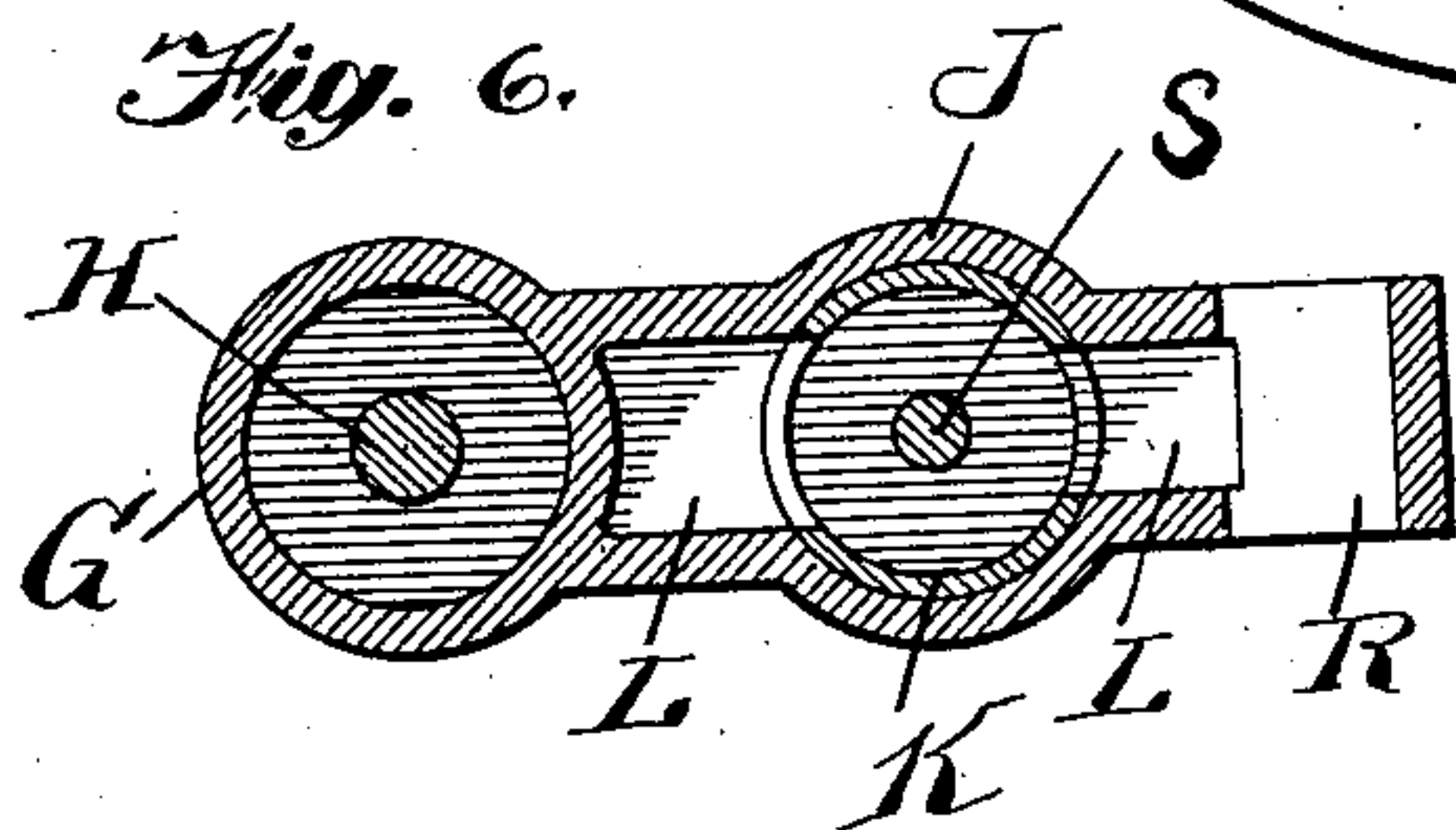
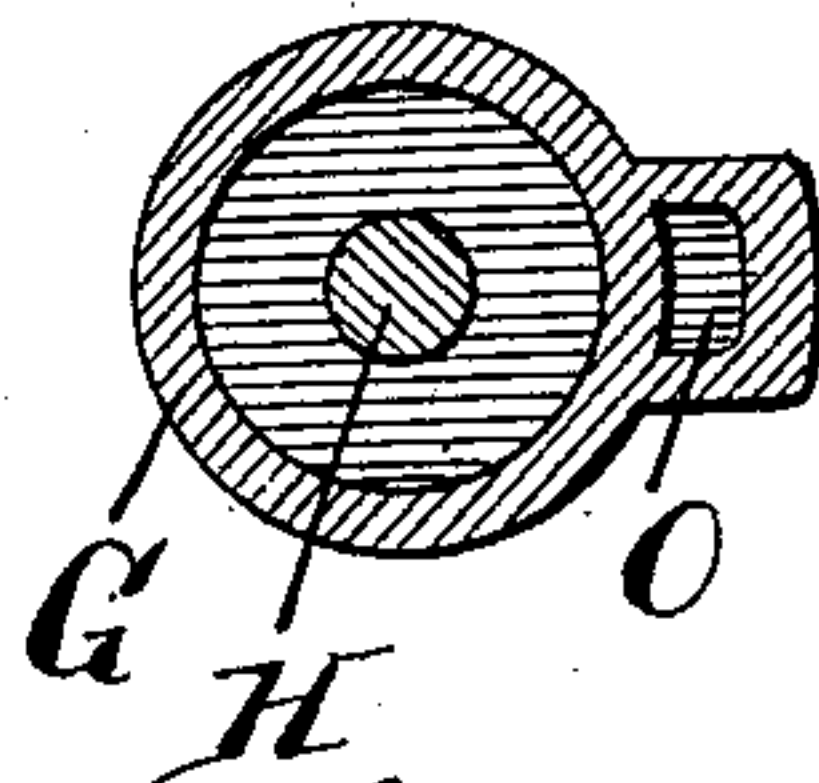


Fig. 7.



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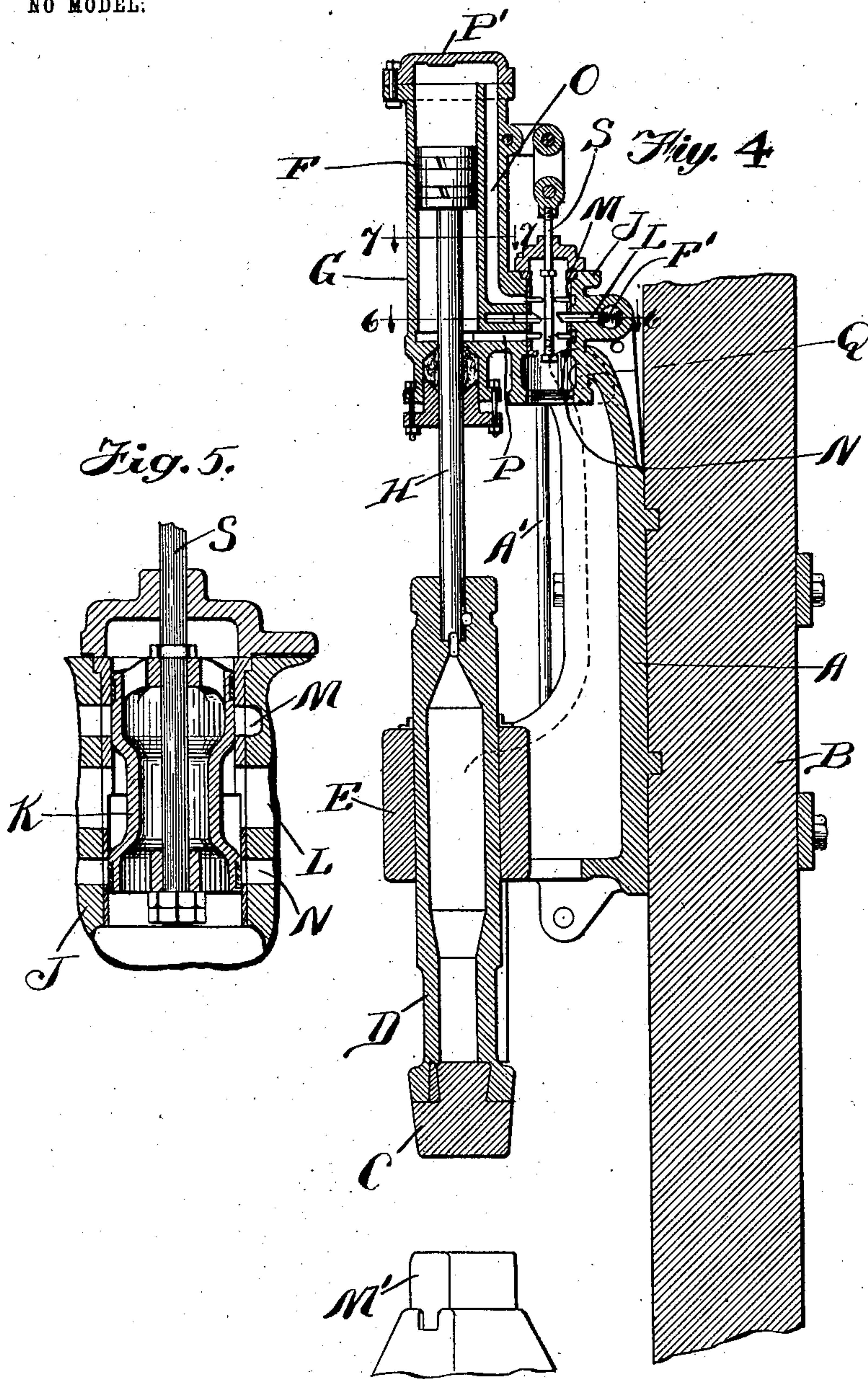
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STEAM HAMMER.

APPLICATION FILED AUG. 12, 1902.

NO MODEL.

4 SHEETS—SHEET 4.



Witnesses:
J. B. Weir
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UNITED STATES PATENT OFFICE.

CHARLES EMERY BILLIN, OF CHICAGO, ILLINOIS.

STEAM-HAMMER.

SPECIFICATION forming part of Letters Patent No. 754,636, dated March 15, 1904.

Application filed August 12, 1902. Serial No. 119,398. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EMERY BILLIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Steam-Hammers, of which the following is a specification.

This invention relates to steam-hammers.

The object of the invention is to provide a construction of steam-hammer which is simple and efficient and wherein the operating parts are mounted upon a casting adapted to be bolted or otherwise secured to the wall of a building or to a post, column, or other supporting-stanchion.

Other objects of the invention will appear more fully hereinafter.

The invention consists, substantially, in the construction, combination, location, and arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in front elevation of a steam-hammer embodying the principles of my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a view in top plan. Fig. 4 is a view in vertical central longitudinal section. Fig. 5 is a broken detail view in longitudinal central section of the control-valve. Fig. 6 is a view in transverse section on the line 6 6 of Fig. 4 looking in the direction of the arrows. Fig. 7 is a view in transverse section on the line 7 7 of Fig. 4 looking in the direction of the arrows.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

In the ordinary construction of steam-hammers the hammer proper and its operating mechanism are mounted upon a very heavy casting, which forms its frame or support. This involves the necessity of a very heavy casting in order to withstand the shocks due to the operation of the hammer and the operating mechanism of the latter. A hammer so constructed occupies considerable space in the

shop and is unhandy to shift from one position to another.

It is among the special purposes of my invention to provide a steam-hammer wherein the hammer proper and its operating mechanism are mounted upon a casting or supporting-framework which may be readily attached to a wall of the shop in which the device is to be used or upon a column, post, or supporting-stanchion, this being particularly desirable in the case of small steam-hammers, which are useful in most shops for comparatively light work.

In the drawings reference-sign A designates a casting or bracket constituting the supporting-framework of the hammer and its operating parts. This bracket or casting is adapted to be bolted or otherwise secured to the wall of the shop in which the device is to be used or to a supporting column, post, or standard, (indicated at B.)

C designates the hammer, suitably carried by a stem or shank D, arranged to operate vertically through a bearing E, formed on or supported by the bracket or frame A. A piston F is arranged to operate in a cylinder G, suitably supported upon the bracket or casting A, and has its rod H arranged to be connected to the stem or shank D of the hammer, whereby by supplying a pressure medium to cylinder G on one side or the other of the piston F operating therein the hammer is reciprocated in its guide-bearing E to accomplish its work.

J designates a valve-casing in which is arranged to operate a valve K, said valve controlling the supply-port L and the inlet-ports M N. The inlet-port M communicates with a passage O, communicating with the upper end of cylinder G, and the inlet-port N communicates with a passage P, delivering into the lower end of cylinder G. Communicating with the valve-casing is an exhaust-pipe Q, and a supply-pipe R communicates with the supply-port L.

Suitably connected to the stem S of control-valve K is a rod A', by which said valve is operated. The rod A' may be actuated to start up the device by means of a hand-lever B',

provided with a detent or catch operating over a toothed segment or rack C' in a well-understood manner. Suitably connected to the valve-operating rod A' is a cam-shoe D', operating
 5 on a cam-track E', formed on the shank or stem of the hammer, the cam-track E' operating to shift the valve at each limit of stroke of the hammer.

F' designates a throttle-valve arranged in the supply-pipe R and which may be operated
 10 through the rods G' H' and links J' K' from a foot-treadle L' or in any other convenient manner, whereby by suitably manipulating the foot-treadle the supply of operating me-
 15 dium may be cut off.

M' designates the anvil, which may be conveniently supported and arranged in any suitable manner—as, for instance, upon a base N', which is separate from and independent of the
 20 frame or bracket A, which supports the hammer and its operating mechanism.

If desired, the cylinder G' may be provided with a cap P' at its upper end, which may be more frangible than the cylinder G, so that in
 25 case the piston F should for any reason exceed its proper length of upward stroke said cap may be carried away without injuring the cylinder.

If desired, a spring-buffer (indicated at Q')
 30 may be arranged to be engaged by a shoulder or collar R' on the hammer shank or stem to relieve the shock of the hammer when moving toward its upper limit of movement.

From the foregoing description it will be
 35 seen that I provide an exceedingly-simple construction of steam-hammer wherein the hammer proper and its operating mechanism is mounted on or carried by a bracket or framework or the cylinder of the hammer may be
 40 formed integrally with such bracket or framework, and which bracket or framework is independent of the anvil and its support and may be readily applied or mounted on a wall, post, column, or stanchion of a shop or shifted
 45 when desired, thus securing economy in construction, facility in handling, and compactness of arrangement of the parts.

Having now set forth the object and nature of my invention and a construction embody-
 50 ing the principles thereof, what I claim as

new and useful and of my own invention, and desire to secure by Letters Patent, is—

1. As an article of manufacture, a steam-hammer comprising a frame or casting having a flat rear portion formed to be secured to
 55 a wall or column, and having attached thereto a cylinder, and guides for the movable parts, a hammer, a spring-buffer to limit the upward movement of the same, and operating mechanism for admitting working fluid into the
 60 cylinder and reciprocating the hammer, as and for the purpose set forth.

2. As an article of manufacture, a steam-hammer comprising a C-shaped frame or casting having a flat back portion formed to en-
 65 gage and be secured to a wall or column, a cylinder at the upper extremity of said frame, vertical guides at the lower extremity in alignment with said cylinder, and a hammer guided thereby, and operating mechanism for admit-
 70 ting working fluid into the cylinder and reciprocating the hammer, as and for the purpose set forth.

3. As an article of manufacture, a steam-hammer comprising a C-shaped frame or cast-
 75 ing having a flat back portion formed to engage and be secured to a wall or column, a cylinder at the upper extremity of said frame, vertical guides at the lower extremity in alignment with said cylinder, and a hammer guided
 80 thereby, and automatic operating mechanism for admitting working fluid into the cylinder and reciprocating the hammer, as and for the purpose set forth.

4. As an article of manufacture, a steam-
 85 hammer comprising a C-shaped frame or casting having a flat back portion formed to engage a wall or column, a plurality of bolt-holes therein whereby the same may be secured to
 90 the wall or column, a cylinder and valve-gear at the upper extremity of the frame, and a hammer guided in bearings at the lower end of the frame, as and for the purpose set forth.

In witness whereof I have hereunto set my
 hand, this 7th day of August, 1902, in the pres-
 95 ence of the subscribing witnesses.

CHARLES EMERY BILLIN.

Witnesses:

E. C. SEMPLE,
 C. H. SEEM.