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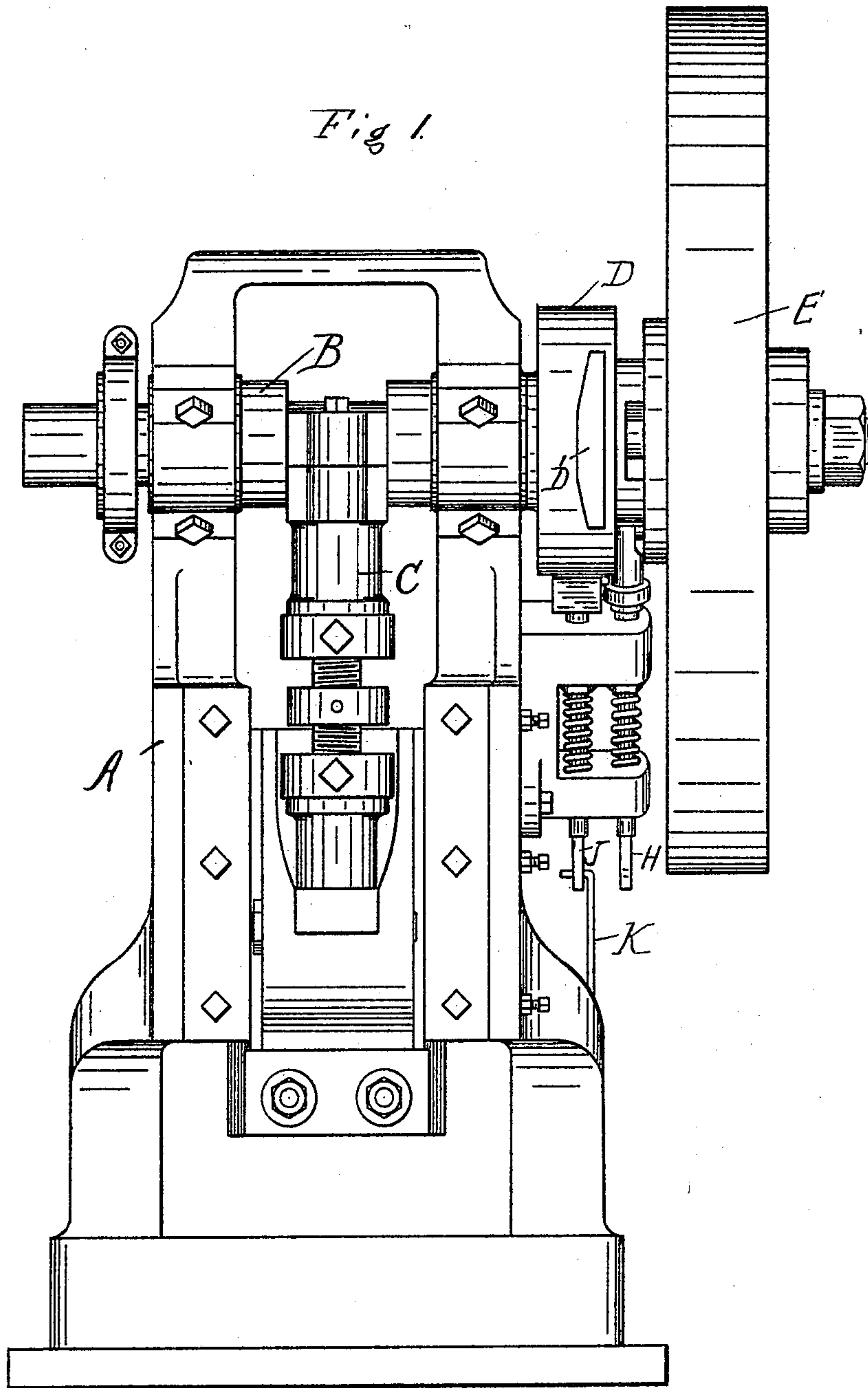
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A. C. KRONQUEST.
CLUTCH.

No. 583,263.

Patented May 25, 1897.

Fig 1.



Witnesses
Frederick Embrey.
Thos. G. Guen

Inventor
August C. Kronquest
By his Attorney
Walter H. Hamblin

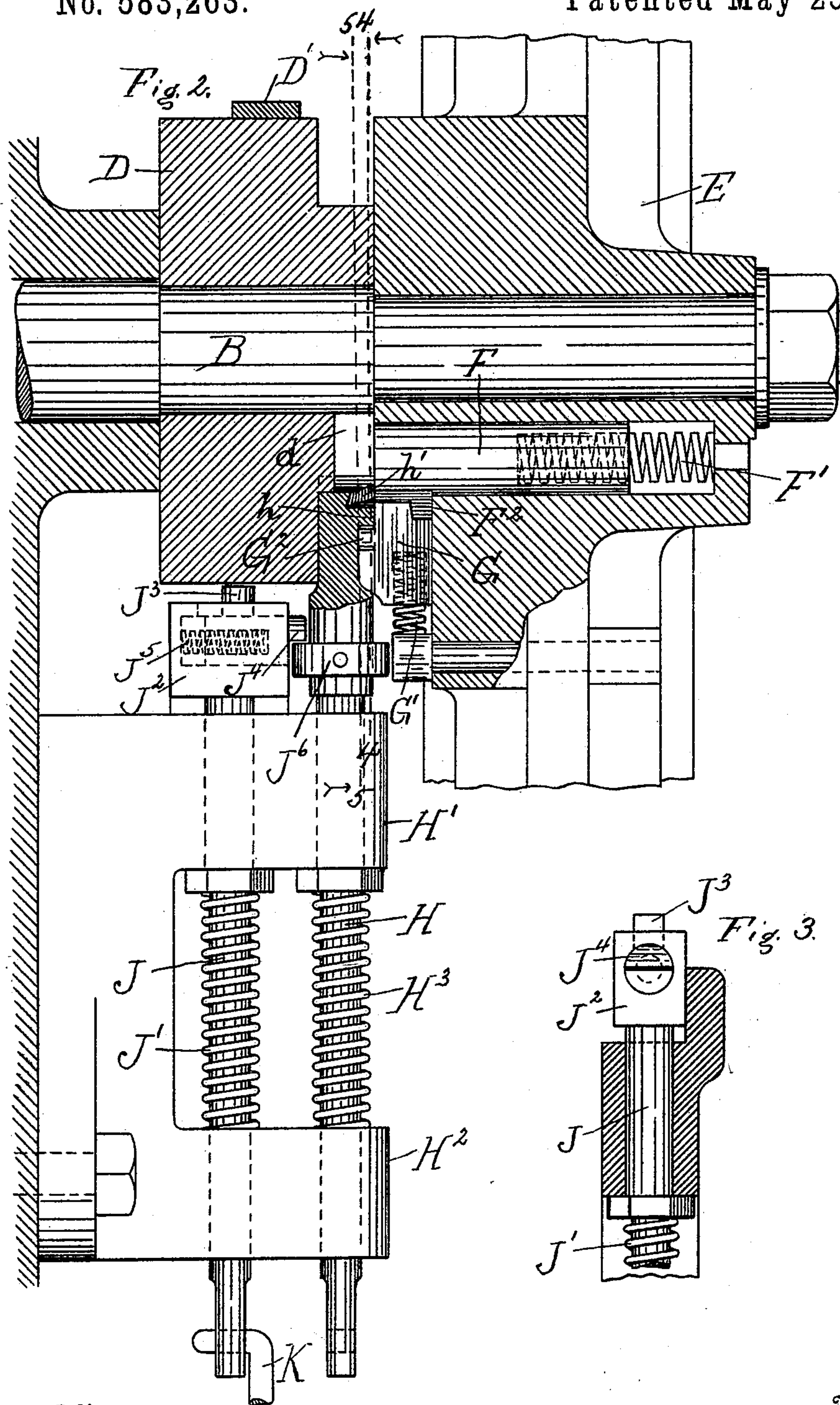
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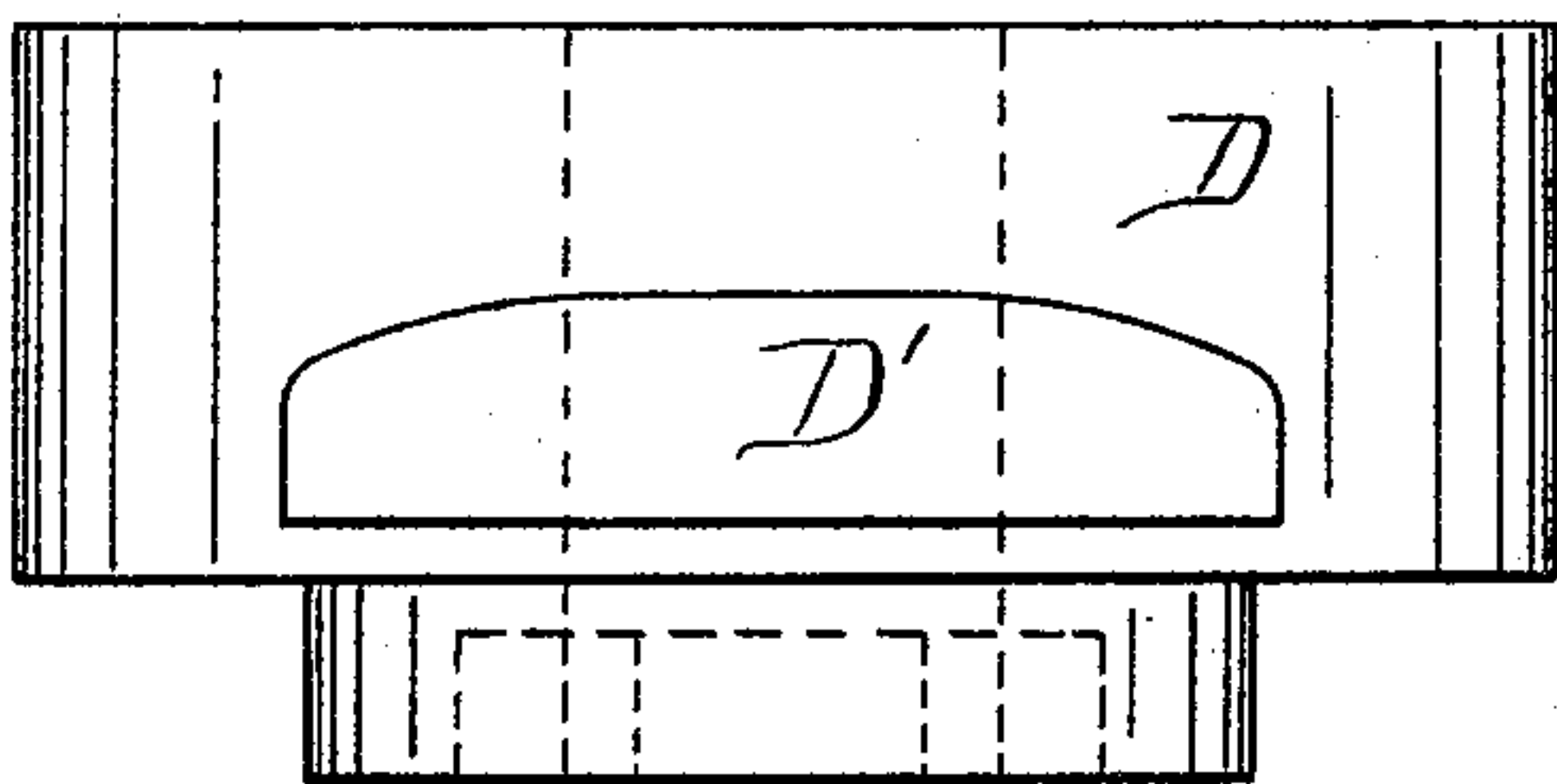
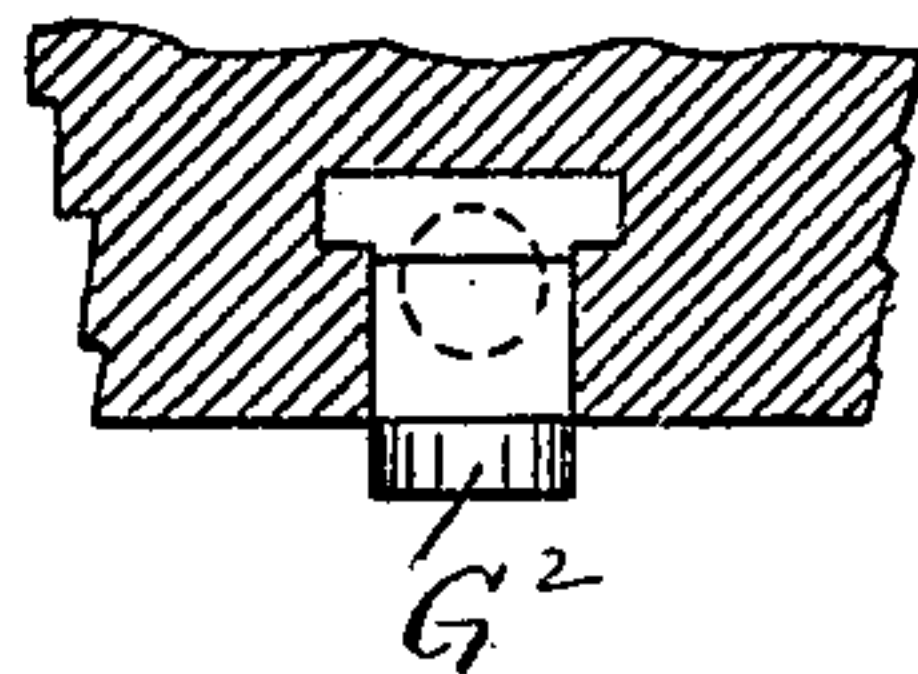
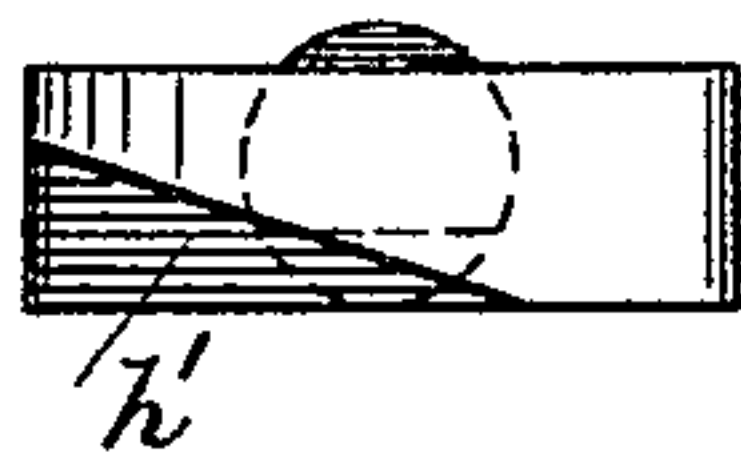
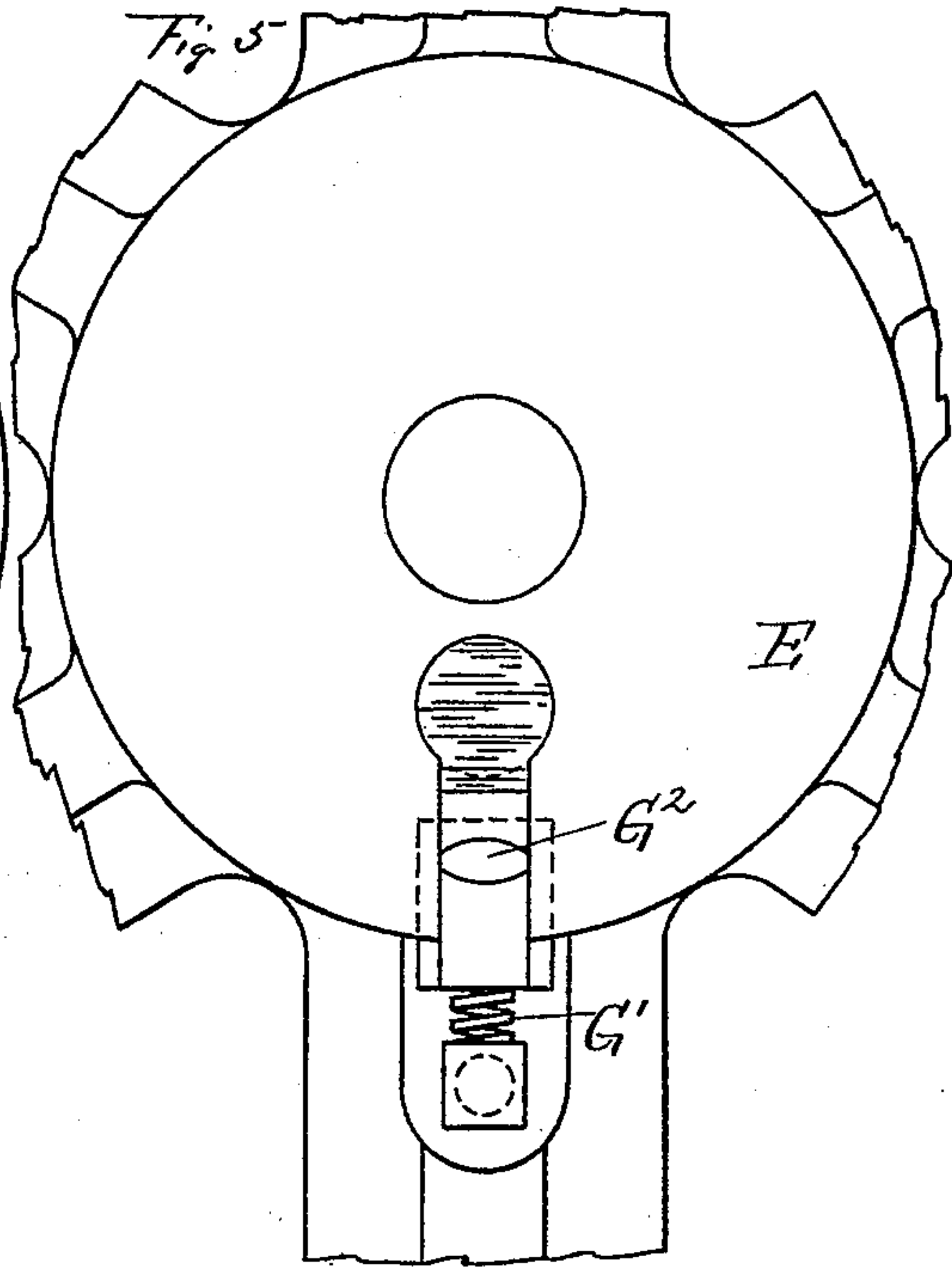
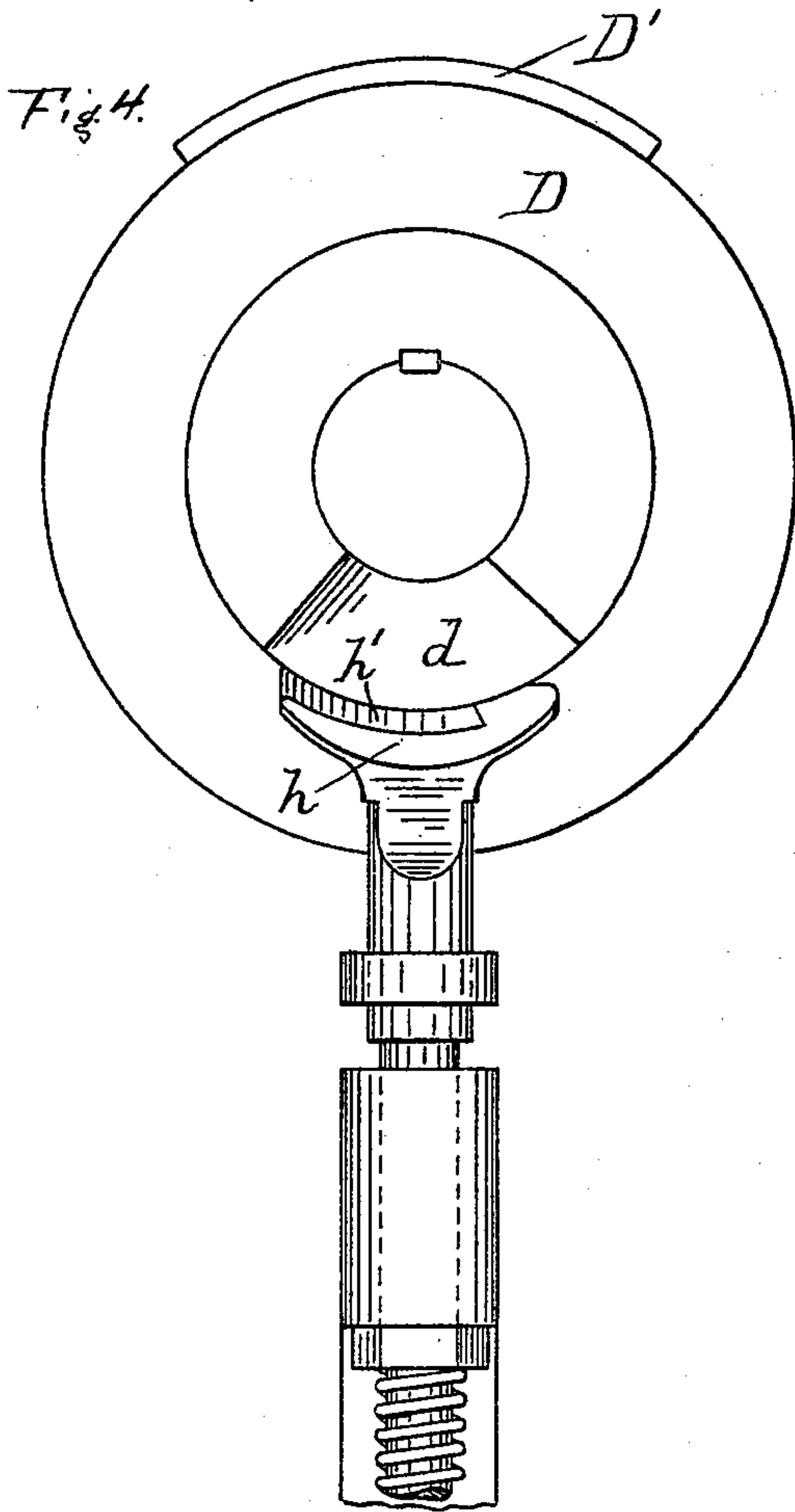
Witnesses
Florence Embrey,
Thos. G. Green

Inventor
August C. Krougrest
By his Attorney
Halter H. Chamberlain

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Witnesses
Hornace Embury
Thos. G. Guier

Inventor
August C. Kronquest
By his Attorney
Walter H. Chamberlain

UNITED STATES PATENT OFFICE.

AUGUST C. KRONQUEST, OF MILWAUKEE, WISCONSIN.

CLUTCH.

SPECIFICATION forming part of Letters Patent No. 583,263, dated May 25, 1897.

Application filed May 25, 1895. Serial No. 550,659. (No model.)

To all whom it may concern:

Be it known that I, AUGUST C. KRONQUEST, a citizen of the United States, residing at Milwaukee, State of Wisconsin, have invented a certain new and useful Improvement in Clutches; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to that class of power-presses wherein the mechanism is thrown into and out of connection with the power by means of a clutch under the control of the operator. In the operation of these presses or of that particular style of press to which my invention is applied in the present instance there is a foot-treadle adapted to be depressed by the operator, and so long as this treadle is kept depressed by the operator the engagement between the source of power and the balance of the mechanism is insured and the press continues to operate. When the operator desires to stop the press, he removes his foot from the treadle and the clutch mechanism is automatically thrown out of engagement. The operation of this press is perfectly satisfactory where it is desired to have the press make several complete revolutions in succession, but it very frequently happens, particularly in some styles of work, that the operator must stop the movement of the press at each revolution thereof, in order to remove the completed article and place a new blank in position. In doing this he very often forgets to remove his foot from the treadle at the proper time, the result being that the press completes another revolution and the operator's fingers or hands are frequently caught and mutilated. My invention is designed to overcome this difficulty by the production of mechanism whereby after the operator has depressed his foot-lever to throw the clutch mechanism into engagement the press will complete one revolution and the clutch mechanism be automatically thrown out of engagement whether the operator keeps his foot on the treadle or not.

The invention consists in a combination of

devices and appliances hereinafter described and explained.

In the drawings, Figure 1 shows an elevation of a form of press to which the invention may be applied. Fig. 2 is a vertical section, on an enlarged scale, of a portion of the apparatus. Fig. 3 is a detail view, partly in section and partly in elevation, of a part. Fig. 4 is an elevation taken on the line 4 4 of Fig. 2, and Fig. 5 is an elevation taken on the line 5 5 of Fig. 2. Figs. 6 and 7 are details of parts. Fig. 8 is a plan view of the collar on the shaft of the machine.

In carrying out the invention, A represents the frame, B the crank-shaft, and C the pitman, of a power-press. It is of course obvious that the particular construction of the press is immaterial in the use of my invention.

I will now describe the form of clutch which is old and to which my improvement is applied.

D represents a collar or pulley keyed to the shaft B, and E represents the band or other wheel to which power is applied to drive the press, this latter wheel being loose on the shaft B. In the hub of the wheel E is a pin F, adapted to be forced in a horizontal direction by the spring F'. This pin has on its lower side the projection F².

G is a block having a recess 2 in its upper end adapted to fit over and engage the projection F² in the pin F, thus holding it in its retracted position. The spring G' tends to keep the block in engagement with the projection F². On the face of the block is a projection G², (shown also in Fig. 5,) beveled or rounded on its top and bottom.

H is a rod carried by the projections H' H² on the frame and having a spring H³, which tends to force it upward. On the end of this rod is a projection h.

The operation of this clutch is as follows: The operator by pressing on the foot-lever pulls down the rod H. This brings the projection h into the path of the projection G², which is on the power-wheel and constantly revolving. The beveled face of the projection G², coming into contact with the projection h, forces down the block G, the result being that the spring F' forces out the pin F, which enters the recess d in the collar D,

and this causes the collar and shaft B to revolve. It is obvious that so long as the rod H is in its lower position—that is, as long as the operator keeps the foot-lever depressed—
 5 the upper end of the rod H with its beveled face h' will be below the pin F, and the latter will continue to remain in the recess d , and the shaft B and wheel E thus be connected; but when the operator releases the pressure
 10 on the rod H the spring H^3 will force it upward. This will bring the beveled face h' into the path of the pin F, and the latter will be forced back until the block G, by virtue of the spring-pressure G' , will engage the pro-
 15 jection F^2 and hold the pin.

As stated above, the only objection to this form of clutch has been that the operator would sometimes forget to remove his foot from the treadle, the result being that the
 20 machine would complete more than one revolution when only one revolution was desired. To obviate this, I provide the mechanism which I will now describe.

J is a rod similar to the rod H, provided
 25 with a spring J' for forcing it upward. On the upper end of this rod is formed a suitable block J^2 to constitute a boxing or bearing for a movable block. This latter has an upward projection J^3 and a horizontal projection J^4 ,
 30 the block being adapted to be moved in a horizontal direction by the spring J^5 . On the collar D is fixed a cam D' , or, perhaps, it would be better to describe it as an elongated pro-
 35 jection having a beveled face. (Shown in detail in Fig. 8.)

The operation of the mechanism constituting my improvement is as follows: The operator depresses the foot-lever and this draws
 40 down the rod J. The projection J^4 , engaging a collar J^6 on the shaft H, draws down the

rod H, and the same operation takes place as though the rod had been drawn down directly by the foot-lever. Now we will suppose that the operator keeps the foot-lever depressed.
 45 As soon as a single revolution is about completed the beveled face of the projection D' , coming into contact with the projection J^3 , will move the projection and its block in a horizontal direction, thus disengaging the
 50 projection J^4 from the collar J^6 and allowing the spring H^3 to force the rod H upward, thus disengaging the pin F, as above described. We thus see that where the foot-lever is en-
 55 gaged to the rod J the press can complete only one revolution before the clutch mechanism is disengaged.

In order that the operator may employ either the old form of clutch without my improvement, (for instance, when he wishes the
 60 press to make several revolutions successively,) I provide both the rods H and J and provide an additional rod K, which may be hooked into either the rod H or the rod J and to which the foot-lever is engaged.

What I claim is—

In a clutch mechanism, the combination of the locking-pin F, the block G for holding it in its retractive position, the rod H and collar J^6 of the horizontally-reciprocating block
 70 having the projections $J^3 J^4$ said block mounted on the vertically-reciprocating rod J, and the beveled projection D' on a movable part of the machine for moving the block in a horizontal direction, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

AUGUST C. KRONQUEST.

Witnesses:

A. C. EWENS, Jr.,
 HENRY SCHLOEGEL.