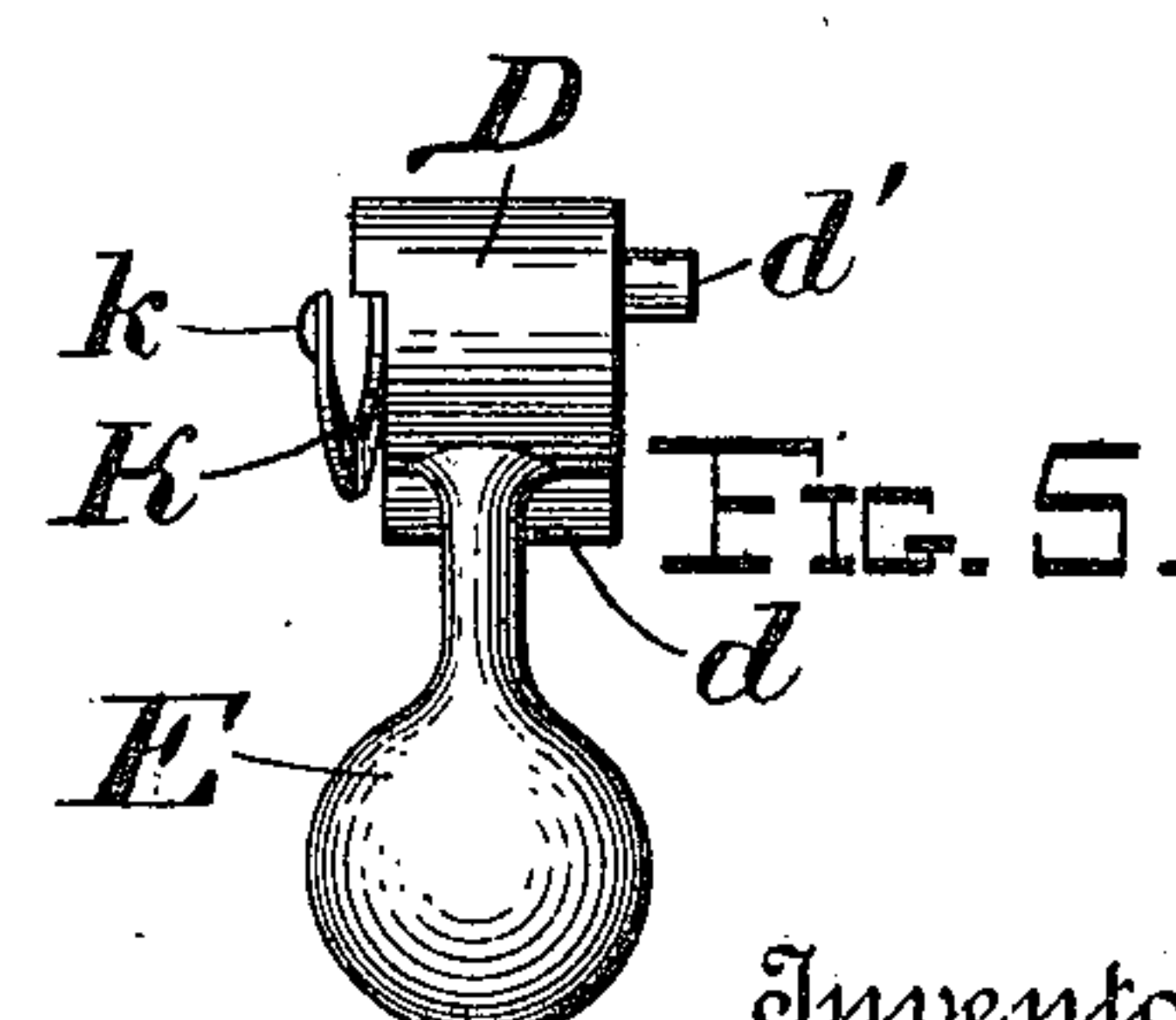
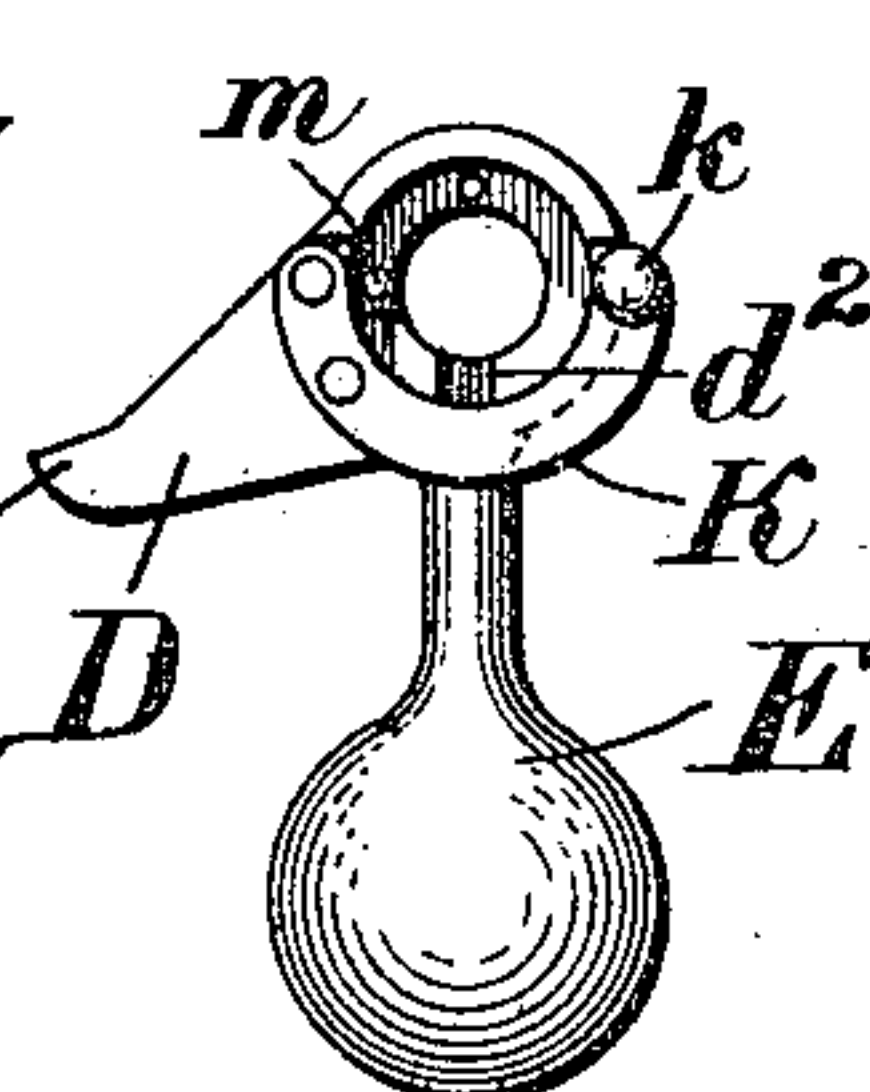
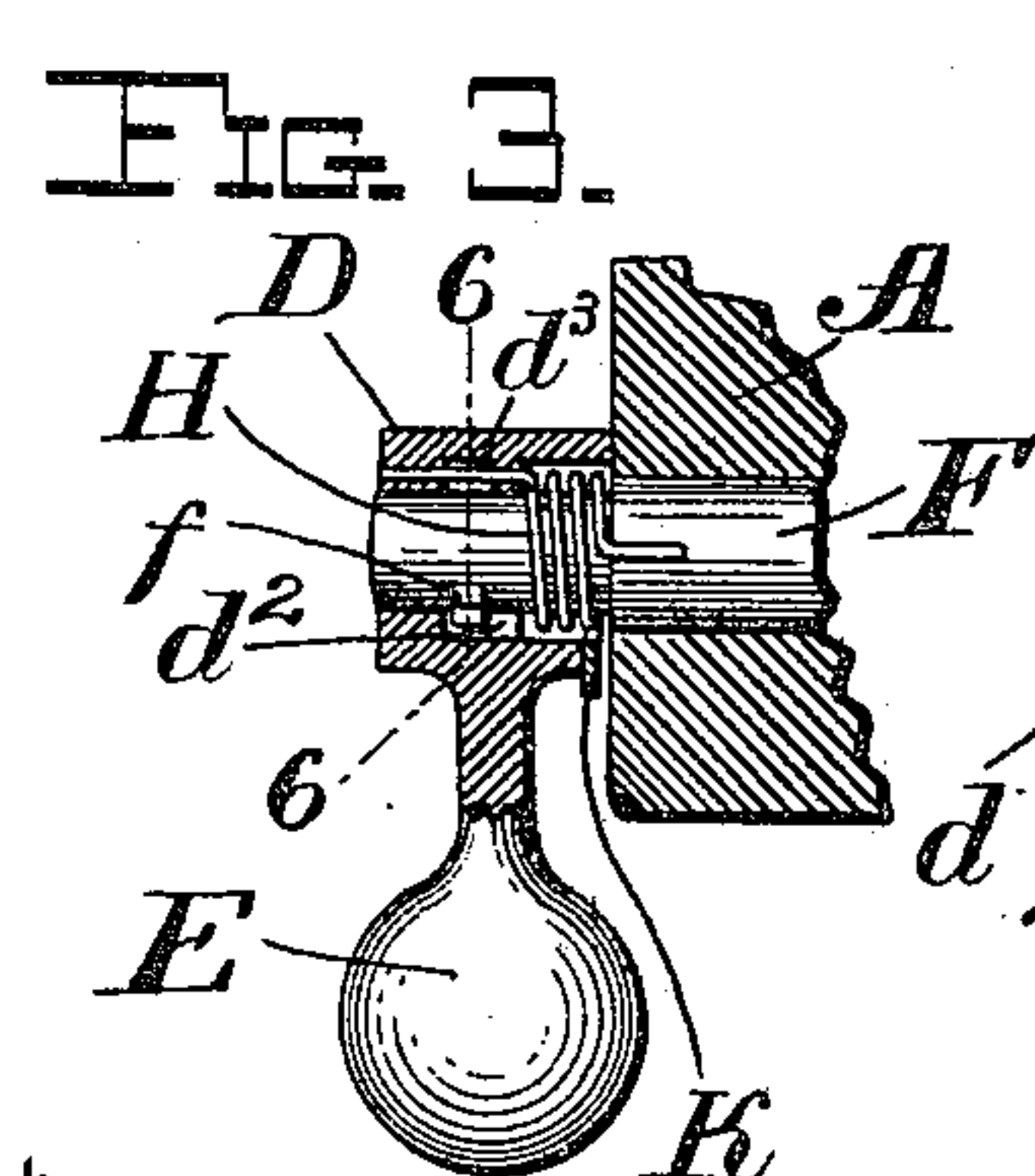
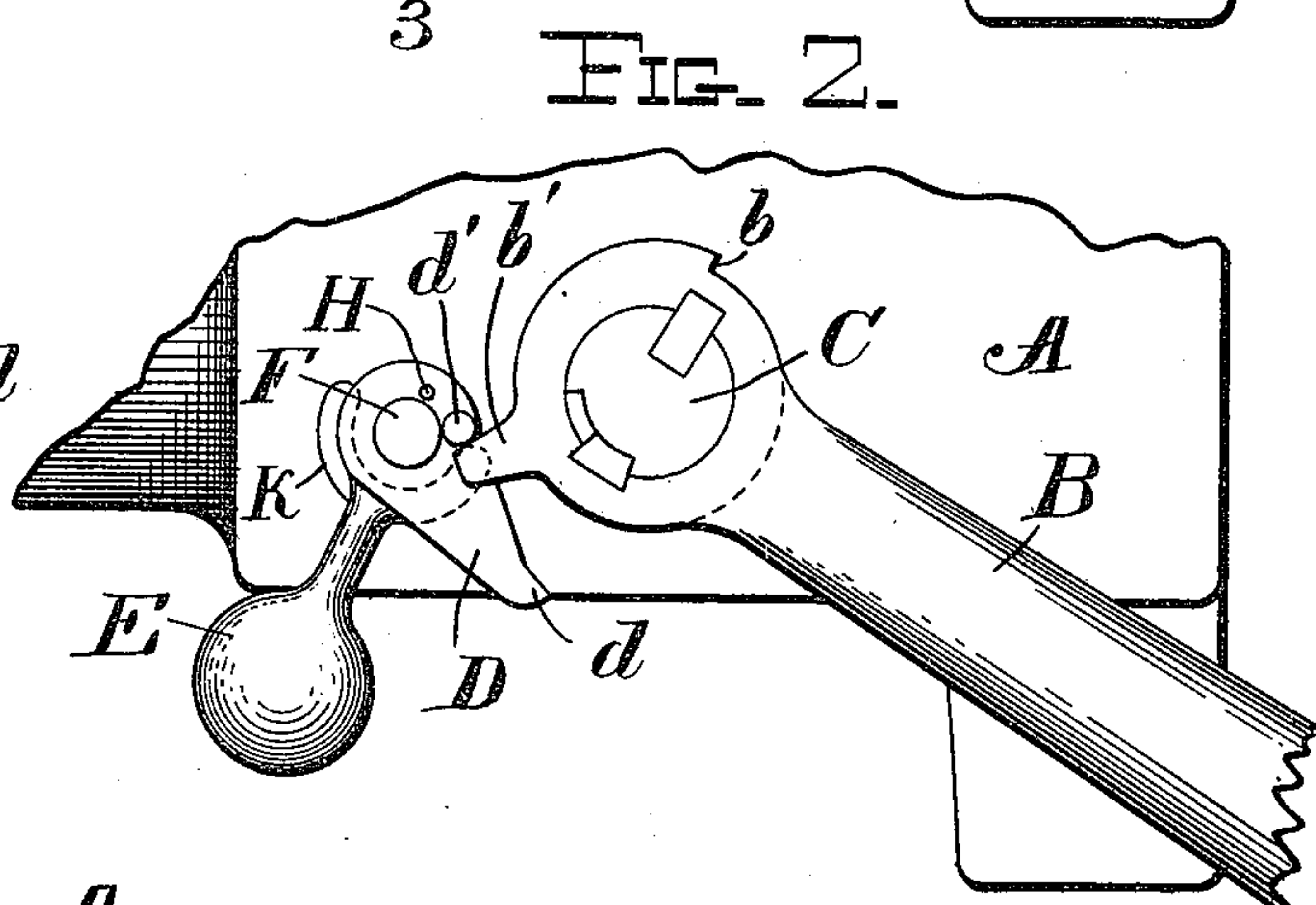
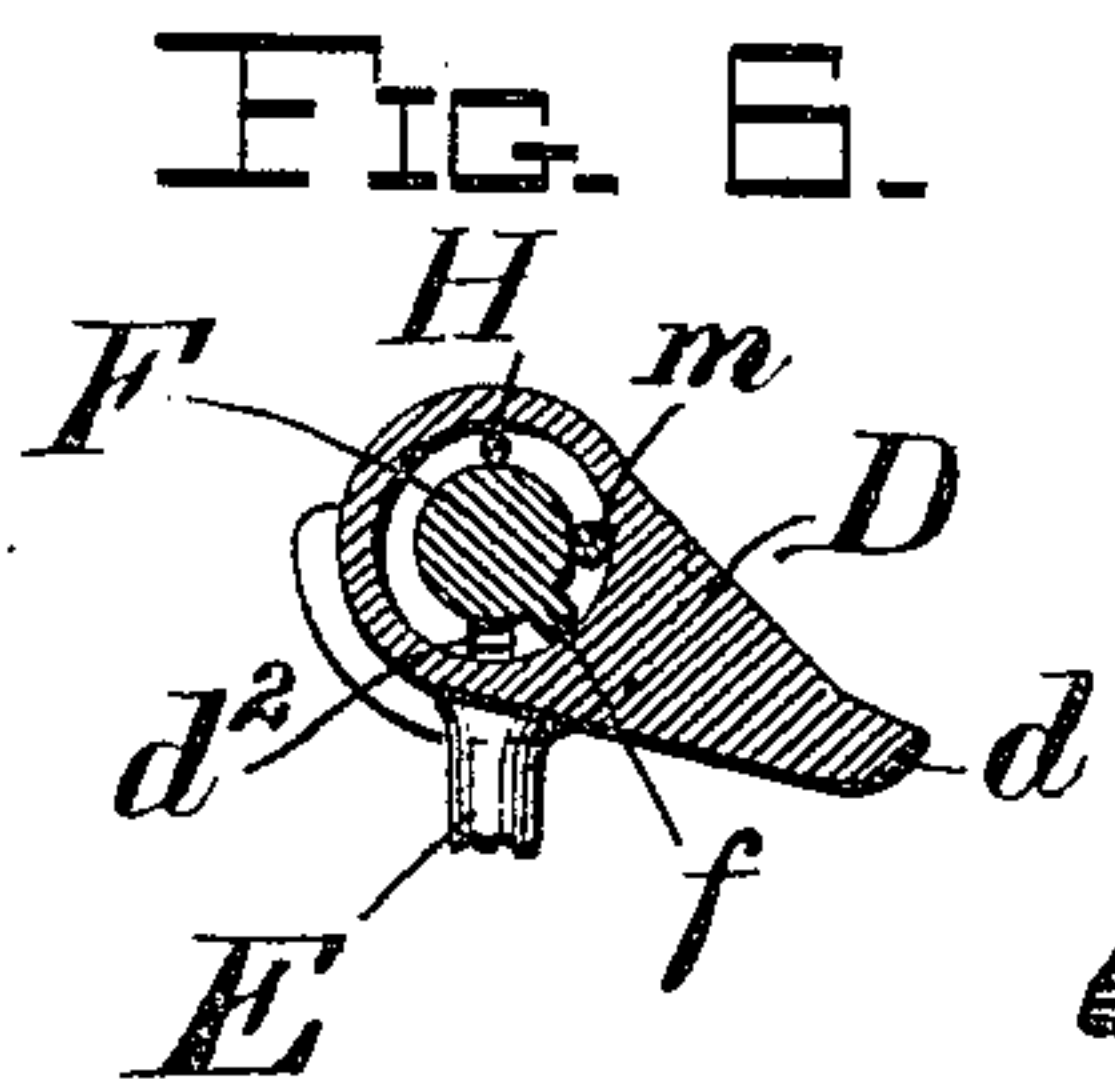
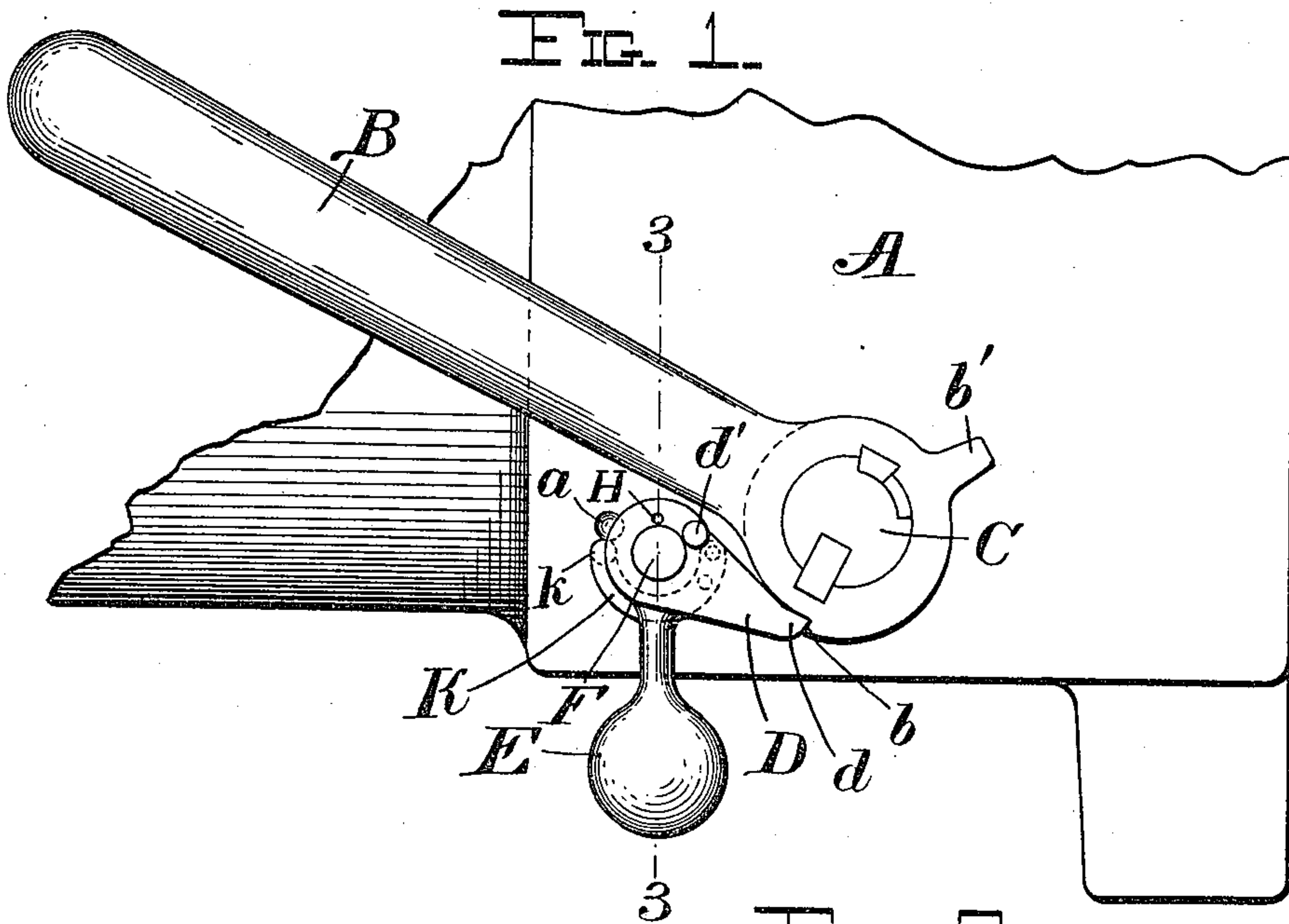


L. L. DRIGGS.

SAFETY LOCK FOR BREECH MECHANISM FOR GUNS.

(Application filed Dec. 9, 1899. Renewed Feb. 12, 1901.)

(No Model.)



Witnesses  
*Percy C. Bowen.*  
*Clarence A. Tatemaw*

Inventor  
*L. L. Driggs,*  
*by Wilkinson & Fisher,*  
 Attorneys.



# UNITED STATES PATENT OFFICE.

LOUIS L. DRIGGS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO WILLIAM H. DRIGGS, OF WASHINGTON, DISTRICT OF COLUMBIA.

## SAFETY-LOCK FOR BREECH MECHANISM FOR GUNS.

SPECIFICATION forming part of Letters Patent No. 679,116, dated July 23, 1901.

Application filed December 9, 1899. Renewed February 12, 1901. Serial No. 47,051. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS L. DRIGGS, a citizen of the United States, residing at New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Safety-Locks for Breech Mechanism for Guns; and I do hereby 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 appertains to make and use the same.

My invention relates to improvements in safety-locks for breech-loading cannon, and is especially intended for use in that class of cannon in which the breech-block is operated by means of a hand-lever engaging a rock-shaft, which latter is journaled across the gun-breech. It has been found in practice that when guns of this character recoil, and especially when mounted on recoil-mounts to allow a comparatively rapid recoil, that the hand-lever tends to swing over toward the unlocking position, causing the premature opening of the breech. To obviate this, various stops, catches, and other like devices have been devised. These, as far as I know, have not been altogether satisfactory in their action. My present invention is to remedy certain defects in these safety locking devices; and it consists of certain novel features, which will be hereinafter described and claimed.

Reference is had to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a side elevation of part of the breech of the gun, showing the hand-lever in the position it assumes when the breech is closed and the safety-lock in engagement. Fig. 2 is a similar view showing the hand-lever in the position it assumes just before the breech is entirely open and just before the hand-lever has completed its downward motion. Fig. 3 represents a section along the line 3 3 of Fig. 1 and looking to the left. Fig. 4 is a detail view showing the safety-lock detached from the gun as seen from the innerside. Fig. 5 is an end view of the safety-lock; and Fig. 6 represents a section of the safety-lock along the line 6 6 of Fig. 3 and looking to the right, parts being broken away.

A represents the housing for the breech-

block at the breech of the gun, which in the present instance is that shown in the patent to Driggs and Tasker, No. 613,195, granted October 25, 1898; but the invention may be applied to other forms of breech mechanism, and I do not intend to limit myself to the special form described.

B represents the hand-lever, which is provided with a catch *b* and the toe *b'* to throw the safety-lock into the engaged position. This hand-lever B is keyed on the rock-shaft C, by means of which the breech-block is operated.

D represents a pawl having an engaging point *d* and a stop *d'*. This pawl is either made integral with or rigidly attached to the weight E. The pivoted end of the pawl D is hollowed out, as shown, to receive the pivot-pin F and locking-spring H. This locking-spring has one end fast in the pin F, which is rigidly attached to the gun, while the other end is held in the pawl D, (see Fig. 3,) and the tendency of this spring is to press the pawl D toward the rock-shaft C, causing it to normally lock the hand-lever when the breech is closed, as shown in Fig. 1. For convenience in assembling the parts and to keep the pawl D and weight E from becoming detached I preferably slot the sleeve in the pawl D, as at *d*<sup>2</sup>, and then provide an annular chamber in the said sleeve, such as *d*<sup>3</sup>, thus making a sort of bayonet-joint between the safety-lock and the pin F, which will allow the lock to swing through a given angle without becoming detached from the gun-body. This bayonet-joint device is so arranged that the ordinary limit of travel of the weight and pawl will not bring the lug *f* into position to register with the slot *d*<sup>2</sup>, and hence there will be no danger in the ordinary use of the device for the pawl and weight to become detached. On the inside of the pawl I provide a spring K, having a boss *k*, which projects into a recess *a* in the gun-body when the weight is swung to the left in Fig. 1, and thus this spring will hold the safety-lock in the disengaged position when the weight E is swung forward, as shown in Fig. 2.

The operation of the device is as follows: Suppose the parts to be in the position shown in Fig. 1 and the gun to be fired. The gun



will recoil suddenly, causing the weight E to swing to the left about its pivot until the boss *k* on the spring K snaps into the recess *a*, when the weight will be held against further movement in either direction. As soon as the toe *d* of the pawl is disengaged from the catch *b* of the hand-lever the latter may be swung around, as in opening the breech, until it reaches the position shown in Fig. 2. After this a still further movement downward will cause the toe *b'* to strike the stop *d'* on the pawl D, will drag the boss *k* out of engagement with the recess *a*, and will allow the weight E to drop. This supplemented by the action of the spring H will cause the pawl D to swing in toward and press against the hub on the base of the hand-lever, and when the hand-lever is returned back to the position shown in Fig. 1 the pawl will snap into engagement with the catch *b* and the parts will be locked, as before. Should it be desired to open the breech when the gun has not recoiled, a slight blow to the weight E will cause the boss *k* to snap into the recess *a*, and thus the safety-lock will be held in the disengaged position.

It will be obvious that various modifications might be made in the herein-described device which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a breech-loading gun, the combination with a rock-shaft for operating the breech mechanism, of a ratchet-and-pawl arrangement for holding said rock-shaft against turning, comprising a pivoted weight and a pawl attached to said weight and a spring

normally holding said pawl in engagement, whereby the recoil of the gun causes the inertia of said weight to automatically disengage said pawl against the action of said spring, and a spring-catch connected to said weight and pawl and adapted to hold the said pawl out of engagement after recoil; substantially as described.

2. In a breech-loading gun, the combination with a rock-shaft for operating the breech mechanism, and a hand-lever fast in said rock-shaft and provided with a holding-catch and a tripping-toe, of a pawl normally engaging said holding-catch, a weight rigidly connected to said pawl, a spring-catch for holding said pawl in the disengaged position, and a stop on said pawl struck by the hand-lever when the breech is opened for releasing said spring-catch; substantially as described.

3. In a breech-loading gun, the combination with a rock-shaft for operating the breech mechanism, and a hand-lever fast in said rock-shaft and provided with a holding-catch and a tripping-toe, of a pawl normally engaging said holding-catch, a spring normally holding said pawl in engagement with said catch, a weight rigidly connected to said pawl, a spring-catch for holding said pawl in the disengaged position, and a stop on said pawl struck by the hand-lever when the breech is opened for releasing said spring-catch; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

LOUIS L. DRIGGS.

Witnesses:

ALBERT W. HOWE,  
L. J. ELIOT.