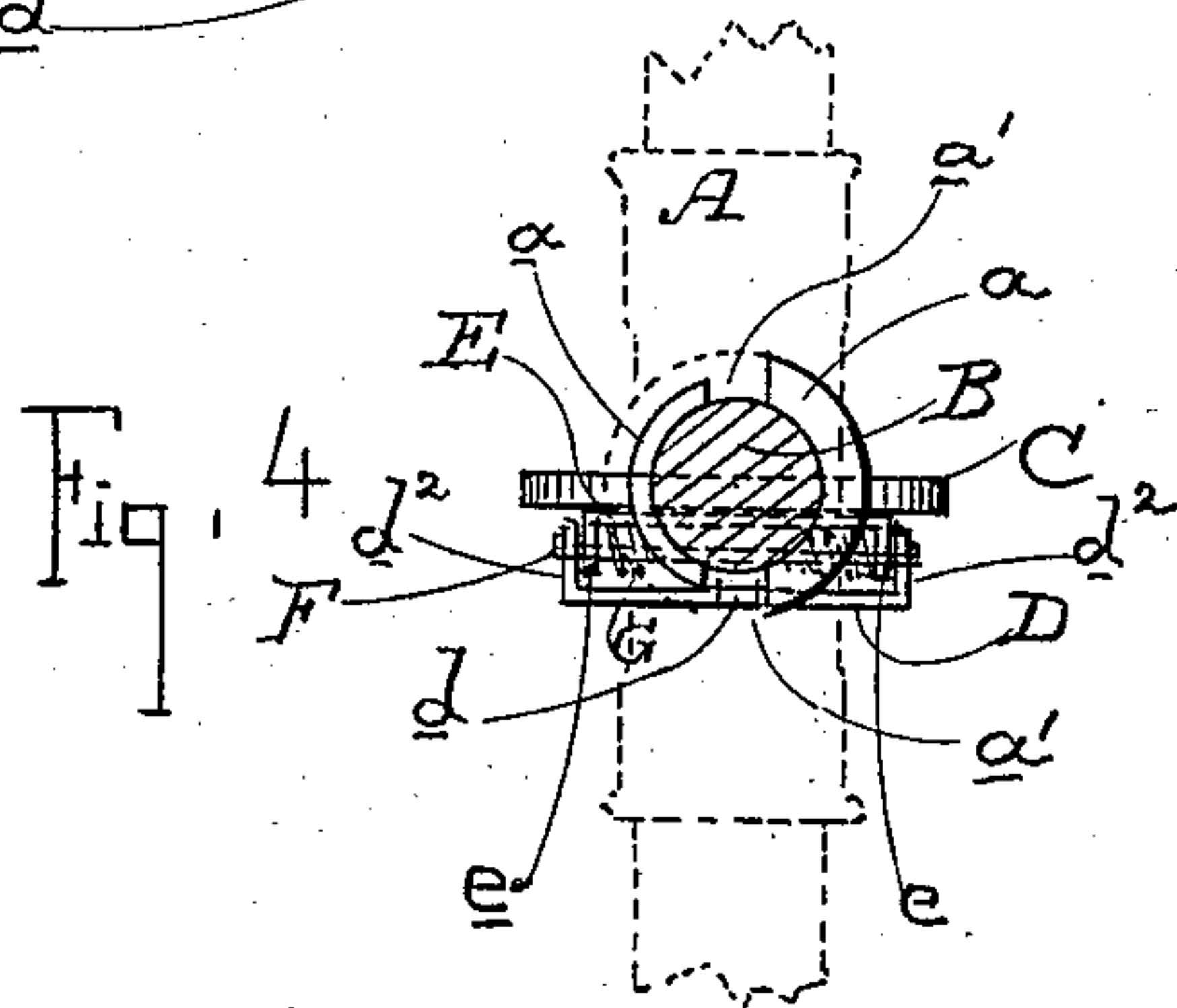
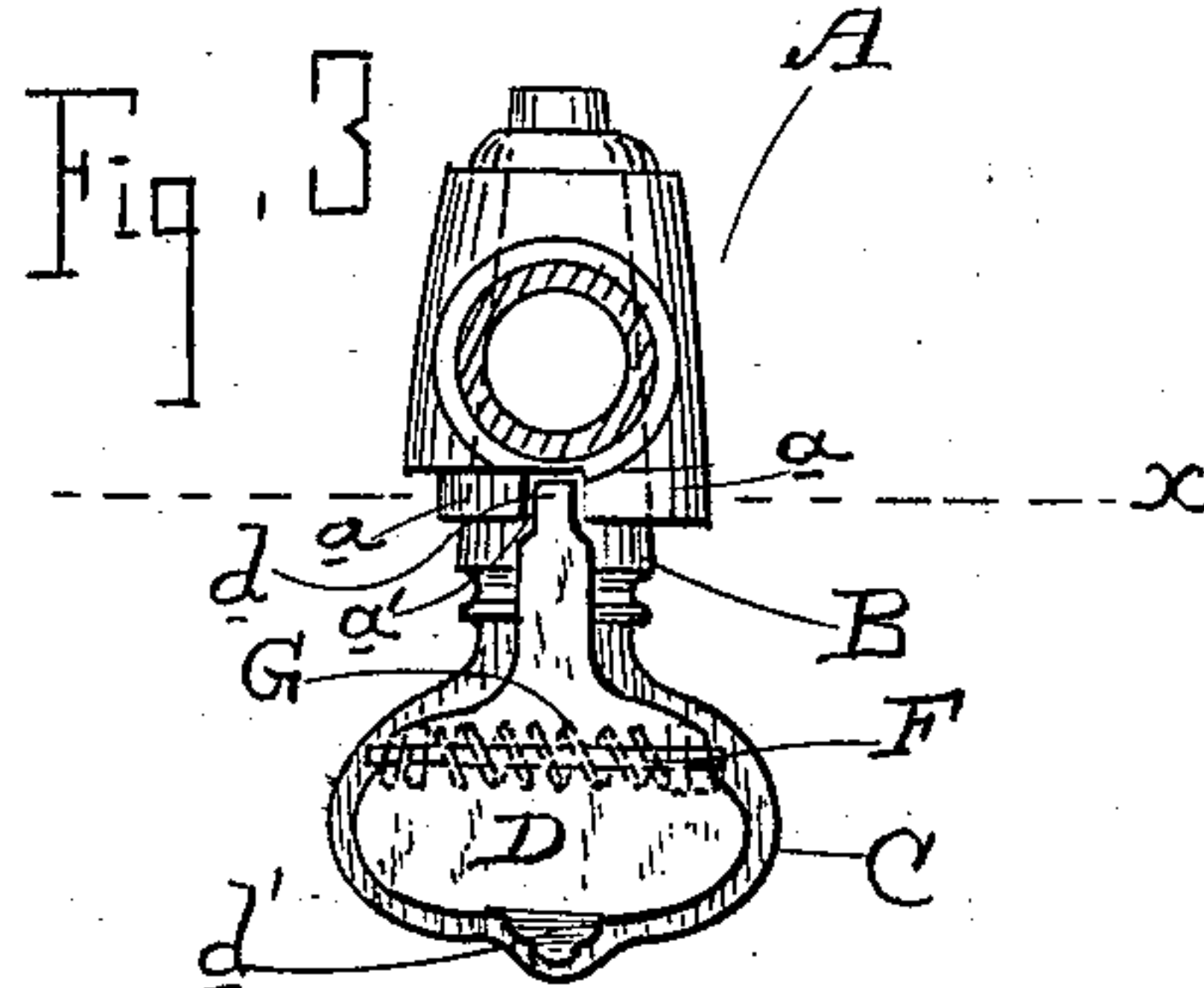
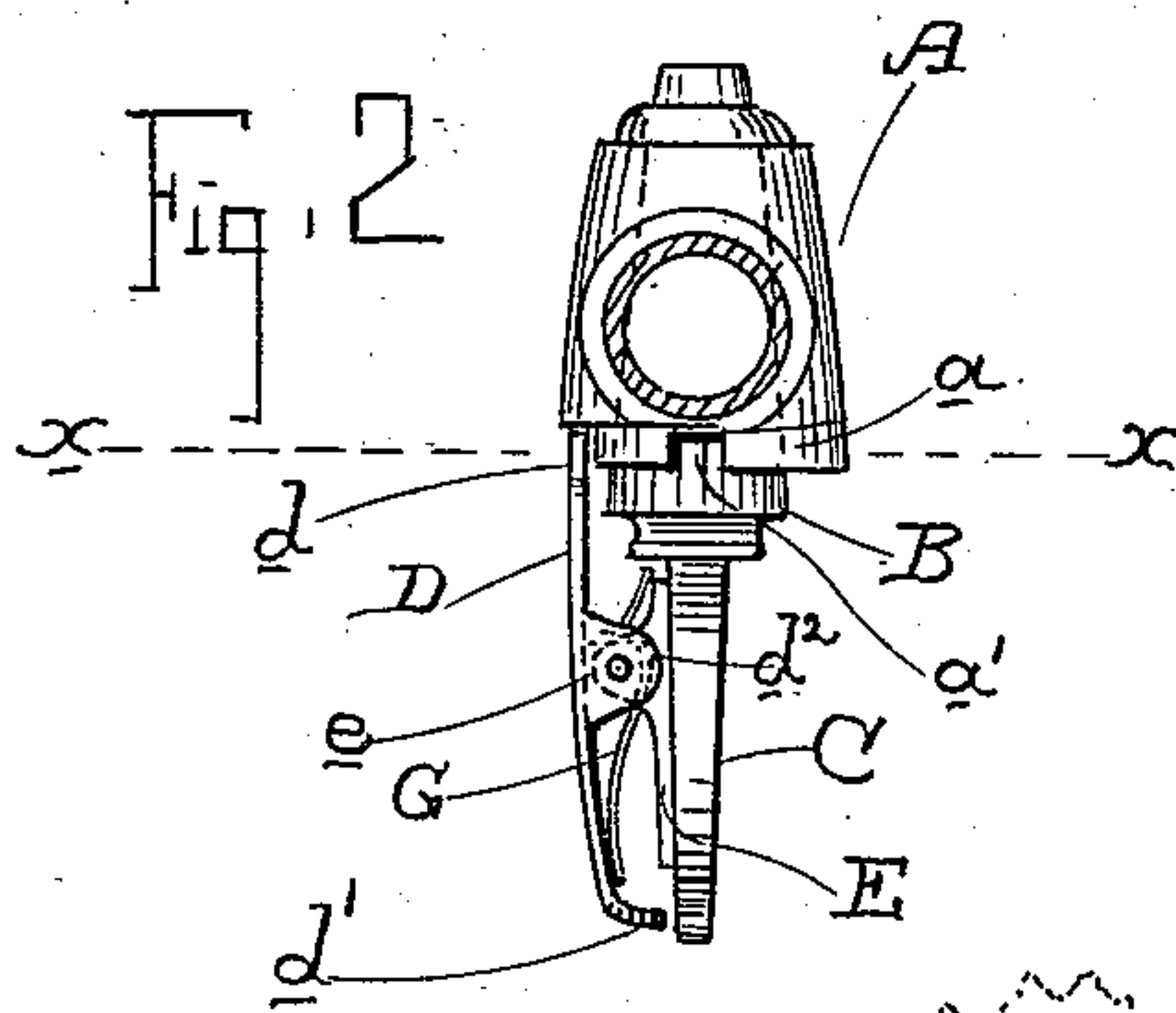
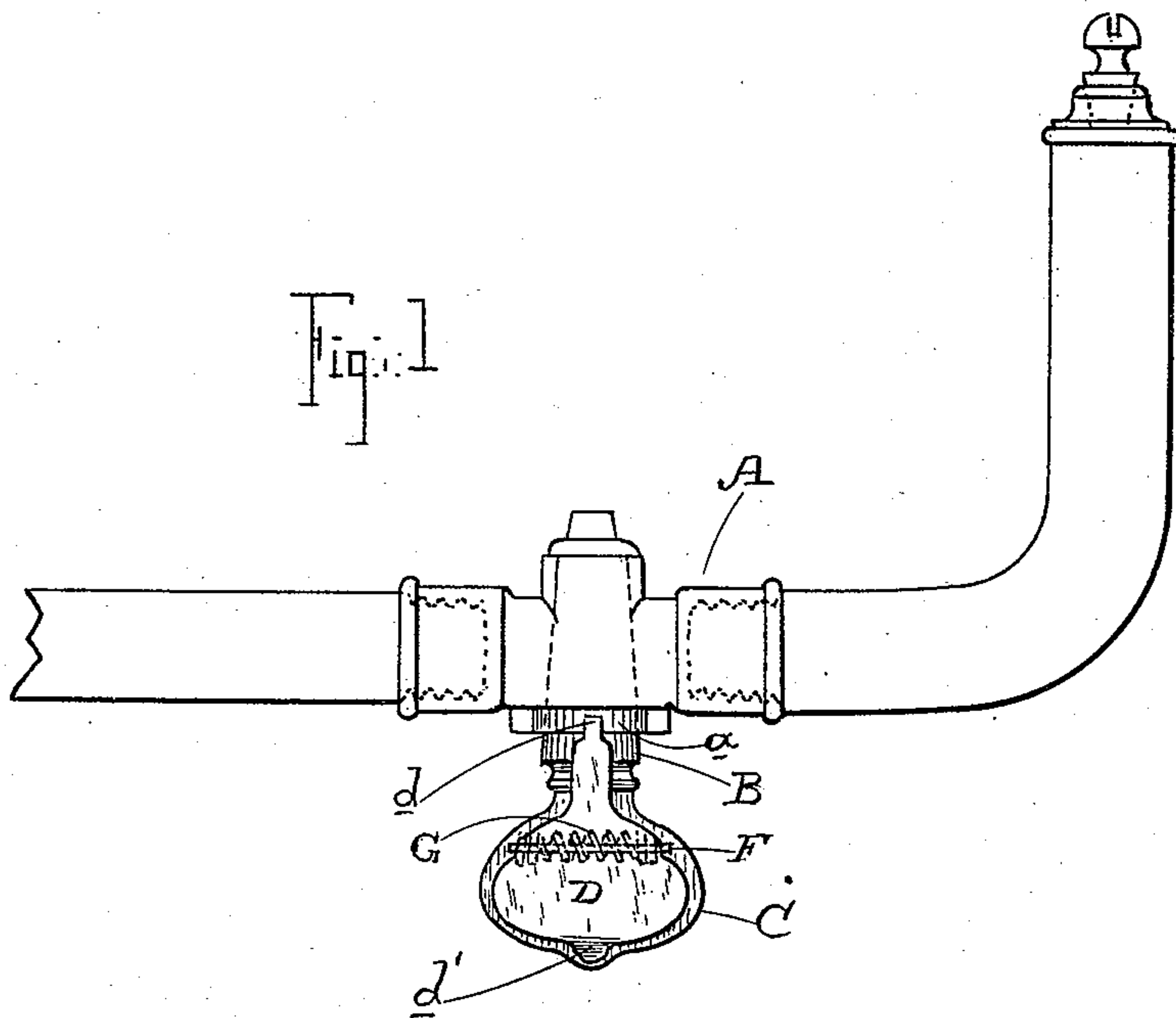


(No Model.)

F. LAWRENCE.  
SAFETY LOCK FOR GAS COCKS.

No. 488,737.

Patented Dec. 27, 1892.



Witnesses,  
J. H. Stone  
J. A. Bayless

Inventor,  
Frank Lawrence  
By Devey & Co  
Attys

# UNITED STATES PATENT OFFICE.

FRANK LAWRENCE, OF SAN FRANCISCO, CALIFORNIA.

## SAFETY-LOCK FOR GAS-COCKS.

SPECIFICATION forming part of Letters Patent No. 488,737, dated December 27, 1892.

Application filed July 21, 1892. Serial No. 440,811. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK LAWRENCE, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Safety-Locks for Gas-Cocks; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of safety devices for gas cocks in which a spring controlled lever is connected with the key, and has its upper end adapted to engage the notches in the lower flange of the valve seat.

My invention consists in the improved construction and arrangement of the locking lever which I shall hereinafter fully describe and specifically point out in the claims.

The object of my invention is to provide a locking lever for gas cocks so constructed and arranged as to lie in the most convenient position with relation to the key, adapting it to be operated by the ordinary position of the hand in grasping the key, said lever being accurate in its movements whereby the general result is effected of permitting the easy operation of the key and its positive locking when the valve is shut off on either side.

Referring to the accompanying drawings for a more complete explanation of my invention,—Figure 1 is a side elevation showing the locking lever free. Fig. 2 is an edge view. Fig. 3 is a side elevation showing the lever locked. Fig. 4 is a horizontal section on lines  $x-x$  of Figs. 2 and 3.

A represents the gas cock having at its central portion the usual seat for the rotary valve or plug B, the lower portion of which is provided with the usual key C. The lower portion of the valve seat has a downwardly extending annular flange  $a$  in which at opposite sides are made the notches  $a'$ . That portion of the flange on one side of the notches is thinner than that on the other side of the notches, as shown, whereby the ends of the thicker portion form limiting stops of one wall of each notch, as will be presently explained.

D is the locking lever. This consists of a plate, the lower portion of which is widened, presenting practically the same contour as the key C, and the upper portion is narrowed

and provided with a detent  $d$  which is adapted to ride upon the thinner portion of the flange  $a$  and to fall into the notches  $a'$  of said flange. This locking lever opposes or lies parallel with the face of the key C, and it is pivotally connected with said key so that when its lower portion is pressed upon it will turn about its pivotal connection and withdraw its detent  $d$  from the notches  $a'$ . The lower end of the locking lever is provided with a stop piece  $d'$  extending inwardly toward the face of the key and adapted to come in contact therewith. The length of this stop is such that it will allow the detent  $d$  of the lever sufficient movement to rise out of the notches  $a'$  and to ride upon the thinner portion of the flange but said stop  $d'$  by coming in contact with the key, will not allow the detent  $d$  to rise high enough to pass the stop walls of the notches formed by the thicker portion of the flange  $a$ , so that the key cannot possibly be turned beyond its closed position in turning off the gas.

The pivotal connection between the locking lever and the key may be of any suitable character; but in order to enable me to provide these locking levers as articles of manufacture ready for use and application to any key, I prefer to arrange them as follows:—A small plate E has up-turned end ears  $e$ , and the wide portion of the locking lever D has down-turned end ears  $d^2$  which overlap the ears  $e$  of plate E. A pivot pin F passes through these overlapping ears from side to side, and a spring G is seated upon this pin, and bears with its ends upon the opposing plate and lever in such a manner as to hold the detent of the lever normally in its locked position in the notches  $a'$ . This arrangement is secured to the key, simply by fastening the plate E by soldering or otherwise upon the face of the key. It will be observed that the pivotal center of the locking lever is sufficiently high to throw the pressure below it whereby there will be no difficulty in operating said lever. The position of the lever and its shape are such that no change whatever is required in the position of the hand of the operator in working the gas key. He grasps the latter in precisely the same manner as customary, his thumb or finger, as the case



may be, pressing on one side against the key and on the other side against the locking lever. This pressure will release the detent  $d$  of the locking lever from the notches  $a'$ , 5 and then a movement of the key will turn the cock open. From its open position he can turn it either way and when the detent  $d$  reaches a notch the spring  $F$  will throw it into engagement with said notch. But should 10 the operator fail to relieve the pressure on the locking lever when the notch is reached he cannot go beyond the notch, because of the stop wall of the notch against which the detent  $d$  comes in contact and from which it 15 cannot escape, by reason of the stop  $d'$  at the other end of the lever coming in contact with the key.

Having thus described my invention, what I claim as new and desire to secure by Letters 20 Patent is—

1. In a gas cock, the combination of the flange  $a$  having the notches, one wall of each of which forms a stop, said flange being of reduced diameter at one side between said 25 walls the key of the gas cock, the locking lever opposing the face of the key and pivotally secured thereto, the detent at the upper end of said lever adapted to ride upon the reduced portion of the flange, to engage the 30 notches of the flange, and to be limited by their stop walls, and the stop  $d'$  of said lever coming in contact with the key for limiting

the pivotal movement of the lever, substantially as herein described.

2. In a gas cock, the flange  $a$  having the 35 opposing notches with back walls forming stops, and having one of its sides between these walls made thinner than the opposite side the key of the gas cock, the locking lever pivotally connected with the face of the 40 key, the spring for controlling said lever, the detent at the upper end of the lever engaging the notches and limited by their back walls, said detent adapted to ride upon the thinned portion of the flange and the stop  $d'$  45 at the other end of the lever coming in contact with the key, substantially as herein described.

3. In combination with a notched flange and the key of a gas cock, the safety lock consisting of the plate  $E$  adapted to be secured 50 to the face of the key, the locking lever  $D$  having the detent engaging the notches of the flange, the cross pin pivoting the plate and lever together and the spring for controlling the movement of the lever, substantially 55 as herein described.

In witness whereof I have hereunto set my hand.

FRANK LAWRENCE.

Witnesses:

S. H. NOURSE,  
J. A. BAYLESS.