

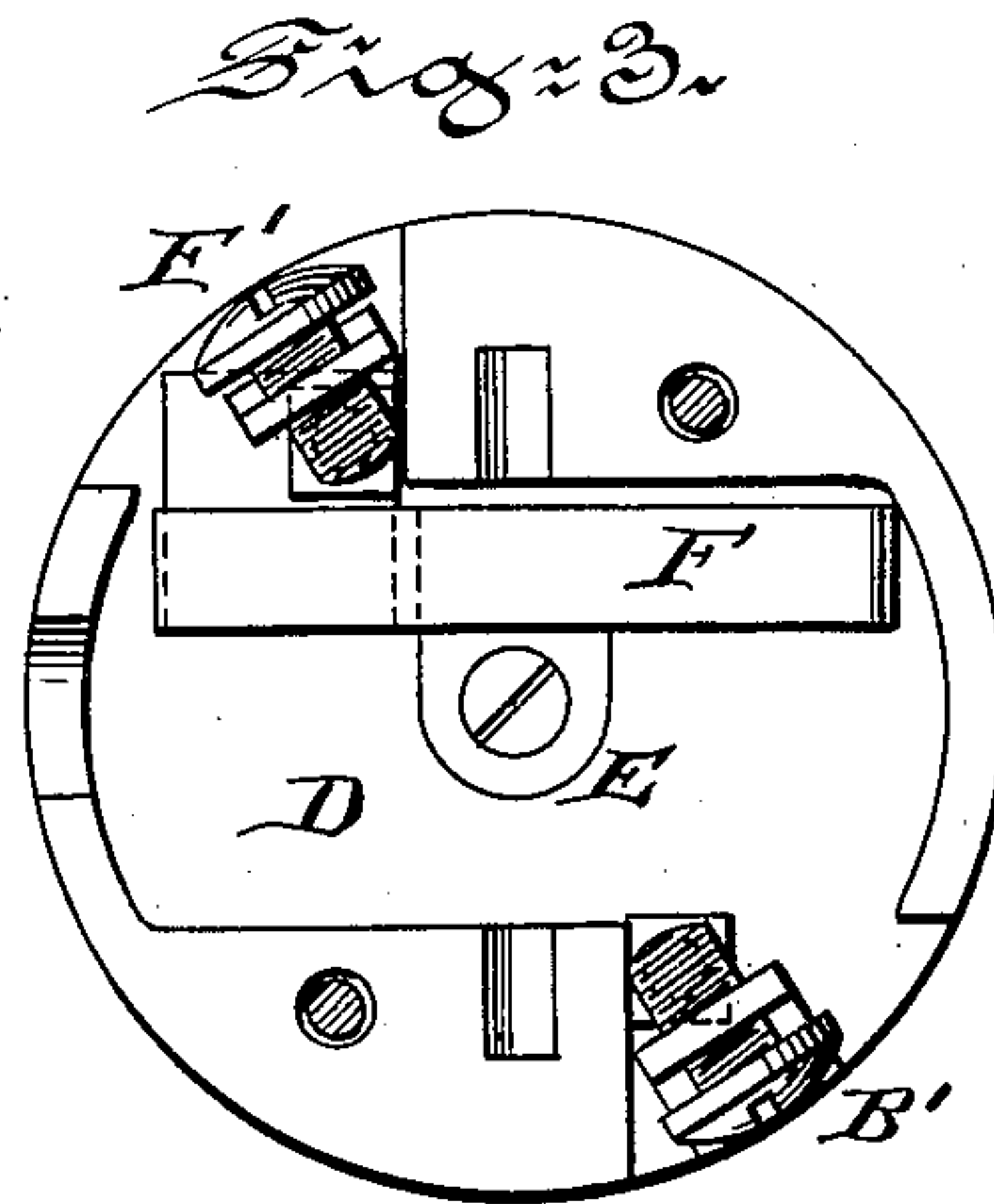
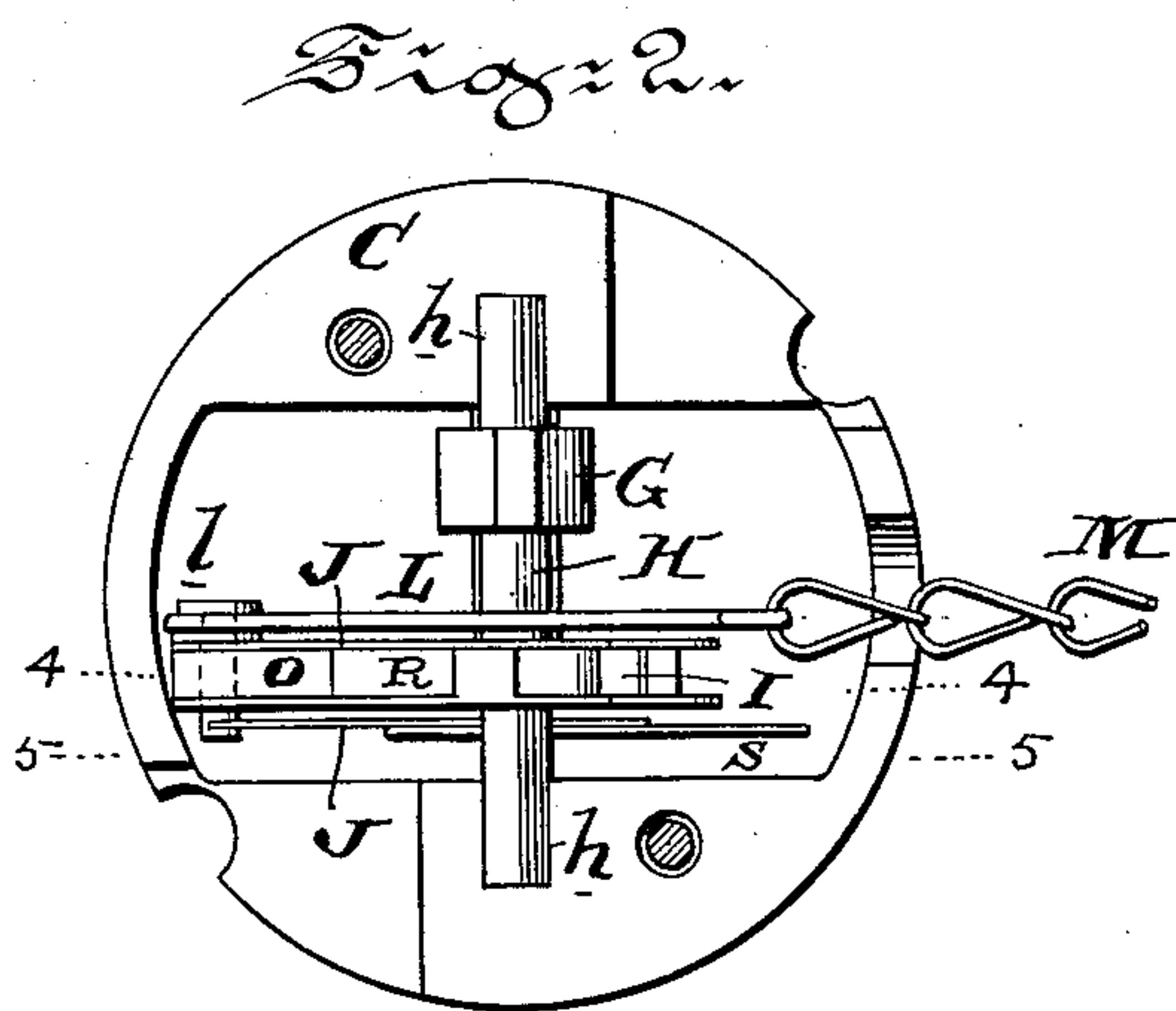
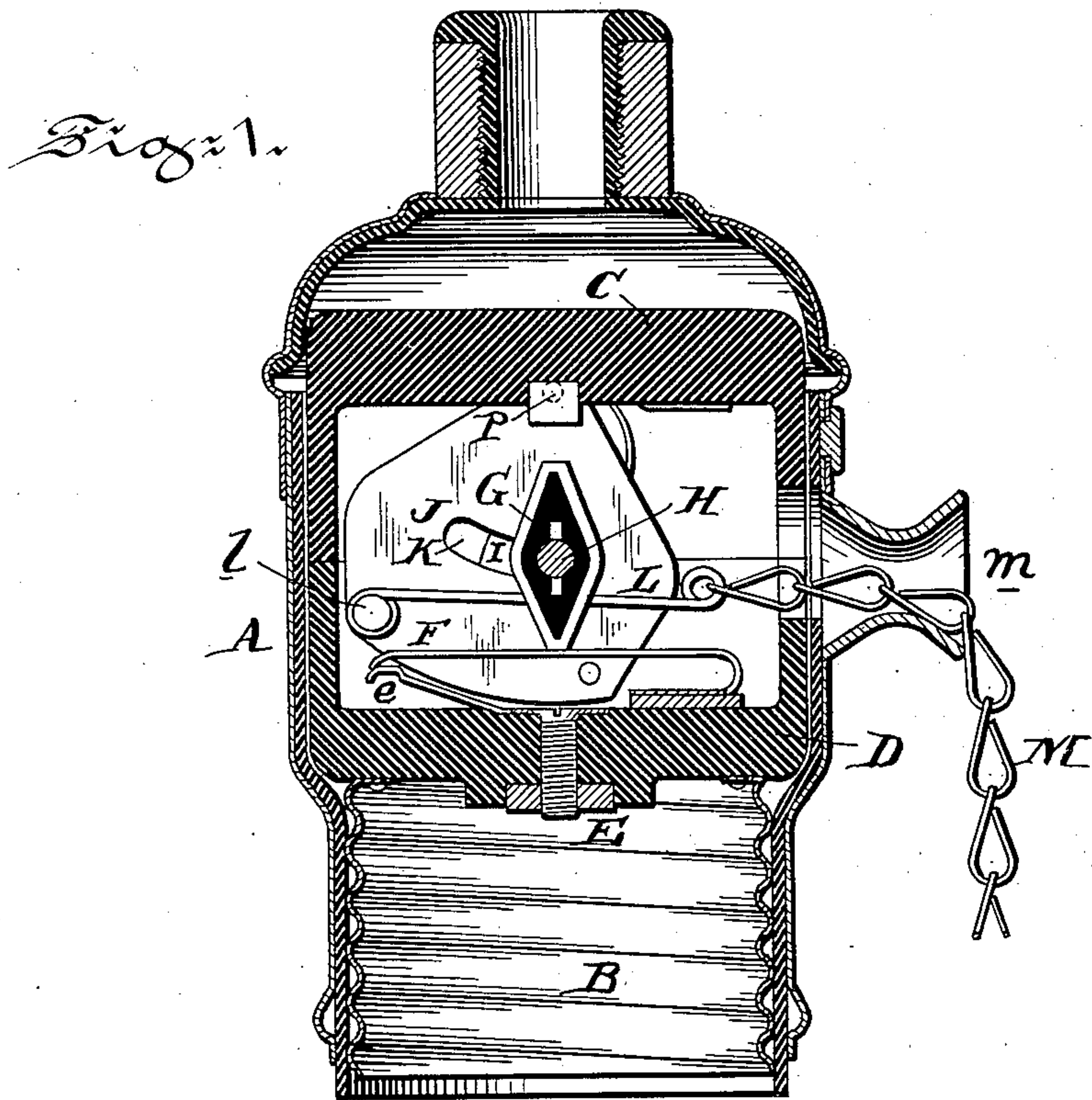
No. 860,867.

PATENTED JULY 23, 1907.

T. H. HILL.  
ELECTRIC LAMP SOCKET.

APPLICATION FILED AUG. 31, 1906.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

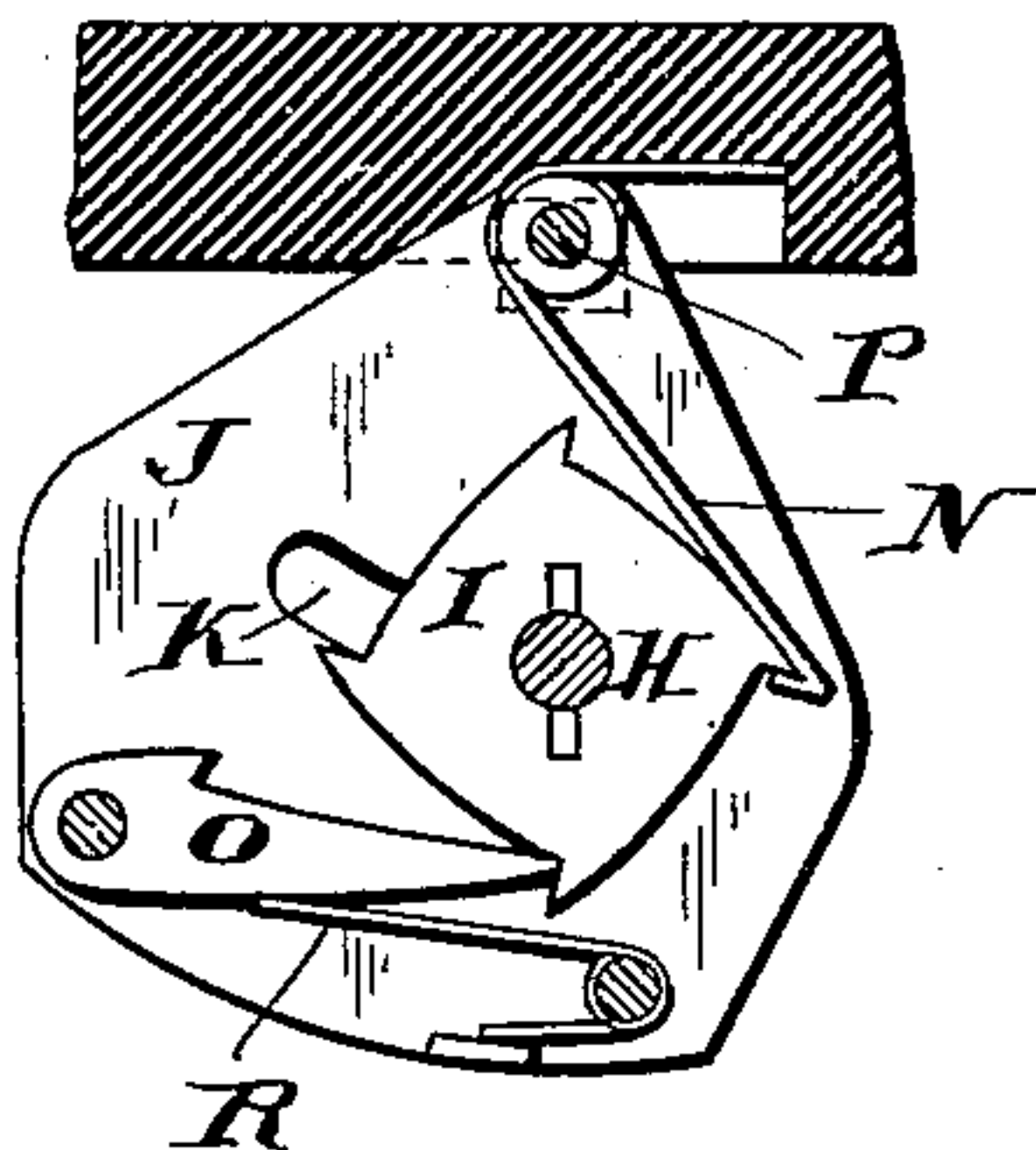


Fig. 5.

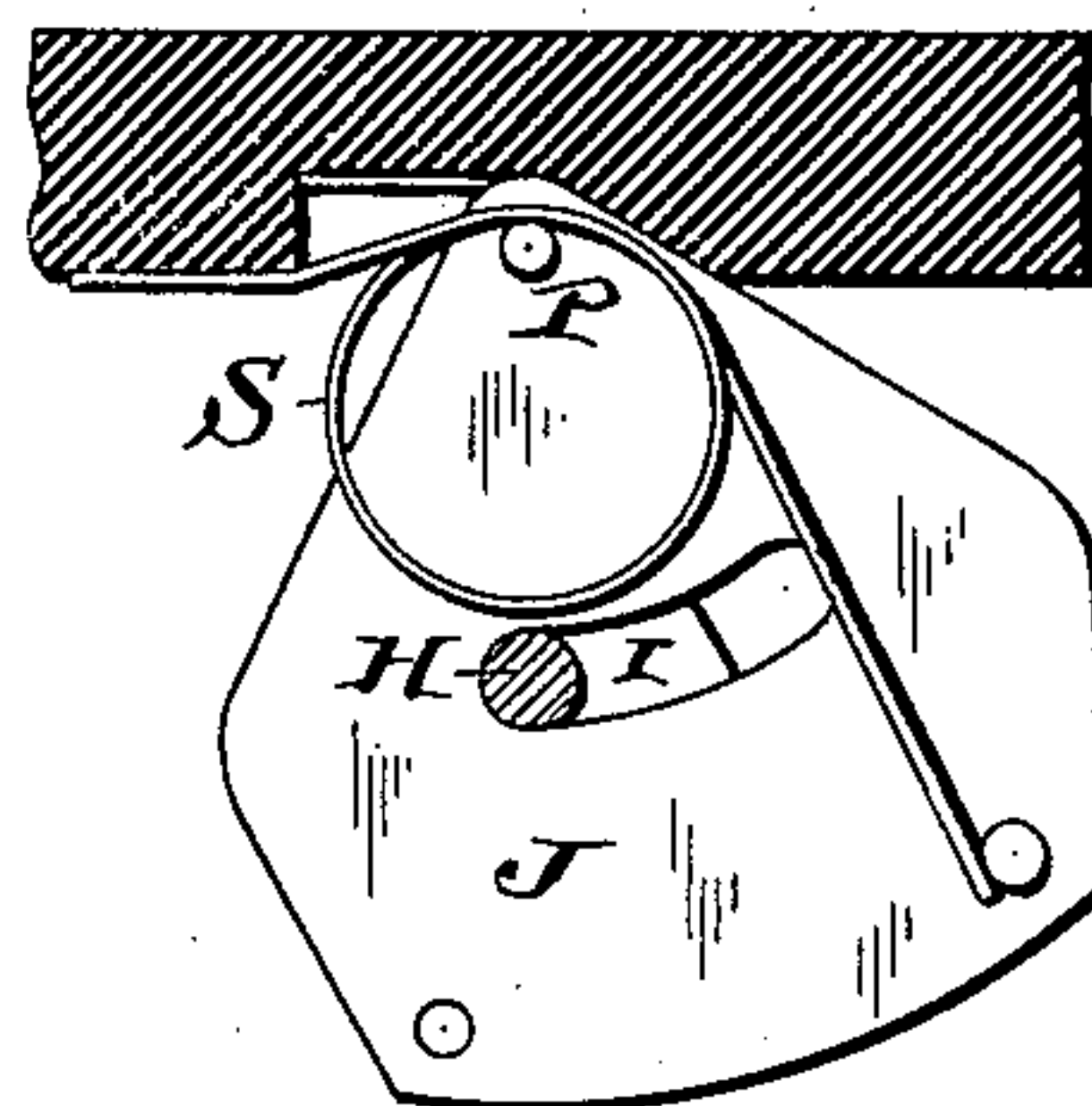


Fig. 6.

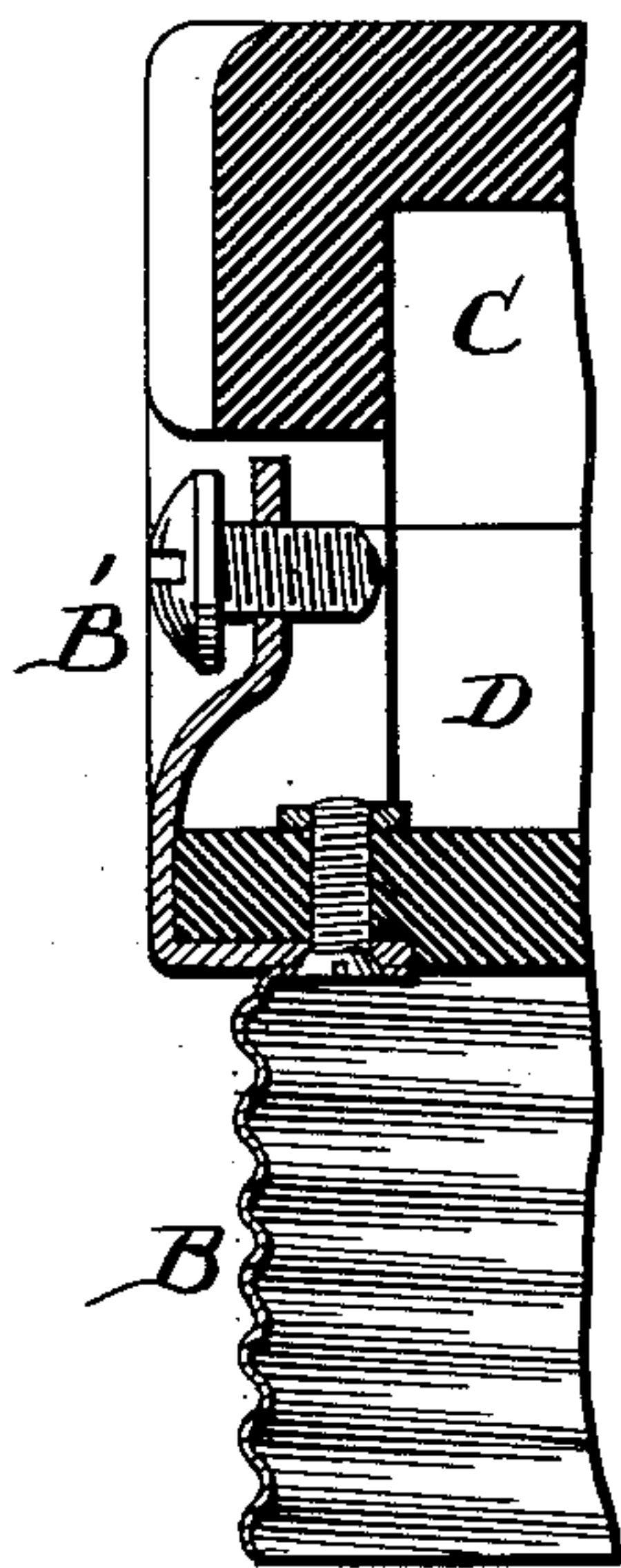
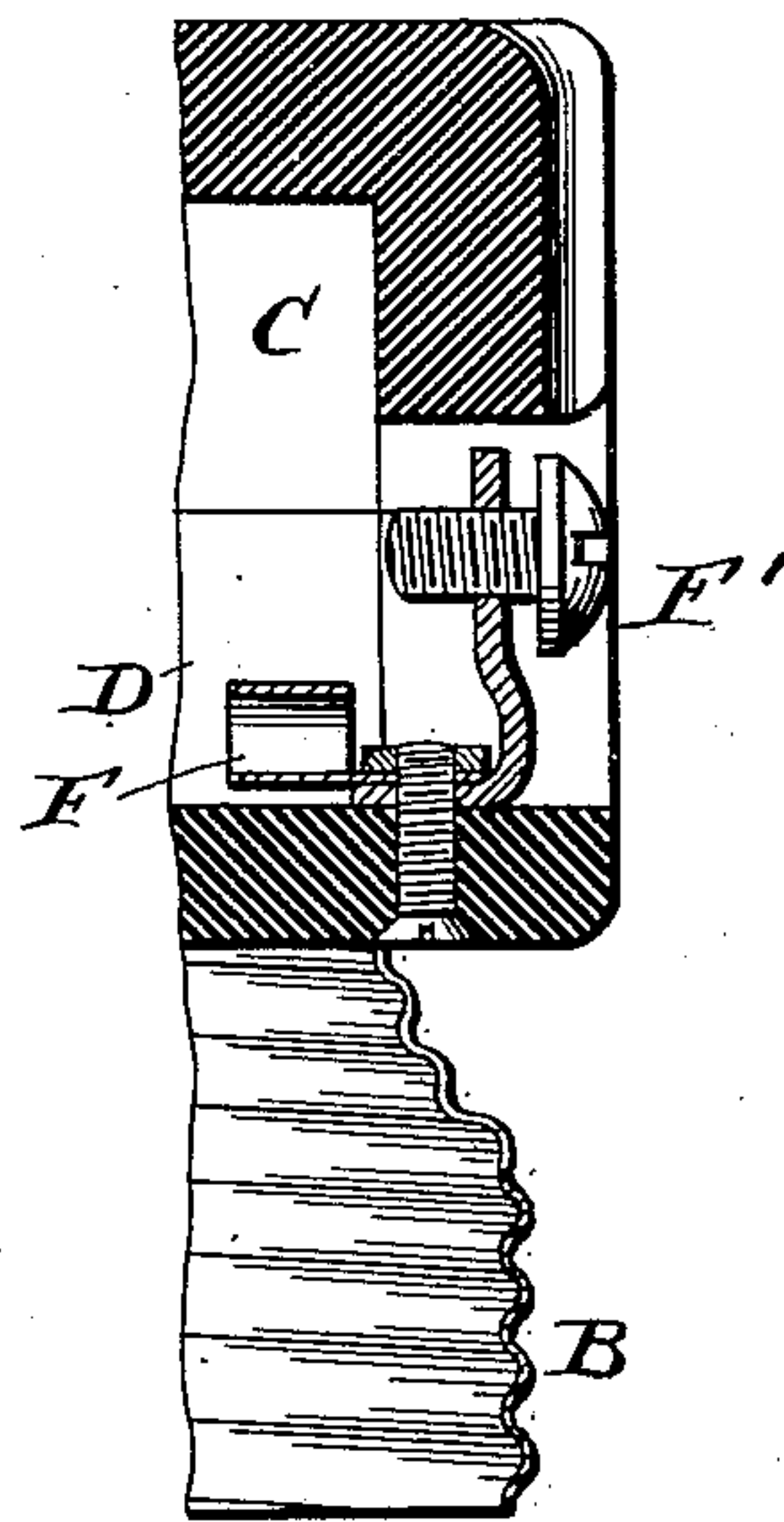


Fig. 7.



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# UNITED STATES PATENT OFFICE.

THOMAS H. HILL, OF PHILADELPHIA, PENNSYLVANIA.

## ELECTRIC-LAMP SOCKET.

No. 860,867.

Specification of Letters Patent.

Patented July 23, 1907.

Application filed August 31, 1906. Serial No. 332,767.

To all whom it may concern:

Be it known that I, THOMAS H. HILL, of the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Electric-Lamp Sockets, of which the following is a specification.

My invention has reference to electric lamp sockets, and consists of certain improvements which are fully set forth in the following specifications and shown in the accompanying drawings, which form part thereof.

The object of my invention is to provide a construction of electric socket switch, which may be operated by a pull device for turning on or off the current; and more particularly, my object comprehends the operative parts for a switch of this character which shall be of such compact construction that it may be placed within an electric lamp socket case of ordinary size and construction.

My invention consists of certain features of construction in an electric lamp socket in which an intermittently rotated shaft operates the switch contacts, and is in turn operated by a pivoted frame having a hinge support located to one side of the shaft and having means located to the other side of the shaft for operating it, said pivoted frame being spring actuated in one direction and moved in the other direction by means of a chain or equivalent means.

Figure 1 is a sectional elevation of an electric lamp socket with my improved circuit controlling switch applied thereto; Fig. 2 is an inverted plan view of my improved switch mechanism; Fig. 3 is a plan view corresponding to Fig. 2 of the circuit controlling switch contacts and the separating insulation therefor removed from the socket; Fig. 4 is a sectional elevation on line 4-4 of Fig. 2 of my improved switch mechanism; Fig. 5 is a sectional elevation of the same on line 5-5 of Fig. 2; Fig. 6 is a sectional elevation showing the insulation and the manner of connecting the circuits with the socket portion; and Fig. 7 is a similar view showing the manner of connecting the electric circuit with the contact spring of the switch.

A is the socket case and may be formed in any suitable manner and adapted to receive any of the ordinary type of lamps. The construction shown is given as an illustration of the adaptability of my invention to a type of socket in commercial use, but I do not restrict myself to any particular construction of the socket, as my invention is intended for use with all makes of lamp sockets.

B is the threaded metallic portion adapted to receive the threaded portion of the lamp and constitutes one terminal of the socket. This part B is connected to a binding post B' as shown in Figs. 3 and 6 which is adapted to receive the electric light circuit terminal. These parts B B' are secured to an insulating box shaped part D within the socket, and having the central

contact E with which the bottom of the lamp makes electrical connection.

e is a spring connecting with the central contact screw E.

F is a contact spring connected to a binding post F', also carried by the insulating part D, and is adapted to make electrical contact with the spring e. The other terminal of the electric light circuit is connected with a binding post F'.

H is a cam-shaft which carries the cam G. This cam may be formed of insulating material or made in any way desired so as to operate upon the contact spring F while maintaining it insulated from the shaft H. This shaft H is also provided with a ratchet wheel I which is formed with four teeth so that the cam G will only be able to stand at such positions as will press the spring F in contact with the spring e or permit these springs to be separated. The shaft H is journaled at h in bearings formed in the insulating part D and the insulating part C which is also contained within the socket case and which, with the part D forms a box shaped structure within which the switch mechanism is located.

J is a pivoted frame pivoted at P in the base of the insulating part C and extends across the cam-shaft H by allowing the latter to extend through a curved slot K therein. In this manner the pivoted frame is made to extend upon both sides of the cam-shaft H, and it is provided on the side most distant from its pivot P with a pawl O for actuating the ratchet wheel I with which the pawl is pressed into contact by spring R. A spring N, extending from the pivot P of the frame J, is formed with the hooked end to prevent backward motion of the ratchet wheel and cam-shaft, and at the same time to normally hold the cam in the position to which it is turned when the current is turned on or off. A spring S is employed to act upon the pivoted frame J, to throw it to one extreme position as shown in the drawings, and in which the pawl O is in a position to operate one of the teeth of the ratchet wheel.

L is a link pivoted at l to the pivoted frame J and preferably upon that portion of it which will enable the said link to extend across the cam-shaft on the side most distant from the pivot P; and this link may be connected to a chain M passing through a flaring or bell mouthed tubular passage m over which it may be pulled for the purpose of rocking the frame J against the action of spring S. If the socket is held in the position shown in Fig. 1, or in a corresponding position; it is evident that the chain M will be guided over the tubular part m, but if the socket is held in such a position to bring the tubular part m to the bottom, then the chain M will hang vertically downward and the pull of the pivoted frame J will be direct.

It is evident that, in the operation of my improved switch, every pull upon the chain M will move the cam



G a quarter of a revolution and that no manipulation of the chain M could bring the cam into any position excepting to open or close the switch. Furthermore the cam together with the shaft H and ratchet wheel are free to rotate in one direction so that the action of the spring F by being made strong is such as to snap the cam around in advance of the pawl when the pawl is moved to throw the ratchet wheel to a position which will enable the spring to act upon it to insure its rotation. When this action takes place, the circuit is quickly broken and the switch therefore acts as a "snap" switch.

The important feature of my invention is in the construction which enables me to employ the pivoted frame J in conjunction with the rotating cam-shaft, whereby a large throw for the pawl may be had without increasing the ordinary size of the lamp socket case.

The pivoted frame J is preferably made of two plates connected together, between which the pawl O and springs R and N are arranged, and by locating such frame to one side of the central line of the socket, the cam G, on the other side, I am enabled to obtain direct pull upon the pivoted frame by the parts L M through the center of the socket case as will be more clearly seen by reference to Fig. 2.

I have shown my improvement in the form which I have found excellently adapted for commercial use and at the same time economical in construction, but I wish it to be understood that the minor details of the construction may be modified from those herein shown, and I therefore do not restrict myself thereto.

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

1. In an electric lamp socket, the combination of a contact spring, a shaft, a ratchet wheel to rotate the shaft, a cam secured to the shaft for operating the contact spring, a pivoted frame having a hinge support located at one side of the shaft and extending to the other side of the shaft, means on the pivoted frame on the side most distant from its pivot for operating the ratchet wheel, and means connecting with the pivoted frame and extending through the side of the socket for operating said frame.

2. In an electric lamp socket, the combination of a contact spring, a shaft, a ratchet wheel to rotate the shaft, a cam secured to the shaft for operating the contact spring, a pivoted frame having a hinge support located at one side of the shaft and extending to the other side of the shaft, a spring to move the frame in one direction, means on the pivoted frame on the side most distant from its pivot for operating the ratchet wheel, and means connecting with the pivoted frame and extending through the side of the socket for operating said frame against the action of its spring.

3. In an electric lamp socket, the combination of a contact spring, a shaft, a ratchet wheel to rotate the shaft, a cam secured to the shaft for operating the contact spring, a pivoted spring actuated frame having a hinge support located at one side of the shaft and extending to the other side of the said shaft, means on the pivoted frame on the side most distant from its pivot for operating the ratchet wheel forward, a spring to lock the ratchet wheel against rotating backward and means connecting with the pivoted frame and extending through the side of the socket for operating said frame for causing it to rotate the ratchet wheel forward.

4. In an electric lamp socket, circuit closing devices, a shaft adapted to operate the circuit closing devices, a pivoted frame having a hinged support located at a distance to one side of the shaft and provide with means at the other side of the shaft for rotating said shaft, and means connecting with the pivoted frame and extending through the side of the socket for operating the pivoted frame.

5. In an electric lamp switch, the combination of a circuit controlling contact spring, a loosely pivoted cam shaft and cam for operating the spring when moved to one position to close the switch and for being operated by the spring when moved into a position preliminary to opening the switch, a ratchet wheel on the shaft to rotate it, and a pivoted frame having a pawl structure for intermittently operating the ratchet wheel.

6. In an electric lamp switch, the combination of a circuit controlling contact spring, a loosely pivoted cam shaft and cam for operating the spring when moved to one position to close the switch and for being operated by the spring when moved into a position preliminary to opening the switch, a ratchet wheel having four teeth on the shaft to rotate it, a spring catch to prevent the ratchet wheel moving backward and a pivoted frame having a pawl structure for intermittently operating the ratchet wheel.

7. In an electric lamp socket, the case having two inclosed parts of insulating material and forming a switch chamber between them, in combination with a circuit closing spring secured to one of said parts, a shaft provided with a ratchet wheel and a cam for operating the spring journaled between the two insulating parts, a pivoted frame hinged to the other of the two insulating parts and extending across the shaft, means carried thereby for operating the ratchet wheel, and means extending through the side of the socket for operating the pivoted frame.

8. In an electric lamp socket and switch, the combination of circuit closing devices, a transverse shaft H having the cam G and ratchet wheel I, a pivoted frame J formed of two side plates inclosing the ratchet wheel and having slots K for the shaft, a pawl O carried by the pivoted frame for operating the ratchet wheel, and means extending to within the socket for operating the pivoted frame.

In testimony of which invention, I hereunto set my hand.

THOS. H. HILL.

Witnesses:

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R. M. KELLY.