

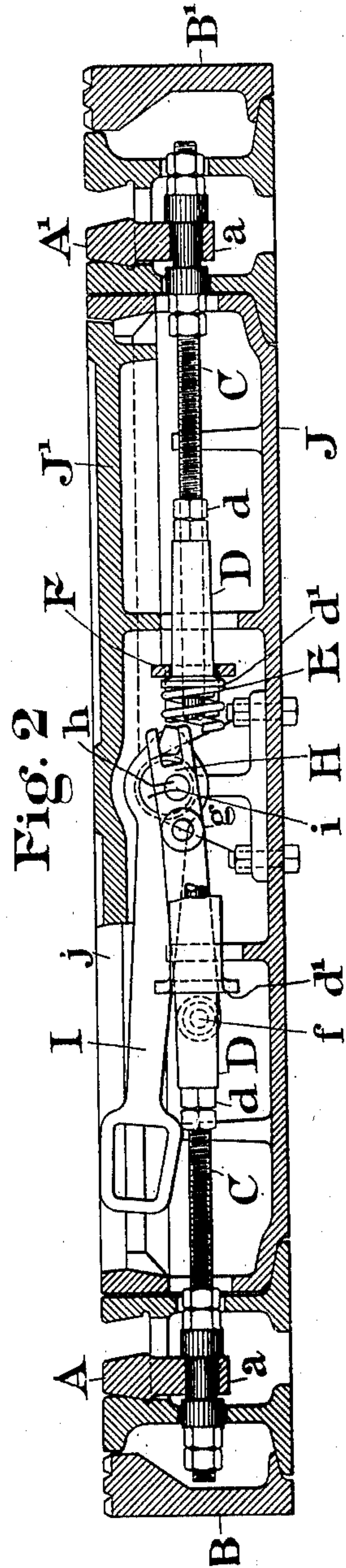
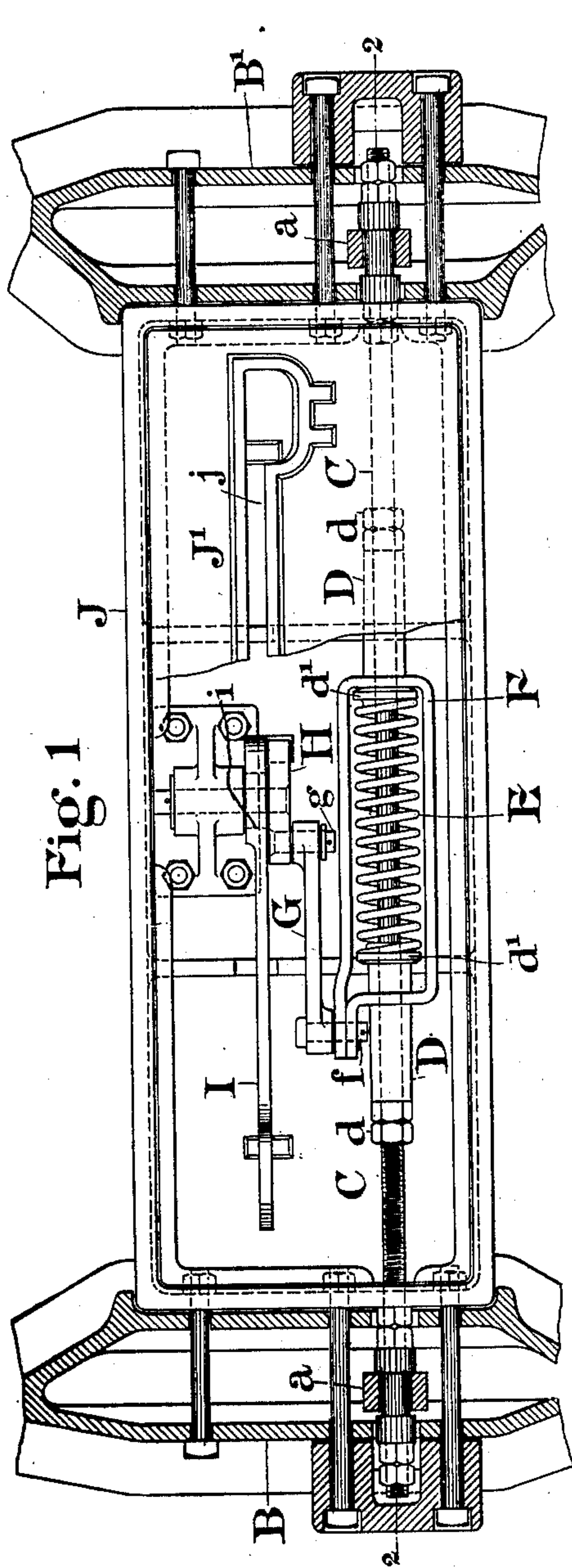
No. 756,729.

PATENTED APR. 5, 1904.

H. C. STIFF.  
SPRING SWITCH.

APPLICATION FILED JULY 21, 1903.

NO MODEL.



WITNESSES:

*Sweeney*  
*Loretto O. O'Neill*

INVENTOR  
*H. C. Stiff*

BY  
*Geo. W. Parmelee*  
his ATTORNEY.



## UNITED STATES PATENT OFFICE.

HENRY C. STIFF, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE  
LORAIN STEEL COMPANY, A CORPORATION OF PENNSYLVANIA.

## SPRING-SWITCH.

SPECIFICATION forming part of Letters Patent No. 756,729, dated April 5, 1904.

Application filed July 21, 1903. Serial No. 166,477. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY CHARLES STIFF, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Spring-Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to certain new and useful improvements in spring-switches having two movable points or tongues, and is designed to provide a simple and convenient arrangement of switch-operating mechanism which can be placed in compact form within a box or closure located between the track-rails.

With this object in view my invention consists in the novel construction, arrangement, and combination of parts, all substantially as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view, partly broken away, of switch mechanism embodying my invention; and Fig. 2 is a longitudinal section on the line 2 2 of Fig. 1 with a portion of the spring and its yoke broken away.

The letters A A' designate the two movable switch-tongues, seated in the track structures B B' and having each a depending lug a.

C is a rod which connects the two tongues, its end portions being secured in the lugs a.

D D designate two spring seats or cones sleeved on the rod C and secured by the adjusting and jam nuts d, and E is a helical spring seated between said cones. F is a yoke which embraces the said spring with its end or transverse arms arranged to slide on the cone-sleeves and to engage the shoulders d' thereof. This yoke is pivotally connected at f to a lever-arm G, which is in turn pivotally connected at g to one arm of a short lever H. The other arm of this lever H is operatively engaged with the short arm of a hand-lever I, fulcrumed at i, lever H having its fulcrum at h eccentrically within the fulcrum i.

The operating parts just described are all arranged within a transverse box J, which is bolted to the track structures B B' and has a

cover-plate J'. In this plate is a slot j, through which works the hand-lever I. To throw the switch to the opposite position from that in which it is shown, the hand-lever is moved upwardly and over through an arc of nearly one hundred and eighty degrees to a position in the other arm of the slot j. This actuates the levers H and G, thereby moving the yoke F to the right into engagement with the collar d' of the left-hand cone d. Said cone is now moved to compress the spring E, and the latter through the right-hand cone throws the rod.

It will be noted that when the switch is fully thrown in either direction the relation between the centers g, h, and i is such as to form a secure lock for the movement, the center g having passed the center h. Owing to the eccentric relation between the centers h and i, this lock is formed without the necessity for moving the outer end of the lever H to a point which will be below the axis of i, as would otherwise be necessary, and said lever is left in a position just within the cover-plate J', where it can be readily reached by the hand. Inasmuch as the switch is thrown in both directions indirectly through the compression of the spring E, it will be readily seen that a car or train may trail through the switch in either direction without affecting the lever and locking arrangement. The construction and arrangement as described also permits all the operating-points to be placed compactly within the box and entirely below the street or track surface.

I do not wish to limit myself to the precise construction and arrangement of parts herein shown and described, as changes may be made in the details thereof without departing from my invention. I do not, however, claim herein, except in combination with the other parts, the particular lever-movement which I have shown and described, as I believe that to be the invention of C. C. Korn, of Johnstown, Pennsylvania, as described and claimed in his application Serial No. 127,429.

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



1. The combination of the two movable switch tongues or points, a rod connecting the same, spring cones or bearings sleeved on said shaft, a spring between said cones or bearings, 5 a yoke embracing said spring, and lever mechanism connected to said yoke and arranged parallel therewith.

2. The combination of the two movable switch tongues or points, a rod connecting 10 them, a spring seated on said rod and arranged to actuate the same to endwise movement in both directions, a yoke for acting upon said spring, a hand-lever movable in a parallel direction with said spring, and an intermediate 15 connection between the said lever and the yoke arranged to form a lock for said rod and tongues.

3. The combination with the two track structures having each a movable point or

tongues, and the box arranged transversely between the said structures and secured thereto, 20 said box having a slotted cover-plate, of the rod extending through the said box and forming a rigid connection between the points or tongues, the spring seated on said rod and 25 arranged to actuate the same in both directions, a yoke for compressing said spring, a hand-lever accessible through and working in the slot of said plate, and an intermediate operating connection between said yoke and the 30 hand-lever, and arranged to form a lock for the rod.

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

HENRY C. STIFF.

Witnesses:

L. O'CONNELL,  
H. W. SMITH.