

(No Model.)

2 Sheets—Sheet 1.

J. H. WALLACE.
SWITCH STAND.

No. 449,017.

Patented Mar. 24, 1891.

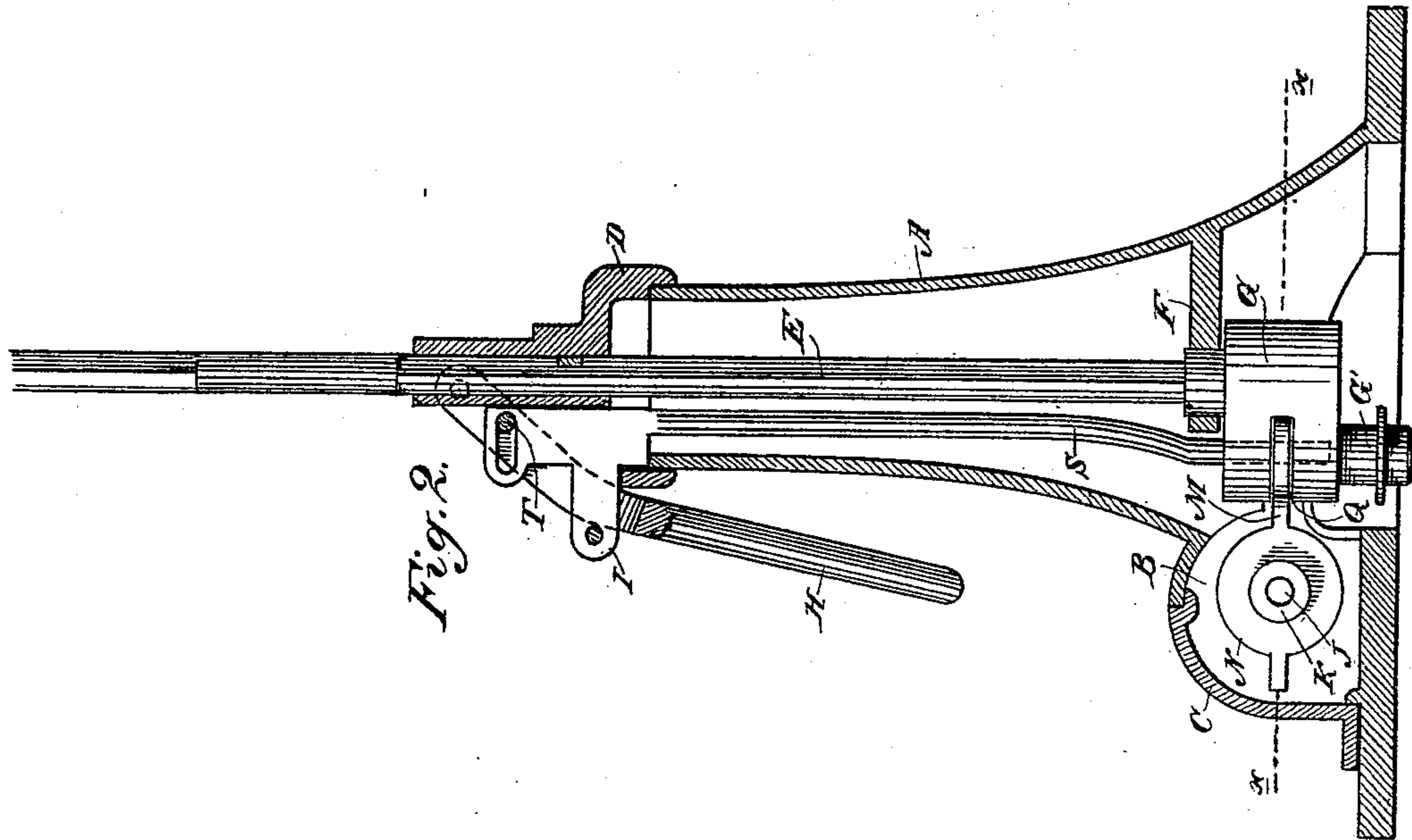


Fig. 2.

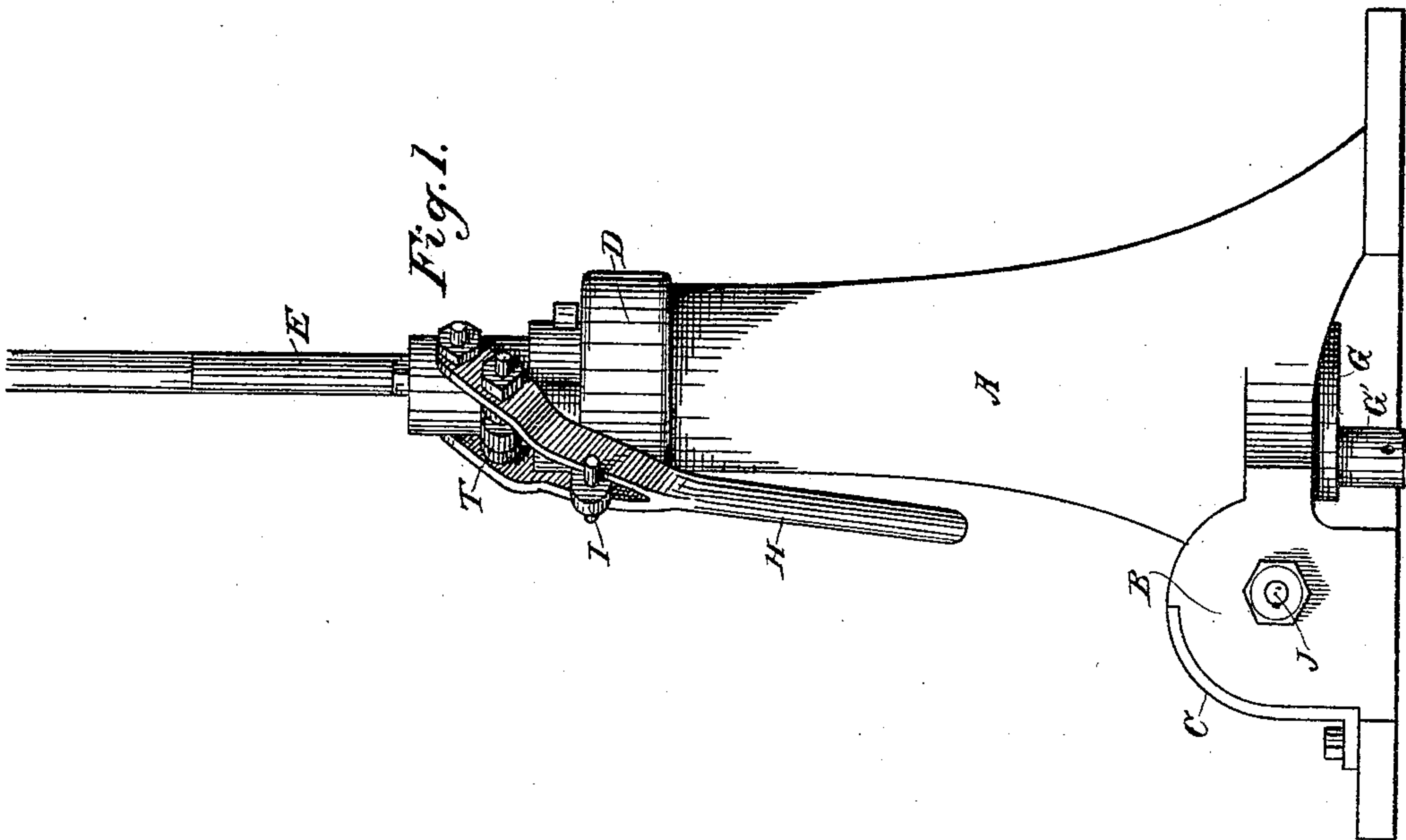


Fig. 1.

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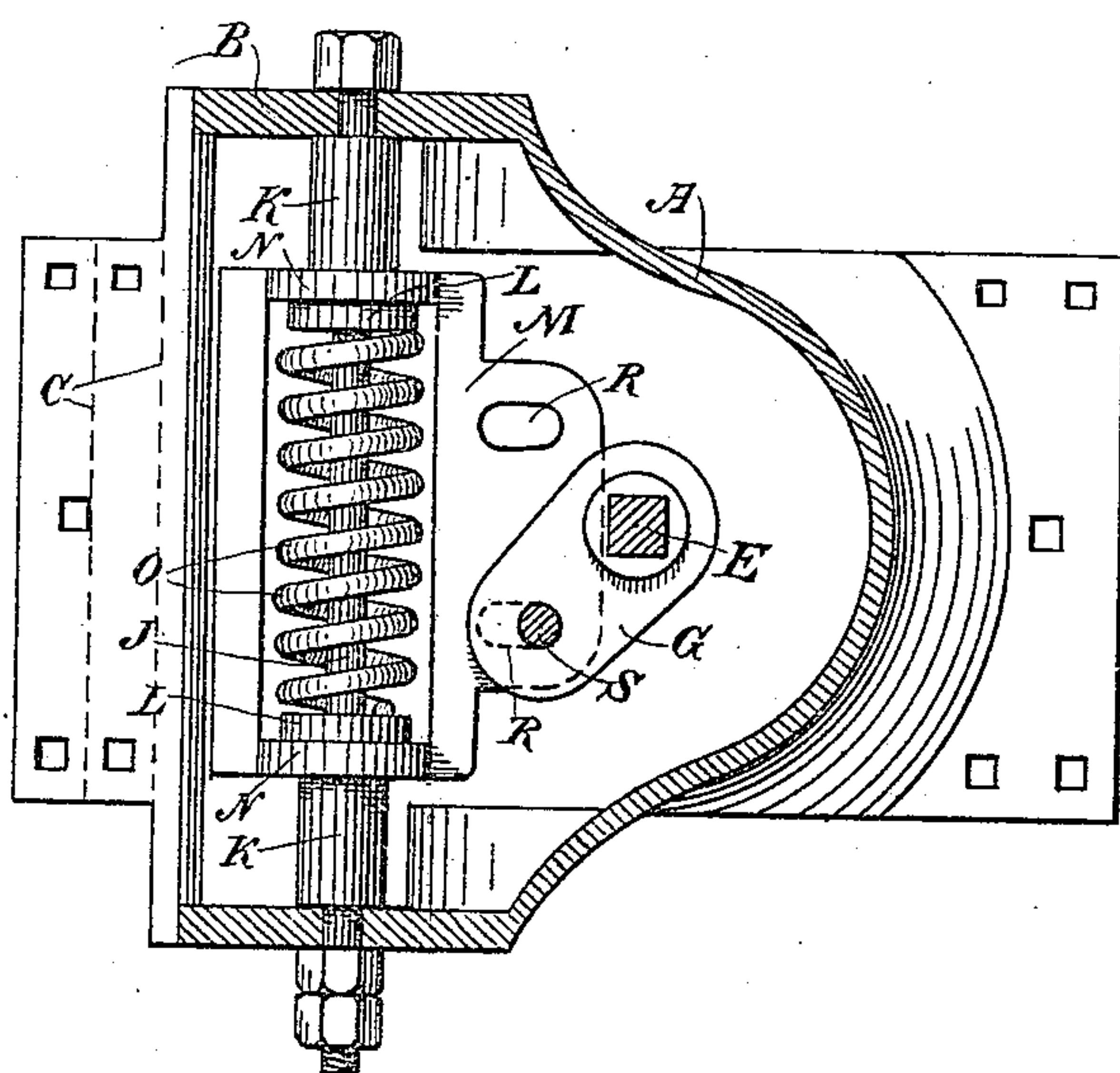
Inventor,
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Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN HERBERT WALLACE, OF SAN FRANCISCO, CALIFORNIA.

SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 449,017, dated March 24, 1891.

Application filed May 28, 1890. Serial No. 353,476. (No model.)

To all whom it may concern:

Be it known that I, JOHN HERBERT WALLACE, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Switch-Stands; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of switch-stands designed to shift and lock railroad-switches and yet permit the point of the switch-rail, when locked, to move against the yielding resistance away from its adjacent rail to enable the wheels of cars to pass through the locked switch without leaving the main rail, said point springing back to its place when the wheels have passed through.

My invention consists in certain devices and details of construction, which will be more fully described and claimed hereinafter.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical elevation of my improved stand. Fig. 2 is a vertical section showing the interior operative parts. Fig. 3 is a horizontal section taken through $x x$ of Fig. 2.

A is a vertical hollow shell, made preferably of cast-iron and of such shape as to contain and conceal the working parts of the apparatus. In the present case I have shown the shell as of a concave conical form in exterior elevation, having a horizontal casing B at one side of the base and provided with a removable cap C.

D is a cap fitted upon the top of the standard A and rotatable about the common vertical axis of the two. This cap has an upward extension, within which is fixed a vertical shaft E. This shaft extends down through the central portion of the stand A, its lower end passing through a fixed guide F, within which it turns, and by which it is kept steady and held in place when rotated.

Upon the lower end of the shaft E and beneath the journal-support F is fixed a crank G, and the crank-pin G' is connected with the switch-rail, which is to be moved by the usual connecting-rod extending along upon or just beneath the surface upon which the rails are laid.

H is a lever-handle fulcrumed to some part

of the rotating head D, and when said lever is in its normal position it hangs down close beside the switch-stand A, and is held in place when so hanging by a lug or lugs I. Suitable locking devices may be connected with the lug or lugs, so as to prevent the lever being lifted up and disengaged from the lug. When the lever is lifted up so as to project horizontally and radially away from the head D, it gives sufficient purchase or leverage so that the head or cap D may be turned around upon the body A of the stand, and with it the shaft E and crank G are turned, and by means of the crank-pin G' and connecting-rod the switch-rails may be moved.

J is a horizontal shaft passing through the horizontal cylindrical casing B, and having the sleeves K surrounding each end of it, and also the collars L, as shown.

M is a horizontal plate, having the disks N, which surround the sleeves K, and against the inner sides of which the collars L abut. Between the collars L a stout coiled spring O surrounds the shaft, and the tension of the spring forces the collars outwardly and firmly in contact with the disks N.

Upon one side the edge of the plate M extends into a corresponding slot Q in the crank G. The plate has slotted openings made through it, as shown at R, and these slots are adapted to receive the lower end of a vertical rod S, which passes through the crank G and through either one or the other of the holes or slots R, which are made in the plate M. The upper end of the rod S is connected with the lever H, as shown at T, at such a distance from the fulcrum of the lever that when the lever is raised from its normal position it raises the rod or shaft S until its lower end is withdrawn from the slot R in the plate M. It will be manifest that when the lever H hangs in its normal position the lower end of the rod S passes through one of the slots R, and thus locks the rotating head D and the crank G and shaft E to the plate M. This plate being held rigidly in its place by the stiffness of the spring O, cannot be moved by any ordinary force which may be applied to it. Therefore when the switch-rail has been turned to either position by turning the head D, the shaft E, the crank G, as heretofore described, the handle H may be dropped, and the

pin S will pass through the slot R in the plate M, which is at that time beneath and in line with the rod, and this holds the switch-rail in that position until it is desired to again change it. If, however, an engine or cars approach this switch from the rear, or, in other words, if it is running in the direction in which the points face upon either main or side track while the switch is set for the other track, it will be manifest that the flanges of the wheels, crowding between the switch-rail and the main-line rail, will force the switch-rail temporarily away from the main rail, and it is done through the connecting-rod, the crank-pin G', and crank G, which act directly upon the plate M and cause it to slide upon the enlargements or sleeves K of the horizontal shaft J. When it is moved by this pressure, it compresses the spring O, thus causing it to yield sufficiently to allow the flanges of the wheels to pass between the switch-rail and the main rail; but after the wheels have so passed the power of the spring forces the plate M back to its normal position, and with it the switch-rail, which is again thrown into contact with the rail. All the ordinary operations of switching by hand and the movement of the switch-rail thereby are performed by simply raising the lever H, withdrawing the shaft or rod S from the slot R in the plate M, with which it is engaged, and this leaves the movable head, the shaft E, and the crank G free to be easily turned, so as to move the switch-rail to its desired position, and it will be manifest that under these conditions the plate M and the spring O remain stationary and entirely independent of the switch mechanism; but whenever the crank G is locked to the plate M by dropping the rod S through the hole in the crank and the slot R in the plate any forcible movement of the switch-rail caused by the passage of car-wheel flanges between it and the main rail will force the plate M to slide in the guiding grooves or channels, and will thus compress the spring O, while the switch-rail is thus forced away from its proper position; but the spring O will again operate to force the plate back to its normal position as soon as the switch-rail is relieved from the pressure upon it.

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

1. A switch-stand having the movable head, crank-shaft, and crank fixed thereon and connected with the switch-rail, a horizontal yield-

ing plate having vertical slots or holes in line with the crank, a vertical rod or pin passing through the crank and adapted to engage with either one or the other of the holes in the plate, a lever fulcrumed to the movable head and connected with the locking pin or rod, so that by moving the lever this locking-rod may be disengaged or engaged with the holes in the plate, and a spring for returning the plate after it has been forced outward by heavy pressure, substantially as herein described.

2. A switch-stand having the rotary head, crank-shaft, and the crank connected with the switch-rail, a horizontally-movable plate having holes made in it, a vertically-moving rod passing through the crank and adapted to engage the holes in the plate, so as to lock the crank and switch-rail, in combination with a horizontal shaft, a spiral spring surrounding said shaft and engaging disks or stops upon the horizontal plate, so as to retain the plate immovably against ordinary pressure, but yielding so as to allow the plate, crank, and switch-rail to be moved by heavy pressure, and acting to return the parts to place as soon as the pressure is removed, substantially as herein described.

3. A switch-stand having the rotary head, crank-shaft, and the crank connected with the movable switch-rail, the horizontal plate, one edge of which fits into a corresponding slot in the crank, a vertically-moving locking pin or rod passing through the crank and adapted to engage corresponding holes made in that portion of the horizontal plate, disks formed upon each end of the plate having holes through them, a horizontal shaft passing through said holes, a slotted opening made in the plate between the disks, a spiral spring surrounding the shaft and lying within this opening, and collars interior to the disks at the ends of the plate against which the ends of the spring abut, whereby the pressure of car-wheel flanges upon the switch-rail will act to move it away from the main rail and will move the crank and with it the horizontal plate by compressing the spring, said spring acting to return the rail to its position as soon as the pressure is removed from the switch-rail, substantially as herein described.

In witness whereof I have hereunto set my hand.

JOHN HERBERT WALLACE.

Witnesses:

J. R. WILKINSON,
F. L. SOUTHARD.