

(No Model.)

S. S. ACKLES.  
STATION INDICATOR.

No. 500,457.

Patented June 27, 1893.

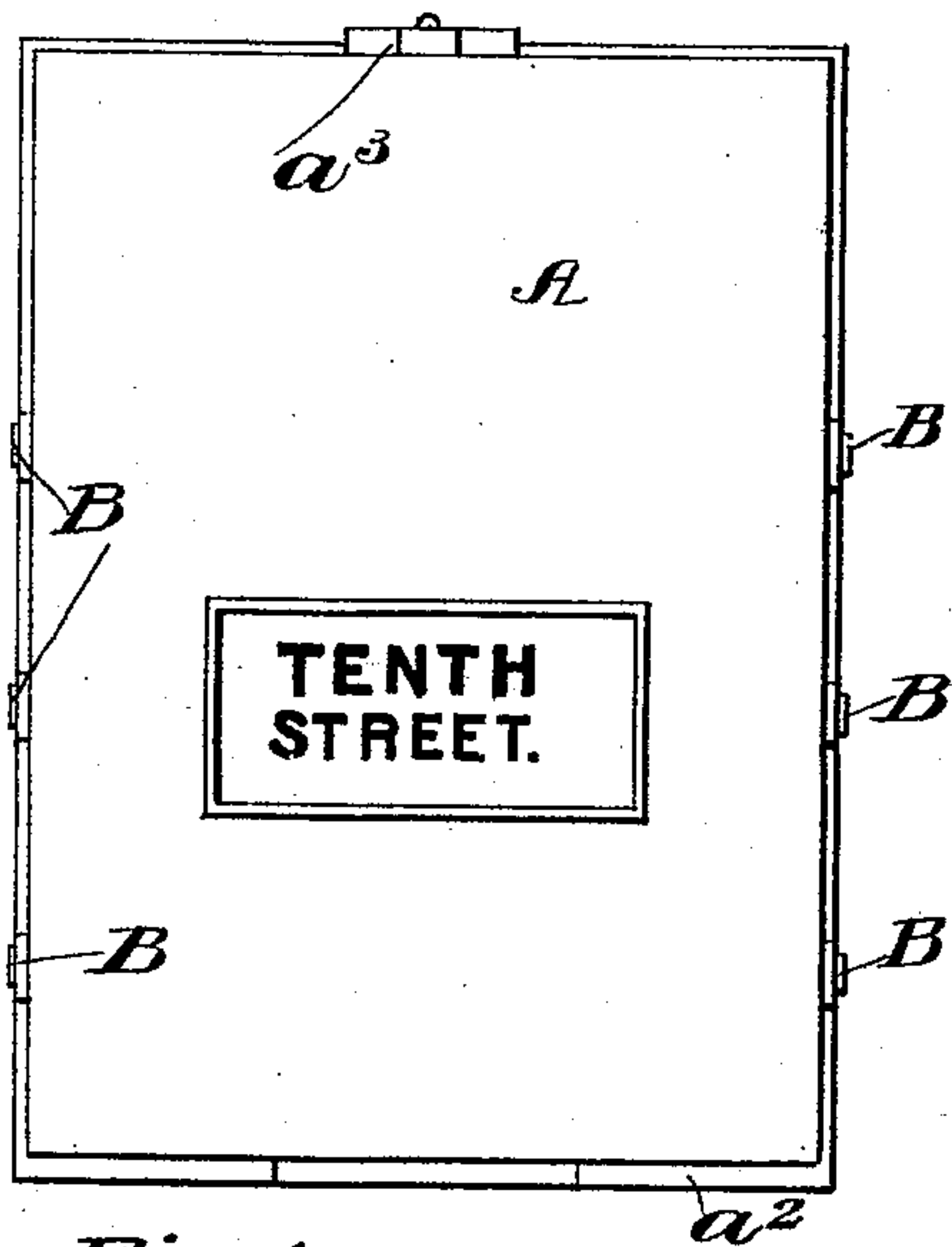


Fig. 1

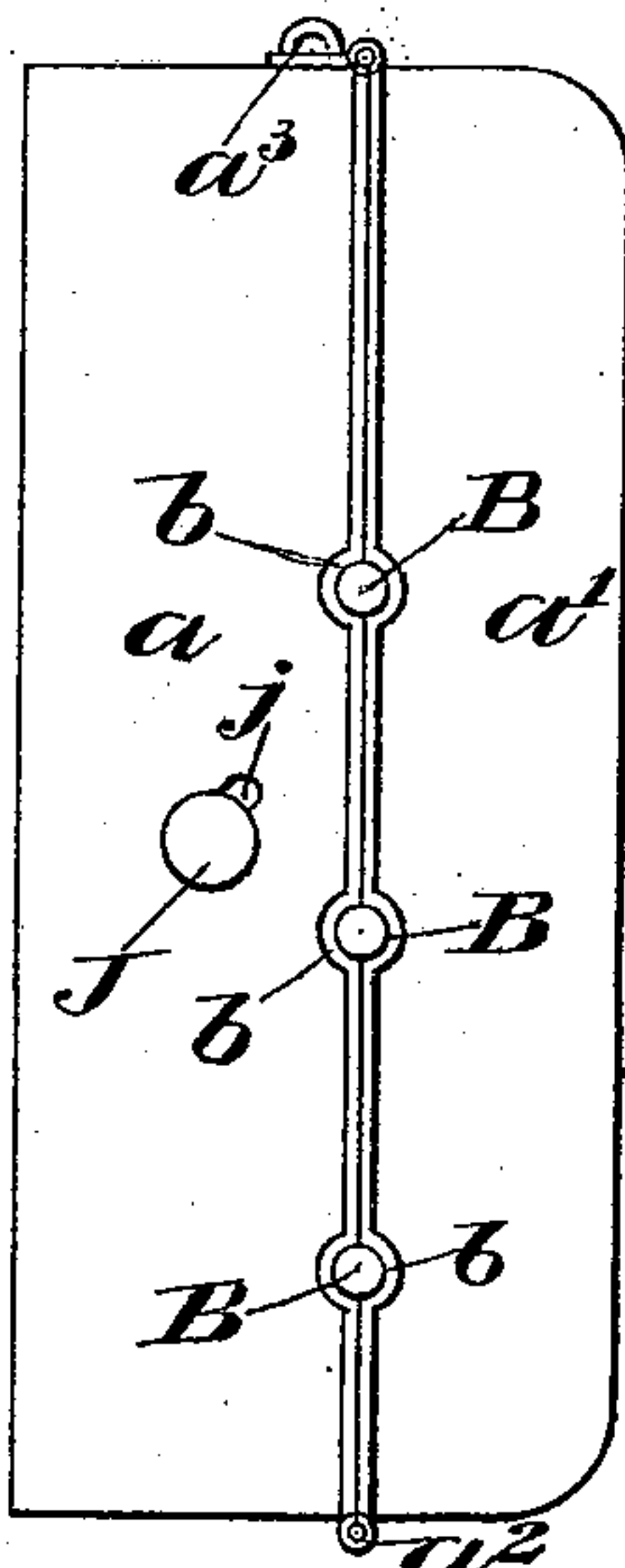


Fig. 2

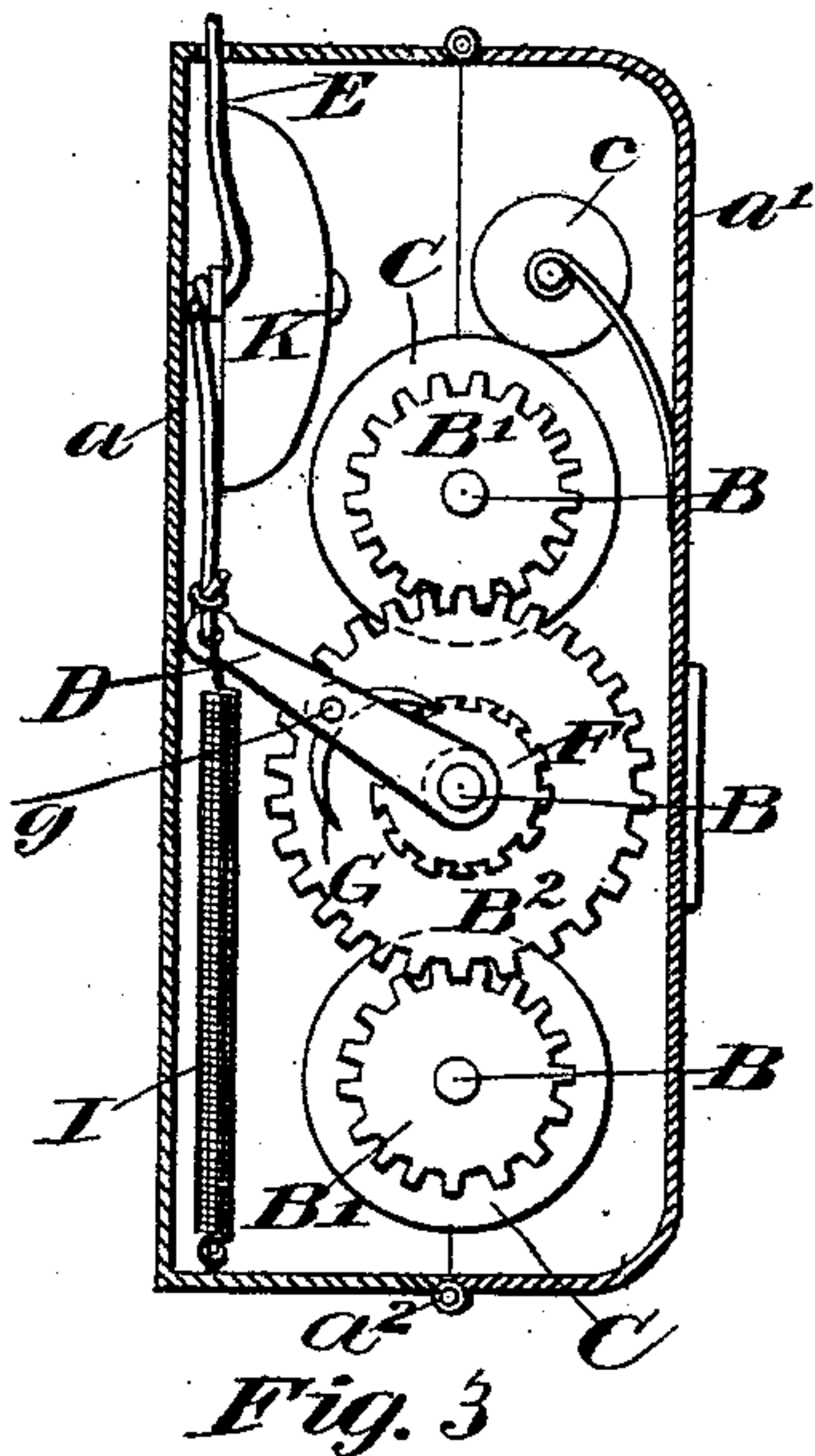


Fig. 3

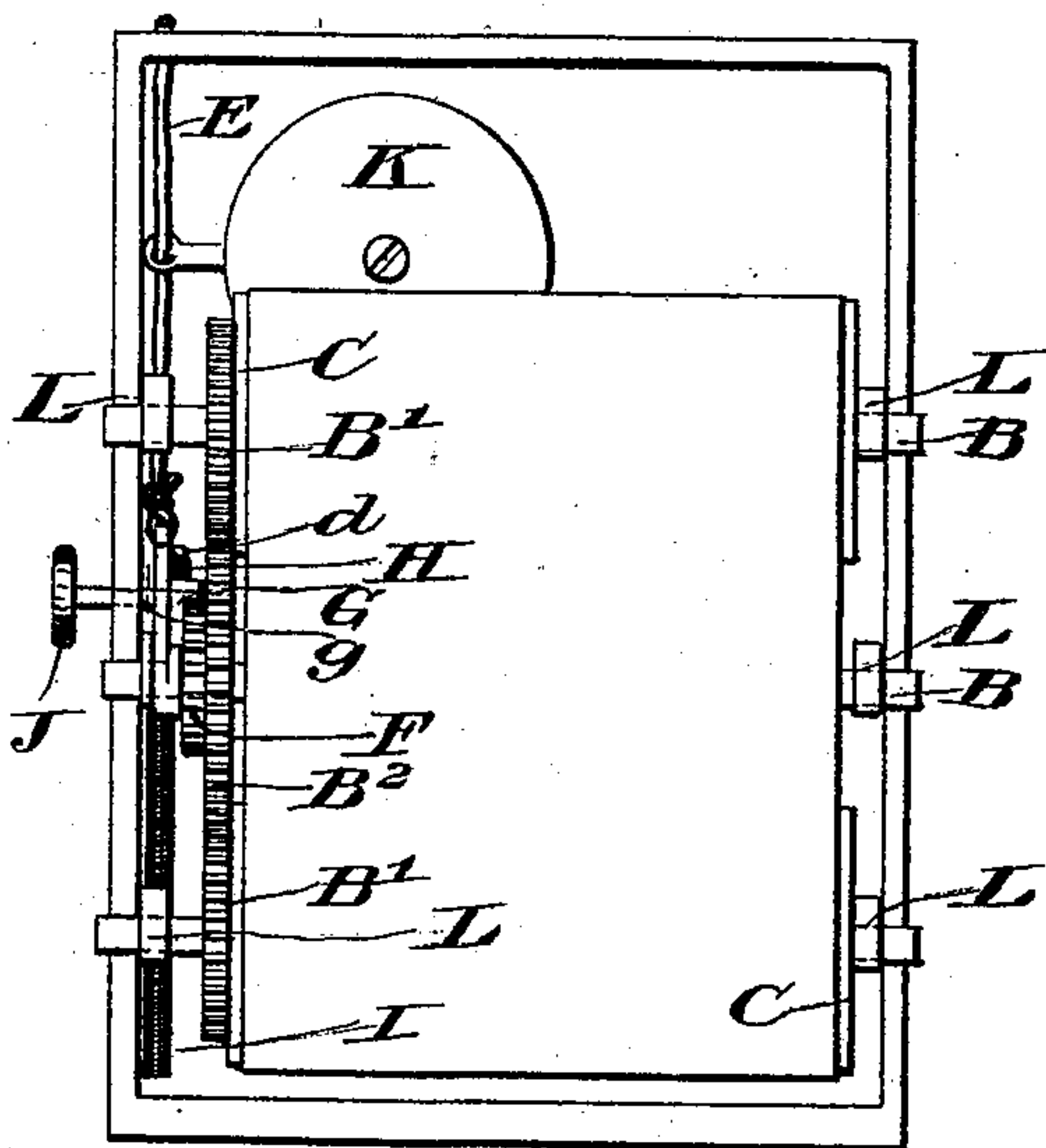


Fig. 4

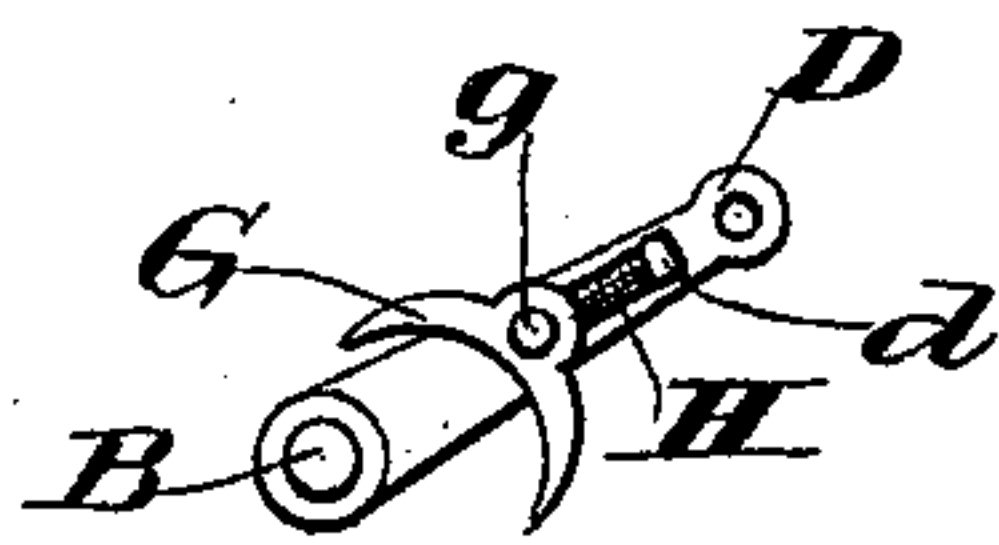


Fig. 5

WITNESSES:  
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# UNITED STATES PATENT OFFICE.

STEPHEN SPAULDING ACKLES, OF DETROIT, MICHIGAN.

## STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 500,457, dated June 27, 1893.

Application filed October 4, 1892. Serial No. 447,796. (No model.)

*To all whom it may concern:*

Be it known that I, STEPHEN SPAULDING ACKLES, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Indicators; 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 certain improvements in station and street indicators for railway and street car lines, and the object of my invention is to provide a device of this kind which shall be of a simple and inexpensive construction and one which shall not become easily deranged by rough handling.

My invention also contemplates the provision of means for remedying various defects in the construction and operation of such devices heretofore in use, all as will be more fully hereinafter set forth.

The novel features of my invention will be carefully defined in the claims.

In order that my invention may be the better understood, I have illustrated in the accompanying drawings a station or street indicator provided with my improvements, in which drawings—

Figure 1 is a general view representing the station indicator in place with the operating cord in position for use. Fig. 2 is a side view of the same, and Fig. 3 is a vertical section through the casing along the ends of the tape reels therein. Fig. 4 is a front elevation of the interior mechanism, the front plate of the casing being removed, and Fig. 5 is a detail view of the mechanism.

In the drawings A represents the casing composed of two sections  $a$  and  $a'$  the former of which is provided with a flange about its rear edge (which lies against the car wall when in place) for securing it in place to the car wall, and at the bottom of the casing these two sections are hinged together at  $a^2$  and at the top a catch  $a^3$  of any preferred form is provided whereby it will be seen that when the outer section  $a'$  is detached from the inner section it drops downward upon the hinge, thus opening the entire casing to facilitate the

adjustment of the various parts of the mechanism.

Each half or section of the casing is provided at each side at the dividing line between said halves as seen in the drawings with a vertical series of three half bearings or journal boxes  $b$  in each of which are mounted cross shafts B. The upper and lower shafts B bear the tape reels C, C, on which are carried the tape bearing the name of each of the consecutive stations to be indicated by the mechanism, and the central shaft is unprovided with such a reel whereby a clear space occupied only by said shaft which is of a comparatively small diameter, is left between said reels C, C, for displaying the name of the station.

Fixed on each of the upper and lower shafts B, are pinions  $B'$  of the same pitch and number of teeth, and fixed upon the central shaft B, which I shall hereinafter term the driving shaft, is a similar toothed wheel  $B^2$  meshing with each of the pinions  $B'$  by which means said pinions are driven from said driving shaft in the same direction, whereby the tape secured at its ends to the respective reels C, C, which are also fixed to the respective upper and lower shafts B, B, is wound off from one and onto the other thereof. Said tape may be conveniently secured to the reels at its ends by making the reels in two parts and clamping the end of the tape between them in a well known way, and in order that the impulse given to the driving shaft B to wind the tape exactly the right distance to display the names of the several stations may not vary and act to wind said tape past the proper point, where the name is printed, which has been a serious objection to such other devices heretofore used, I prefer to provide a friction or brake wheel C, borne on the outer section  $a'$  of the casing, which when the casing is closed, bears against one of the drums or reels C, and serves to prevent its being rotated too far by any unevenness in the pulling of the operating cord.

I will now describe the method of actuating the driving shaft of the indicator, with special reference to Figs. 1 and 2. Fixed on the end of said driving shaft just inside the casing is an arm D, to the upper end of which is



secured the end of the operating cord E, which passes through an opening in the top of the casing and may be of any well known form or may be an iron rod adapted to be turned by the attendant in charge by means of a key as will be readily understood, and on said shaft B just inside the arm D is mounted a double verge wheel F, with the teeth of which engages one or the other of the arms of a pallet lever G, pivoted at *g*, to the arm D, and backed by a spring H, which finds a bearing at its forward end against the rear end of said pallet lever G and at its rear end against a projection *d* on the arm D, as clearly shown.

Fixed on the outer end of the arm D is one end of a spiral spring I, the other end of which is secured to the casing, which spring I acts to retract the said arm and hold the same in its normal lowered position when not raised by means of the operating cord E. Thus it will be seen that when said operating cord is pulled, the arm will be raised carrying the verge wheel F through its engagement with one of the pallets of the lever G and rotating the driving shaft the required distance whereby the rotary movement is transmitted through the gearing to the reels C, carrying the tape forward and winding it off one of said reels and onto the other so as to expose the name of the next succeeding station on the tape to the view of the passengers within the car.

I have also provided a device whereby the same indicator may be employed for displaying the names of the stations on the reverse trip by simply reversing the movement of the reels C, which result is accomplished through the medium of the other inoperative arm of the pallet lever G, when the same is set into engagement with the verge wheel F. This may be effected by means of a thumb screw J, the stem *g* of which forms the pivot of the pallet lever G, as seen in Fig. 4. By turning this thumb screw J, the stem of which plays through a slot *j* in the casing, either of the arms of the pallet lever may be thrown into engagement with the teeth of the verge wheel F, the other arm of the pallet lever, which was during the previous operation of the indicator inactive, being thrown into engagement with the teeth of the verge wheel and the arm previously in engagement therewith being disengaged, with the result that the indicator will operate in the reverse manner, displaying the several stations on the tape in the reverse order.

In order to call the attention of the passengers of the conveyance to the indicator as said conveyance approaches the several stations along the line, I have provided an audible signal in the form of a gong bell K mounted inside the casing to the hammer of which the operating cord is attached so that when said cord is pulled the gong will be sounded. This means of sounding the gong I believe to be preferable, but may employ other means, as

for instance, the end of the arm D to which the operating cord is attached may be employed in lieu of a hammer for striking the gong by being lengthened so as to come in contact with the same whenever said cord is pulled.

In order to hold the reels C, C, and their shafts in position when the casing is opened, I have provided light spring hooks L, one at each end of the several shafts B, whereby when the case is opened for adjusting the several drums or reels said hooks will serve to hold the shafts in place and prevent them from falling out as they would otherwise do.

It is often the case that the tape will stretch while in use and this will require a careful readjustment of the reels C, C, to provide for which I have made the casing in two sections as shown each of which sections being provided with one half of the bearing or journal of each shaft. Thus it will be seen that the casing may be opened and the several pinions lifted from engagement with the gear wheel on the driving shaft and the reels turned in order to adjust them to their proper relative positions.

As is obvious, my invention is susceptible of some modification without material departure from its principles and therefore I do not wish to be understood as limiting myself to the precise construction and arrangement herein shown.

Having thus described my invention, I claim—

1. The combination with a casing composed of two sections hinged together at one end, said sections having coinciding half bearings formed in their faces of a shaft journaled in said half bearings and spring clips secured to one section of said casing, each of said clips having its end arranged under one end of said shaft and bent up outside the same, whereby said shaft is held in place when said sections are separated substantially as set forth.

2. The combination with a casing having a slot formed in its side, of a driving shaft journaled in said casing, reels journaled in said casing, the tape secured in said reels, gearing in said casing for driving said reels from said driving shaft, a verge wheel on said shaft, an arm on said shaft within the casing, a thumb screw mounted in said arm and projecting through the slot in the side of the casing a double pallet lever fixed to the inner end of said thumb screw, an operating cord for moving said arm, whereby said verge wheel is driven from said pallet lever, and a retracting spring for said arm, substantially as set forth.

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

S. SPAULDING ACKLES.

Witnesses:

WM. H. CRADDOCK,  
C. C. VANDERHOFF.