

No. 698,754.

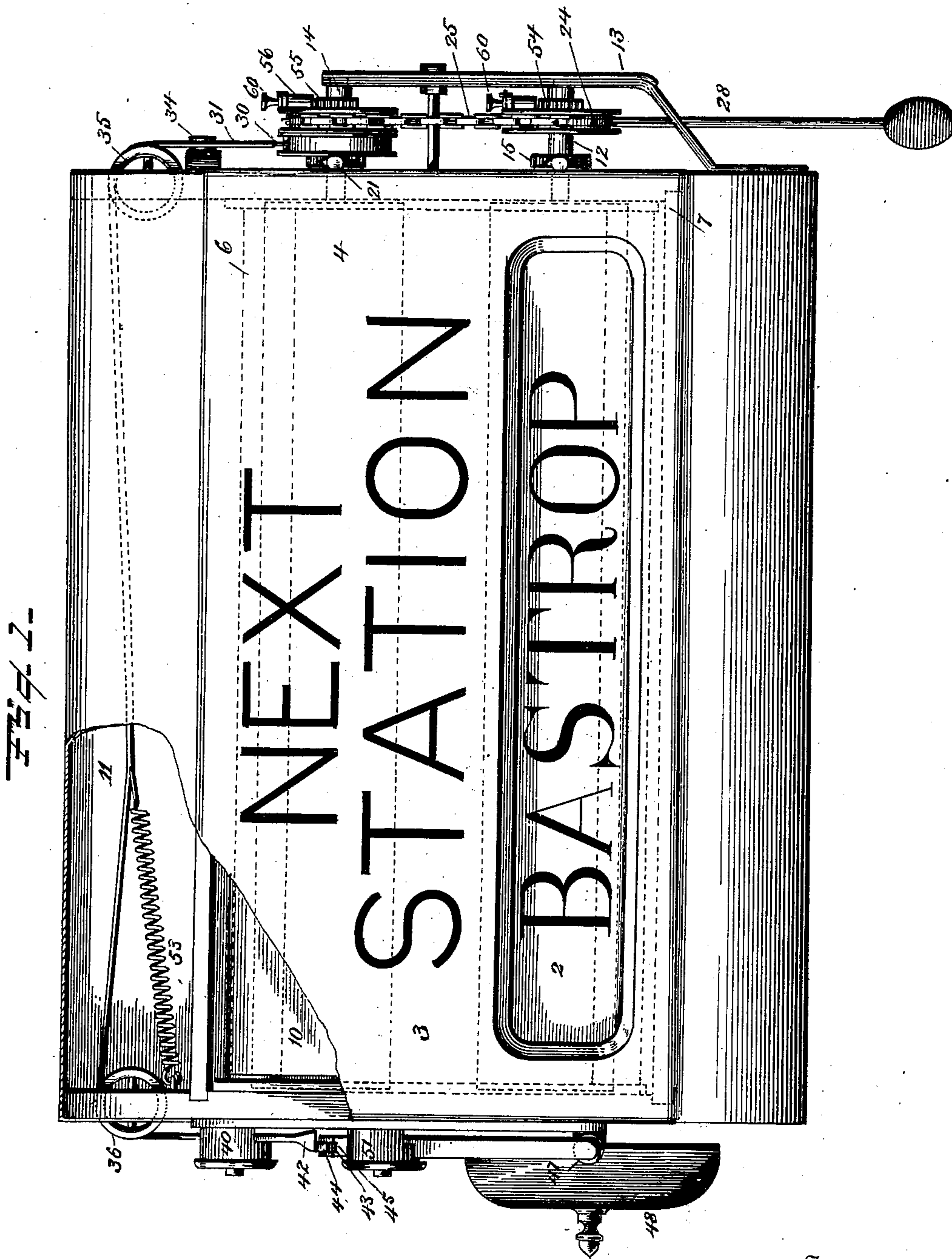
Patented Apr. 29, 1902.

W. SMITH.
STATION INDICATOR.

(Application filed Dec. 13, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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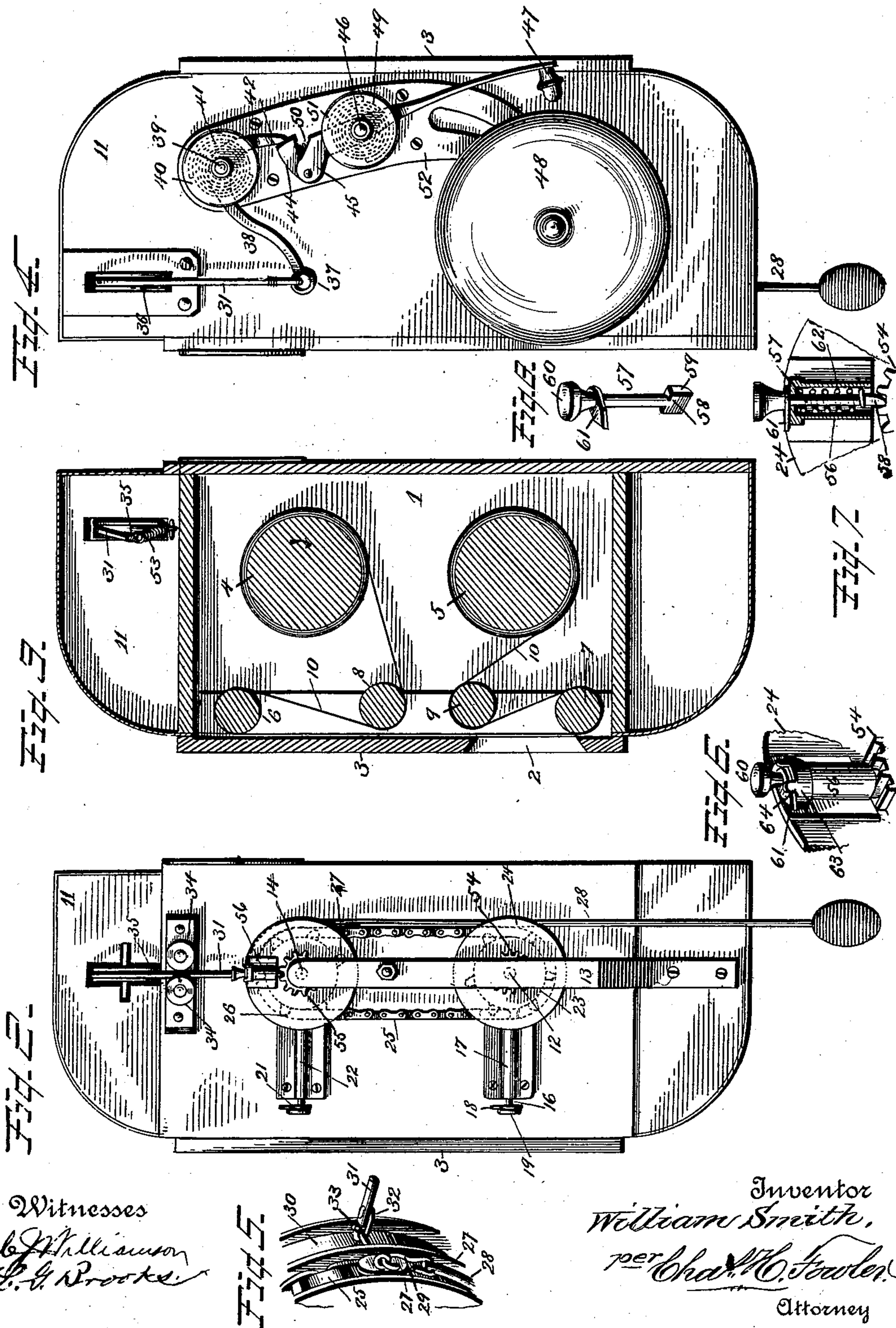
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

WILLIAM SMITH, OF BASTROP, LOUISIANA, ASSIGNOR OF ONE-HALF TO
PEYTON CAPEL ROBINSON, OF BASTROP, LOUISIANA.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 698,754, dated April 29, 1902.

Application filed December 13, 1901. Serial No. 85,732. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SMITH, a citizen of the United States, residing at Bastrop, in the parish of Morehouse and State of Louisiana, have invented certain new and useful Improvements in Station-Indicators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the figures of reference marked thereon.

This invention relates to certain new and useful improvements in signal and station indicators of that class in which is employed a band adapted to be wound from one roller to another and having means whereby the same may be moved as each station is approached or at any other predetermined time.

The present invention has for its objects, among others, to provide an improved indicator of this character simple in its nature, capable of manufacture at small cost, yet efficient in its operation, and not liable to get out of order.

I aim, further, at improvements in the details of construction whereby better results are attained and the assemblage of the parts facilitated.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a front elevation of my improved station-indicator with a portion broken away. Fig. 2 is an end elevation thereof. Fig. 3 is a substantially central vertical section through the same from front to rear. Fig. 4 is a view looking at the end opposite that seen in Fig. 2. Fig. 5 is a detail perspective showing a portion of the drum to which the operating-cord is attached and a portion of the adjacent drum and sprocket over which the sprocket-chain passes. Fig. 6 is a perspective view showing one of the adjustable keys. Fig. 7 is a substantially central vertical section through the same. Fig. 8 is a perspective detail of one of the keys removed from its casing.

Like numerals of reference indicate like parts throughout the several views in which they appear.

Referring now to the details of the drawings, 1 designates a casing adapted to be affixed in any desired position in any suitable manner. It is provided with an aperture 2, through which the names on the canvas are adapted to be exposed to view. Upon the front of the case may be affixed in any suitable manner any desired inscription, as "Next station," as seen in Fig. 1. The front wall 3, in which the said aperture is provided, may be made removable to permit access to the interior of the casing, or the back may have means for ready access to the interior, if desired.

4 is a roller disposed to revolve in suitable bearings near the top of the casing, while 5 is another roller of the same diameter mounted to revolve in suitable bearings near the bottom of the said casing, as seen best in Fig. 3. Near the top and bottom of the casing, near the front thereof, are disposed the smaller rollers 6 and 7, while intermediate these rollers are the other smaller rollers 8 and 9, disposed in a vertical plane a little back of the front smaller rollers 6 and 7, as seen clearly in Fig. 3.

10 is the canvas or paper or whatever material is used. It is adapted to be wound upon one of the large rollers and unwound therefrom onto the other. It passes, say, from the upper roller under the same and under the roller 8, thence upward and over the roller 6, and thence downward in a vertical plane parallel with and in proximity to the front of the casing and past the aperture 2 therein, and under the roller 7 up over the front of the roller 9 and thence downward and under the lower roller 5, all as clearly shown in Fig. 3, the arrangement of rollers being such that the canvas is kept smooth and held in a vertical plane, stretched, as it passes the aperture 2 in the front wall of the casing, so the name on the canvas as it appears opposite the said aperture may be clearly seen and read.

At the top of the casing I provide a longitudinal chamber 11 for a purpose which will soon be made apparent.

The shaft 12 of the lower roller is extended beyond the end of the casing and its extreme outer end is supported in the bracket 13, suitably secured to the end wall of the casing, and at its upper end forming a bearing for the extended end of the shaft 14 of the upper larger roller 4, as seen clearly in Figs. 1 and 2. On the shaft 12 just outside the end wall of the casing is a ratchet-wheel 15, with which is designed to engage a dog or pawl carried by a stem 16, movable in a suitable housing 17, secured to the end wall of the casing, as seen best in Fig. 2, and spring-actuated to normally hold the pawl in engagement with the teeth of the ratchet. This stem is provided with a finger or pointer 18 and a suitable knob or handle 19. As this pawl or dog is in all respects similar to those employed in connection with the ratchets on the outer ends of the shafts of the large rollers and which are shown in detail in Figs. 6, 7, and 8 and will be specifically described hereinafter, a detailed description thereof is not deemed necessary. On the shaft of the upper large roller is a similar ratchet 20, and adapted for cooperation therewith is a similar dog or pawl 21, mounted to move in a suitable housing 22 on the end wall of the casing and likewise provided with an operating-knob and a finger or pointer, the object of which will be hereinafter fully set forth. On the lower shaft 12 is also fast a sprocket-wheel 23, as seen best in Fig. 2, the said sprocket being inclosed between the parallel annular flanges 24, between which is designed to be disposed the sprocket-chain 25, which passes around the said sprocket and around a similar sprocket-wheel 26, secured to the upper shaft 14 and provided with similar flanges 27, all as shown clearly in Figs. 1 and 2.

28 is the operating-cord. It is attached at its upper end to the sprocket-chain 25 by a loose-link connection 29, as seen best so as to allow of the cord being used at either the back or front of the sprocket and casing.

30 is a drum fast to the upper sprocket-wheel and its flanges, which latter, like the lower sprocket and its flanges, is loosely secured on the shaft upon which it is mounted, so as to turn independent thereof, and to this drum is fast one end of the cord or chain 31, being shown in Fig. 5 as provided with a hook or the like 32, which is detachably engaged with a cross-bar 33, held between the sides of the drum. This cord or chain passes upward between rollers 34, held on the end of the casing and over a grooved pulley 35, journaled in an opening in the end wall of the chamber 11, as seen in the various views, and thence extends lengthwise of the said chamber, passing over a grooved pulley 36, journaled in an opening in the opposite end wall of the chamber 11, as seen clearly in Fig. 1, the said cord or chain thence passing downwardly, as seen best in Fig. 4, and connected with an eye 37 in the end of the longer arm of the bell-crank lever 38, which is fulcrumed

at 39 within a housing 40, and around the pivot of the said lever is a spring 41, as seen in dotted lines in Fig. 4. The shorter arm 42 of this bell-crank lever is broadened and flattened, as seen at 43, to ride upon the arm 44, which is pivoted on the short arm 45 of the bell-hammer arm, which is pivoted at 46 and carries at its other end the bell-hammer 47, adapted for cooperation with the bell 48, secured to the outer face of the end wall of the casing, as shown. The spring 49 around the pivot of the bell-hammer arm serves to return the arm to normal position after it has been actuated to sound the gong. The outer face of the arm 44 is rounded or inclined, and the arm is normally held outward by a spring 50, interposed between the under face of the arm 44 and the arm 45. The spring 49 around the pivot of the bell-hammer arm is inclosed within a suitable housing 51. The bell-crank lever 38, the hammer-arm, the bell, and the accessories thereof are all carried by a plate 52, secured to the end wall of the casing, so as to be all removable therewith.

53 is a spring arranged within the chamber 11 at the top of the casing and having one end attached to the end wall of the chamber in any suitable manner and its other end connected with the cord or chain 31, as seen clearly in Figs. 1 and 3. This serves to return the parts to their normal position after the cord 28 has been actuated to operate the canvas and the gong, as will be readily understood.

Fast to the lower shaft 12 is a ratchet 54, disposed outside the flanges of the lower sprocket-wheel, and upon the upper shaft 14 is a similar ratchet 55, similarly disposed. Secured to the outer flange of the sprocket-wheel is a casing 56, within which is adapted to reciprocate a stem 57, having at its lower end a dog or pawl 58, which has one side beveled, as shown at 59. The upper end of this stem is projected beyond the upper end of the casing and is there provided with a suitable knob or handle 60 and a pointer 61. Around the stem within and extending lengthwise of the casing 56 is a spring 62, which tends to normally force the pawl or dog downward. Around the upper end of the casing is a flange 63, which is notched, as shown at 64, (seen best in Fig. 6,) so that by raising the stem till the pointer is above the top of the flange the stem may be turned and then lowered to bring the pointer in any desired position and the pointer then held between the side walls of the notch into which it is lowered. These pawls are so disposed that they may be used with the tapered or beveled side in either of two operative positions, or by engaging the pointer in the middle notch the lower end of the pawl or dog may be made to rest upon the outer faces of the teeth of the ratchet, and thus not operate either way. It will be understood that one of these pawls or dogs is employed in connection with each of the ratchets 54 and 55 and also that the pawls 16

and 21 are employed in connection with the inner ratchets 15 and 20, except that the notched flange is not present nor necessary.

With the parts constructed and arranged substantially as above described the operation is substantially as follows: The canvas having been wound upon the upper roller, the upper key or pawl is set so that the upper ratchet 55 will be moved toward the rear of the casing and the upper pawl 21 turned so that it will allow the ratchet 20 to move in that direction, but hold it against retrograde movement when the pawl 58 is taking a new hold, and the lower pawl 58, being set to allow the lower ratchet to turn backward toward the rear of the casing and the lower pawl or dog 16 set to allow the ratchet 15 to turn in the same direction, but prevent its retrograde movement, the operating-cord 28 is thrown back of the ratchet and when pulled upon the rollers 4 and 5 will be moved in the direction of the arrows in Fig. 3, and the canvas will be moved so as to bring a new name opposite the aperture 2. When the operating-cord 28 is pulled upon, the cord 31 is simultaneously pulled, and this pulls the short arm of the bell-crank lever 38 till after moving the arm 44 and the hammer-arm the predetermined distance it slips off the arm 44, when the springs around the pivots of the hammer-arm and the pivot of the bell-crank lever will cause the gong to be sounded and return the parts to their normal position, the spring 53 serving to restore the bell-crank lever and the drum 30 and cord 31 to their previous position, when the pawls 58 will ride over the ratchets and the parts are in position for another pull on the operating-cord to display the next name on the canvas. When it is desired to reverse the movement of the canvas, all that it is necessary to do is to reverse the direction of the various pawls or dogs and then pull the operating-cord, so it will hang over the front of the sprocket-chain, when a pull thereupon will revolve the rollers 4 and 5 in the opposite direction and the canvas will be unwound from the roller 5 and wound upon the roller 4. The reversal of the direction of movement of the rollers and canvas does not affect in any wise the operation of the gong-sounding mechanism, which remains the same under all conditions, the drum 30 moving with the upper sprocket-wheel and its flanges and always returning to the same relative position regardless of the direction of revolution of the rollers and the canvas.

The bracket 13 may be braced by a suitable brace 70, as seen in Fig. 1.

Modifications in detail may be resorted to without departing from the spirit of the in-

vention or sacrificing any of its advantages.

What I claim as new is—

1. In a station-indicator, a roller, a ratchet fast on the shaft thereof, a sprocket-wheel having a flange, a casing on said flange, and a spring-actuated pawl in said casing having beveled side and an operating-knob and pointer, as set forth.

2. In a station-indicator, a roller, a ratchet fast thereon, a sprocket loose on said shaft, a drum fast with the sprocket, a pawl-casing, a spring-acting pawl carried by the sprocket and engaging the ratchet, said pawl being reversibly mounted in its casing, and an operating-cord reversibly connected with said drum, as and for the purpose specified.

3. The combination with the roller and its shaft and a ratchet fast on said shaft, of a sprocket and drum loose on the said shaft, a reversible pawl carried by the sprocket to engage the ratchet, a pointer carried by the pawl and a casing for the pawl having a projecting flange provided with notches, as and for the purpose specified.

4. In a station-indicator, a casing having a chamber at its upper end, canvas-operating means, embodying a sprocket-wheel, a ratchet and a pawl carried by the sprocket and engaging the ratchet and a gong and its actuating devices, a cord connecting the same with the canvas-moving mechanism, and passed through said chamber and a spring within said chamber connected with the said cord to return the parts to their normal position, a pointer carried by said pawl, and a casing for the pawl having a notched flange, as set forth.

5. The combination with the canvas-operating mechanism, of a cord connected therewith, a bell-crank lever connected with said cord, a bell, a hammer-arm and an arm pivotally connected therewith having an outwardly-pressing spring and an inclined outer face to be engaged by the bell-crank lever, as set forth.

6. The combination with a bell, a hammer-arm, an arm pivoted thereon, and a spring acting upon said arm, of a bell-crank lever having one end to engage said arm near the pivotal connection of the two, canvas-operating mechanism, and a connection between the same and the bell-crank lever, as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM SMITH.

Witnesses:

T. J. BRODNAX,
J. A. ANDERSON.