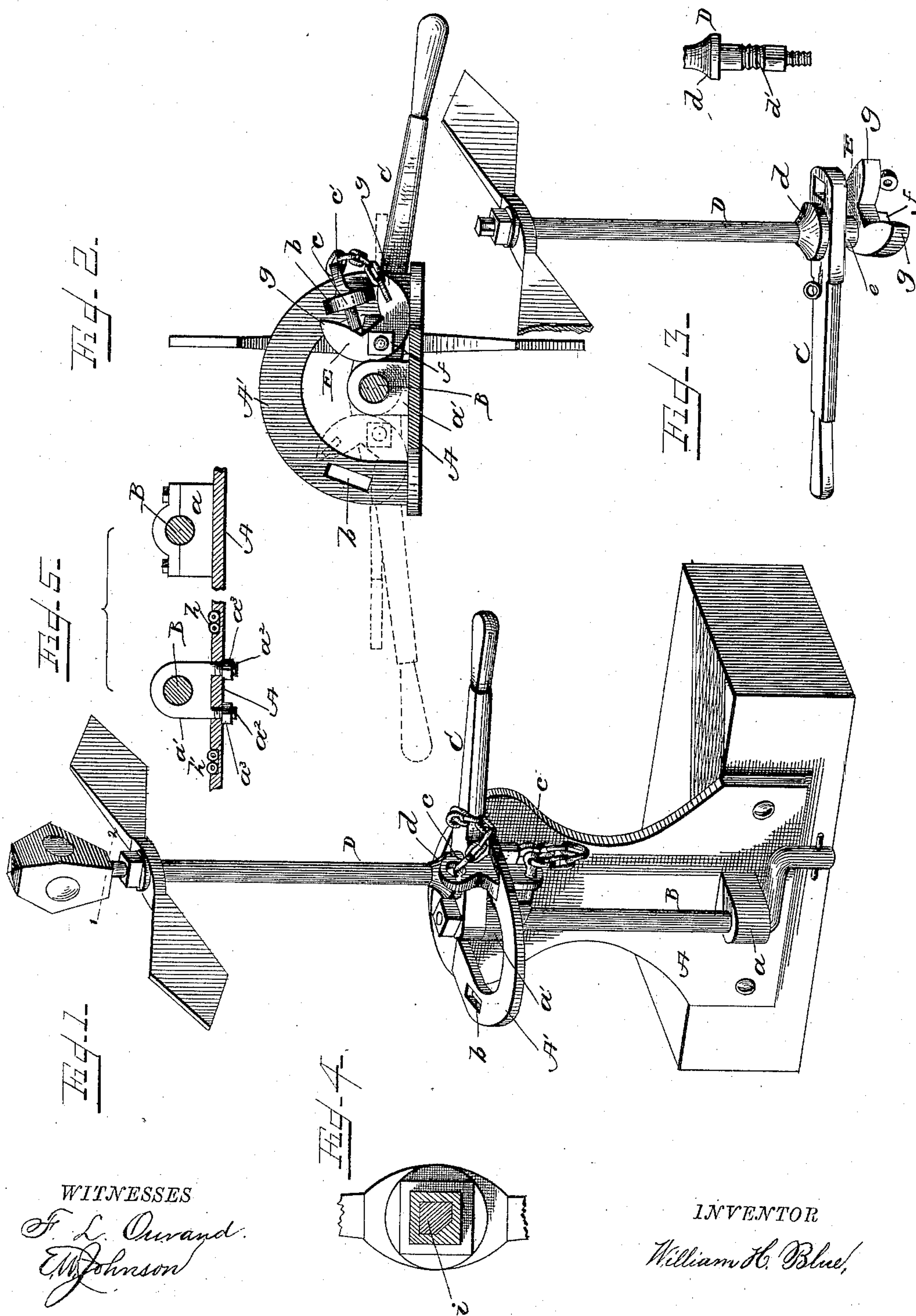


(No Model.)

W. H. BLUE.
SWITCH STAND.

No. 319,386.

Patented June 2, 1885.



WITNESSES

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SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 319,386, dated June 2, 1885.

Application filed June 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BLUE, a citizen of the United States of America, residing at Grafton, in the county of Taylor and State of West Virginia, have invented certain new and useful Improvements in Switch-Stands; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to switch-stands; and it has for its object to provide a stand that will be of more simple construction and effective operation than any other form of stand heretofore devised.

To these ends my invention consists in the improvements and combinations of parts hereinafter described, and pointed out in the claims.

This invention further consists in pivoting the switch-operating crank-rod to the stand and connecting the operating-lever thereto, so that said lever, in addition to its function of operating said switch-rod, can support and carry a signal-rod, which latter is provided with means for limiting the movement of the signal independent of that of the switch-operating crank-rod.

The invention further consists in providing a switch-stand with a horizontal moving lever and guide therefor, in connection with appliances and devices for effecting the respective varying movements of the switch and signal rods, as hereinbefore referred to.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a switch-stand and appurtenances embodying my improvements. Fig. 2 is an inverted sectional view of the upper portion of said stand. Fig. 3 is a detail perspective view of the operating-lever, signal-rod, and dog. Fig. 4 is a sectional plan on the dotted line 1 2, Fig. 1, and Fig. 5 detail views representing modifications.

The switch-stand, suitably supported, has a vertical portion, A, provide with bearings *a* *a'*, which, as illustrated in Fig. 1, are rigidly

attached to said vertical portion A. A curved guide, A', projects from the stand so as to lie in line with the upper bearing, *a'*. The said curved guide A' is preferably provided with openings *b*, each of which is adapted to receive a pin, *c*, connected to the operating-lever by a chain, and designed to lock said operating-lever against pivotal movement. The lower portion of said pin *c* is provided with an opening adapted to receive a bolt or lock, *c'*, whereby the said pin *c* is locked against accidental vertical movement.

B is the switch-operating crank-rod, which is bent at right angles beneath the bearing *a*, and terminates in a vertically-depending portion which is connected to the throw-rod of the switch. The upper part of this switch-operating crank-rod B, above the bearing *a'*, has a shoulder formed thereon above which the crank-rod is key-ended, to enable it to fit the corresponding opening in the end of the hand-lever, the connection of said lever therewith being secured by means of a nut engaging the threaded end of said rod.

Attached to the upper end of the crank-rod B, and extending at right angles therefrom, is the lever C, the under side of which rests upon the bearing *a'* and the upper face of the curved guide A'. The signal-carrying rod D bears loosely at its lower end in the said lever C, between the bearing *a'* and guide A'.

The signal-carrying rod D is provided near its lower end with a shoulder, *d*, which bears upon the upper side of the lever C, and the rod beneath this shoulder is round and smooth, so the said rod may turn freely in its bearings in the lever. The lower portion of this rod D, above the dog E, is screw-threaded, as shown at *d'*, for the reception of a retaining-nut, *e*, and beneath this nut *e* the rod D is key-ended for the reception of a dog, E, which is held thereon by the nut *f* upon the lower end of the rod.

The dog or cam for turning the signal-rod is preferably of the form shown in Fig. 2, said dog or cam being made of a single piece, the greater portion of its outer edge being curved. Said dog is also provided with projecting portions *g* *g*, and between these projecting portions it is provided with a vertical opening,

through which passes the lower end of the signal-rod D. The dog between the portions *g g* is cut away, so as to permit the locking-pin *c* to pass between the portions *g g*, so as to prevent the cam and signal-rod from turning.

To insure the proper adjustment of the signal-lantern on the rod D, the end of the same may be shaped as shown in Fig. 4, by reference to which it will be seen that one corner of the end *i* of said rod is cut away and the lamp provided with a socket similar in shape to that of the said end *i*. Thus the parts can only be secured one upon the other in their proper relative positions.

In connection with said lamp, the usual bladed vane or signal is secured on the rod D, below the lamp, and is adapted to turn broadside or edgewise, as the case may be, upon each forward or backward quarter-rotation of said signal-rod D.

Although in Figs. 1 and 2 I have illustrated the bearing-blocks *a a'* as being rigidly attached on the vertical portion of the switch-stand, in practice I propose to construct said bearings independent of the said stand, as seen in Fig. 5, and provide them each with threaded shanks *a''*, adapted to pass through openings therefor in said vertical portion of the switch-stand and be locked in position by means of nuts *a'''*, which engage the projecting ends of said shanks on the reverse side of the stand.

h h' represent contact-rollers, which are journaled in openings in the vertical portion of the switch-stand at the limit of the pivotal movement of said dog E, so that the curved sides of said dog contact with said rollers, thereby not only preventing frictional wear at such points, but enabling the dog by such contact to turn easily.

The pin or lock *c* is preferably connected by a chain or cable to the dog E.

It will be obvious that when the lever C is swung around upon the guide A' no independent rotary movement of the signal-rod occurs until the said lever has nearly reached the limit of its pivotal movement, at which point one of the portions *g* of the dog comes in contact with the side of the stand, and is thereby turned with respect to the operating-lever, the construction of the parts being such that as said lever completes its swing the dog will have been moved sufficiently to revolve the rod one-quarter, thereby securing a positive quarter-rotation of both signal vane and lantern. As illustrated, the lever C moves the distance of an arc one-half of the complete circle in which said lever is concentrically pivoted, whereas the signal-rod only revolves one-quarter, as aforesaid.

From the foregoing it will be apparent that the switch-stand herein described is of simple and durable construction, and gear-wheels are entirely dispensed with, and that the several parts may be readily reversed or replaced when worn or broken.

The arrangement of removable bearings *a a'*

permits the switch-rod to be readily removed or adjusted.

The openings *b* are located in the curved guide-rail A', so that when the pin *c* is inserted through either of the same its lower end will extend between the portions *g* of the dog E beneath, and thus lock said dog, as well as the operating-lever.

I claim—

1. The combination of a railroad-switch-operating crank-rod, a signal-carrying rod located eccentrically with respect to said rod, and devices for operating said crank-rod and signal-rod to effect, respectively, a greater revolving movement of one than the other, substantially as set forth.

2. A switch and signal stand having an independent switch-operating crank-rod, and a signal-carrying rod located eccentrically relative to said crank-rod, and means for turning both of said rods so that the switch-operating crank-rod will make one half-turn while the signal-carrying rod turns one quarter-revolution, substantially as set forth.

3. In a railroad switch-stand, a rail-operating crank-rod pivoted to a stand and provided with an operating-lever, said operating-lever carrying a signal-rod, so as to be movable therein, and having a cam or dog rigidly attached thereto for changing its position, substantially as set forth.

4. The improved switch-stand provided with a switch-operating crank-rod, a signal-carrying rod, and an operating-lever, the signal-carrying rod having a dog which abuts against the stand, so that when the switch-operating crank-rod is turned one half-revolution the signal-carrying rod will effect a quarter of a revolution.

5. In a railroad switch-stand, a support having bearings for a vertical switch-operating crank-rod, a horizontal lever attached to said crank-rod and carrying a vertical rod with a signal, and a dog for turning said signal-carrying rod.

6. In a railroad switch-stand, a vertical support with horizontal guide and bearings for the reception of the switch-operating crank-rod, a lever secured at its inner end to the switch-operating rod, a signal-carrying rod pivoted to the lever and provided at its lower end with a dog, which abuts against the vertical portion of the stand, and a pin for locking the lever.

7. In a switch-stand, a switch-operating crank-rod, a signal-carrying rod having at its lower end a dog, and an operating-lever, in combination with the stand having a horizontally-projecting lever-guide and a flat portion adjacent to the ends of the lever-guide.

8. The combination, in a switch, of a switch-stand provided with upper and lower bearings, and a guide arranged on a plane with the upper bearing, a rail-operating crank-rod pivoted in said bearings and provided with an operating-lever resting on both the upper bear-

ing and guide, and signal devices, substantially as set forth.

9. The combination, with a switch, of a switch-stand provided with upper and lower bearings, and a guide arranged on a plane with the upper bearing, a rail-operating crank-rod pivoted in said bearings, and provided with an operating-lever resting on both the bearing and guide and a signal-rod mounted on said lever between said upper bearing and guide, substantially as set forth.

10. The combination, in a railroad switch-stand, of a support having independently-removable bearings, a switch-operating rod bearing therein, a horizontal lever connected to the same and carrying a vertical signal-rod, and a dog for turning said signal-rod, substantially as set forth.

11. The combination, in a switch-stand, of a support having bearings for a vertical switch-rod, and contact-rollers *h*, a lever secured at its inner end to the switch-operating bar and carrying a signal-bar, and a dog connected to said signal-bar for turning the same upon contacting with the rollers *h*, substantially as set forth.

12. The combination, in a railroad switch-stand, of a support having bearings and a guide, a switch-rod bearing in said guides, a horizontally-moving lever secured to said rod and carrying a signal-rod, a dog secured to said signal-rod, and a device for conjointly locking said lever and dog, substantially as set forth.

13. The combination, in a railroad switch-stand, of a support having a vertical switch-operating rod attached thereto, a lever connected to said rod and carrying a vertical signal-rod, and means attached to the signal-rod for changing its position when the lever is moved, whereby the switch-rod can be moved and the position of the signal changed by a single movement of the lever.

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

WILLIAM H. BLUE.

Witnesses:

THOS. L. SHIELDS,
WILL R. D. DENT.