

(No Model.)

2 Sheets—Sheet 1.

H. McL. ABERNETHY.
SWITCH STAND.

No. 587,689.

Patented Aug. 10, 1897.

Fig. 1.

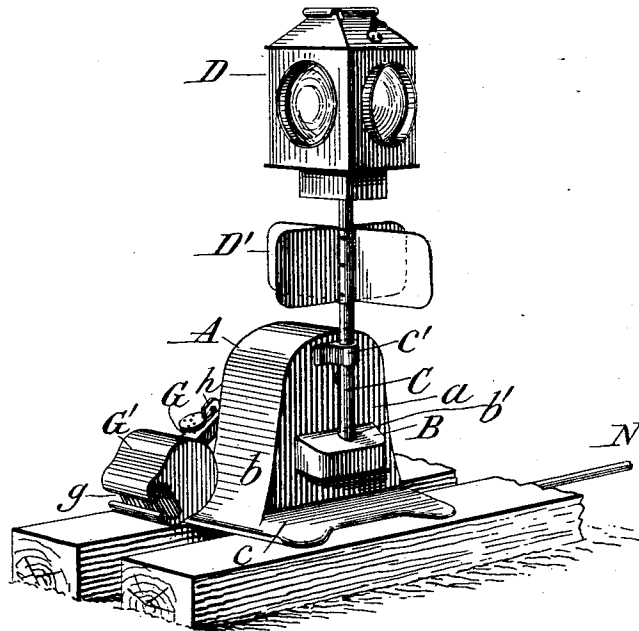
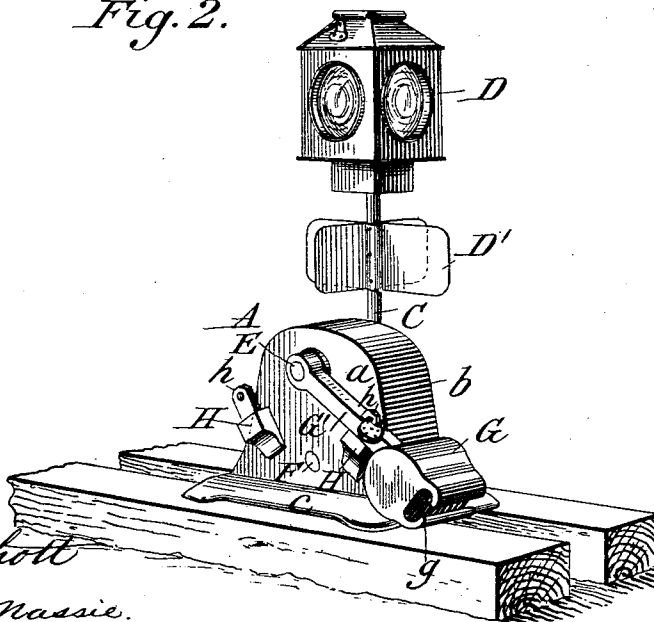


Fig. 2.



Attest:

J. H. Schott

M. C. Massie.

Inventor
Harry McL. Abernethy
by Jas. L. Skidmore
his Attorney.

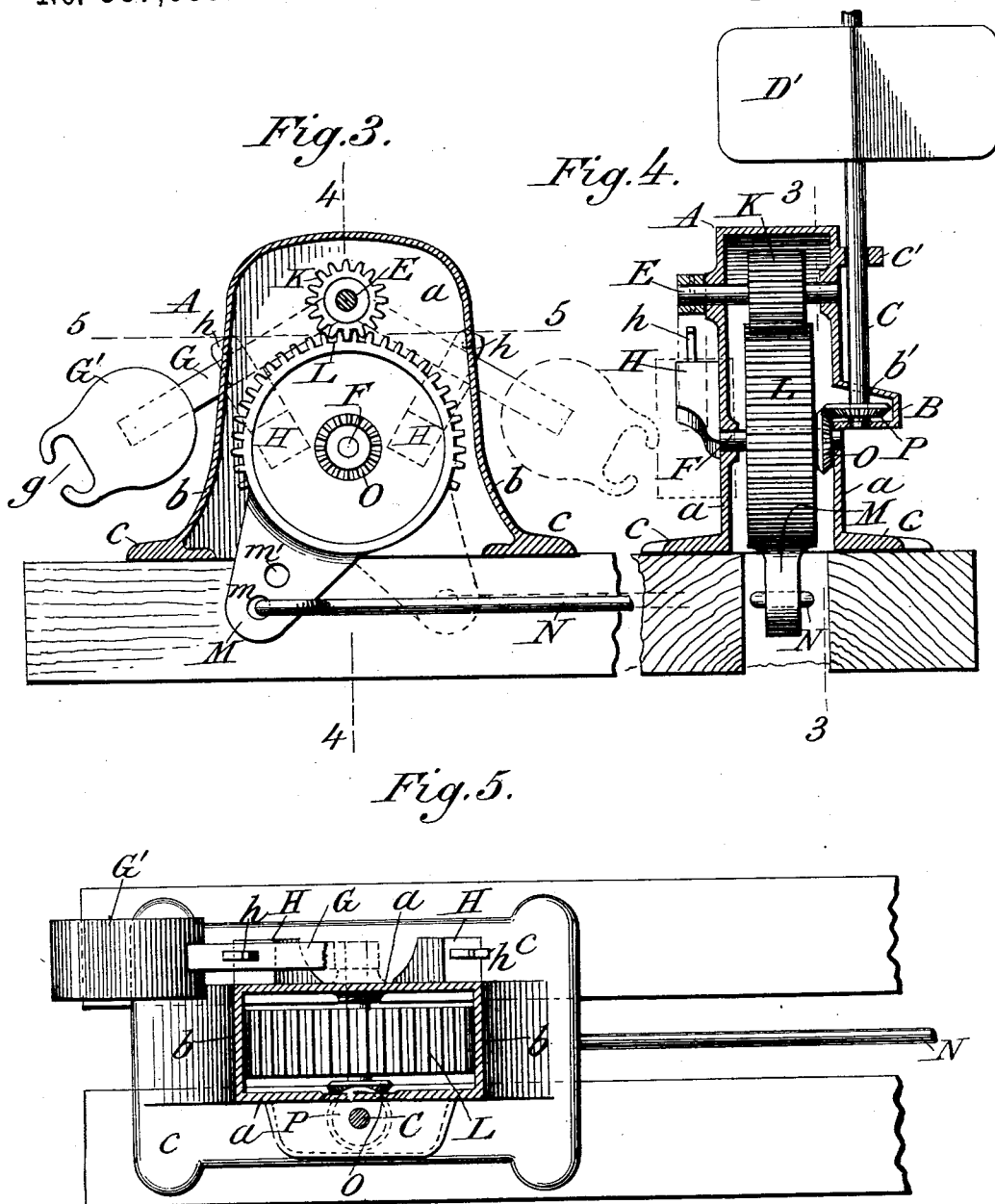
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UNITED STATES PATENT OFFICE.

HARRY MCLEAN ABERNETHY, OF BEAVER FALLS, PENNSYLVANIA.

SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 587,689, dated August 10, 1897.

Application filed July 21, 1894. Renewed January 8, 1897. Serial No. 618,483. (No model.)

To all whom it may concern:

Be it known that I, HARRY MCLEAN ABERNETHY, a citizen of the United States, residing at Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Stands; and I do 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.

This invention is an improved switch-stand, and it also includes the mechanism contained therein for operating the switch and signal light or target. This device is also adapted for use in either the switch-yard or on the main line.

The object of the invention is to provide a stand that shall be of the simplest character and formed of a single piece.

Another object is to so construct this stand that every portion of the mechanism shall be fully protected from snow, ice, dust, &c.

Another object is to so arrange the various operating parts that the ball shall receive a two-thirds revolution instead of a half-revolution, as now practiced, thus insuring a more positive action of the parts; and a still further object is to construct all the locking mechanism upon the stand and also arrange the same so that the ball of the hand-lever will not strike the tie or earth.

In the drawings forming a part of this specification, Figure 1 is a perspective view of my improved stand. Fig. 2 is a similar view from the opposite side. Fig. 3 is a vertical longitudinal sectional view through the stand and contained mechanism. Fig. 4 is a transverse vertical section, and Fig. 5 is a horizontal sectional view.

In carrying out my invention I employ a stand or base A, which is cast or made with a single piece and shaped as shown—that is, with two flat sides *a a* and the arched covering portion and sides *b*, all of said sides terminating in a broad flat flange or base *c*, which is intended to rest upon two or more cross-ties. One of the sides *a* is formed with a small chamber B, perforated in its upper side, as shown at *b'*, to receive the lower end of the signal-standard C. This side is also formed with a guide *c'*, through which the standard

passes, thus holding said standard steady against the stand proper. This standard carries a lantern D at its upper end and a target D' below the same, and by making the standard long or short the stand is adapted for use on the main line or yard.

The stand or base A being formed of a single piece it is obvious that no snow, ice, or dust can get into the same. Within the stand A are journaled two horizontal shafts E and F, the shaft E being arranged near the upper end and the shaft F near the lower end. Upon one end of the shaft E within the stand is mounted the hand-lever G, by means of which the switch and signal are operated. This hand-lever is formed with a ball or block G' at its free end, said ball or block being constructed with a handhold *g*, as clearly shown, and upon the face of the side *a* are formed stop-lugs H H, against which the hand-lever strikes, thereby limiting the movement of said lever and preventing the ball or block striking in the mud and slush and splashing the operator. The lugs H also carry locking-staples *h h*, which pass through the hand-lever and afford a means of attachment for the usual padlock, all of these parts being preferably integral with the stand proper. Mounted upon the shaft E within the stand is a gear-wheel K, which meshes with a wheel L, mounted upon the shaft F, said latter wheel being formed with a depending projection M, which extends below the base of the stand between the ties and to which the switch-rod N is attached. This projection M has two holes *m* and *m'* to receive the end of the switch-block, the hole *m* being used when it is desired to move the switch-point about five inches and the hole *m'* when it is desired to move the point only four inches. Another gear O, forming a part of and cast integral with wheel L or mounted independent of said wheel upon the shaft F, is adapted to mesh with a horizontal gear P, mounted upon the lower end of the signal-standard and located within the chamber B.

By means of the mechanism above described it will be seen that when the hand-lever is thrown from side to side the switch-point will be moved and the signal-standard revolved. It will also be noticed that by using two horizontal shafts, one below

the other, and by connecting the lever to the upper one I am enabled to secure a two-thirds swing or revolution for the hand-lever, thus gaining the advantage of a much lighter and easier throw over other devices which have only a one-half revolution. The connection between the shaft and switch-stand is also rendered surer of action on account of the peculiar arrangement.

Slight departures from the exact construction and arrangement hereinbefore referred to may be resorted to without departing from the spirit of my invention.

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

1. A switch-stand composed of a single hollow piece, the interior of the stand forming a single unobstructed chamber adapted to receive a portion of the operating mechanism and having a broad, thickened flat base, two integral lugs on the outside of one side of said stand so arranged as to permit a two-thirds throw of the stand-lever and serving as stops for the latter, and an integral extension on the other side of the stand forming a chamber to receive and support the lower end of a signal-standard, substantially as shown and described.

2. In a hollow switch-stand composed of a single piece, the combination with the stand proper, of the upper and lower shafts, journaled therein, integral lugs on the exterior serving as stops, the upper and lower gears, and the operating-lever connected with the upper shaft outside of the stand, said lever being capable of a two-thirds revolution, substantially as shown and described.

3. In a hollow switch-stand composed of a single piece without bolt or rivet, the combination with the stand proper, of the upper and lower shafts journaled therein, the upper and lower gears, integral lugs on the exterior

serving as stops, the signal-standard and gear connections between the same and the lower shaft, and the operating-lever connected with the upper shaft outside of the stand, said lever being capable of a two-thirds revolution, substantially as shown and described.

4. In a switch-stand formed of a single piece and without bolt or rivet, the combination of the broad base and integral stops, the upper and lower shafts journaled within the switch-stand, the upper and lower gears, the signal-standard having a gear at its lower end, a gear on the lower shaft meshing therewith, the switch-rod and operating-lever, the latter being capable of a two-thirds revolution, substantially as set forth.

5. A switch-stand formed of a single piece, having a broad flat base, integral stops, upper and lower shafts journaled within the stand, the lower gear having a depending projection, the signal-standard having a gear at its lower end, a gear on the lower shaft meshing therewith, a switch-rod and operating-lever, the latter being capable of a two-thirds revolution for throwing the switch-rod, substantially as shown and described.

6. In a switch stand, the combination with the stand proper having a broad base and integral stops, the upper and lower shafts journaled therein, the upper and lower gears, said lower gears having a depending projection, the signal-standard having a gear at its lower end, a gear on the lower shaft meshing therewith, the switch-rod and operating-lever, said operating-lever being capable of a two-thirds revolution, substantially as shown and described.

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

HARRY MCLEAN ABERNETHY.

Witnesses:

JOS. C. ROUZER,
A. R. LEYDA.