

(No Model.)

2 Sheets—Sheet 1.

A. E. FLICKINGER.
SWITCH STAND.

No. 563,582.

Patented July 7, 1896.

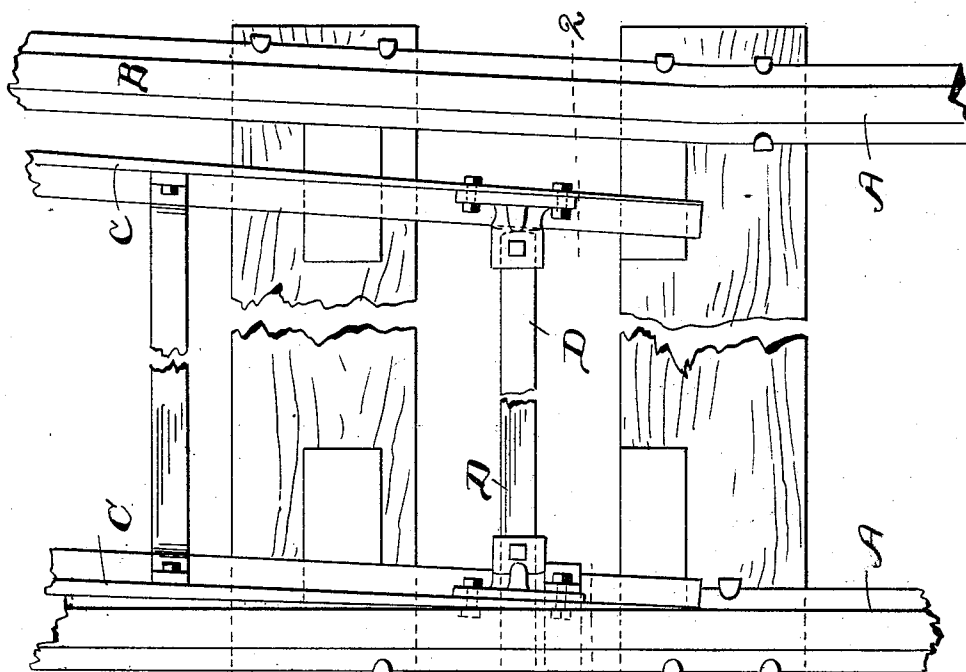
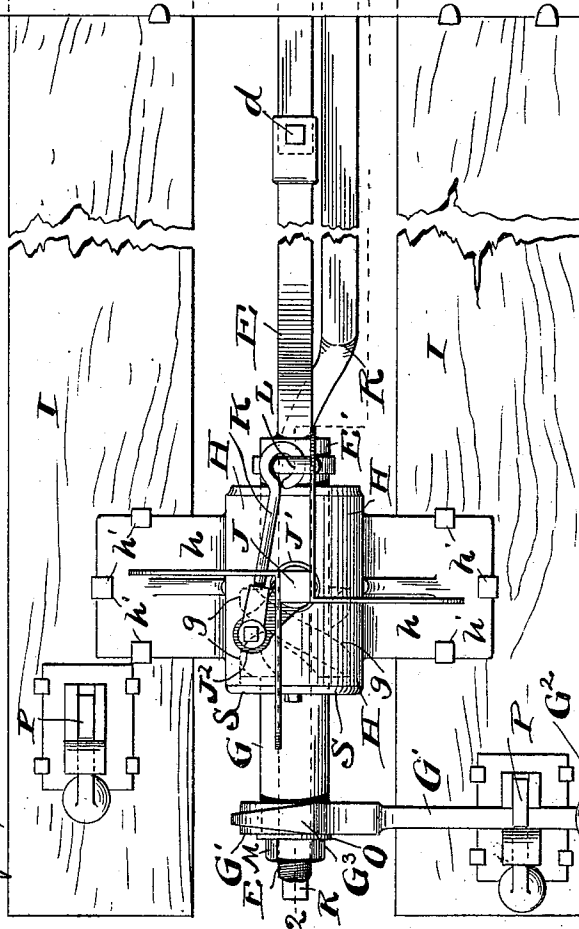


Fig. 1.



Witnesses:
E. B. Gilchrist
[Signature]

Inventor:
Aaron E. Flickinger
By
M. D. Siggitt & Co.
his Attorneys.

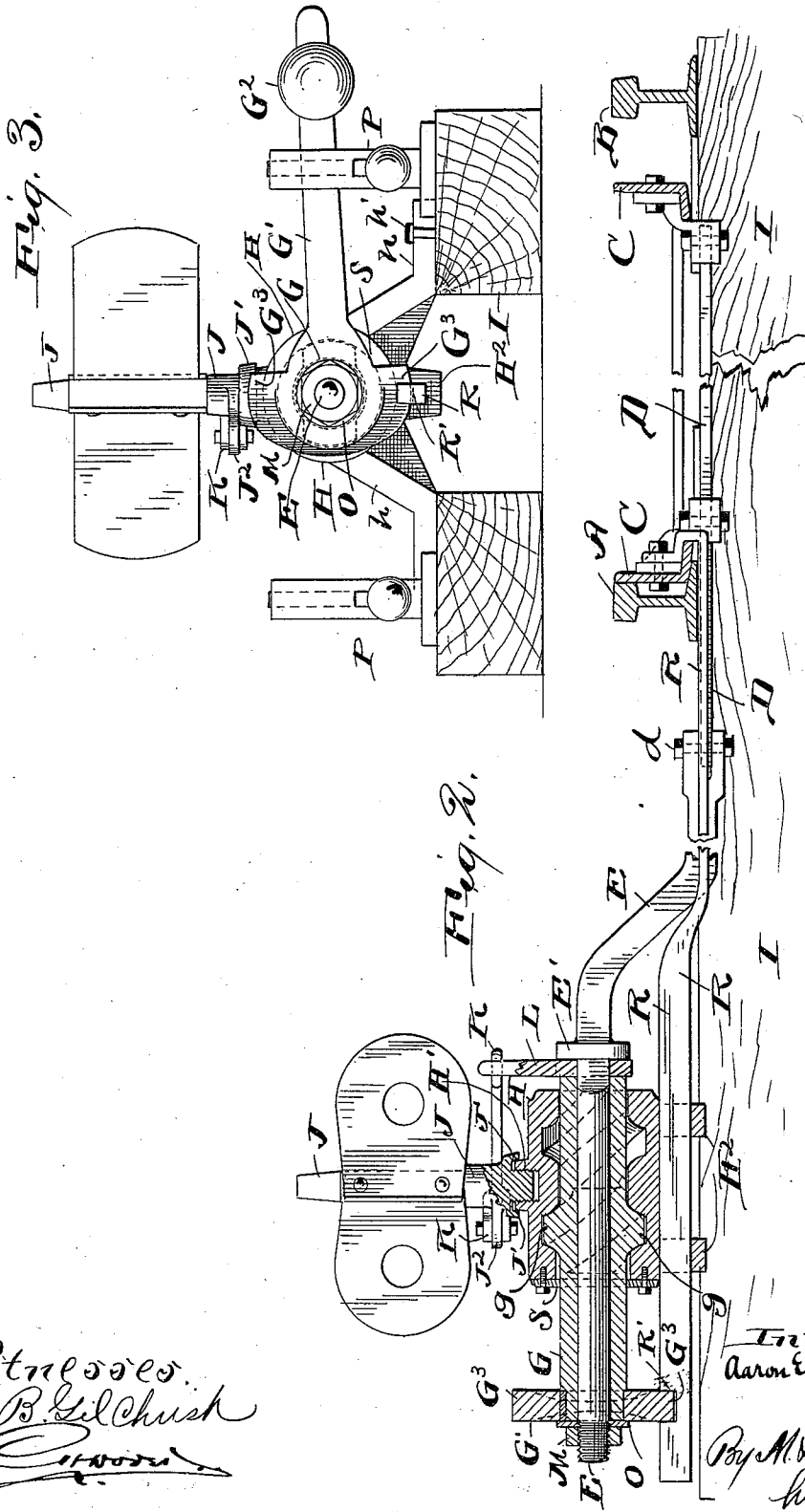
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2 Sheets—Sheet 2.

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Witnesses.
E. B. Gilchrist
[Signature]

Inventor:
Aaron E. Flickinger

By *M. D. Leggett*
his Attorneys

UNITED STATES PATENT OFFICE.

AARON E. FLICKINGER, OF ELYRIA, OHIO, ASSIGNOR OF ONE-HALF TO
FRANK A. BEEMAN, OF CLEVELAND, OHIO.

SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 563,582, dated July 7, 1896.

Application filed October 26, 1895. Serial No. 566,936. (No model.)

To all whom it may concern:

Be it known that I, AARON E. FLICKINGER, of Elyria, in the county of Lorain and State of Ohio, 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 pertains to make and use the same.

My invention relates to improvements in switch-stands; and it consists in certain features of construction and combinations of parts hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a top plan of my improved switch-stand and connected railway-switch. Fig. 2 is a side elevation, mostly in vertical section, on line 2 2, Fig. 1. Portions are broken away in Figs. 1 and 2 to reduce the size of the drawings. Fig. 3 is a left-hand end elevation relative to Figs. 1 and 2.

Referring to the drawings, A designates a main railway-track; B, a stationary branch track-rail that connects with a rail of the main track, and C C the pair of movable rails of the switch. Switch-rails C C are united in the usual manner, and are movable laterally as required to establish or interrupt continuity of either of the aforesaid tracks. The switch rail or rails are operatively connected in any approved manner, by means of a link D, with the switch-operating rod E. Link D extends in under and transversely of and a suitable distance beyond the outer side of one of the rails of the main track, and at its outer end is bolted or pivoted vertically, as at *d*, to one end of the longitudinally-reciprocating switch-operating rod E. Rod E, that is commonly called the "switch-rod," extends upwardly from its pivotal connection with the switch-rail-engaging link, as shown in Fig. 2, to the switch-stand, and thence extends horizontally through and has suitable bearing in an externally-screw-threaded sleeve G. Sleeve G is provided externally with any suitable number of threads *g*, that engage the threads of the correspondingly internally-screw-threaded metallic box or case H, through which said sleeve extends. Case or box H constitutes, therefore, a large nut engaged internally by the correspond-

ingly externally-threaded sleeve G. Two of the ties I I of the main track are extended beyond said track to form a support for the switch-stand, and nut H is suitably supported from said ties, and, to this end, is provided, preferably, with legs or feet *h*, secured, preferably by means of spikes *h'*, to the supporting-ties, as shown in Fig. 1. Sleeve G, at one end, is provided with a lever G' for turning the same, and said lever is operatively mounted in any approved manner upon the sleeve. Nut H, at the top and central portion, is provided with a socket H', the surrounding wall of whose bore is screw-threaded and engaged by the lower correspondingly externally-screw-threaded end of the upright switch-signal shaft J. Said shaft, at the upper end of the supporting-socket, is provided with a guard J' for preventing ingress of dust, dirt, and water to the threaded bearing of said shaft, and said guard consists, preferably, of an annular flange formed externally of and upon the shaft and overhanging the upper extremity of the outer sides of the supporting-socket, as shown in Fig. 2.

The signal-shaft, at any suitable point, preferably a short distance above the supporting-socket, is provided with a laterally-projecting arm J², that is operatively connected, by means of a link K, with the upper end of an upright arm L, fixed or suitably mounted upon rod E and preferably snugly interposed between one end of sleeve G and a collar or flange E', formed upon and externally of said rod. Rod E extends beyond the lever-bearing end of sleeve G, and at said end is externally screw-threaded. A nut M is mounted upon said threaded end of rod E, and a washer O is interposed between said nut and the lever-bearing end of sleeve G. It will therefore be observed that nut and washer M and O prevent rod E from moving endwise independently of the embracing sleeve in the one direction, and flange or collar E' prevents endwise movement of said rod independently of the embracing sleeve in the opposite direction.

It will also be observed that the movable switch rail or rails are actuated laterally in the one direction or the other, according as sleeve G is turned in the one direction or the other within the engaging and stationary nut.

It will furthermore be observed that the

signal-shaft, by means of the connection here-
before described between it and sleeve and
rod G and E, is actuated in the one direction
or the other, according as the switch rail or
5 rails are moved laterally into the one or the
other of their extreme positions.

Lever G' is preferably weighted at or near
its outer end, as at G², in the usual manner,
and ordinary latches P for locking lever G
10 in its extreme position are preferably pro-
vided. Latches P are rendered inoperative,
however, in any suitable manner, when it is
desired to have the switch thrown automati-
cally by the rolling-stock.

15 By the foregoing description it will be ob-
served that my improved switch-stand is ex-
ceedingly simple in construction and pos-
sesses great durability, and the legs or feet of
the stationary nut places said nut a desirable
20 distance above the supporting-ties.

Another important feature of my invention
consists in the provision of a longitudinally-
reciprocating locking-rod R, that is opera-
tively connected at one end with the switch
25 rail or rails in any approved manner, and
thence extends to and through any suitable
number of boxes H², integral or rigid with and
depending from nut H. Rod R extends in
under the lever-bearing end of sleeve G, and
30 is provided with a recess R', adapted to be
engaged by two lugs or members G³, project-
ing laterally of the axis of the lever G' in op-
posite directions, respectively, and the ar-
rangement of parts is such that the one or the
35 other of said lugs or projecting members shall
engage the aforesaid recess in rod R, accord-
ing as the lever is in the one or the other of
its extreme positions. Rod R, of course, re-
ciprocates endwise with the switch-rod in the
40 actuation of the latter, and the locking of
lever G' by means of rod R positively pre-
vents accidental lateral displacement of the
switch-rails by vibration of the rails or oth-
erwise. Those portions of the lever lugs or
45 members G³ that engage the recess in rod R
in the extreme positions of the lever snugly
fit the recess, but said lugs or members G³
are preferably somewhat wedge-shaped to fa-
cilitate their entrance into the aforesaid re-
50 cess.

It will be observed that if the bolt or pin
that pivotally secures the switch-rod to the
link that connects said rod with the switch
rail or rails should become detached, or should
55 the link that connects the switch-rod with the

switch-rails be broken, the switch-rails would
still be locked in position by means of rod R,
and hence would not be subject to lateral
displacement by the vibration resulting from
the travel of rolling-stock over the rails. 60
Also, the switchman, should he be required
to change the position of the switch-rails, and
should the aforesaid pivotal bolt or pin be
displaced, or the link connecting the switch-
rod with the switch-rails be broken, would 65
find that lever G', upon the actuation of said
lever from its one extreme position in which
he found it into its other extreme position,
would not fall into the recess in rod R, (be-
cause it is obvious that said rod, if the afore- 70
said pivotal bolt or pin were displaced, or the
switch-rail-engaging lugs broken, would not
have moved endwise with the lever-bearing
screw-threaded sleeve,) and will at once un-
derstand that something is out of order or 75
broken.

Concluding, I would remark that a dust-
guard S, for excluding dust, dirt, and water
from the bore of the nut, is preferably pro-
vided around sleeve G at the end of the nut 80
at which said sleeve was introduced.

What I claim is—

The combination of the switch rail or rails;
the horizontal stationary nut H, and threaded
sleeve G capable of rotary motion; the rod E 85
embraced by said sleeve; means for prevent-
ing endwise displacement of the sleeve inde-
pendently of said rod; the switch-rod D op-
eratively connected at one end to the switch
rail or rails, and pivotally connected at the 90
other end to rod E; the lever G' operatively
connected to sleeve G and having two lugs
G³ G³ at opposite sides, respectively, of its
axis; the longitudinally-movable locking-rod
R arranged below and longitudinally of the 95
aforesaid nut, said locking-rod being opera-
tively connected at one end with the switch
rail or rails, and, at the other end, having a
slot or recess R', arranged to be engaged by
the aforesaid lugs on lever G' when the latter 100
is in its extreme positions, substantially as
and for the purposes set forth.

In testimony whereof I sign this specifica-
tion, in the presence of two witnesses, this 11th
day of October, 1895.

AARON E. FLICKINGER.

Witnesses:

C. H. DORER,
ELLA E. TILDEN.