W. J. WILMOT-GILBERT.

ADJUSTMENT FOR SWITCH STANDS.

APPLICATION FILED FEB. 21, 1912.

1,043,184. Patented Nov. 5, 1912.

Fig. 1.

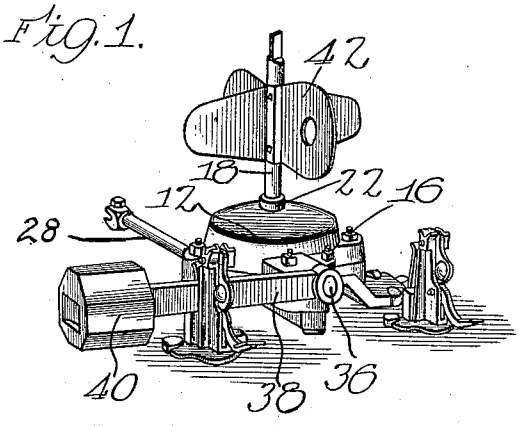


Fig. 2.

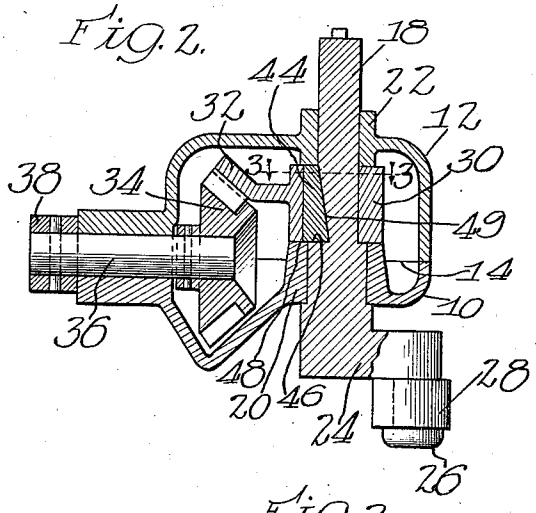
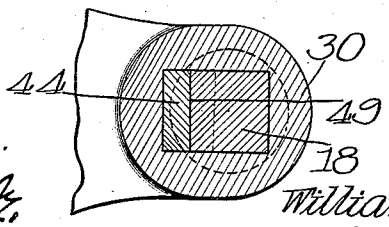


Fig. 3.



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ADJUSTMENT FOR SWITCH-STANDS.

1,043,184. Specification of Letters Patent. Patented Nov. 5, 1912.

Application filed February 21, 1912. Serial No. 679,121.

To all whom it may concern:

Be it known that I, WILLIAM J. WILMOT-GILBERT, a citizen of the United States, residing at Chicago Heights, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Adjustments for Switch-Stands, of which the following is a specification.

This invention relates to switch stands for use in connection with railroad switches.

The object of the invention is to provide a novel means for securing the vertical shaft or mast which carries the target in rigid connection with the gear through which it is operated.

The invention consists in the combination with the parts named of a wedge so located and mounted that the gear and mast are automatically secured together with initial rigidity as wear takes place, the same being easily and cheaply made and installed, satisfactory in operation, and not readily liable to get out of order.

In the drawings, Figure 1 is a perspective view of the exterior of one form of switch stand to which the device of this invention is applied. Fig. 2 is a vertical sectional detail view through the center of the device. Fig. 3 is a plan view on the line 3—3 of Fig. 2.

The mechanism may be inclosed in any sort of a casing. The particular form here shown comprises a bottom or base 10, a top 12 engaging the base on the line 14, there being bolts or other securing devices 16 for holding the parts of the case in closed position, as shown in Fig. 1. Standing substantially vertical in this case is a shaft 18 journaled in the integral lug 20 in the lower portion 10 of the case and in the bearing member 22 in the upper portion 12 of the case. On the lower end of this shaft 18 is a crank arm 24 carrying a crank pin 26, to which is attached a connecting or switch rod 28 leading away to the switch to be controlled.

Inside the case between the members 20 and 22, heretofore described, and inclosing the shaft 18 is the hub 30 of a bevel gear 32, which gear in turn meshes with a bevel pinion 34 on shaft 36. At the outer end of this shaft 36 is a lever 38 carrying at its outer end a weight 40, said lever 38 being adapted to be moved from the position shown in Fig. 1 upward and to the right through an angle of one hundred and eighty degrees, thus rocking the shaft 36 and consequently rotating the gear 32. When the hub 30 of the gear 32 is rigidly secured to the shaft 18 this shaft and consequently the target 42 thereon is rotated through approximately ninety degrees; this because the gear 32 has approximately twice as many teeth on it as are on the bevel pinion 34.

It is very important that the shaft 18 be rigidly secured to the hub 30 on the gear 32 and remain so as long as the switch stand is in use, and in practice this has been exceedingly difficult, if not impossible, to obtain. The reason why wear takes place at this point is that in practice the gear 32 and its hub 30 is of cast metal and more or less rough and unfinished, with the result that when the parts are assembled there is more or less play between the hub 30 and the shaft 18, with the result that each throw of the lever 38 causes slip and consequent wear between the hub and shaft. This difficulty is solved in the device of this invention by inserting in a space provided for the purpose between the hub 30 and the shaft 18 an upwardly tapering wedge or key 44 provided with an end 46 resting in part at least upon the upper end 48 of the inwardly turned boss 20 on base member 10 heretofore referred to.

It will be noticed that the principal tapered face 49 of the wedge bears directly against the shaft 18. The result of the construction is that the wedge 44 is prevented from longitudinal movement in either direction while the shaft 18, which is downwardly movable through the stand except for this wedge 44, constantly tends, under the action of gravity to move into contact with the wedge, thereby automatically locking the gear hub 30 and the shaft 18 together. In other words, as wear takes place the shaft 18 automatically gravitates downward and thus remains in continuous contact with the wedge 44 and is, therefore, always in as tight connection with the gear hub as when first applied. In actual practice the device has worked and does work as stated.

In assembling the device, the operator first takes the base portion 10 and places it in position on the shaft 18. He then places the wedge 44 in position in contact with the shaft 18 and places the hub 30 over the shaft and wedge, this, however,

after having placed the shaft 18 and gear 34 in position. The operator now puts on the cover portion 12 and uses the bolts 16 to secure the whole together, after which the target 42 and the lever 38 are placed in their respective positions.

Attention is called to the fact that the construction is particularly valuable in such a stand as shown where the shaft or mast 18 is equipped with a crank arm 24 which cannot be passed through the parts of the case.

The claims are:—

1. In a device of the class described, a stationary base portion, an approximately vertical shaft journaled therein, a member rotatable with the shaft inclosing said shaft contacting with said base member, and a vertically tapering wedge interposed between and contacting with the shaft and base member, having its lower end bearing on the base member, for the purposes set forth.

2. In a switch stand, the combination of a base portion, an approximately vertical shaft journaled therein, a crank arm on the lower end of the shaft movable below the base, a gear above the base having a hub inclosing said shaft adapted to rotate in contact with the base member, a vertically tapering wedge member inserted between and contacting with the shaft and gear hub having its lower end bearing on the base member, and means for rotating said gear, for the purposes described.

3. In a device of the class described, the combination of a case comprising a base member and a separable cover member, a vertical shaft journaled in said two portions of the case, a gear within the case having a hub inclosing the shaft and bearing against both the base and cover member, a wedge member inserted between the hub of the gear and the shaft having its lower end constantly bearing upon the base member, the taper of said wedge being upward, whereby the shaft by gravity tends to move into contact with it, a crank arm integral with the lower end of the shaft, and means operatable from outside the case for rotating said gear which is attached to the shaft so as to rotate the shaft and crank, for the purposes set forth.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM J. WILMOT-GILBERT.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."