No. 840,572. PATENTED JAN. 8, 1907.

M. W. LONG.

SWITCH STAND.

APPLICATION FILED NOV. 18, 1905.

Fig. 1

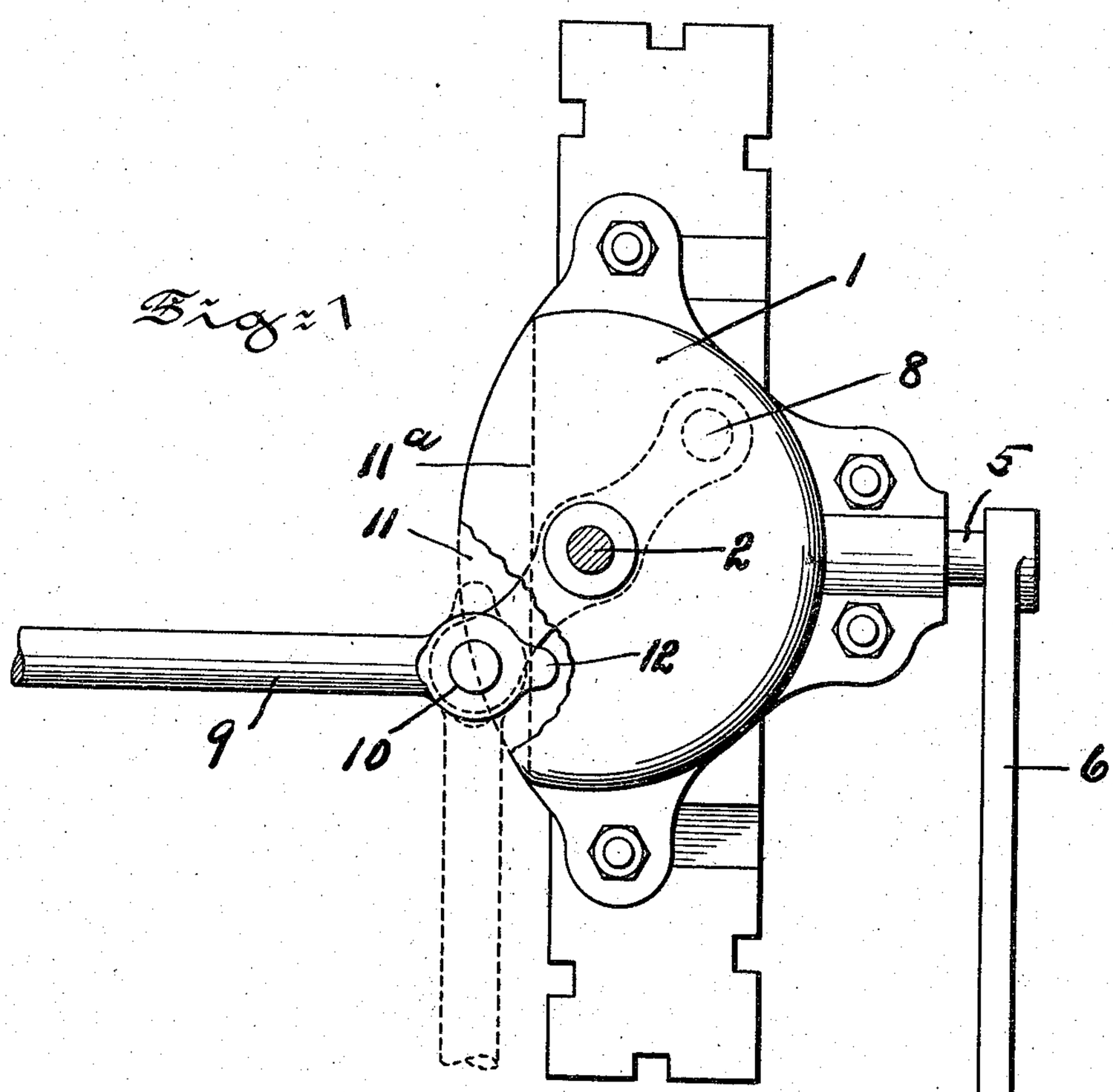
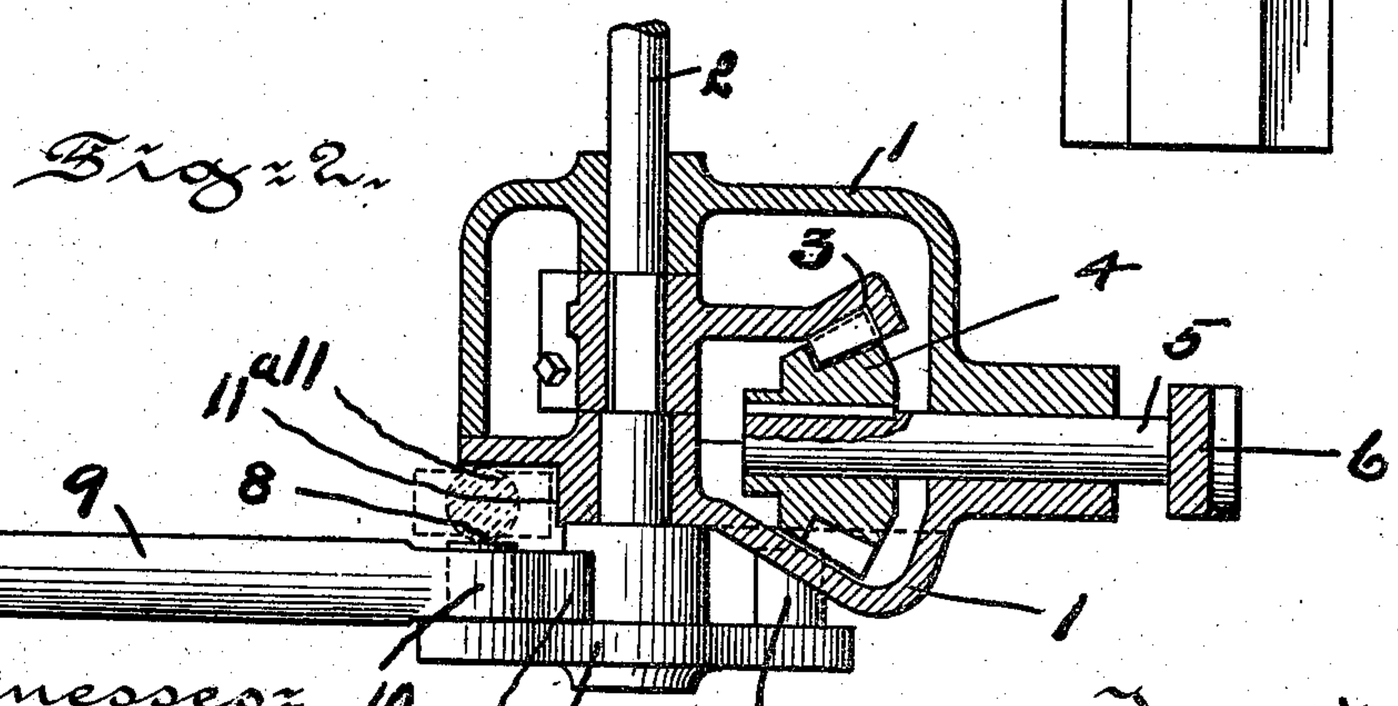


Fig. 2.



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UNITED STATES PATENT OFFICE.

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SWITCH-STAND.

No. 840,572. Specification of Letters Patent. Patented Jan. 8, 1907.

Application filed November 18, 1905. Serial No. 288,052.

To all whom it may concern:

Be it known that I, MALCOLM W. LONG, a citizen of the United States, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Stands, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1 is a plan view of a well-known type of switch-stand, partially broken away, in which my invention is embodied. Fig. 2 is a sectional side elevation.

The object of this invention is to provide in a switch-stand a ready means for attaching the target-shaft crank thereof to the switch-connecting rod, whereby when said rod and crank are connected and the said rod is secured in place to a switch the said rod cannot be detached from the crank.

To this end the invention consists in providing the crank of a switch-stand of well-known type with an upwardly-extending stud or crank-pin, which pin is adapted to be entered into a corresponding vertical hole through the end portion of the usual switch-connecting rod, and providing said rod with a lug or projection which when said rod is connected in place to the switch will be under and closely adjacent the under side of a part of the frame or casing of the switch-stand, in which position said rod cannot be disengaged from said crank-pin, but when said rod is disconnected from the switch and is brought to a position at right angles (or thereabout) to its normal position will be free from said casing, and the rod may be thereupon disengaged from the crank-pin.

In the drawings, 1 is the frame or casing of a well-known type of switch-stand, in which is journaled the usual vertical target-shaft 2, having mounted thereon within the said casing a segment-gear 3, which engages a bevel-pinion 4 on a horizontal shaft 5, which carries the usual weighted operating arm or lever 6.

On the lower end of the target-shaft 2, below the casing, is a crank 7, (in this instance double, as seen, so as to be adapted for either a right-hand or a left-hand switch,) having extending upwardly therefrom a stud or pin 8, the upper free end of which when the target-shaft is rotated in the operation of the stand just safely clears the under side of the adjacent part of the casing 1, as shown.

9 is the switch-connecting rod, the outer end of which is connected to the switch (not shown) in the customary way, the inner end of which rod is provided with a vertical hole 10, adapted to fit the stud or pin 8 of the target-shaft crank 7.

The under side of the casing 1 of the stand is in this instance undercut to form an L-shaped space in vertical cross-section, (marked 11 in Fig. 2,) the roof or top of which space is of a height above the top of the crank-pin 8 sufficient to permit the inner end of the switch-connecting rod to be placed upon or detached from the pin 8 when the crank is in the proper position—that is, the height of said space 11 above the pin 8 is greater than the thickness of the inner end of the said rod. Said space 11 is of a horizontal depth from the line of the center of the pin 8 (when the stand parts are in position shown in the drawings—that is, when the switch is open) to the vertical wall 11^a thereof slightly greater than the horizontal thickness of the switch-connecting rod from the axis of the hole 10 therethrough to its outer side.

The rod 9 is provided with a lug or projection 12 extending longitudinally from the inner end of the rod, which lug is of such length that when the rod is connected to the switch and the stand in position in which the switch is open—that is, in the position of extreme throw in one direction, as shown in the drawings—said lug will extend under the casing 1, thereby preventing any possibility of disengagement of the rod 9 from the crank-pin 8.

In assembling the parts the rod 9 before it is connected to the switch is brought to the position indicated by dotted lines in the drawings—that is, parallel with the trackway and with the wall 11^a of the space 11, and so with the lug 12 free. Said rod is then dropped into place, with its hole 10 engaging the pin 8, and is then turned on its pivot (the pin 8) to the position of the full lines and the outer end thereof secured to the switch in the usual way, it of course being understood that the target-shaft crank 7 and other parts of the stand are during this assembling operation in the position of extreme throw in one direction to bring the pin 8 beneath the

space 11—that is, from beneath the under side of the casing 1.

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

1. In a switch-stand of the character recited, the combination with the target-shaft, of the crank thereon, having the upwardly-projecting crank-pin, the switch-connecting rod having a hole adapted to receive said crank-pin, and having the projection on its inner end, and the casing having a portion under which said projection is adapted to extend when said rod is connected to the switch, and to be freed from said portion when the rod is disconnected from the switch and suitably rotated on said crank-pin, substantially as set forth.

2. In a switch-stand of the character recited, the combination of the target-shaft, of the crank thereon, having the upwardly-projecting crank-pin, the switch-connecting rod having a hole adapted to receive said crank-pin, and having the projection on its inner end, and the casing having a portion under which said projection is adapted to extend when said rod is connected to the switch, and having also the undercut space the height of the roof of which space above the top of said crank-pin is greater than the thickness of the inner end of said rod, whereby when said rod is disconnected from the switch and rotated on said crank-pin to cause said projection to come under said space, the said rod may be disconnected from said crank-pin, substantially as set forth.

In testimony whereof I have hereunto affixed my signature.

MALCOLM W. LONG.

Witnesses:

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