

N. BURAS & E. P. LARRY.
 SWITCH THROWING AND LOCKING APPARATUS.
 APPLICATION FILED DEC. 28, 1909.

991,422.

Patented May 2, 1911.

Fig. 1

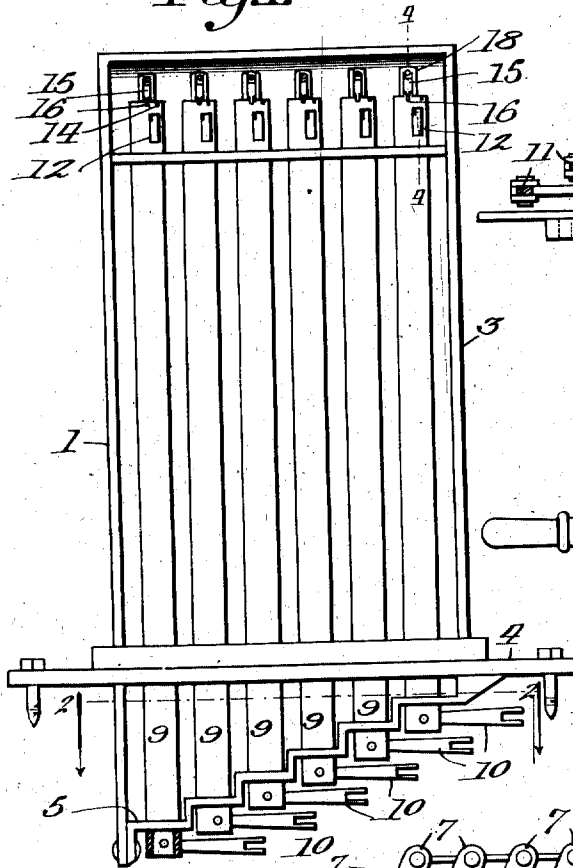


Fig. 3.

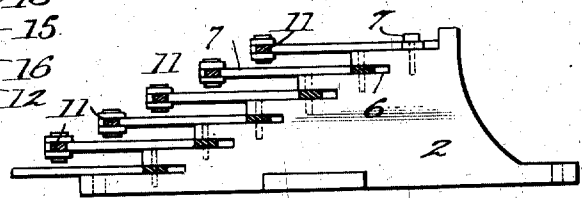


Fig. 4.

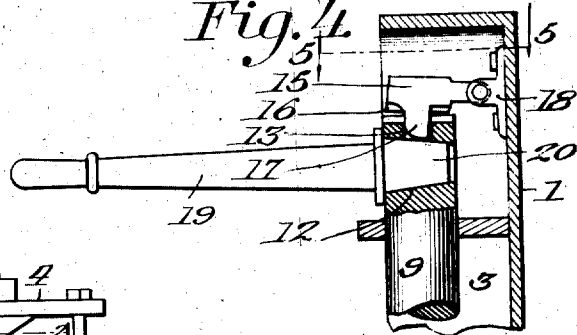


Fig. 2.

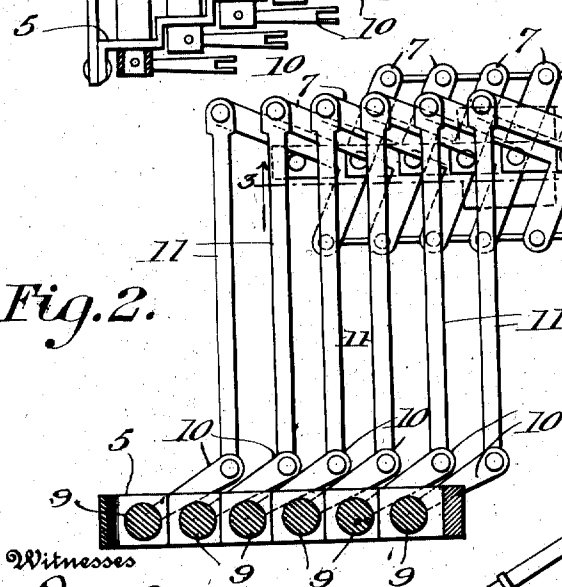
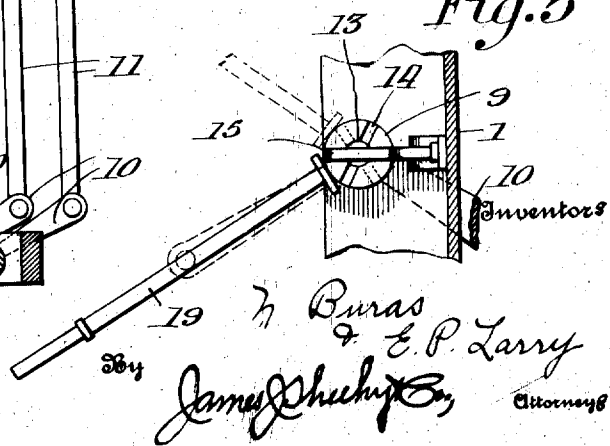


Fig. 5.



Witnesses

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SWITCH THROWING AND LOCKING APPARATUS.

991,422.

Specification of Letters Patent.

Patented May 2, 1911.

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To all whom it may concern:

Be it known that we, NORBERT BURAS and EDWARD P. LARRY, citizens of the United States, residing at Venice, in the parish of Plaquemine and State of Louisiana, have invented new and useful Improvements in Switch Throwing and Locking Apparatus, of which the following is a specification.

Our present invention pertains to means for throwing and locking switches and other devices; and it contemplates the provision of an apparatus embodying such a construction that a single lever is used to unlock any one of a plurality of switches or other movable devices, and then throw the same from one position to another.

The invention also contemplates the arrangement of the plurality of combinations with which the single lever is designed to cooperate, in a single stand, and this compactly and yet in such manner that there is no liability of any one of the said combinations interfering with the operation of any other.

The invention also contemplates the provision of movable means designed to be connected with a switch or other device to be moved, movable means for normally locking the first-named means and means movable into and out of the first-named means; the said elements being so relatively arranged that the introduction of the third-named means in the first-named means is attended by locking of the latter while removal of the third-named means from the first-named means is attended by locking of said first-named means.

With the foregoing in mind, the invention will be fully understood from the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is an elevation of the apparatus constituting the best practical embodiment of our invention of which we are cognizant. Fig. 2 is a horizontal section, taken in the plane indicated by the line 2—2 of Fig. 1, looking downward. Fig. 3 is a detail vertical section, taken in the plane indicated by the line 3—3 of Fig. 2, looking in the direction of the arrow. Fig. 4 is an enlarged detail section, taken on line 4—4 of Fig. 1 and showing one of the gravitating latches and the vertical rock-shaft with which it cooperates. Fig. 5 is a horizontal section

taken in the plane indicated by the line 5—5 of Fig. 4, looking downward.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

Our novel apparatus comprises a stand 1 and a lever-support or pedestal 2; the latter being arranged as shown in Fig. 2, relative to the former.

As shown in Fig. 1, the stand 1 comprises an upright frame 3, having a base plate 4 that is adapted to be fixed in position, and also comprises a stepped bracket 5, suitably fixed to and depending from the base plate of the main frame.

The support or pedestal 2 is stepped and provided with slots 6, as best shown in Fig. 3, and is designed to be suitably fixed in the position shown in Fig. 2. In the slots 6 and on the uppermost step of the pedestal 2 are fulcrumed six (more or less) horizontally swinging T-shaped levers 7, and the head of each of said levers is designed to be connected through rods 8, Fig. 2, with the switch or other movable device that is to be moved and locked; the stepped character of the pedestal serving to prevent the levers and the rods from interfering notwithstanding the compactness of the arrangement.

Journaled in the frame 3 and bracket 5 of the stand 1 are six (more or less) upright rock-shafts 9, and fixed on the lower ends of the said rock-shafts 9 are cranks 10; each crank being arranged adjacent one of the steps of the bracket 5 in order to prevent the cranks interfering with each other, and also in order to prevent interference between the link-bars 11 which connect the cranks 10 with the stems of the T-levers 7, as clearly shown in Fig. 2. By particular reference to said figure, it will be manifest that rocking of any one of the rock-shafts 9 in a direction to swing its crank 10 toward the left will be attended by swinging movement of the particular lever 7 connected with said crank 10 in one direction, while rocking of the said shaft 9 in the opposite direction will swing its crank 10 toward the right, and swing the mentioned lever 7 in the direction opposite to that first-named.

Each rock-shaft 9 is provided near its upper end with a horizontal tapered socket 12, and a vertical aperture 13 extends from said socket to the upper end of the shaft. It will also be observed by comparison of Figs. 4 and 5 that in its upper end each rock-shaft

9 is provided with grooves 14 which intersect each other and communicate with the aperture 13.

Adjacent each rock-shaft 9 a gravitating latch 15 is pivoted, which latch is provided with a lower edge portion 16 designed to seat in the particular groove 14 that is presented to it, and is also provided with a depending and beveled portion 17 designed to extend through the aperture 13 and into the socket 12 of the rock-shaft. Each of the plurality of latches 15 is connected as shown to a bracket 18 on the back of the stand 1.

19 is the lever for unlocking and throwing the rock-shafts 9 and the switches or other movable devices (not shown) connected therewith. The said lever 19 is provided at one end with a tapered portion 20, designed to be placed in the sockets 12 of the shafts 9 in the manner shown in Fig. 4.

With the parts in the position shown in Fig. 1, all of the rock-shafts 9 are locked against rotation. When, however, it is desired to unlock and throw one rock-shaft and the switch or other device connected therewith, the operator simply inserts the lever 19 in the socket 12 of the particular rock-shaft, and then rocks the shaft by swinging the lever. In this connection it will be noticed that when the tapered portion of the lever 19 is inserted in the socket 12, said tapered portion will act against the latch portion 17 and raise the latch portion 16 from one of the grooves 14 of the rock-shaft, and thereby unlock the rock-shaft; also, that when the tapered portion of the lever 19 is withdrawn from the socket 12, the latch 15 will gravitate and its portion 16 will, by entering one of the grooves 14 of the shaft, lock the said shaft against rotation. Thus when a switch, for instance, is locked in closed position by the locking of one of the shafts 9 in the position shown in Fig. 1, the placing of the lever 19 in the socket 12 of said shaft will unlock the shaft and the switch. Then by rocking the shaft through the lever 19 the switch can be thrown to open position, in which position it will be locked when the lever 19 is withdrawn from the socket 12 and the latch portion 16 enters one of the grooves 14 in the shaft.

It will be gathered from the foregoing that each of the rock-shafts 9 can be locked in two positions to secure a switch, for instance, in closed and open position; and it will also be gathered that the single lever 19 can be used to operate any one of the plurality of rock-shafts 9 and the latch 15 complementary to the same.

While we have shown and described one form of our invention, it is to be understood that we are not limited to the details or the form or relative arrangement of parts disclosed, but that modifications may

be made therein within the scope of our invention as claimed.

Having described our invention, what we claim and desire to secure by Letters-Patent, is:

1. An apparatus for throwing and locking movable devices, comprising a stand having a stepped bracket, a stepped pedestal, T-levers fulcrumed on the steps of the pedestal, rods connected to the heads of the said T-levers and adapted to be connected to the devices to be moved and locked, upright rock-shafts journaled in the stand and having horizontal tapered sockets near their upper ends and apertures extending from said sockets to said ends and also having grooves in said ends and arranged at an angle to each other, cranks fixed on the lower portions of the rock-shafts and arranged adjacent the steps of the bracket, links connecting said cranks and the stems of the T-levers, gravitating latches connected with the stand and arranged above the rock-shafts and each having an edge portion to seat in said grooves and also having a depending portion to extend through the aperture in a shaft and into the tapered socket thereof, and a lever having a tapered end portion adapted to be placed in and removed from the tapered socket of any one of the rock-shafts.

2. An apparatus for throwing and locking movable devices, comprising a plurality of suitably-supported levers adapted to be connected with devices to be thrown and locked, a plurality of rock-shafts suitably supported side by side and connected with said levers; each of said rock-shafts having a tapered socket near one of its ends and an aperture extending between said socket and end and also having grooves in the end, suitably-supported latches having edge portions adapted to normally seat in said grooves and also having depending portions adapted to normally extend through said apertures and into said sockets, and a lever having a tapered end portion adapted to be placed in and removed from the tapered socket of any one of the rock-shafts.

3. An apparatus for the purpose set forth, comprising a plurality of suitably-supported rock-shafts; each of said shafts having a socket near one end and an aperture extending between said socket and end and also having a groove in the end, suitably-supported latches, each of which has a portion adapted to normally seat in the groove of a shaft and also has a portion adapted to normally extend through the shaft aperture and into the socket thereof, and a lever adapted to be placed in and removed from the socket of any one of the rock-shafts.

4. An apparatus for the purpose set forth, comprising a plurality of suitably-supported rock-shafts each provided with

means to receive a lever, latches for locking the rock-shafts, each latch extending into the lever-receiving means of its respective rock-shaft, and a lever adapted to be placed in and removed from the lever-receiving means of any one of the rock-shafts, and when so placed to disengage the respective latch of the rock-shaft from the latter.

5. An apparatus for the purpose set forth, comprising a rock-shaft having a socket near one end and an aperture extending from said socket to said end, a latch adapted

to normally cooperate with said end of the rock-shaft to lock the same; said latch having a portion that normally extends through said aperture and into said socket, and a lever adapted to be placed in and removed from the said socket.

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Witnesses:

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