Nov. 8, 1932. H. B. TAYLOR 1,886,987

HAND OPERATING MEANS FOR POWER OPERATED RAILWAY TRAFFIC CONTROLLING DEVICES

Filed July 31, 1931 2 Sheets-Sheet 1

FIG. 1.

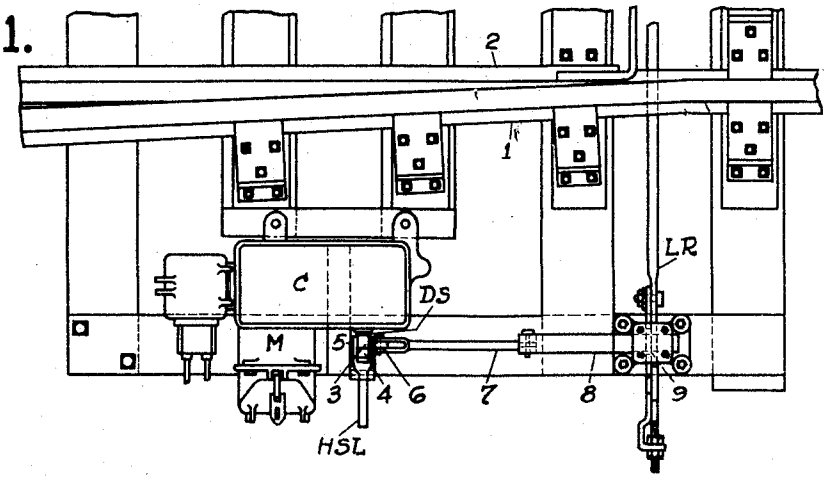


FIG. 5.

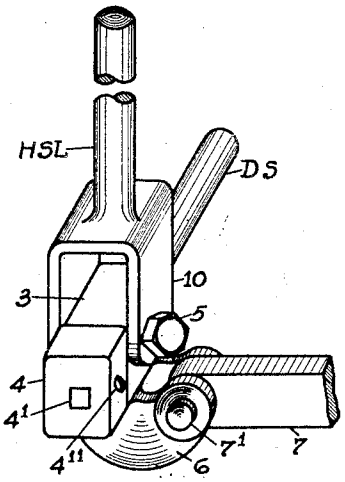
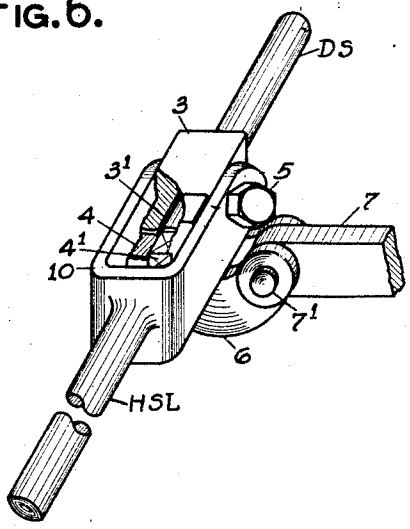


FIG. 6.



INVENTOR
H. B. Taylor.
BY
his Neil D. Preston
ATTORNEY

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HAND OPERATING MEANS FOR POWER OPERATED RAILWAY TRAFFIC CONTROLLING DEVICES

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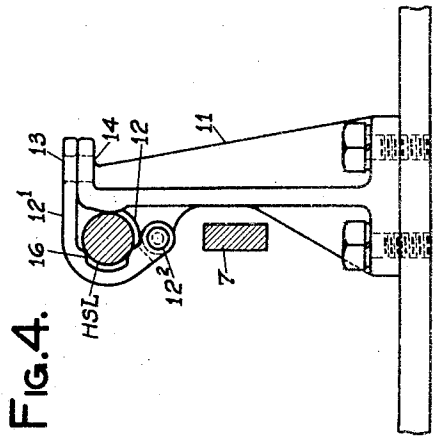


FIG. 4.

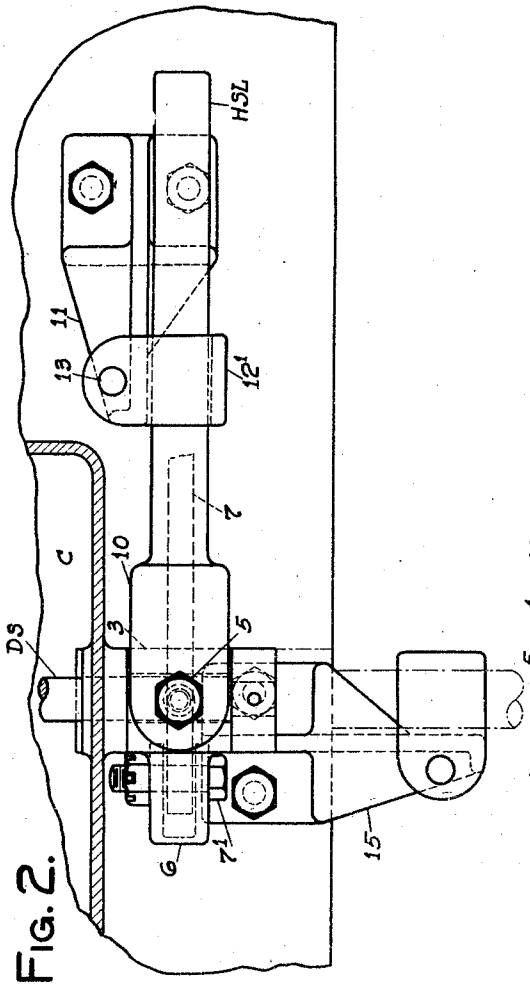


FIG. 2.

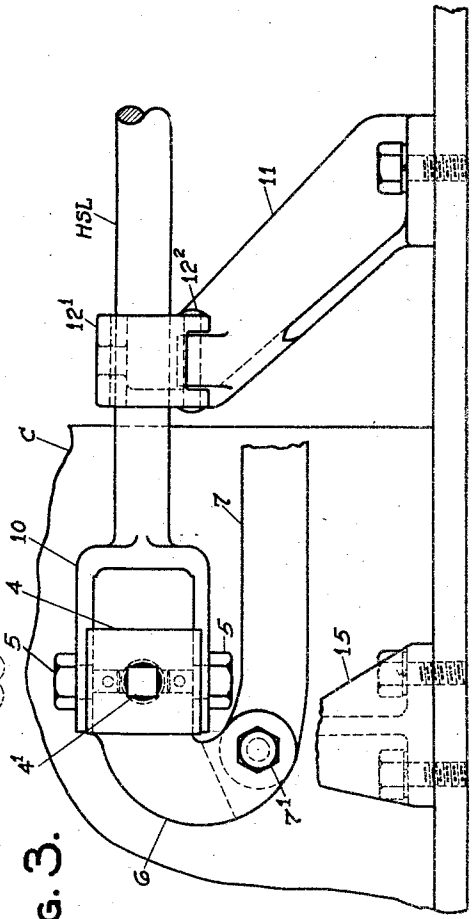


FIG. 3.

INVENTOR
H. B. Taylor,
BY
Neil W. Preston
his ATTORNEY

Patented Nov. 8, 1932 1,886,987

UNITED STATES PATENT OFFICE

HERBERT B. TAYLOR, OF ROCHESTER, NEW YORK, ASSIGNOR TO GENERAL RAILWAY SIGNAL COMPANY, OF ROCHESTER, NEW YORK

HAND OPERATING MEANS FOR POWER OPERATED RAILWAY TRAFFIC CONTROLLING DEVICES

Application filed July 31, 1931. Serial No. 554,275.

This invention relates in general to a dual control selector, and has more particular reference to a selector for use in railway practice.

In general, and in particular in railway practice, it is often times desirable to be able to select at will whether a device is to be operated by power or by hand, and furthermore it is desirable that means for so selecting the medium of operation be rugged in construction, economical to produce, and efficient and long lived.

With the above and other considerations in mind, it is proposed in accordance with the present invention to provide a selecting means whereby a device can, at will, be operated either by power or by hand.

More particularly it is proposed to provide a selecting means whereby the member which selects whether power or hand operation be employed, also constitutes the hand operating member itself.

Further objects, purposes, and characteristic features will appear as the description of the invention progresses, reference being made to the accompanying drawings showing wholly by way of example, and in no manner whatsoever in a limiting sense, one form which the invention can assume. In the drawings:—

Fig. 1 is a diagrammatic view showing one situation in which the invention can be employed.

Fig. 2 is a plan view of one form of the invention, shown in detail.

Fig. 3 is an elevation of a portion of the invention, shown in Fig. 2.

Fig. 4 is an elevational view, with portions shown in section, of a detail of the invention.

Fig. 5 is a perspective view of the essential portions of one form of the invention, shown in one operative position.

Fig. 6 is a view, similar to Fig. 4, but with the parts shown in a different operative position.

Referring to the drawings, and first to Fig. 1, there is here shown a track rail 1, constituting a portion of a stretch of single track, and a portion of a track switch 2, for controlling a diverging route. Adjacent the rail 1 is an operating means, including motor M, connected to a casing C, containing gears or other transmitting means, for connecting the motor to a driving shaft DS, on which is mounted, for relative rotation therewith, a clutch member 3, and a second clutch member 4, which is fixed to the drive shaft DS, and cannot rotate relatively thereto. Pivoted to the clutch member 3, as by a pin 5, is a hand operating and selecting lever HSL. Fastened to, or integral with, the relatively rotatable clutch member 3, is a crank or the like 6, to which is connected a driven rod 7, the rod 7 carrying a lock bolt 8 receivable, at times, in a notch 9 in a lock rod LR, carried by, and movable with, the switch member 2.

As shown diagrammatically in Figs. 5 and 6, the drive shaft DS carries at its outer end the fixed clutch member 4, as by means of a squared end portion 4^1, and a pin or the like 4^{11}. The drive shaft also carries the relatively rotatable clutch member 3, which, as shown in Fig. 6, is relatively rotatable on the drive shaft DS, on the cylindrical portion 3^1 of the drive shaft.

As referred to above, the handle HSL, is bifurcated at its inner end 10, so as to straddle the relatively rotatable clutch member 3, and is pinned thereto by the pins 5 on either side, so as to pivotally connect the bifurcated portion 10 to the relatively rotatable clutch member 3. As best shown in Fig. 5 the driven rod 7 is pinned to the crank 6 as by a pin 7^1.

The specific construction shown in Fig. 2 and Fig. 3 is a detail view of the hand operating and selecting arrangement shown in Fig. 1, but in Fig. 2 and Fig. 3 the hand lever HSL is shown in a manually operable position and is also shown as thus manually operated to unlock the switch locking rod LR, or in other words, the drive shaft DS is in the same position as in Fig. 1 but the crank 6 has been operated approximately 90° out of correspondence therewith by the hand selecting lever HSL.

Referring now to Fig. 4, there is here shown a receiving member for the lever HSL, which includes a support 11 having a receiving socket 12 including a hinged part 12^1 which in the position shown in Fig. 4, has an aperture

13 in registery with an aperture 14 in the support 11, to thereby receive the hasp of a padlock or the like (not shown) for connecting the two together and preventing swinging movement of the handle HSL away from the support 11. By swinging the hinged portion 12 on its pivot 12^2 the handle HSL can be moved either vertically or horizontally, depending upon the then position of pin 5, to swing about its pivot 5 as for example, from the position shown in Fig. 5 to the position shown in Fig. 6 to there be received in a support member 15 which is constructed in the same manner as support 11.

The support members 11 and 15 have receiving sockets 12 for receiving the handle HSL, provided with inwardly projecting bosses 16, three in number in the form shown whereby to securely hold the handle in place while minimizing frictional wear between the parts upon rotation of the handle HSL as will appear below. It should be noted, in order to always have correspondence between the motor and its contacts and the lock rod, as best shown in Fig. 3, the clutch member 4 is rectangular in transverse section, with its larger dimension greater than the space between the bifurcations of the end of lever HSL, whereby, on taking control away from the motor, it is necessary to hand operate the parts back again to former position, before control can be given back to the motor.

Referring now to Fig. 5, with the handle in the position as shown, the selecting means is positioned for operation of the rod 7 by hand, and a clockwise movement of the handle HSL, in a direction at right angles to the center line of the drive shaft DS, operates to rock crank 6 on the drive shaft and thus move the driven rod 7 to the left, as shown in Fig. 3.

On the other hand, by moving the hand selecting lever HSL through an arc of 90° on its pivot pin 5, from the position shown in Fig. 5, to that shown in Fig. 6, the bifurcated part 10 connects up the two clutch members 3 and 4 so that they must move together, and hence connects up the drive shaft DS, so as to drive the normally relatively rotatable clutch member 3, and hence rock crank 6 and the driven rod 7 in the same manner as can be accomplished by hand, as explained above.

Thus the hand lever HSL can be moved to connect the crank 6 with the power driven shaft DS, or it can be disconnected therefrom, by moving the lever HSL to a position wherein the mechanical advantage is sufficient to permit hand operation of the crank 6 and the driven rod 7.

The particular device controlled by the rod 7 can of course, be other than a lock bolt for a lock rod of a track switch, and can be used in any situation to which it is adapted, and furthermore the various parts can, within reason, be modified in size and design without departing from this invention.

The above rather specific description of one form of device embodying the present invention, has been given solely by way of illustration, and is not intended, in any manner whatsoever, in a limiting sense. Obviously, this invention can assume many different physical forms, and is susceptible of numerous modifications, and all such forms and modifications, are intended to be included by this invention, as come within the scope of the appended claims.

Having described my invention, I now claim:—

1. In combination, a drive shaft, a fixed clutch member on the drive shaft, a relatively rotatable clutch member on the drive shaft, a driven member connected to the rotatable clutch member, and a bifurcated operating member pivoted to the rotatable clutch member and movable to operatively interconnect the two clutch members.

2. In combination, a drive shaft, a fixed clutch member on the drive shaft, a relatively rotatable clutch member on the drive shaft, a driven member connected to the rotatable clutch member, and a bifurcated operating member pivoted to the rotatable clutch member and movable to operatively interconnect the two clutch members, the fixed clutch member being rectangular in cross section, and receivable by the bifurcation of the operating member only along one dimension, whereby to insure correspondence between the drive shaft and the driven member.

3. In combination, a drive shaft, a fixed clutch member on the drive shaft, a relatively rotatable clutch member on the drive shaft, a driven member connected to the rotatable clutch member, an operating member fastened to the rotatable clutch member and movable to operatively interconnect the two clutch members, and a split socket receiving member for the operating member, the socket member being operable to allow removal therefrom of the operating member at all operating positions thereof.

4. In combination, a drive shaft, a fixed clutch member on the drive shaft, a relatively rotatable clutch member on the drive shaft, a driven member connected to the rotatable clutch member, a bifurcated operating member pivoted to the rotatable clutch member and movable to operatively interconnect the two clutch members, and a split socket receiving member for the operating member, the socket member being operable to allow removal therefrom of the operating member at all operating positions thereof.

5. In combination, a power driven shaft, a first rectangular clutch block rotatable thereon, a second rectangular clutch block fixed on the shaft, an operating member connected

to the first clutch block, and a hand operating and selecting member fastened to the first clutch member and movable to operatively interengage the two clutch members.

6. In combination, a power driven shaft, a first rectangular clutch block rotatable thereon, a second rectangular clutch block fixed on the shaft, an operating member connected to the first clutch block, and a hand operating and selecting member fastened to the first clutch member and movable to operatively interengage the two clutch members, said selecting member having a bifurcated end, straddling the first clutch member and pivoted thereto to swing in an axial plane of the driven shaft whereby to cause the second clutch member to be received in the bifurcation of the selecting member.

7. In combination, a power driven shaft, a first rectangular clutch block rotatable thereon, a second rectangular clutch block fixed on the shaft, an operating member connected to the first clutch block, and a hand operating and selecting member fastened to the first clutch member and movable to operatively interengage the two clutch members, said selecting member having a bifurcated end straddling the first clutch member and pivoted thereto to swing in an axial plane of the driven shaft whereby to cause the second clutch member to be received in the bifurcation of the selecting member only when the power driven shaft and the operating member bear a predetermined relative relation.

In testimony whereof I affix my signature.

HERBERT B. TAYLOR.