Dec. 1, 1931. S. P. HULL 1,834,403

LAMP TIP

Filed Aug. 19, 1930 2 Sheets-Sheet 1

Fig 1

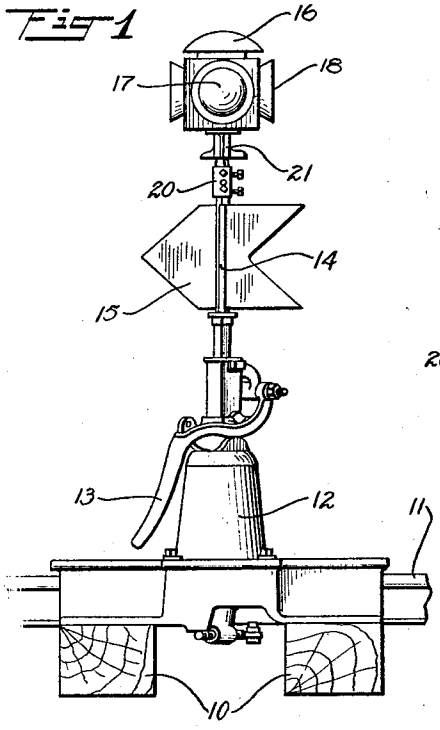
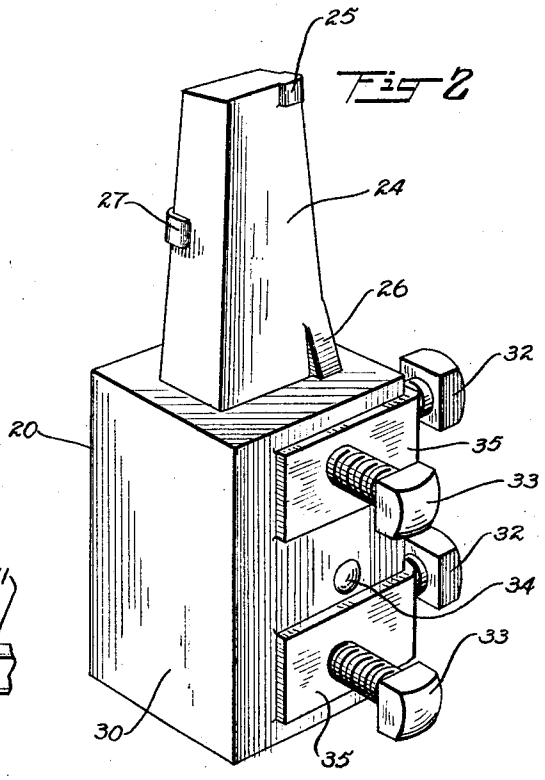


Fig 2



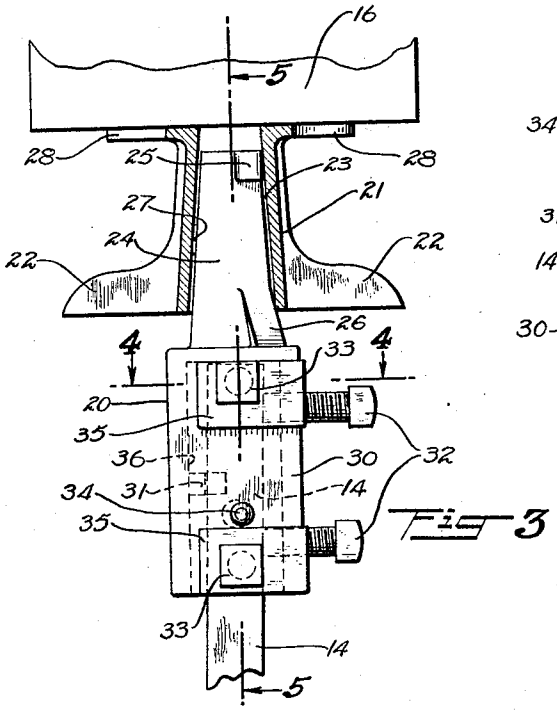
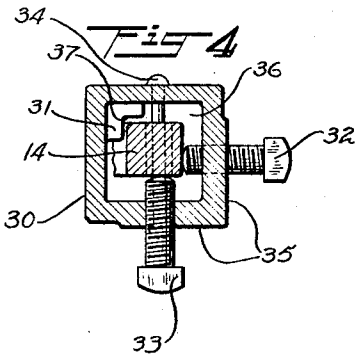


Fig 3

Fig 4



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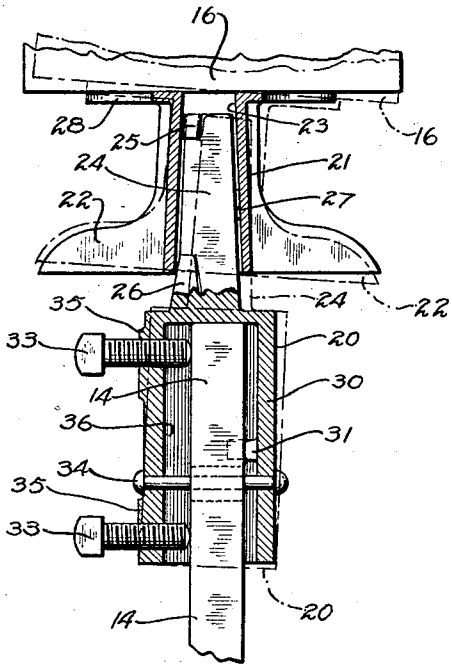


Fig 5

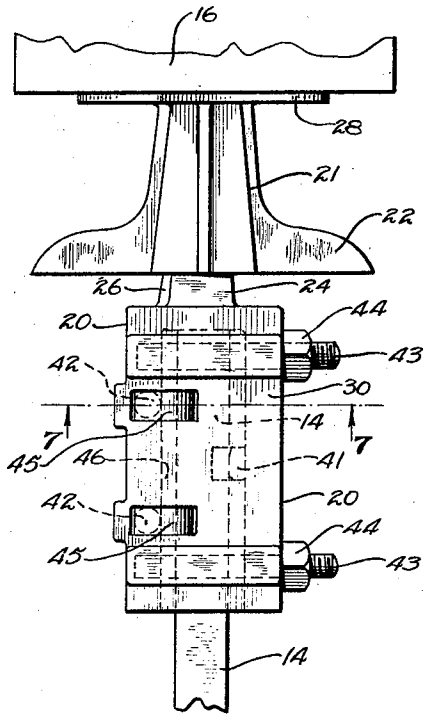


Fig 6

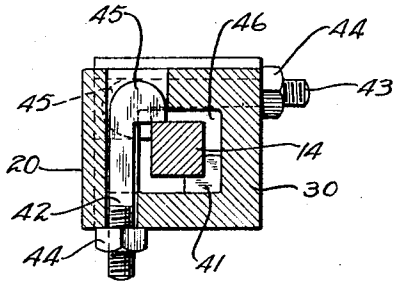


Fig 7

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UNITED STATES PATENT OFFICE

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LAMP TIP

Application filed August 19, 1930. Serial No. 476,310.

The invention relates to railroad switch stands, and more particularly to devices for mounting a switch stand lamp on the switch stand.

In switch stands for operating railway switches a lamp is generally mounted on the top of the switch stand to indicate the position of the switch points. The lamp is generally mounted upon a spindle or other part of the switch stand which moves with the switch points.

According to a preferred form of the invention an adapter member is provided between the lamp and the switch stand spindle. This adapter may have a portion which cooperates with a portion on the lamp to provide a mounting for the lamp which permits easy detachability of the lamp and yet supports the lamp in a rigid manner without wabbling.

The adapter may also have devices cooperating with the switch stand spindle by which the adapter may be adjusted to any desired position and through which the lamp may be beveled so that the beam of light emitted by the lamp will be directed in a proper direction to be most noticeable by the engineer driving the train.

The invention also consists in certain new and original features of construction and combinations of parts hereinafter set forth and claimed.

Although the novel features which are believed to be characteristic of this invention will be particularly pointed out in the claims appended hereto, the invention itself, as to its objects and advantages, the mode of its operation and the manner of its organization may be better understood by referring to the following description taken in connection with the accompanying drawings forming a part thereof, in which

Fig. 1 is an elevation illustrating a well known type of switch stand provided with a lamp and adapter according to the invention;

Fig. 2 is a perspective of the adapter;

Fig. 3 is an elevation of the adapter and cooperating parts with parts broken away for clearance;

Fig. 4 is a section on the line 4—4 of Fig. 3;

Fig. 5 is a vertical section through the adapter and its cooperating parts to illustrate the structure and operation thereof;

Fig. 6 is an elevation of a modified form of adapter; and

Fig. 7 is a section on the line 7—7 of Fig. 6.

In the following description and in the claims parts will be identified by specific names for convenience, but they are intended to be as generic in their application to similar parts as the art will permit.

Like reference characters denote like parts in the several figures of the drawings.

In the drawings accompanying and forming part of this specification, practical commercial embodiments of the invention are shown, but as such illustrations are primarily for purposes of disclosure, it will be understood that the structure may be modified in various respects without departure from the broad spirit and scope of the invention as hereinafter defined and claimed.

Referring now to the drawings, and more particularly to Figs. 1 to 5, inclusive, the adapter is shown mounted on a well known type of switch stand and supporting the usual switch stand lamp. It will be understood that this disclosure is merely for purposes of illustration and that the invention may be used with other types of switch stand and other types of lamp.

The railway ties are denoted by 10 and the rails are denoted by 11. The switch stand is denoted by 12 and has an operating handle 13 for operating the switch points. The main spindle or shaft of the switch stand is denoted by 14 and it will be understood that this shaft rotates 90° to throw the switch points from one position to the other. A flag or signal 15 may be mounted on the spindle 14 if desired.

Mounted on the spindle is the adapter 20 which supports the lamp 16 having lenses 17 and 18 which may be of different colors, as is well known in the art.

The adapter 20 comprises in general a socket portion 30 fitting over the top of spindle 14 and a plug portion 24 fitting with-

in the socket member 21 which is riveted or otherwise secured to the lamp 16.

The construction for demountably positioning the lamp will first be described. The socket member 21 has a plurality of fingers 28 riveted or otherwise secured to the lamp 16 and also a plurality of feet 22 to provide a base to sit the lamp 16 down on when it is not in mounted position, as will be understood by those skilled in the art. The socket member 21 has a tapered socket 23 which is preferably oblong in cross section, the walls of which socket are substantially smooth.

The plug 24 of the adapter 20 is tapered, as illustrated, to correspond with the taper of the socket 23 and is also preferably oblong in cross section. One corner of the plug 24 is provided with projections or protuberances 25 and 26 and the diagonally opposite corner is provided with a projection 27 located substantially midway in elevation between projections 25 and 26. The projections 25 and 27 have apices which engage in the corresponding corners of the socket 23 and the side faces of these projections are substantially parallel to the side faces of the plug 24. The edges of the projections 25 and 27 are conveniently rounded, as shown.

The side faces of the projection 26 are tapered, as shown, at an angle greater than the taper of the plug 24 and the apex of the projection 26 is adapted to engage the corresponding corner of the socket 23.

Thus a construction is provided whereby the lamp 16 may be easily demounted for cleaning and refilling without jamming or without sticking. Furthermore, the mounting positively positions the lamp on the adapter and prevents all wabbling by providing a three-point support for the lamp socket. Tight fit is provided for even if the lamp socket varies slightly in shape as commonly occurs in manufacture.

The construction for adjusting the adapter 20 on the switch stand spindle 14 will now be described. The socket member 30 is provided with a rectangular socket 36 having a projection 31 at one corner part way of the socket. The projection 31 is provided with a groove or recess 37 to receive the adjoining corner of the spindle 14. The spindle 14 and socket 36 are both substantially square in cross section, and the socket 36 is considerably larger than the spindle 14.

The socket member 30 is provided with strengthened portions 35 on adjoining side walls through which two pairs of adjusting or set screws 32 and 33 are threaded. The set screws 32 are positioned between the set screws 33 and the projection 31 lies between the set screws 32. It will be noted that the set screws 32 and 33 are also off center, being nearer their common corner than the other corners. If desired, a rivet 34 may be passed through the socket 30 and spindle 14, the fit between the rivet and either or both of the members 14 and 30 being loose so as not to interfere with the adjustment of the screws 32 and 33. This prevents the removal of the adapter from the spindle 14, thus obviating any chance of the adapter being changed in position by 90° and thus giving the wrong signal to the engineer.

It will be understood that by manipulating screws 32 and 33 the adapter 20 can be adjusted about the lug 31 in three planes. Thus the beam of light emitted from the lamp 16 can be adjusted to be directed to the proper position where it can be seen by the engineer driving the train at a maximum distance. The adjustment can be made for both positions of the lamp, that is for directing the beam from both of the different colored lenses 17 and 18 when they are thrown to position in line with the track.

Referring now to the modified form shown in Figs. 6 and 7, the set screws in the preceding construction are replaced by angle screws 42 and 43, having hooked heads 45 engaging the spindle 14. The adapter socket is denoted by 46 and the projection 41 corresponds to the projection 31 in the preceding construction. Nuts 44 are provided on the bolts 42 and 43 by which the adapter may be adjusted in a manner similar to that of the preceding construction.

Thus an adapter has been provided for mounting the switch stand lamp on a switch stand having improved means for detaching or demounting the lamp, and improved means for adjusting the lamp. Considerable trouble has been experienced in the past in getting a proper fit between the lamp socket and the plug on which it is mounted. Ground surfaces have been resorted to but trouble has been encountered both due to wabbling of the lamp and sticking of the lamp. The adapter, according to the invention, not only overcomes these difficulties, but also permits adjusting the position of the lamp so that the beams of light emerging from the lamp will be thrown to the proper position where they can be seen for the maximum distance by the engineer.

This adjustment may be made when the adapter is installed, and it need not be changed for long periods of time since it is not affected by the detaching and positioning of the lamp. At the same time the permanent rivet prevents removal of the adapter and positioning in the wrong position.

While certain novel features of the invention have been shown and described and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes may be made by those skilled in the art without departing from the spirit of the invention.

What is claimed is:

1. In a lamp tip, a lamp having a socket member with a tapered socket oblong in cross-section, a switch stand spindle having a corresponding tapered plug oblong in cross-section, said plug having an upper projection and a lower projection on the same corner and an intermediate projection between said first projections in elevation and on the diagonally opposite corner, said projections having apices fitting in the corners of the socket, said upper and intermediate projections having side faces engaging the faces of the socket, the side faces of said lower projection being tapered at an angle greater than the angle of the plug.

2. In a lamp tip, a lamp having a socket member with a tapered socket oblong in cross-section, a switch stand spindle having a corresponding tapered plug oblong in cross-section, said plug having an upper projection and a lower projection on the same corner and an intermediate projection between said first projections in elevation and on the diagonally opposite corner, said projections having apices fitting in the corners of the socket, said lower projection being tapered at an angle greater than the angle of the plug.

3. In combination a socket member with a tapered socket rectangular in cross-section, a corresponding tapered plug rectangular in cross-section, said plug having an upper projection and a lower projection on the same corner and an intermediate projection between said first projections in elevation and on the diagonally opposite corner, said projections having apices fitting in the corners of the socket, said upper and intermediate projections having side faces engaging the faces of the socket, the side faces of said lower projection being tapered at an angle greater than the angle of the plug.

4. In a quick detachable connection, telescoping plug and socket members, parts of said members having different tapers, one of said tapers being of such angle that the members will not jam, the other of said tapers acting to prevent wabbling between said members.

5. In a quick detachable connection, a tapered socket member, a tapered plug member fitting therein, three projections on one of said members substantially in the same plane engaging the other member, the second of said projections being opposite from and longitudinally intermediate of the first and third of said projections, one of said projections having a larger taper than the taper of said plug and socket.

6. In a mounting for a switch stand lamp, an adapter comprising a plug and a socket connected directly and rigidly thereto, a lamp having a socket demountably engaging said plug, a switch stand having a spindle in said adapter socket, said adapter socket carrying adjusting devices to adjust said lamp on said spindle.

7. In combination, a socket member, a plug member positionable therein, and separate adjusting devices between said members for varying the angular relation of the axes of said members independently in planes at right angles to each other, said planes each being substantially parallel to said axes.

8. In a switch stand, a lamp, an operating element, a socket member, a plug member fitting therein, fulcrum devices between said plug and socket members for adjusting in planes at right angles, and adjusting devices between said plug and socket members cooperating with said fulcrum devices for adjusting in planes at right angles, said members being secured respectively to said lamp and operating element.

9. In a switch stand, a lamp, an operating element, a socket member with a rectangular opening of uniform transverse dimension, a plug member of uniformly square cross-section, a pair of upper and lower set-screws threaded through the wall of said socket member on one side a second pair of upper and lower set-screws threaded through the wall of said socket member on an adjacent side, said second pair being located in such relation so as not to interfere with said first pair, and a projection in said socket on the corner diagonally opposite the corner included by said screw-supporting sides, said projection having a groove receiving the adjoining corner on the plug member, said members being secured to said lamp and operating element, respectively.

10. In a switch stand, a lamp, a switch stand operating element, a socket member with a rectangular opening of uniform transverse dimension, a plug member of uniformly square cross-section, a pair of upper and lower set-screws threaded through the wall of said socket member on one side, a second pair of upper and lower set-screws threaded through the wall of said socket member on an adjacent side, said second pair being located in such relation so as not to interfere with said first pair, and a projection in said socket on the corner diagonally opposite the corner included by said screw-supporting sides, said projection having a groove receiving the adjoining corner on the plug member, and a rivet passing through opposite walls of said socket member and said plug member and loosely through one of said members, one of said members being secured to said lamp, the other of said members being secured to said operating element.

11. In a mounting for a switch stand lamp or the like, a switch stand lamp or the like having an attaching member, an adapter, a switch stand having a supporting member, a detachable connection between said adapter

and one of said members, an adjustable connection between said adapter and the other of said members, said adjustable connection comprising a socket and plug fitting therein with adjusting devices therebetween, a part of each of said connections being formed unitary with said adapter.

In testimony whereof I have hereunto set my hand.

SAMUEL P. HULL.