

Jan. 14, 1930.

M. H. EDMONDSON
WORK ILLUMINATING DEVICE

1,743,535

Filed Nov. 22, 1928

2 Sheets-Sheet 1

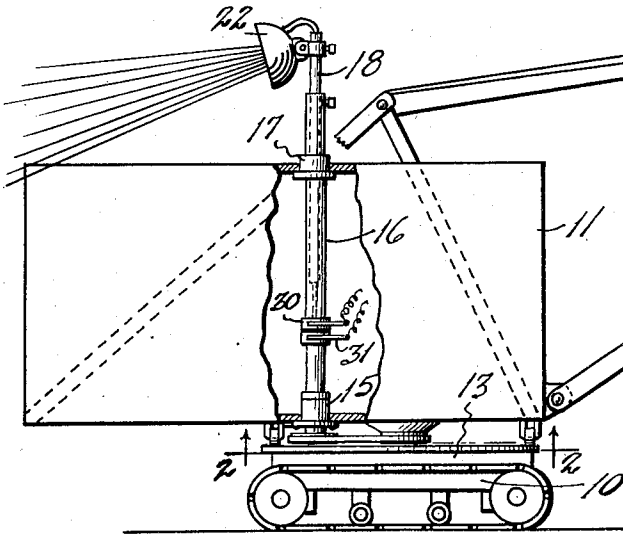


Fig. 1.

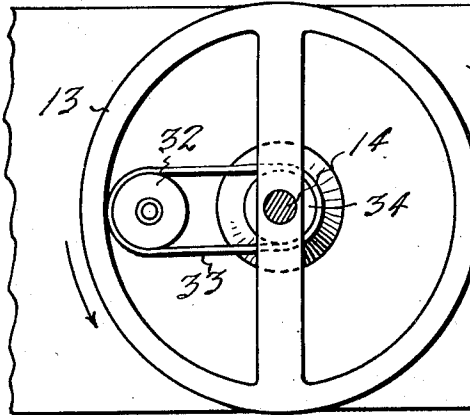


Fig. 2.

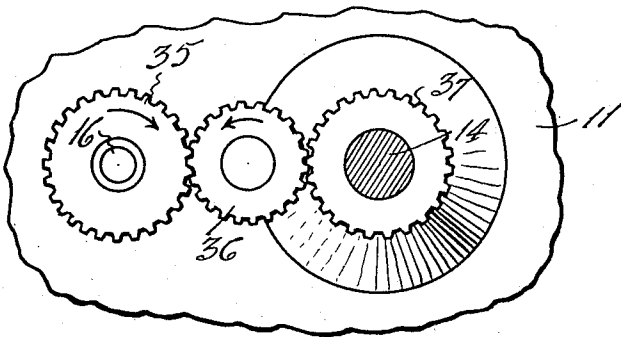


Fig. 4.

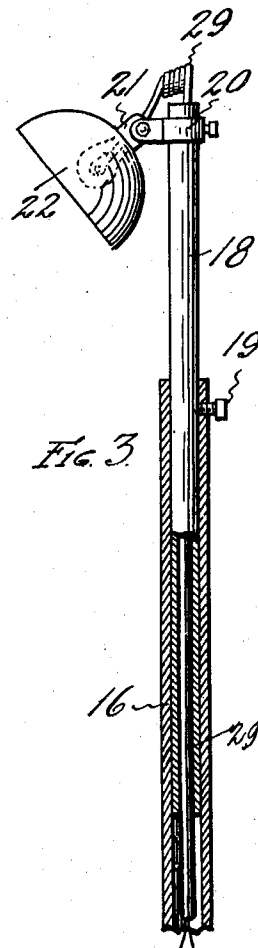


Fig. 3.

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2 Sheets-Sheet 2

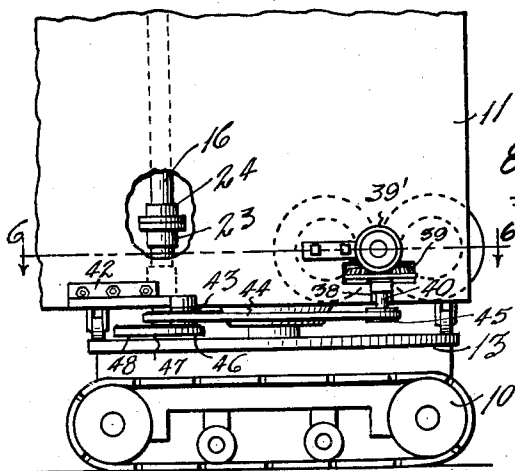


Fig. 5

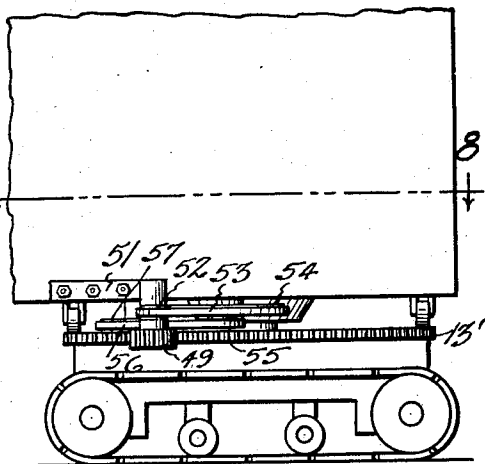


Fig. 7

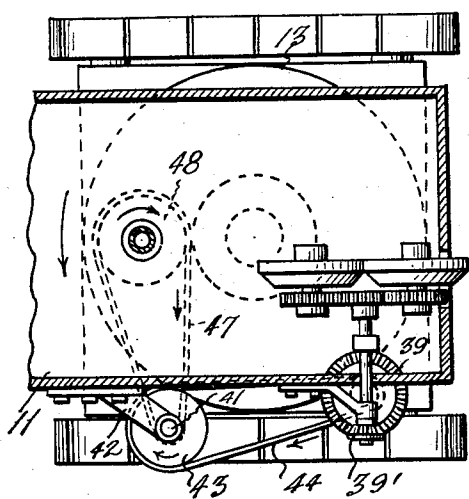


Fig. 6

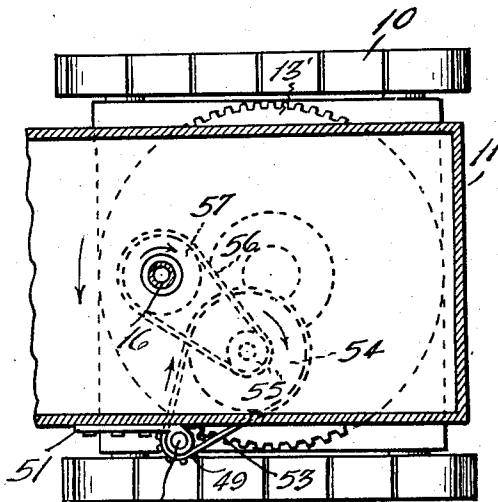


Fig. 8

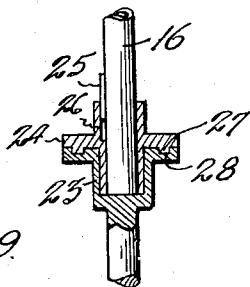


Fig. 9

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WORK-ILLUMINATING DEVICE

Application filed November 22, 1928. Serial No. 321,125.

This invention relates to new and useful improvements in work illuminating devices.

One object of the invention is to provide an illuminating device arranged to be so mounted on rotating excavators, cranes and the like, as to remain stationary while the machine is rotating and thus maintain constant illumination on the work.

A further object of the invention is to provide a stationary light for rotating machines which may be adjusted vertically.

A particular object of the invention is to provide a lamp support mounted in a rotatable body and connected with a compensating gearing so as to hold said support and its lamp to a given position and thus direct the light rays upon a fixed location irrespective of the rotation of the body.

A construction designed to carry out the invention will be hereinafter described, together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings, in which an example of the invention is shown, and wherein:

Fig. 1 is a view of an excavating machine, partly in elevation and partly in section, equipped with an illuminating device constructed in accordance with the invention,

Fig. 2 is an enlarged cross-sectional view taken on the line 2—2 of Fig. 1 and looking in the direction of the arrows,

Fig. 3 is a detail of the adjustable lamp mast,

Fig. 4 is a plan view of another form of compensating gearing,

Fig. 5 is a view of a portion of an excavating machine, showing another form of illuminating device,

Fig. 6 is a horizontal cross-sectional view taken on the line 6—6 of Fig. 5,

Fig. 7 is a view similar to Fig. 5 showing still another form,

Fig. 8 is a horizontal cross-sectional view taken on the line 8—8 of Fig. 7, and

Fig. 9 is a detail of the clutch.

In the drawings the numeral 10 designates the truck and 11 the cab of an excavating machine, crane or similar machine to which the invention is adapted. The truck has a turntable 13 and the cab is connected thereto by a central pivot post 14.

In the floor of the cab is mounted a floor flange 15 and an upright tubular shaft or post 16 is journaled in the flange. The post extends through a flanged bearing 17 in the roof of the cab. An extension tube 18 telescopes into the upper end of the post and is fastened by a set screw 19, thus making for vertical adjustment. The post and tube constitute a mast.

A clamp 20 is adjustably mounted on the upper end of the tube so as to be rotated around the tube or moved vertically thereon and fastened in position. A lamp socket 21 is pivoted to the clamp so as to be swung in a vertical arc and fastened to direct the light rays on the desired location. A reflector shade 22 is mounted on the socket.

The post 16 may be made in one piece or it may be split and connected by a clutch as is shown in Figs. 5 and 9. The lower section of the split post is fastened in the bottom of a flanged socket 23 which receives a clutch sleeve 24 surrounding the lower end of the upper post section.

The sleeve has a key-way 26 receiving a key 25 on the upper post section. The socket and sleeve are flanged, the latter having teeth 27 engaging in sumps 28 in the former, whereby rotation is contributed from the lower post section through its socket which in turn rotates the upper post section through the agency of the keyed sleeve.

For supplying electrical current to the lamp of the socket 22, a cable 29 extends through the tube 18 and at a point below said tube is connected to insulated commutator rings 30

on the post having suitable electric circuit connections 31 which permit rotation of the post. The post 16 is located eccentrically of the pivot 14 of the cab and truck. It is desirable to have the post remain relatively stationary when the cab is rotated so as to keep the rays of light directed on a fixed location. There are several ways of accomplishing this result, some of which will be described herein.

In Figs. 1 and 2 the post 16 is extended below the floor of the cab 11 and has a pulley 32 fastened thereon. A belt 33 passing around this pulley also passes around a pulley 34 fastened to the pivot post 14 which is stationary in the truck 10, thus when the cab 11 is rotated the belt will cause the post 16 to retain its relative position with reference to the stationary truck, whereby the lamp 20 will remain stationary.

In Fig. 4 a similar result is obtained by fastening a gear 35 on the lower end of the post 16. This gear meshes with a pinion 36 suitably journaled to the floor of the cab and in turn meshing with a gear 37 fastened to the stationary pivot post 14. When the cab is swung in the direction of the arrow (Fig. 4) the gear 35 and pinion 36 will be swung in the directions of the arrows owing to the connection with the fixed gear 37. The term gearing is used herein to designate gears, pinions, belts and chains and sprockets.

In Figs. 5 and 6 the turn table 13 is provided the same as in Figs. 1 and 2. A shaft 40 mounted in a bracket 38 on the side of the cab is driven by a beveled gear 39 from a beveled pinion 39' suitably driven from the cab and the latter thus rotated. A counter shaft 41 is mounted in a bracket 42 on the side of the cab and has a pulley 43 fastened thereon. This pulley 43 is driven by a belt 44 from a pulley 45 on the shaft 40. A second pulley 46 on the shaft 41 drives a belt 47 which in turn drives a pulley 48 fastened on the lower end of the post 16. The arrows indicate the directions of rotation of the elements.

Figs. 7 and 8 show still another driving arrangement. The cab may be rotated as is shown in Figs. 5 and 6 or by any other means involving a ring gear 13'. A pinion 49 engages the ring gear and is fastened on a shaft 50 journaled in a bracket 51 secured to one side of the cab at the bottom thereof.

A pulley 52 fastened on the shaft 50 drives a belt 53 which in turn drives a large pulley 54 journaled under the floor of the cab. The pulley 54 is connected with and rotates a small pulley 55 which in turn drives a belt 56. The belt drives a larger pulley 57 fastened on the lower end of the post 16. The arrows indicate the directions of rotation. In each train of gearing in the several figures the rotating elements are of such diameters as to give the desired result in retaining the post in its relative position. By lifting the sleeve 24 of the

clutch the post 16 may be rotatably adjusted to focus the light on the desired location.

Various changes in the size and shape of the different parts, as well as modifications and alterations, may be made within the scope of the appended claims.

What I claim, is:

1. In a work illuminating device, the combination with a portable truck and a cab rotatably mounted on the truck, of an illuminating member having lighting means at its upper end and rotatably mounted on the cab, and means connected with the relatively stationary truck for holding the illuminating member so as to direct the rays of its lighting means on a fixed location while the cab is being rotated.

2. In a work illuminating device, the combination with a portable truck and a cab rotatably mounted on the truck, of an illuminating member having lighting means at its upper end and rotatably mounted on the cab, means connected with the relatively stationary truck for holding the illuminating member so as to direct the rays of its lighting means on a fixed location while the cab is being rotated, and means for adjusting the illuminating member to direct its light rays on different locations.

3. In a work illuminating device, the combination with a portable truck and a cab rotatably mounted on the truck, of an upright post rotatably mounted in the cab, illuminating means mounted on the upper end of the post above the cab, and means connected with the rotatable post for compensating the rotation of the cab whereby the illuminating means is held in a relatively fixed position with relation to the work.

4. In a work illuminating device, the combination with a portable truck and a cab rotatably mounted on the truck, of an upright post rotatably mounted in the cab, illuminating means mounted on the upper end of the post above the cab, means connected with the rotatable post for compensating the rotation of the cab whereby the illuminating means is held in a relatively fixed position with relation to the work, and a clutch connected with the post for adjusting the same with relation to said connecting means whereby the illuminating means may be directed on different work locations.

5. In a work illuminating device, the combination with a portable truck and a cab rotatably mounted on the truck, of an upright post rotatably mounted in the cab, an extension vertically adjustable on the upper end of the post above the cab, a lamp socket adjustably mounted on the extension, a rotating element on the lower portion of the post, and a driving connection connected with said rotating element.

6. In a work illuminating device, the combination with a portable truck and a cab ro-

tatably mounted on the truck, of an upright
post rotatably mounted in the cab, an extension
vertically adjustable on the upper end of
the post above the cab, a lamp socket adjust-
ably mounted on the extension, a rotating
5 element on the lower portion of the post, a
driving connection connected with said rotating
element, and a clutch connected in the
post whereby the upper portion of the post
10 may be rotatably adjusted with relation to the
lower portion of the post.

In testimony whereof I affix my signature.

MORTON H. EDMONDSON.

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