

Sept. 17, 1946.

W. A. COURTENAY, JR

2,407,629

VEHICLE HOIST

Filed May 2, 1944

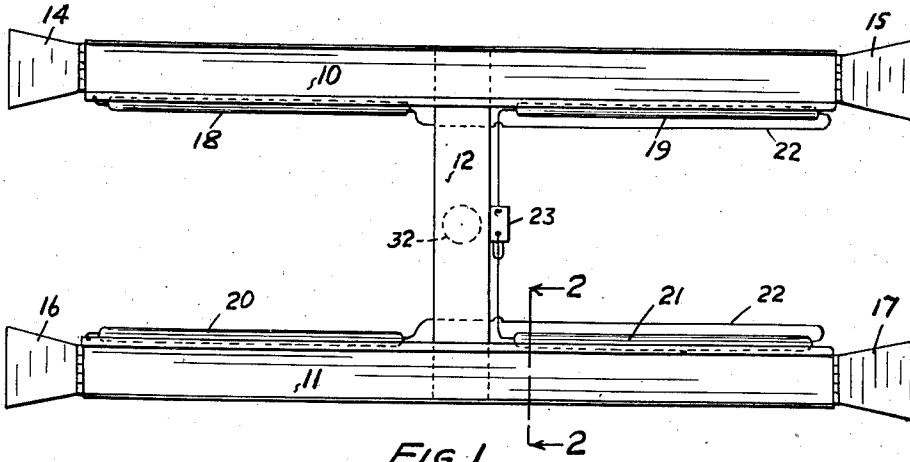


FIG. 1.

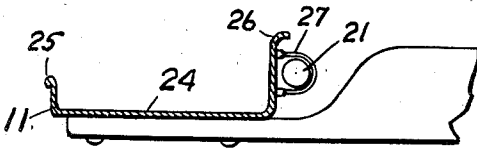


FIG. 2.

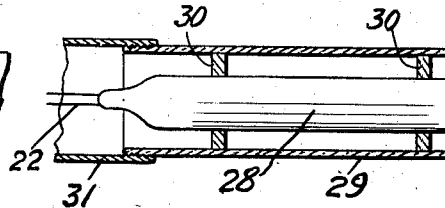


FIG. 3.

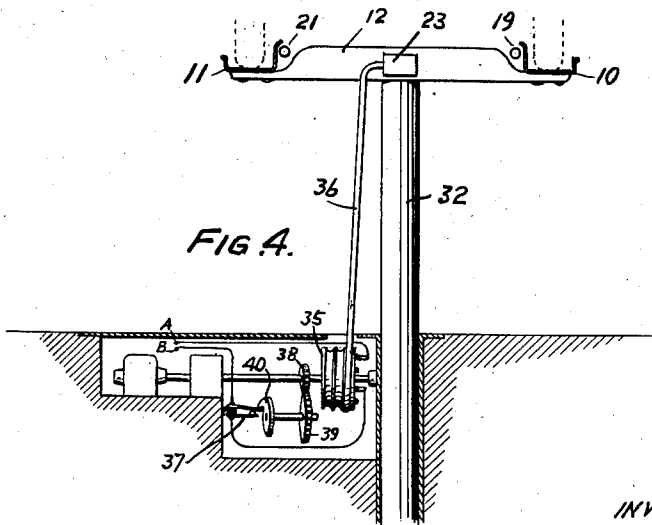


FIG. 4.

INVENTOR

WITNESS:

Robert R. Kischel

William A. Courtenay, Jr.,
BY

Bussier and Harding
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,407,629

VEHICLE HOIST

William A. Courtenay, Jr., Chester, Pa., assignor
to Sun Oil Company, Philadelphia, Pa., a cor-
poration of New Jersey

Application May 2, 1944, Serial No. 533,686

2 Claims. (Cl. 240—2)

1

This invention relates to hoists or lifts which are used for raising automobiles, trucks, buses, etc., to a position which permits an operator to readily work on the chassis and other parts of the vehicle which are inaccessible when the vehicle is on the ground. In particular the invention contemplates an arrangement for providing proper and effective illumination for the operator when the hoist is in its raised position.

It is the custom for an operator when working on the underside of a vehicle to be provided with an incandescent light which he carries or which is suspended on the vehicle adjacent to the parts to be worked upon, or is of the portable floor type. This provides a great inconvenience to the operator since the light must be moved from time to time as the work progresses, and it is impossible with this procedure to always obtain the proper light in all the areas to be worked upon. Also because of the frequent moving of the light, it and the various connections are subject to extreme wear and breakage necessitating frequent replacements.

The present invention utilizes a fluorescent type of light which is so associated with the hoist or lift that all parts of the understructure of a vehicle are readily visible. The lights are made a part of the hoist or lift and are so arranged as to be automatic in operation and not requiring any attention of the operator. The electrical equipment for controlling power to the lights is associated with the apparatus in a manner to be explosion proof in order to eliminate hazards ordinarily existent where automotive equipment is being serviced.

Referring to the drawing wherein:

Figure 1 is a plan view of the apparatus with the various parts shown diagrammatically.

Figure 2 is an enlarged view in elevation of the apparatus taken on the line 2—2 of Figure 1 with a portion sectioned.

Figure 3 is an enlarged detail of a portion of the apparatus.

Figure 4 is an elevational view of the apparatus.

Referring to Figure 1 the hoist or lift comprises a pair of runways 10 and 11, interconnected by a bolster 12, which is fixedly secured to the runways. The runways 10 and 11 are provided with the usual ramps 14, 15, 16 and 17 which are hingedly mounted in order to provide inclined guides for directing the vehicle onto the runways. The illuminating means comprises a plurality of fluorescent light assemblies as indicated at 18, 19, 20 and 21 which are positioned between the runways 10 and 11, and electrically connected by a

2

suitable line as indicated generally at 22, which has one end grounded to each runway as shown.

As heretofore mentioned the illuminating means will be of the fluorescent type since they can readily be constructed to give effective illumination while being of relatively small diameter adapting them to occupy relatively confined spaces extending from the bolster of the lift to each end of the runways. The fluorescent illuminating means may be of either the so-called cold or hot cathode type, but since the hot cathode type necessitates a time lag before it reaches its greatest intensity it is preferred to use the cold cathode type which is instantaneous. The light assemblies 18, 19, 20 and 21 in Figure 1 will be understood to be of the cold cathode type and a constant current high voltage transformer 23, will be provided in the circuit to effect the instantaneous lighting. With the hot cathode type of light the arrangement shown in Figure 1 would be similar except that the transformer would be eliminated and a starter substituted.

Referring to Figure 2 the runway 11 is shown in detail and comprises a rolled steel channel section forming the tread portion 24 with inner and outer upstanding flanges 25 and 26, providing a channel for receiving the wheels of a vehicle. The light assemblies as indicated are secured adjacent to the inner flange 26, for example by means of support 27, and are positioned below the upper edge of the flange in order to be shielded and protected thereby.

In Figure 3 a portion of a light assembly is shown in detail and comprises the fluorescent tube 28 positioned within a transparent plastic covering 29 suitably spaced from the tube by means of apertured discs 30. The discs 30 preferably will be constructed of a resilient material in order to give some resiliency to the assembly and provide protection against breakage through shock when the hoist is being raised or lowered. Each of the transparent coverings 29 will be provided with fittings 31 of suitable shape to enclose the unprotected electrical wires 22 in order to satisfy fire safety laws.

In Figure 4 the hoist is shown raised from the floor by means of a piston or cylinder 32 which may be hydraulically operated or operated by other suitable means (not shown). When the hoist is raised to a predetermined height, for example, four feet or a distance from the floor suitable for an operator to work, current from a source will be automatically supplied to the lights. To effect this various means may be resorted to, for example, a switch may be actuated directly by

3

the hoist or vehicle when a predetermined height is reached. In order, however, to provide an arrangement which satisfies fire safety laws, the switch means will be located in an explosion-proof box below the floor level. To this end a reel 35 is provided on which is wound a plural wire extensible cable 36 having one end connected with the transformer 23 and the other end connected with power lines A, B. The reel may be provided with springs to maintain the cable taut when the hoist is raised or lowered. In order to close the circuit to the light assemblies 18, 19, 20 and 21 a switch 37 is provided in the circuit and is arranged to be opened and closed through rotation of the reel 35. A suitable arrangement is to provide a gear train comprising a gear 38 secured to and rotatable with the shaft of reel 35 for driving gear 39 which in turn operates the switch 37 to close the circuit through the rotatable actuator 40 when the hoist has reached the predetermined height. For example, the switch 37 could be arranged to be closed when the reel 35 has traveled through sufficient number of revolutions to permit the flexible cable 36 to reach the predetermined height and through the gears 38 and 39 the actuator 40 has completed one revolution.

While only one specific arrangement of the invention is shown and described it is to be considered as exemplary and not limitative of the invention.

What I claim and desire to protect by Letters Patent is:

1. A hoist for vehicles which comprises a pair of spaced runways normally supported on the

4

ground floor for receiving a vehicle, means for elevating said runways, an electrical circuit including a power source and tubular lighting means, said lighting means being positioned in a confined space adjacent said runways and extending substantially the full length thereof, an explosion proof chamber, switch means in the circuit between said power source and said lighting means, said switch means being disposed beneath the ground floor and within said explosion proof chamber, means between said switch means and said hoist operable to actuate the switch and close the circuit from the power source to the lighting means when the hoist has been elevated to a predetermined height.

2. A hoist for vehicles which comprises a pair of runways having inner upstanding flanges for receiving and maintaining a vehicle thereon, means for elevating said runways, an electrical circuit including a power source and a plurality of tubular lights, certain of said lights being positioned along the inner flange of each runway and extending substantially the full length of the runways, switch means in the circuit between said power source and lights, an extensible electrical connection between said hoist and switch means for maintaining the lights in circuit with the power source when the hoist is in raised position, and an explosion proof chamber, said switch means being enclosed in said chamber and operable to close the circuit to the lights when the hoist is elevated to a predetermined height.

WILLIAM A. COURTENAY, Jr.