July 5, 1938. C. B. COLLINS 2,122,908

HOIST

Filed April 28, 1937

FIG. 1.

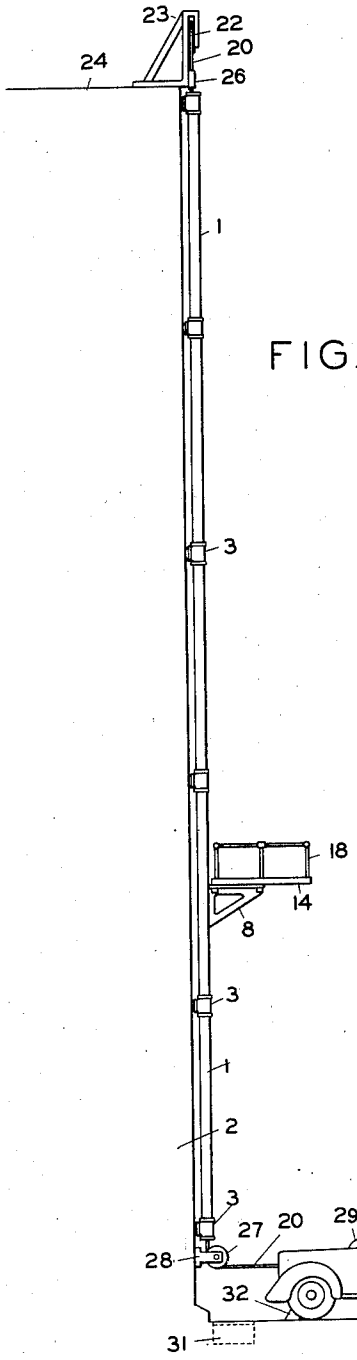


FIG. 4.

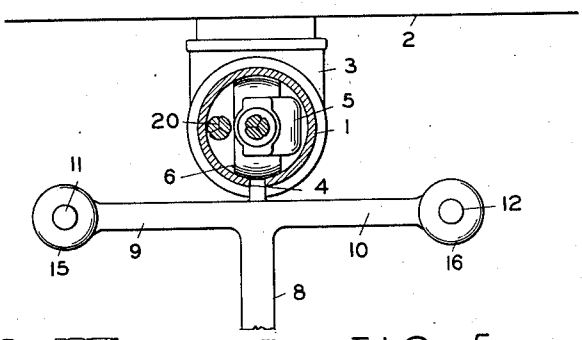


FIG. 3.

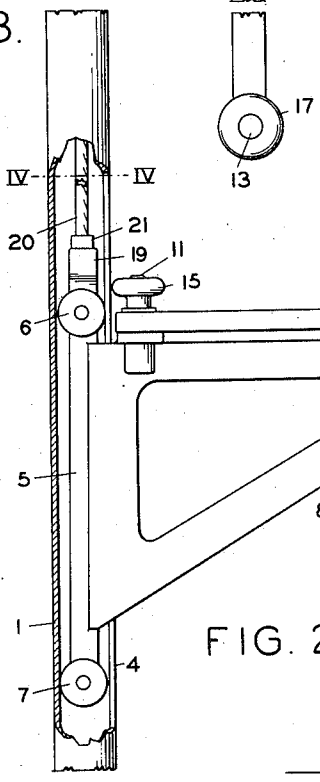
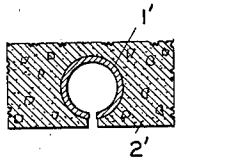


FIG. 5.



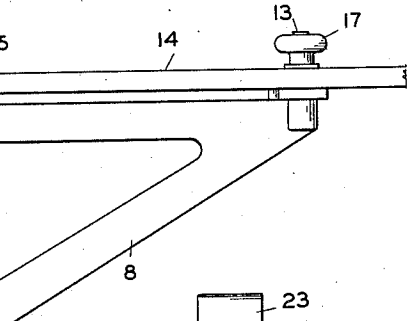
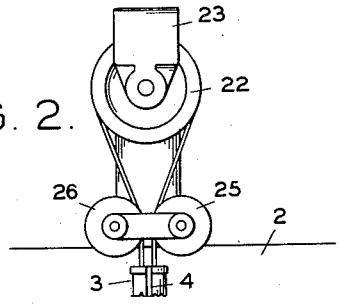


FIG. 2.



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2,122,908

UNITED STATES PATENT OFFICE

2,122,908

HOIST

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Application April 28, 1937, Serial No. 139,445

3 Claims. (Cl. 187—6)

This invention relates to improvements in hoists, and more particularly, to hoists for fire fighting purposes.

Among the objects of the present invention is to provide quick access to the roof and upper floors of buildings from the exterior thereof so as to expedite the fighting of fires caused by incendiary bombs.

Another object is to reduce the unit cost of the hoist by providing a demountable hoist platform and separable means which may be used in conjunction with any one of a plurality of hoist installations.

Another object is to render the permanent portion of the hoist structure sightly and inconspicuous in appearance so as not to deface the appearance of the building to which it is applied.

Other objects and advantages appear as the description progresses.

In this specification and the accompanying drawing, the invention is disclosed in its preferred form. It is, however, to be understood that it is not limited to this form, because it may be embodied in other forms within the purview of the claims following the description.

In the one sheet of drawings:

Fig. 1 is a side elevation of a hoist assembly constructed in accordance with this invention. The apparatus is shown in operation.

Fig. 2 is a front view of the pulleys at the upper end of the hoist.

Fig. 3 is an enlarged side elevation view partly in vertical section illustrating the traveling member of the hoist.

Fig. 4 is a further enlarged horizontal section of the same taken along the line IV—IV in Fig. 3 with the hoist platform removed.

Fig. 5 is a detailed view in horizontal section showing the method of incorporating the guide member in a new building.

In detail, the construction illustrated in the drawing, referring more particularly to Fig. 1, comprises the hollow guide member formed by the pipes 1 interconnected and vertically mounted on the face 2 of a building by the T-couplings 3. The continuous slot 4 is provided through the pipe member 1 and the T-couplings 3 and extends from top to bottom of the assembled guide. In the case of buildings to be constructed in the future, the guide member may be countersunk in the face of the building 2' as indicated at 1' in Fig. 5. The permanent portion of the hoist structure in this form is rendered invisible thus effectually preventing marring of the architectural design of the building.

The traveler 5 is located within the guide 1 and has the rollers 6 and 7 at the upper and bottom portions thereof respectively engaging the interior of the pipe 1, refer to Figs. 3 and 4. The rollers are centrally located with respect to the transverse center line of the piping. The traveler 5 is offset on one side relative to the rollers. This leaves clearance on the opposite side of the rollers for purposes to be later described. The bracket 8 integral with the traveler 5 extends forwardly therefrom through the slot 4. The bracket has the lateral arms 9 and 10 projecting from opposite sides thereof adjacent the guide 1. The bolt shanks 11, 12, and 13 are fixed in the end of the arms 9 and 10 and the forward end of the bracket 8 respectively.

The platform 14 rests on the bracket 8 and is firmly secured thereto by the nuts 15, 15 and 17 threaded on the shanks 11, 12, and 13. For rapid assembly, the nuts 15 to 17 may be in the form of hand wheels. The platform 14 need only be sufficiently large to accommodate one person together with chemical equipment for use in quenching the blaze. The platform is provided with the usual hand rails 18.

The upper portion 19 of the traveler 5 is aligned with the axis of the guide. The lower end of the cable 20 is connected to the upper end 19 of the traveler by means of the union 21. The cable 20 extends upward through the open upper end of the guide 1 and passes around the pulley 22.

The pulley 22 is mounted in the bracket 23, which is fixed on the parapet 24 of the building. The guide pulleys 25, 26 are similarly mounted on the bracket 23. The pulley 25 guides the upwardly extending portion of the cable 20 from the axis of the guide 1 to the periphery of the pulley 22. The pulley 26 guides the fall of the cable 20 from the pulley 22 back into the guide 1, bringing it into the position indicated in Fig. 4. The clearance provided on one side of the rollers 6 and 7 as previously described allows room for the passage of the fall of the cable 20.

The lower end of the cable 20 passes around the pulley 27 which is anchored to the face of the building by the yoke 28. From the pulley 27, the cable passes to the sheave 29 on the motor truck 30. Conventional means, well known to those skilled in the art, are employed for driving the sheave 29 from the motor of the truck 30.

The invention operates substantially as follows:

The platform 14 is first secured on the brackets 8 by means of the hand screws 15, 17. The free end of the cable 20 is wound on the sheave 29.

Blocks such as 32 should be placed under the wheels of the truck to prevent its movement during the operation of the hoist. The firefighting equipment is loaded on the platform 14. The sheave 29 is then rotated by the motor of the truck 30 so as to wind up the cable 20. This raises the platform 14. When the platform has risen to the height desired, the rotation of the sheave 29 is discontinued, halting the movement of the platform and enabling the man thereon to proceed to the exact location of the blaze.

After the fire is subdued, the sheave 29 is operated so as to lower the platform 14 to its lowermost position. The hand nuts 15—17 are then removed, permitting the platform 14 to be demounted from its supporting bracket 8 and to be stowed on the truck 30. The free end of the cable is removed from the sheave 29 and may be coiled up within a covered pit such as is indicated at 31 below the level of the sidewalk. The traveler 5 and its projecting bracket 8 may be raised above the reach of passersby by manually pulling the cable 20 downward.

It will be seen that the only separate equipment required for individual buildings is the relatively inexpensive hollow guide, the cable 20, and its pulleys. This structure is relatively inconspicuous and may be entirely concealed in the face of new buildings as in the modification shown in Fig. 5.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. A hoist including a vertical tubular guide having a longitudinal slot therein; a traveler within said guide; rollers at the top and bottom of said traveler engaging the interior of said guide; said traveler being offset with respect to said rollers to provide clearance between the opposite side of said rollers and the adjacent interior wall of said guide; the top of said traveler being located on the axis of said guide; a pulley mounted at the upper end of said guide; a cable connected to the top of said traveler and extending upwardly therefrom, passing around said roller, and extending downwardly through said hollow guide member through the clearance provided between said rollers and the adjacent interior walls of said hollow guide; and motive means engaging the free end of said cable.

2. A hoist including a vertical tubular guide member having a longitudinal slot therein; a traveller within said guide member; rollers mounted at the top and bottom of said traveller and engaging the interior of said guide, said rollers being of a width sufficient to extend across said slot and engage the interior of said guide on opposite sides thereof; a bracket fixed on said traveller and extending laterally therefrom through said slot; a pair of opposed arms extending laterally from said bracket; a platform adapted to rest on said bracket and said arms; and threaded means located at the end of said bracket and each of said arms for detachably securing the platform thereto.

3. A hoist including a vertical tubular guide open at top and bottom and having a longitudinal slot therein; a traveller within said guide; rollers at the top and bottom of said traveller engaging the interior of said guide; said traveller being offset with respect to said rollers to provide clearance between the opposite side of said rollers and the adjacent interior wall of said guide; a pulley of larger diameter than said tubular guide mounted above the open upper end of said guide; a cable connected to the top of said traveller and extending upwardly therefrom, passing around said roller, and extending downwardly through the clearance provided between said rollers and the adjacent interior wall of said tubular guide; a pair of opposed pulleys engaging said cable intermediate the first mentioned pulley and the end of said guide and operating to guide said cable from the larger diameter of said first pulley into the smaller interior of said guide; and motive means engaging the free end of said cable.

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