June 3, 1941. H. J. RIBLET 2,244,374

SCAFFOLD HOIST

Filed Nov. 9, 1938

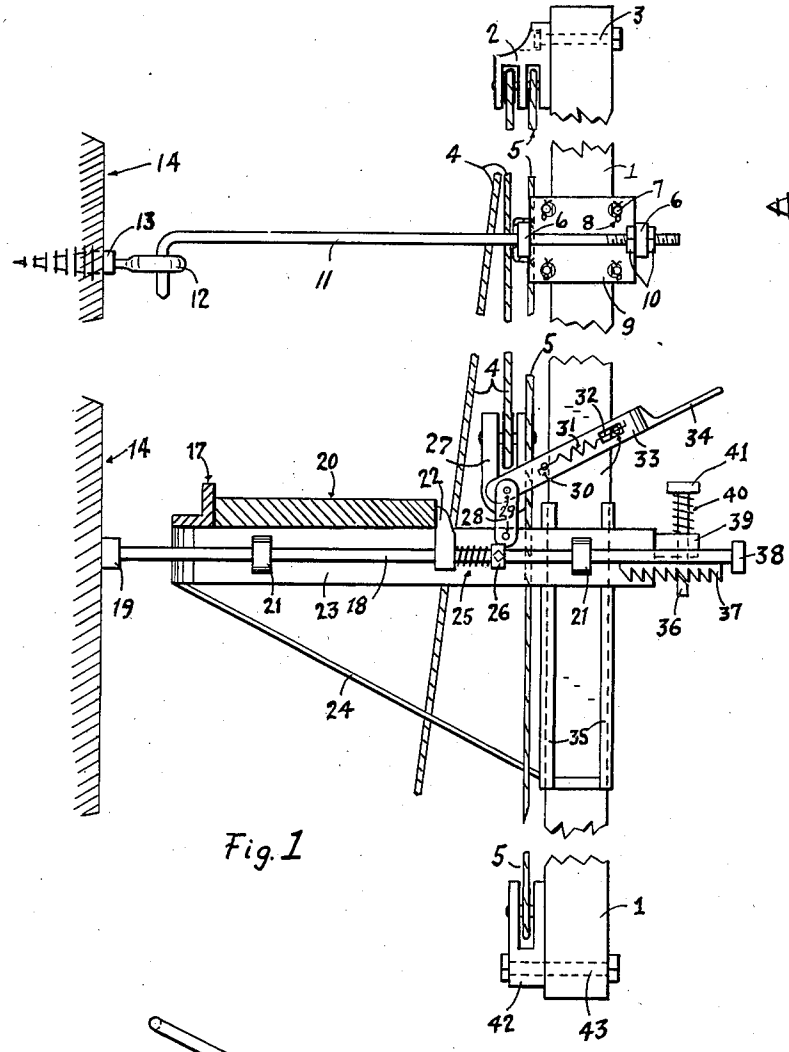


Fig. 1

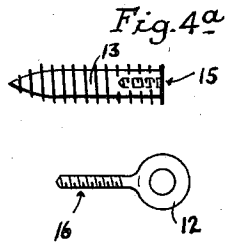


Fig. 4a

Fig. 4

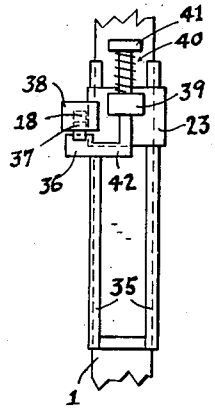


Fig. 3

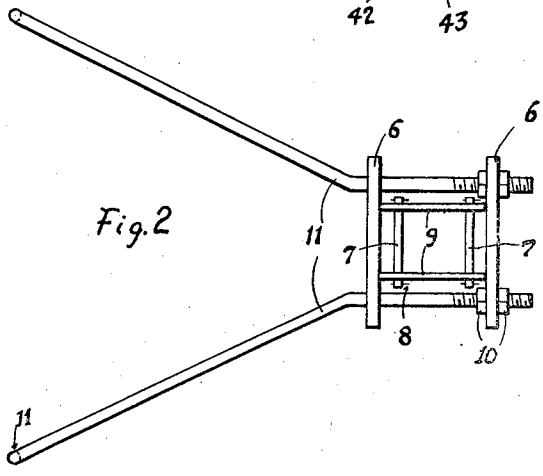


Fig. 2

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SCAFFOLD HOIST

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15 Claims. (Cl. 304—10)

This invention relates to scaffolds such as are used by painters and other workmen upon buildings, and relates particularly to mechanisms for attaching and steadying such scaffolds.

The objects of my invention are, first, to provide an absolutely safe anchoring means for securing the top of a scaffolding to a building, which anchorage means may be quickly operable from the foot of the scaffolding and which does not depend in any way on the existence of a projecting cornice; second, to provide an easily operable mechanism for stopping motion of the platform supporting member relative to the building and to the workers' platform.

I attain these objects by mechanisms illustrated in the accompanying drawing, in which—

Figure 1 is a side view of one of the two uprights needed to support a workers' platform.

Figure 2 is a top view of the wall bracket which secures the top of the upright to the building.

Figure 3 is a rear view of the platform supporting member.

Figure 4 is a view of a special fitting which may be secured to the building without seriously defacing the same.

Fig. 4a is a view of a threaded shell fitting inserted in the wall to receive the special fitting of Fig. 4.

Similar numerals refer to similar parts throughout the several views.

The character 1 designates an upright which is embraced by a slide shown in Figure 3 comprised of a pair of plates 9 welded to two narrow bars 6. Through four suitable spaced holes run four bolts 7 secured by cotter pins 8, but free to turn, which bear upon the uprights. Holes are drilled in the bars 6, through which go rods 11, bent as shown. They are fastened in place by nuts 10, and so may be easily changed. The slide is actuable up and down the upright by rope 5, which runs continuously through the pulleys, 2 and 42, and is tied to the slide at the bar 6, nearest the building. The ends of the rods 11 are bent to form hooks as seen in Figure 1 so that they may engage fittings previously set in the building and properly spaced. I have found a spacing of thirty inches satisfactory. I have shown in Figure 4a a fitting made of a non-rusting shell 13, with a fine machine thread 15, so that the screw eye 12 may be easily removed without defacing the building.

The operation of fastening the top of the upright to the wall is as follows: After two screw eyes 12 have been placed in the wall about thirty inches apart in a horizontal line approximately twenty feet from the ground, the operator raises the upright to a vertical position and places it midway between the screw eyes so that the hooks on the rods 11 will just touch the wall 14. Then while standing safely on the ground facing the building and steadying the upright with his elbows and forearms he will be able to raise and lower the wall bracket shown in Figs. 1 and 2 by pulling on the rope 5 with his hands. If the hooks on rods 11 are also thirty inches apart, he will then by remote control be able to adjust the wall bracket so that hooks on rods 11 drop into the screw eyes 12. To unfasten the upright, it is necessary only to raise the upright 1 a few inches until the hooks on rods 11 are free of the screw eyes 12.

Between a pair of uprights such as seen in Figure 1 projects a scaffold platform 20. It is supported by a long rectangular projecting member 23, (see Figure 1 and Figure 3) welded on both sides of the upright to the sleeve 35 and held in place by a locking device 33. The projecting member is braced by the bar 24. The link 28 is rotatable in a vertical plane about bolts 29. The locking device 33 consists of a U-shaped bar, running in back of the upright, to which a foot pedal 34 has been welded. Two steel bolts 30 run through a hole and slot 32, while spring 31 keeps them always bearing on the upright. A rope 4 runs through pulleys 2 and 27, the latter of which is fastened to the platform supporting device by means of the upper of the two bolts 29. Thus the operator may raise the platform from the ground by pulling on rope 4, during which time member 33 will assume a horizontal position. When he releases the tension in the rope the platform will drop a few inches while member 33 will assume an oblique position and "catch."

On the side of member 23 are welded two guides 21, through which runs a square shaft 18. Between these guides 21 we have a collar with set screw 26, a compression spring 25, and a dog 22, which is free to slide on the shaft 18. A piece of angle iron 17, about one foot long has been welded on top of the projecting member 23, and under the shaft we have a ratchet 37, which is engaged by a tooth 36, on the end of a member 42, which slides through a square hole in the guide 39 and is held up by a compression spring 40, operating on a nut 41. The operation of this is as follows: The operator, when the platform has reached the desired height and the locking mechanism 33 is in the locking position, may with his heel on the back of shoe 38, force

the shaft 18 through the guides 21, until the shoe 19 is bearing on the wall and exerting some considerable pressure thereon. Now, if collar 26 is properly adjusted, the dog 22 will be pressing against the plank 20, and holding it parallel to the angle iron 17. It is to be observed that either of these two effects can be independently annulled by properly adjusting the collar 26. Now it is obvious to anyone skilled in the art that a similar device on the other upright will eliminate any side sway that the platform might otherwise have.

To lower the platform the operator must grasp rope 4, and by pulling downward take some of the pressure from the locking device 33. Then by placing his foot on the pedal 34, and bringing it to a horizontal position, he frees the locking device 33 and also disengages the tooth 36 from the ratchet 37. Thereupon the spring 25 forces the shaft 18 outward taking shoe 19 away from the building and releasing the pressure of the dog 22 on the plank 20. He may then raise or lower his end of the platform by pulling on rope 4, or by letting it out.

It will be noticed that, if during the operation of lowering the platform supporting member 23 all the operator's weight were supported by the platform 20, there would be considerable binding of the sleeve 35 on the upright. However, when the operator's foot is placed on the foot pedal 34, the locking device 33 is kept in a horizontal position by the upper ends of the sleeve 35. Now the operator, by shifting his weight between the foot resting on the platform 20 and the foot on the foot pedal 34, may eliminate any tendency for the sleeve 35 to bind on the upright 1.

The primary advantges secured by the invention are: first, safety—the forces of gravity all act to keep the hooks 11 engaged in the fittings 12; secondly, versatility—the only assumption we need is that we have a place to fasten a fitting; thirdly, rigidity of the worker's staging.

What I claim is:

1. In a device of the character described, the combination with an upright, of a slidable member freely movable longitudinally of said upright, of means whereby said slidable member may be raised as well as lowered from a station on the ground, and an anchorage member carried by the slidable member and engageable with suitable fittings on the building after the slidable member has been brought to the proper height by means of said lowering and raising device.

2. In a device of the character described, the combination with an upright, of a wall bracket made of a sleeve loosely embracing the upright, a projecting member attached to the sleeve, interfittingly shaped at its extremity to engage a suitable interfitting fastening attached to the building and some member fastened to the sleeve by which it may be raised and lowered from a station on the ground.

3. In a device of the character described, the combination of a scaffolding upright, of a slidable member freely moveable longitudinally of said upright, of means attached to said slidable member whereby it may be raised as well as lowered by a worker stationed on the ground, and a projecting member carried by the slidable member and interfittingly shaped at its extremities to engage two suitable separated interfitting fastenings on the building so as to form with the sleeve a rigid triangle.

4. In a device of the character described, the combination with an upright, of a slidable member freely movable longitudinally of said upright, of means whereby said slidable member may be raised as well as lowered from a station on the ground, and an anchorage member carried by the slidable member and engageable with suitable separated interfitting fastenings on the building by remote control by lowering of the slidable member by means of said lowering and raising device.

5. In a device of the character described, the combination of an upright, of a wall bracket made of a sleeve loosely embracing the upright, two semi-flexible projecting members attached to the sleeve, interfittingly shaped at their extremities to engage two suitable interfitting fasenings attached to the building and a member fastened to the sleeve by which it can be raised and lowered from a station on the ground.

6. In a device of the character described, the combination with an upright, of a wall bracket made of a sleeve loosely embracing the upright, two rods attached to the sleeve and interfittingly shaped at their extremities to engage suitable separated interfitting fastenings attached to the building, a flexible member, fastened to the sleeve, running over a pulley at the top of the upright, having its two ends extending to the ground.

7. In a device of the character described, the combination of an upright, of a wall bracket made of a sleeve loosely embracing the upright, two rods exchangeably secured to the sleeve and interfittingly shaped at their extremities to engage suitable interfitting fastenings attached to the building, a member fastened to the sleeve by which it may be raised and lowered from a station on the ground.

8. In a device of the character described, the combination with an upright, of a wall bracket made of a pair of plates embracing loosely the upright laterally and fastened together by two flat bars, four rods running through four holes in each of the two plates and fastened by cotter pins but free to turn in the holes, two rods fastened by nuts to the two flat bars and bent at the ends to form hooks, a rope running continuously over a pulley at the top and one at the bottom of the upright and tied to the flat bar nearest the building, substantially as described.

9. In a device of the character described, the combination with a scaffolding upright and a platform supporting member, of a slidable member freely movable longitudinally of said upright of means whereby said slidable member may be raised as well as lowered from a station on the ground, and an anchorage member carried by the slidable member and engageable with suitable fittings on the building by lowering of the slidable member by means of said lowering and raising device.

10. In a device of the character described, the combination with an upright, of a slidable member freely movable longitudinally of said upright and provided with a member whereby it can be raised as well as lowered from a station on the ground and carrying an anchorage member engageable with suitable interfitting fastenings on the building, and a platform supporting member prevented from falling by an automatic locking device.

11. In a device of the character described, the combination with an upright, of a slidable member freely movable longitudinally of said upright, of means whereby said slidable member may be

raised as well as lowered from a station on the ground, and an anchorage member carried by the slidable member and engageable with the building by lowering of the slidable member by means of said lowering and raising device.

12. In a device of the character described, the combination with an upright, of a slidable member freely movable longitudinally of said upright, of means whereby said slidable member may be positively raised as well as positively lowered from a station on the ground, and an anchorage member carried by the slidable member and engageable with the building in some way after the slidable member has been brought to the proper height by means of said positive lowering and raising device.

13. In a device of the character described, the combination with a scaffold upright, of a platform supporting member, prevented from falling by a locking device, rotatable about a horizontal axis parallel to the building, containing two horizontal rods parallel to the building and acting as jaws, and provided with a projection away from the building to act as a foot pedal which is prevented from rotating below a position where the plane of the jaws is horizontal by the interposition of the platform supporting member.

14. In a device of the character described, the combination with a scaffold upright, of a platform supporting member, consisting of a shelf projecting toward the building, rigidly fastened to a sleeve freely movable longitudinally of said upright, and a locking device rotatable about a horizontal axis parallel to the building and provided with a foot pedal projecting away from the building and prevented from descending below the horizontal by the upper part of the sleeve.

15. In a device of the character described, the combination with scaffolding upright, of a platform supporting member consisting of a projecting shelf rigidly fastened to a sleeve freely movable longitudinally of said upright, and a locking device, fastened to the projecting shelf by means of two vertical flat bars and two horizontal bolts which is free to rotate about these bolts and is provided with a foot pedal projecting away from the shelf and is prevented from rotating below the horizontal by the upper part of the sleeve, essentially as described.

HENRY J. RIBLET.