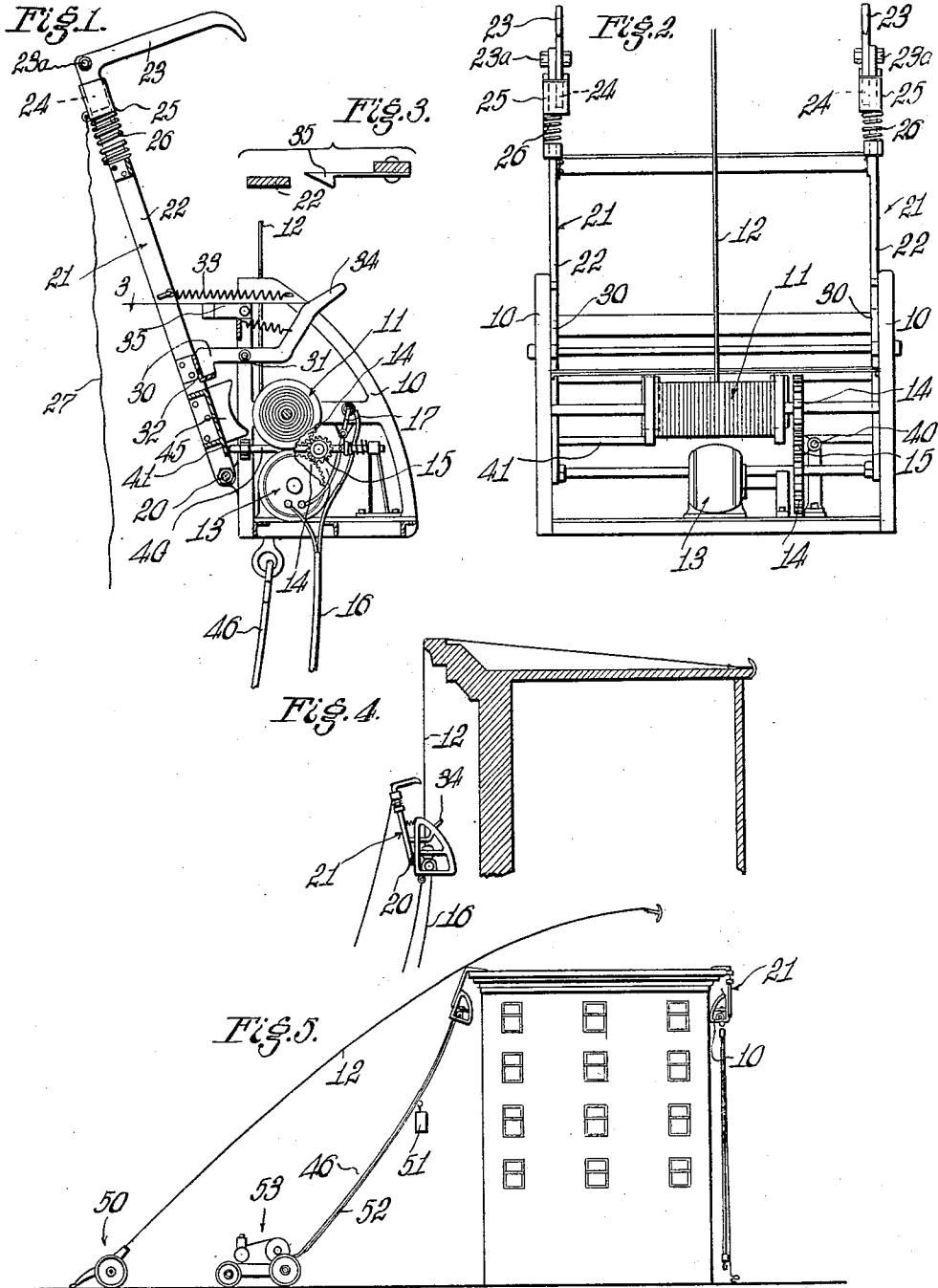


C. W. TAYLOR.
SCALING DEVICE.
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1,069,088.

Patented July 29, 1913.



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UNITED STATES PATENT OFFICE.

CHARLES W. TAYLOR, OF LOS ANGELES, CALIFORNIA.

SCALING DEVICE.

1,069,088.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES W. TAYLOR, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles, State of California, have invented new and useful Improvements in Scaling Devices, of which the following is a specification.

This invention relates to a device and combination of mechanism adapted for scaling a building or other structure and attaching itself thereon so as to afford an elevation means on the side walls thereof; the particular object of the invention being to supply a device for hanging and supporting work scaffolds and the like from the sides of buildings, and for rescue work in fires.

My invention comprises in combination a means for throwing a line over a building, and a hoisting means adapted to hoist itself on that line and having mechanism which will cause it to grapple with the cornice or top of a building to cause it to be secured there. Once the hoisting mechanism is securely attached to the building, a scaffold platform or cage may be run up and down along the face of the building. This may be done by any suitable means.

I have described in the following specification typical mechanism for accomplishing all of the desired operations of my invention, and I have also shown my preferred forms in the accompanying drawings, in which;

Figure 1 is a vertical longitudinal cross section of the hoisting apparatus of my mechanism. Fig. 2 is a rear view of the same. Fig. 3 is a detail section taken as indicated by line 3 of Fig. 1. Fig. 4 is a view illustrating the hoisting apparatus in the act of elevating itself on a building. Fig. 5 shows my complete apparatus in its various activities.

In the drawings, 10 designates a suitable frame work on which is mounted a suitable hoisting drum 11 adapted to carry cable 12. A motor 13 is mounted on frame 10 and is connected by gears 14 and 15 to the drum so as to rotate it to wind up the cable 12 thereon. The motor is supplied with current through any suitable flexible cable, and the current to the motor must pass through switch 17 which is normally closed but opens in a manner hereinafter to be described. The frame 10 is made in such

configuration as to move upwardly easily over any obstruction, such as window sills; and the hoisting device is supposed to raise itself on the cable 12 until it has reached the uppermost portion or cornice of the building.

Pivoted at 20 to the frame is a pair of grappling or supporting hooks 21 made in any convenient form, preferably as shown in Figs. 1 and 2. The hooks may be one or more in number; I have preferably shown two in the drawing. Each hook is composed of a shank 22 and a hook portion 23 pivoted thereto. Hook portion 23 has an extension 24 which normally rests alongside the shank 22 and is held securely in that position by a sleeve 25 surrounding the extension 24 and the shank 22. Sleeve 25 is held in the position shown in Figs. 1 and 2 by a suitable spring, and a trip cord 27 provides for pulling the sleeve 25 downwardly to release the extensions 24 and allow the hooks 23 to move on their pivots 23^a.

The grappling hooks 21 are normally held in position as shown in Fig. 1 by means of a suitable trigger 30 pivoted at 31. This trigger has one end engaging member 32 on the grappling hook, thus keeping the hooks in the position shown in Fig. 1 against the tension of spring 33. The other end of the trigger designated by numeral 34, is adapted to be engaged by the underside of an overhanging cornice at the top of the building and to be thus moved downwardly, thus causing the upward movement of the other end of the trigger and releasing the grappling hooks to be moved to the right of Fig. 1 by action of spring 33. When the trigger engages the under side of the cornice the hook portion of the grappling hooks will be over the cornice and their movement to the right in Fig. 1 will throw the hooks over the cornice ready to securely support the hoisting apparatus. When the hooks are moved under the action of spring 33 they are engaged by suitable detents 35, so that they cannot pass back to the position shown in Fig. 1. At the same time that the grappling hooks pass over the cornice the current to the motor is discontinued by the operation of switch 17, the gear 15 is thrown out of mesh with gears 14, and a brake is applied to drum 11. Gear 15 is mounted on a slider 40 and is normally spring pressed into engagement with gears 14. The end of the slider engages cross bar 41

on grappling hooks 21 in such manner that the movement of the hooks as above described causes the disengagement of gears 14 and 15. Switch 17 is mechanically connected to the slider in such a manner that the movement of the slider will open the switch and discontinue current to the motor.

The brake is applied to the drum by having a brake shoe 45 mounted on the hooks 21 to engage the drum 11 when the hooks are thrown to their position as described. These brakes are sufficiently strong in their action to prevent the unwinding of the drum under the weight of the hoisting mechanism alone; but the arrangement is such that a downward pull on a cable 46, or any other tackle, attached to the underside of the frame 10, will cause the hoisting mechanism to be pulled down on cable 12 and cause the hooks 21 to move down upon the cornice and to thereby solidly hold the whole device in its place.

In operation, I first employ some means to project the cable 12, or any extension thereof, over a building. This may be suitably done with a mortar illustrated at 50 in Fig. 5. After the cable has been projected over the building, its end is located and made secure at any suitable point, (it matters not whether the line has gone over this single building or over several others). The motor 13 of the hoisting apparatus is started and the apparatus begins elevating itself on the cable 12 toward the top of the building. This is illustrated in Fig. 4. When the mechanism reaches the cornice trigger 34 is operated and the grappling hooks are thrown inwardly over the cornice. The motor is stopped and the brake applied as hereinbefore described. The device may then be pulled down to where the hooks are securely resting upon the cornice.

Any suitable tackle may be carried up by the hoisting apparatus, and this tackle may then be used as an elevator means between the ground and the top of the building. For instance, the hoisting apparatus may carry up a cable which becomes the supporting cable for a movable cage 51, the cage being moved by other suitable cables 52 and operated from a suitable mechanism 53 on the ground.

When it is desired to release the apparatus from the building it is only necessary to pull upon the line 27; this releases the portions 23 of the hooks and allows the hoisting and grappling mechanism to again hang on the line 12. Downward pulling on the

line 46 will then bring the apparatus to the ground.

Having described my invention which I claim is:

1. In combination, a line having means to engage a support, a hoisting apparatus adapted to raise itself on said line, grappling hooks movable on said hoisting apparatus, an electric motor on said apparatus for supplying motive power for hoisting the apparatus on said line, means on the apparatus to engage with an exterior stationary object and to thereby cause the movement of the supporting hooks, and means coöperating with the supporting hooks to discontinue electric current to the motor.

2. In a device of the character described, a frame, grappling hooks movable thereon, a hoisting drum thereon, a line on said drum having means to engage a support, a motor operating said drum, and means engageable with an exterior stationary object to cause the movement of the grappling hooks.

3. In a device of the character described, a frame, grappling hooks movable thereon, a spring for moving the hooks, a trigger holding the hooks against spring movement and adapted to be operated by striking a stationary object, a winding drum, a line on said drum having means to engage a support and motive power means therefor.

4. In a device of the character described, a frame, grappling hooks movable thereon, a spring for moving the hooks, a trigger holding the hooks, against spring movement and adapted to be operated by striking a stationary object, a hoisting drum, a line on said drum having means to engage a support, an electric motor operating the same, and switch mechanism operated by the movement of the hooks to discontinue current to the motor.

5. In a device of the character described, a frame, a grappling hook movable thereon to engage over a stationary object, a hoisting mechanism on the frame having means to engage a support to raise the frame and hoisting mechanism, and means engageable with an extraneous stationary object to cause the movement of the grappling hooks.

In witness that I claim the foregoing I have hereunto subscribed my name this 24th day of June 1912.

CHARLES W. TAYLOR.

Witnesses:

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