Jan. 16, 1923.

1,442,101.

W. SMITH.

LIFTING DEVICE.

FILED DEC. 16, 1920.

Fig. 1

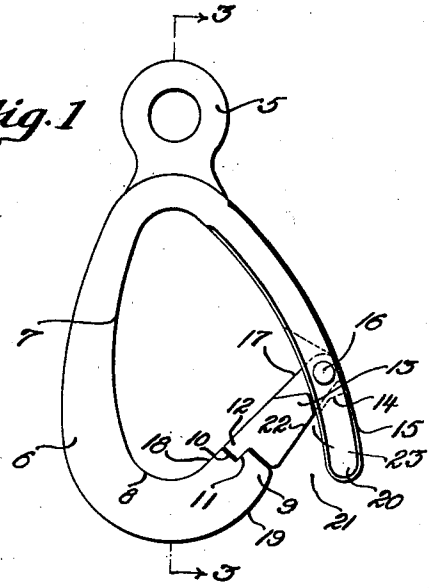


Fig. 2

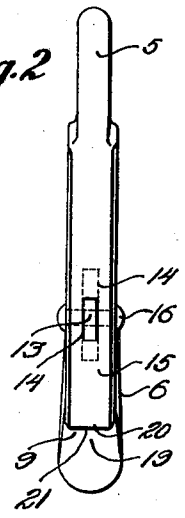


Fig. 4

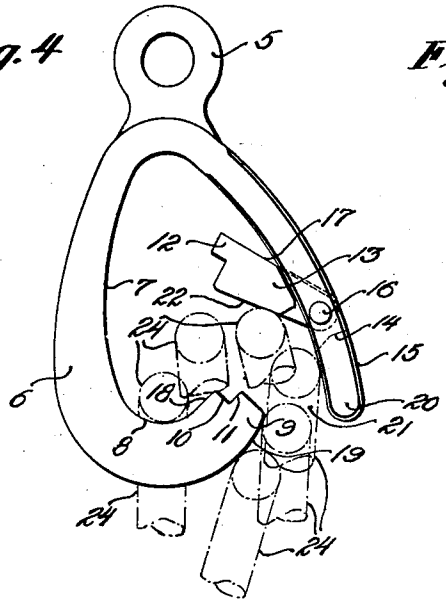
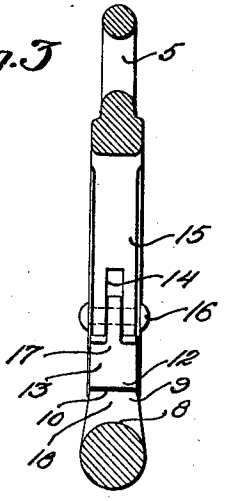


Fig. 3



Witnesses

Geo. A. Gruse

Augustus B. Copper

Inventor

Wolf Smith

By Joshua R. H. Potts

his Attorney

Patented Jan. 16, 1923. 1,442,101

UNITED STATES PATENT OFFICE.

WOLF SMITH, OF PHILADELPHIA, PENNSYLVANIA.

LIFTING DEVICE.

Application filed December 16, 1920. Serial No. 431,074.

To all whom it may concern:

Be it known that I, WOLF SMITH, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Lifting Devices, of which the following is a specification.

One object of my invention is to provide an improved lifting device which can be used with safety in connection with cables, chains or other lifting apparatus and which will include detent locking means so arranged and constructed that after connection of any looped member, such as an eye or chain link, with the hook that said looped member during the lifting operation cannot be accidentally detached from the hook.

Another object is to so construct my improved device that certain of the parts thereof will be so shaped that when engaged by a looped member, such as that above described, in the attempt to attach said member thereto, said parts will serve to correctly deflect and guide said member into the hook.

A further object is to make the device of my present invention of a simple and durable construction which can withstand rough usage without getting out of order.

These objects and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawings in which

Figure 1 is an elevational view showing a device made in accordance with my present invention,

Figure 2 is a side view of the device shown in Figure 1,

Figure 3 is a sectional view taken on the line 3—3 of Figure 1, and

Figure 4 is a view of the same general character as that shown in Figure 1 illustrating how an eye or looped member may be quickly and positively connected thereto.

Referring to the drawings, 5 represents a shank eye which has a hook 6 depending therefrom; said hook being curved to provide a recess 7 which, at the left side of a vertical plane passing centrally through the eye, is made partially elliptical. Said recess at its bottom is continued to provide a cradle or pocket 8. The end 9 of the hook 6 has a notch 10 therein which provides a ledge 11 for the purpose of forming an abutment for a lip 12 of a detent latch 13; said detent latch at its end opposite the lip 12 extending into a slot 14 in a retaining arm 15 which leads downwardly in a convex curve from the shank eye 5.

A pivot pin 16 extends through the arm 15 and through the end of said detent latch so as to pivotally connect the detent latch to the arm 15. The surface 17 of the detent latch 13 when in the position shown in Figure 1 is in alignment with the surface 18 which partially forms said pocket 8 and extends at an incline as clearly illustrated. The lower portion of the hook has a curved guiding surface 19 which leads upwardly to the extreme free end of the hook and the lower end 20 of the arm 15 is spaced from said surface 19 to provide a mouth or entrance opening 21. The upper wall of slot 14 is positioned to permit the latch to swing upwardly to a sufficient distance to admit the passage of any eye or link which will enter the opening 21 but to limit further upward movement of the latch.

The detent latch 13 when in its closed position as shown in Figure 1 has its bottom surface 22 slanting upwardly from the end 9 of the hook and the space between this surface 22 and the arm 15 provides a wedge shape space 23 which forms a continuation of the mouth or entrance opening 21.

The shank eye 5 forms a means of connection with a cable or chain (not illustrated) and during the use of the device, considering for example that an eyelet or chain link 24 which may be attached to any weight or burden to be lifted, is to be attached to the device, the same can readily be done as shown in Figure 4. It is merely necessary to move the looped member or link relatively to the device so that said member initially engages the surface 19 and by keeping said member in contact with said surface during a relative movement between the device and said member, the member will be guided into the mouth or entrance opening 21 and upwardly into the extension 23 where it will be compelled to swing the detent latch 13 on its pivot 16 and the surface 22 of said detent latch will guide the member 24 into the cradle or pocket 18 after which the detent latch will automatically move into its closed position and thereby lock the looped member to the device. Thus considering that the device is held stationary and the looped mem-

ber 24 is moved upwardly, the latter can be attached to the device by a single upward continuous movement after once contacting and holding the member 22 in engagement with the guiding surface 19 and it is not necessary on the part of the workman to direct his attention to casting or hooking the member 24 over the hook since the deflecting portions provided by the surface 19, the arm 15, and the detent latch 13 will automatically cause the looped member to be cast upon the hook and rest within the cradle 8.

While I have described my invention as taking a particular form, it will be understood that the various parts of my invention may be changed without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A lifting device including a depending hook adapted to sustain the load, a downwardly extending retaining arm spaced from the hook and a gravity latch pivotally mounted in the retaining arm and adapted to bridge the space between the hook and the retaining arm.

2. A lifting device including a depending hook adapted to sustain the load, a downwardly extending retaining arm spaced from the hook and provided with a slot, a latch pivotally mounted in the slot and adapted to bridge the gap between the hook and the retaining arm.

3. A lifting device including a depending hook, adapted to sustain the load, the upwardly extending end of the hook having a ledge, a downwardly extending retaining arm spaced from the hook and a gravity arm pivoted in the hook and having a shoulder adapted to engage with the ledge on the hook.

4. A device of the character described having a depending hook portion, a lower part of which extends upwardly to a free end, said device having a downwardly extending arm, the lower end of which is spaced from the end of said hook, said end of the hook having a deflecting surface leading upwardly and forming a part of the boundary of the space between said hook end and the end of said arm; and a detent latch pivotally connected to said arm at a position above the lower end of said arm and adapted to swing in one direction into a position to bridge the upper part of the space between said hook end and said arm, said latch being adapted to swing in another direction into a position so as to slant upwardly toward the side of said hook; substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WOLF SMITH.

Witnesses:

ELIZABETH GORBE,

CHAS. E. POTTS.