

No. 864,474.

PATENTED AUG. 27, 1907.

G. W. LEEPER.  
LOAD BINDER.

APPLICATION FILED APR. 16, 1906.

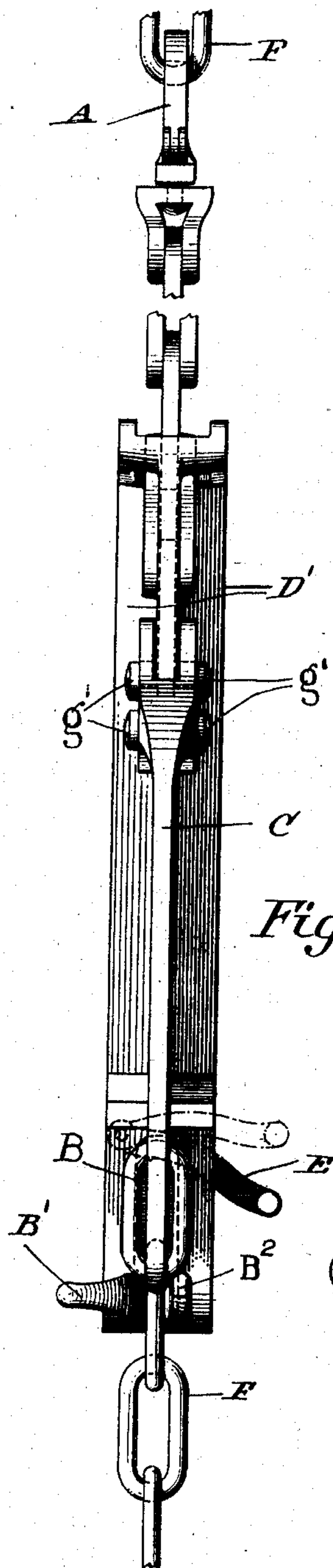


Fig. 1.

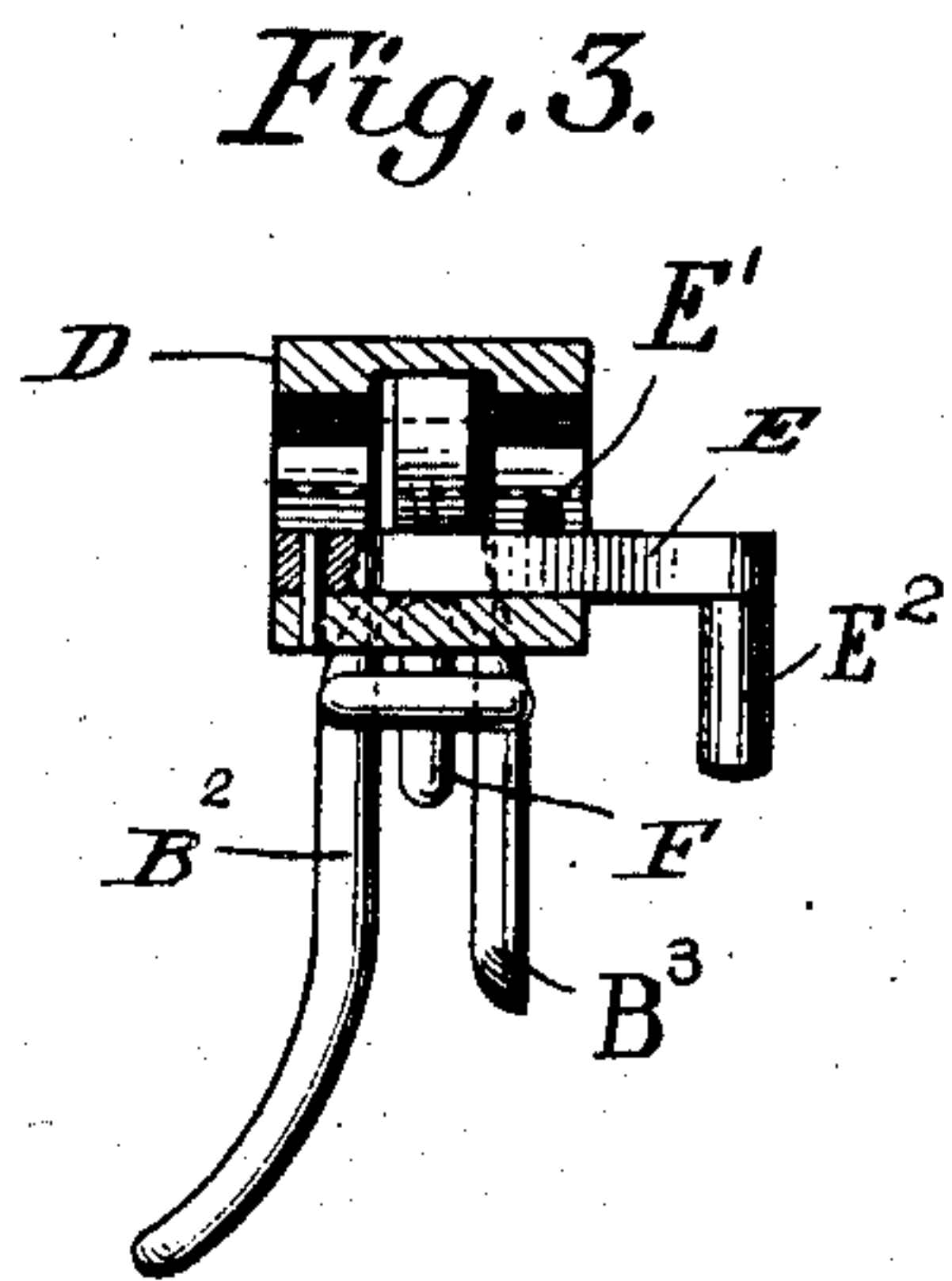


Fig. 3.

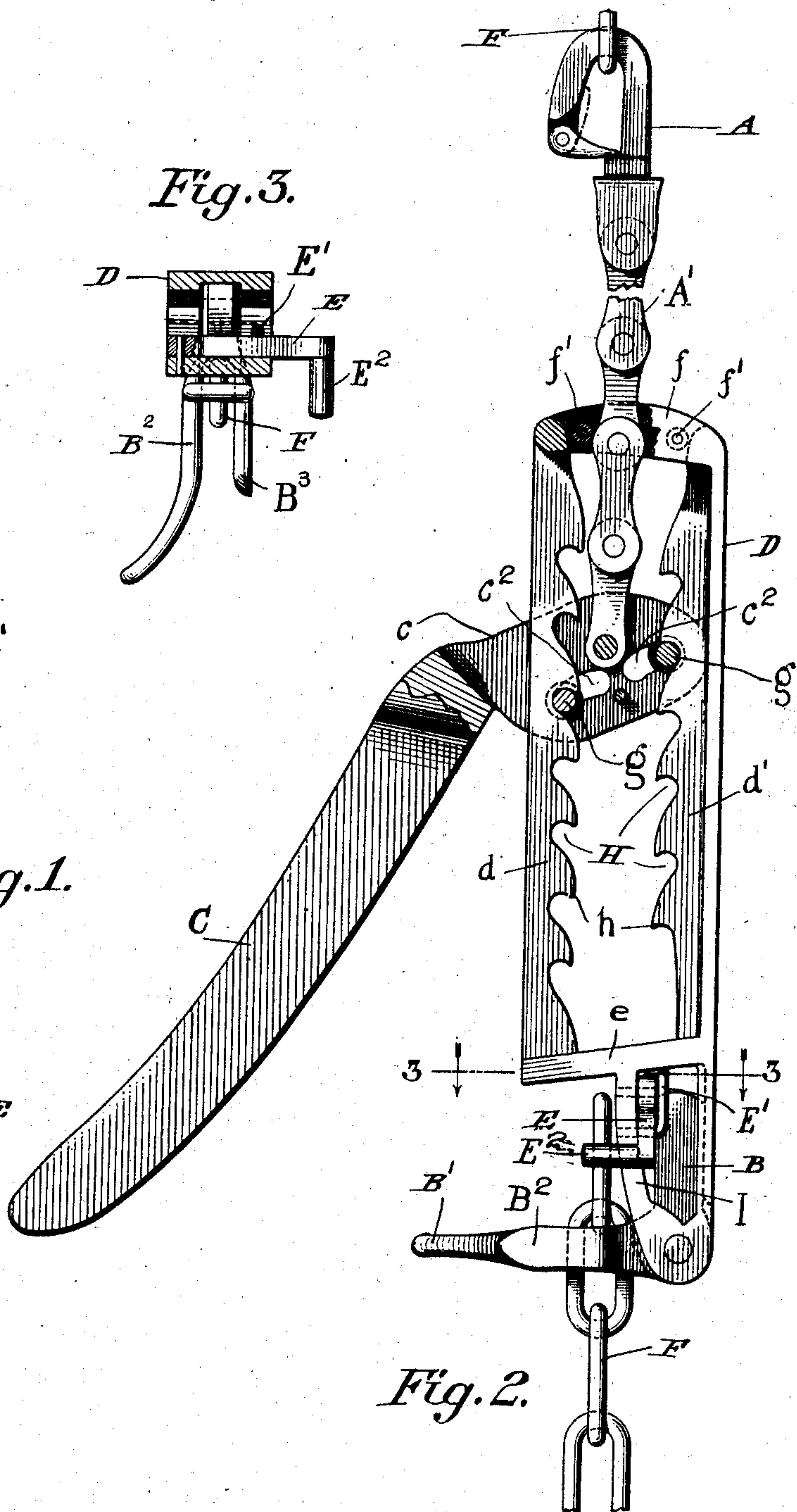


Fig. 2.

Witnesses:  
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# UNITED STATES PATENT OFFICE.

GEORGE WILLIAM LEEPER, OF PORTLAND, OREGON.

## LOAD-BINDER.

No. 864,474.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed April 16, 1906. Serial No. 312,064.

To all whom it may concern:

Be it known that I, GEORGE WILLIAM LEEPER, a citizen of the United States of America, residing at 210 East Forty-second street, in the city of Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Load-Binders, of which the following is a specification.

This invention relates to a device for binding or tightening the chain, rope or cable around an object or objects to be secured.

The object of the invention is to provide a simple and efficient device of this character which is cheap to manufacture and easy to operate.

In the accompanying drawings, Figure 1 represents an edge view of the binder; Fig. 2 represents a side elevation thereof partly in section; and Fig. 3 represents a horizontal section taken on line 3—3 of Fig. 2.

In the form shown this binder which is preferably made of steel comprises a frame D constructed of spaced side members  $d$   $d'$  connected at their lower end by a cross-bar  $e$  which is preferably made integral therewith and at their upper ends by a slotted bar  $f$ . The inner oppositely-disposed faces of these side members or bars  $d$   $d'$  are provided with downturned hook-shaped ratchet teeth  $h$  having curved lower faces forming sockets H, the sockets on one side bar being arranged opposite the teeth on the other side bar. One of the side bars  $d'$  has oppositely-extending flanges as  $D'$  for a purpose to be described.

A lever C has a bifurcated end  $c$  mounted to slide on the frame D, the arms of said bifurcated lever end having curved oppositely-disposed inclined slots as  $c^2$  arranged therein in which are loosely mounted rollers  $g$   $g$ . These rollers have retaining heads  $g'$   $g'$  and are adapted to engage the sockets H under the ratchet teeth  $h$ . The free ends of the arms of the bifurcated lever end  $c$  are rounded to engage the flanges  $D'$   $D'$  and serve as a fulcrum when the lever is moved downward. A flexible element  $A'$  is attached at one end between the arms of the bifurcated lever end  $c$  and at its other end is preferably provided with a hook A for engaging one end of a binding member F. The cross-bar  $f$  is slotted to permit the flexible element  $A'$  to pass freely therethrough and is preferably provided with rollers  $f'$  to facilitate the movement of the element  $A'$  therebetween.

Mounted on the end of the frame D having the cross-bar  $e$  is a slotted bracket I in the slot of which is fulcrumed a bell-crank lever. The short arm B of this bell-crank lever is movable in the slot of the bracket and is adapted to be engaged by a pivoted trip member E to lock the binder in operative position. The binding element F is detachably connected at one end with the long arm of the bell-crank lever which is preferably bifurcated and in the form shown the binding element comprises a chain, one link of which is disposed between the arms  $B'$  and  $B^2$  of said bifurcated long lever

arm. The trip lever or arm E is limited in its movement by a keeper  $E'$  and is preferably provided with an operating handle  $E^2$ .

In the use of this binder, the lever C being placed near the bar  $f$  of the frame D and the flexible member  $A'$  connected with the element F, said element F is drawn as tightly as possible around the article or articles to be bound by hand and the short arm B of the bell-crank lever is swung upward into the bracket and the trip lever E is dropped down in front thereof to hold it in this position. Then the lever C is raised and lowered like a pump handle and the rollers  $g$ ,  $g$  dropped by force of gravity into the sockets under the teeth  $h$  until sufficient tension is applied to the articles to be bound. To release the load, the trip lever E is raised and the tension on the binding element will draw the bell-crank lever down and unfasten the binding element so that it may be removed.

I claim as my invention:—

1. In a load binder, the combination of a member having ratchet teeth, a lever having slots in one end thereof, rollers slidably mounted in said slots to engage said teeth, a flexible element connected at one end to the slotted end of said lever, a bell-crank lever mounted on said teeth carrying member, a binding element connected with one arm of said bell-crank lever and adapted to be connected with said flexible element and means for engaging the other arm of said bell-crank lever to hold it in operative position.

2. A load binder comprising a frame composed of spaced side bars having ratchet teeth on their inner faces, a lever having one end bifurcated to straddle said side bars, rollers slidably mounted in said bifurcated lever end to engage said ratchet teeth, a binding element, a flexible element connected with said lever end, and a member pivotally mounted on said frame for engaging one end of said binding element, and means for locking said member to hold said binding element tight.

3. A load binder comprising a frame composed of spaced side bars having ratchet teeth on their inner faces, a lever having one end bifurcated to straddle said side bars, rollers loosely mounted in said bifurcated end to engage said ratchet teeth, a flexible element connected with said lever end, a binding element detachably connected with said flexible element, and a bell-crank lever fulcrumed to said frame and having means for detachably engaging the free end of said binding element and means for engaging said bell-crank lever to lock it in operative position.

4. A load binder comprising a frame composed of spaced side bars having ratchet teeth on their inner faces, a lever having one end bifurcated to straddle said side bars, rollers loosely mounted in said bifurcated end to engage said ratchet teeth, a flexible element connected with said lever end, a binding element detachably connected with said flexible element, a bell-crank lever fulcrumed on said frame and having one arm thereof bifurcated to receive the free end of said binding element and a trip lever or latch for engaging the other arm of said bell-crank lever to hold it in operative position.

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Witnesses:

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