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C. OLIVER ET AL

1,505,663

CRANE SLING

Filed Sept. 10, 1923

3 Sheets-Sheet 1

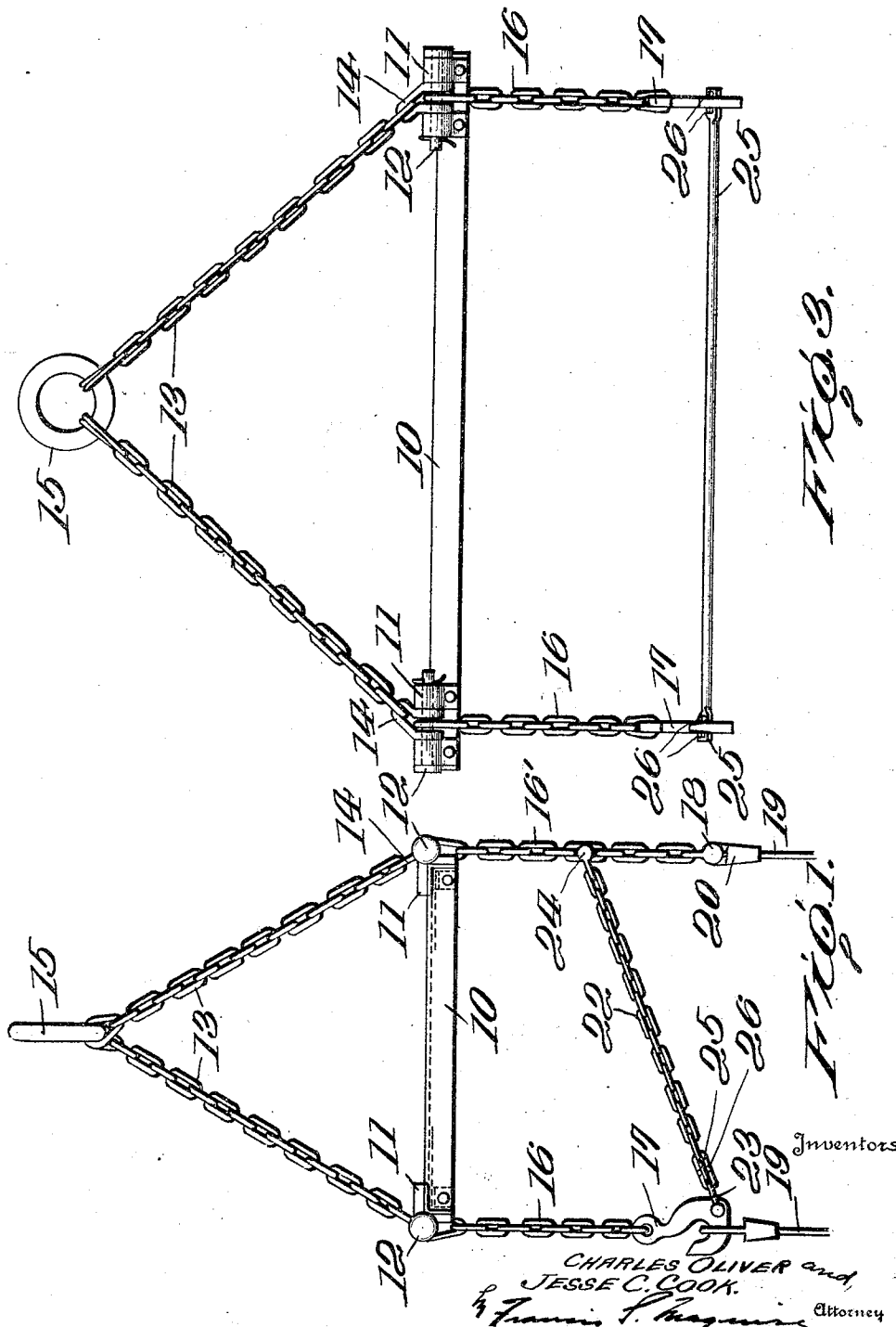


FIG. 2.

FIG. 1.

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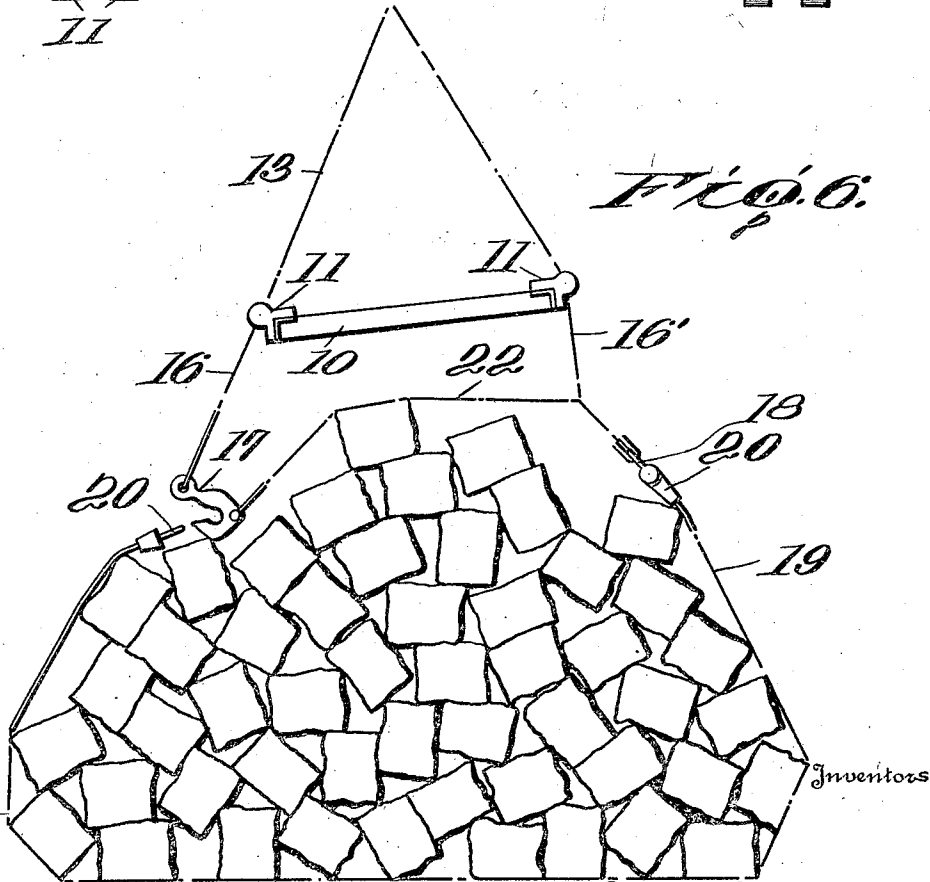
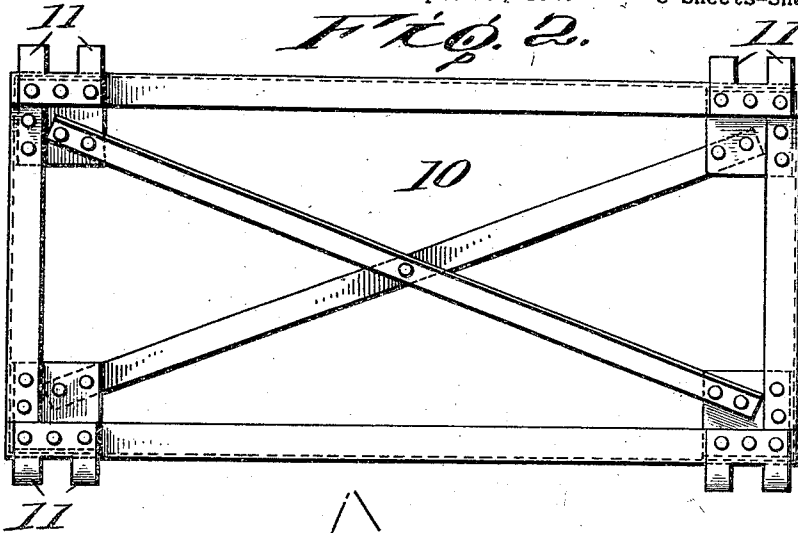
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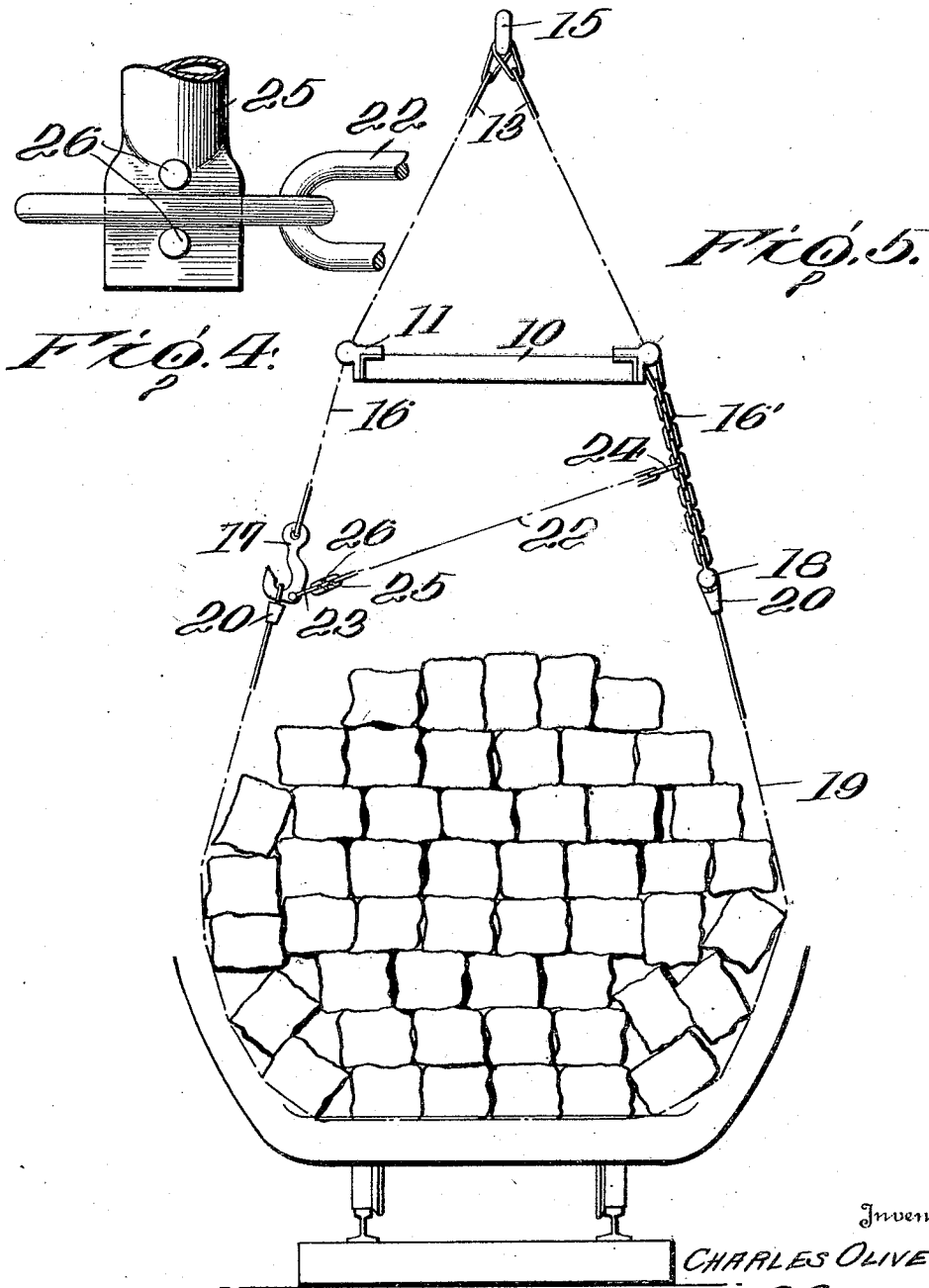
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CRANE SLING

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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

CHARLES OLIVER, OF TOLEDO, OHIO, AND JESSE C. COOK, OF JEFFERSONVILLE, INDIANA, ASSIGNORS TO AMERICAN CREOSOTING COMPANY, OF LOUISVILLE, KENTUCKY, A CORPORATION OF INDIANA.

CRANE SLING.

Application filed September 10, 1923. Serial No. 661,907.

To all whom it may concern:

Be it known that we, CHARLES OLIVER, of Toledo, in the county of Lucas and State of Ohio, and JESSE C. COOK, of Jeffersonville, in the county of Clark and State of Indiana, have invented certain new and useful Improvements in Crane Slings; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in crane slings, and an object is to provide means for handling railroad ties or other timber which have been loaded on a tram car, and given a preserving treatment, such as shown in patent to Lowry, No. 805,214 of November 21, 1905. The timber after being treated is transferred from the tram cars to railroad cars, and it has been customary to do this by hand, or to provide slings which required an attendant to release the sling after the load has been transferred from the tram car to the railroad car.

It is an object of this invention to overcome these objections and to provide a sling which may be operated by a crane in transferring the load from one car to another, and when the load is deposited on the car, to automatically cause the sling to be released from the load and removed therefrom, thereby eliminating the delay caused by the necessity of having an attendant to release the sling from the load, and increasing the amount of work which may be done with the crane and sling.

The invention consists of certain novel features of construction and combinations of parts which will be hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation of the sling frame; Figure 2 is a top plan view; Figure 3 is a view in side elevation; Figure 4 is a detail view showing the connection between spreader rod and cross chains; Figure 5 is a view in end elevation showing position of sling when load is to be removed from tram car; and Figure 6 is a similar view illustrating the manner of disengaging the sling from the load after it has been deposited on the railroad car.

A metal frame 10, preferably rectangular in shape, is provided at ends of the longitudinal sides thereof with brackets 11, 11 for carrying pins 12. Connected to the pins are four chains 13, 13, by means by clevises 14. The four chains 13 are connected to a ring 15, which is adapted to be engaged by a crane (not shown) for supporting and swinging the frame in elevating and lowering the load.

Suspended from the frame 10, are four chains 16, 16, and 16', 16', which are connected to the frame by the pins 12. Two of the chains 16, located on one side of the frame carry at their ends specially formed hooks 17, 17, while the other two chains 16' have clevises 18, 18 at the ends thereof.

The clevises 18 of the chains 16 have slings or cables 19 connected thereto which pass under and up around each side of the load, and are engaged by the hooks 17, 17, by means of eyes or loops 20 formed in the ends of the slings or cables 19. The frame 10 is of such length as to position the cables near each end of the load and is narrower than the overall width of the load, thus causing the cables 19 to angle inwardly in order to be connected to the chains 16, 16'.

Cross chains 22, 22 are connected to the hooks 17, 17, by means of clevises 23, and extend transversely of the frame 10, to the chains 16', to which they are connected by means of clevises 24, about midway of the length of the chains 16'. A spreader bar or rod 25 is interposed between the cross-chains 22 and connected thereto adjacent the hooks 17. The ends of the bar or rod 25 are preferably flattened or shaped to pass through a link of each of the cross chains 22, and fastened against accidental removal by means of pins or bolts 26, 26.

When the load is suspended the cross chains 22 are of just sufficient length to become taut. The loads must be of practically uniform cross section, depending on the size of the frame 10, and it is found that if stacked in a form approximating a circle that when lifted, the load will maintain this shape until set down by the crane on a level supporting surface. As soon as this happens, the load begins to spread out pushing the cables 19 with it (Figure 6). The cables 19 in turn pull on the chains 16, 16' and tend

to bring them in line with the new position of the cables. The cross chains 22, however, prevent the hooks 17, from taking this new position. The result is that after the load has spread out to a certain point, the cross chains 22 in connection with the cables 19 shifting around on the hook has caused the hook to tilt enough to allow the cable to slip off the hook. Thus the load is automatically unhooked and the cables may then be pulled out from under the load by the crane.

The action of releasing the hooks 17 from the cables 19, is often so violent as to cause the hook to rebound back and up into the frame 10. When this occurs the crane must be lowered so that the hooks 17 and chains may be disengaged from the frame. To overcome this difficulty, the spreader bar 25 has been provided, and because of its length cannot pass up between the members of the frame and the hooks are therefore prevented from becoming entangled in the frame 10.

From the foregoing it will be seen that the device has many novel features; the method of attaching the frame to the chains so as to allow the chains to swing in any required direction, and the frame being arranged with respect to the load so as to properly position the chains and cause the load to be released. The cross chains are attached in such a manner with respect to the hooks, as to cause the hooks to be automatically disengaged from the cables, and the spreader bar prevents the hooks from becoming fouled with the frame.

We claim as our invention:

1. In a crane sling, the combination of a frame, cables connected to the frame for passing beneath the load, hooks on the frame engaging the cables for supporting the load, and means for automatically causing the hooks to be actuated for releasing the cables upon depositing the load on a supporting surface.

2. In a crane sling, the combination of a frame, chains suspended from the frame, hooks carried by some of the chains, cables for passing beneath the load and engaged by the chains and hooks for supporting the load, and means for automatically causing the hooks to be actuated for releasing the cables upon depositing the load on a supporting surface.

3. In a crane sling, the combination of a frame, flexible means carried by the frame, cables connected to the flexible means and passing beneath the load, hooks having a flexible connection with the frame and adapted to engage the cables for supporting the load, and means for automatically causing the hooks to be actuated for releasing the cables upon depositing the load on a supporting surface.

4. In a crane sling, the combination of a frame narrower than the width of the load to be supported thereby, flexible means carried by the frame, cables connected to said means and passing beneath the load to be supported, hooks flexibly connected to the frame and adapted to engage the cables, and means connected to the hooks and flexible means for preventing the hooks from assuming the angle of pull of the cables upon depositing the load on a supporting surface and thereby automatically causing a disengagement of the hooks and cables.

5. In a crane sling, the combination of a frame, flexible means connected to the frame, cables connected to said means and passing beneath the load to be supported, hooks flexibly connected to the frame and adapted to engage the cables, a spreader bar interposed between the hooks, and means connected to the hooks, and flexible means for automatically causing the hooks to be actuated for releasing the cables upon depositing the load on a supporting surface.

6. In a crane sling, the combination of a frame, cables connected to the frame for passing beneath the load, hooks connected to the frame engaging the cables for supporting the load and means associated with the hooks for preventing the hooks from assuming the angle of pull of the cable upon depositing the load on a supported surface and thereby automatically causing a disengagement between the cables and hooks.

7. The combination with a crane sling comprising a flexible load supporting member including separably connected sections; of a means for automatically disconnecting said sections actuated upon the depositing of the load upon a support.

8. The combination with a crane sling comprising a flexible load supporting member including separably connected sections; of a means for automatically disconnecting said sections actuated by the lateral spreading of the load upon deposit thereof upon a support.

9. The combination with a crane sling comprising a load supporting member including separably connected sections adapted to permit lateral spreading of the load upon deposit of the same upon a support; of a connector member for joining said sections, and section disconnecting means cooperating with said connector member and rendered effective by the movement of said load supporting member to accommodate the spread of the load upon deposit thereof upon a support.

10. The combination with a crane sling comprising a load supporting member including separably connected sections adapted to permit lateral spreading of the

load upon deposit of the same upon a support; of a connector member for joining said sections, and section disconnecting means carried by said connector and a portion of said load supporting member said means being rendered effective by the movement of said load supporting member to

accommodate the spread of the load upon deposit thereof upon a support.

In testimony whereof we have signed this specification. 10

CHARLES OLIVER.
JESSE C. COOK.