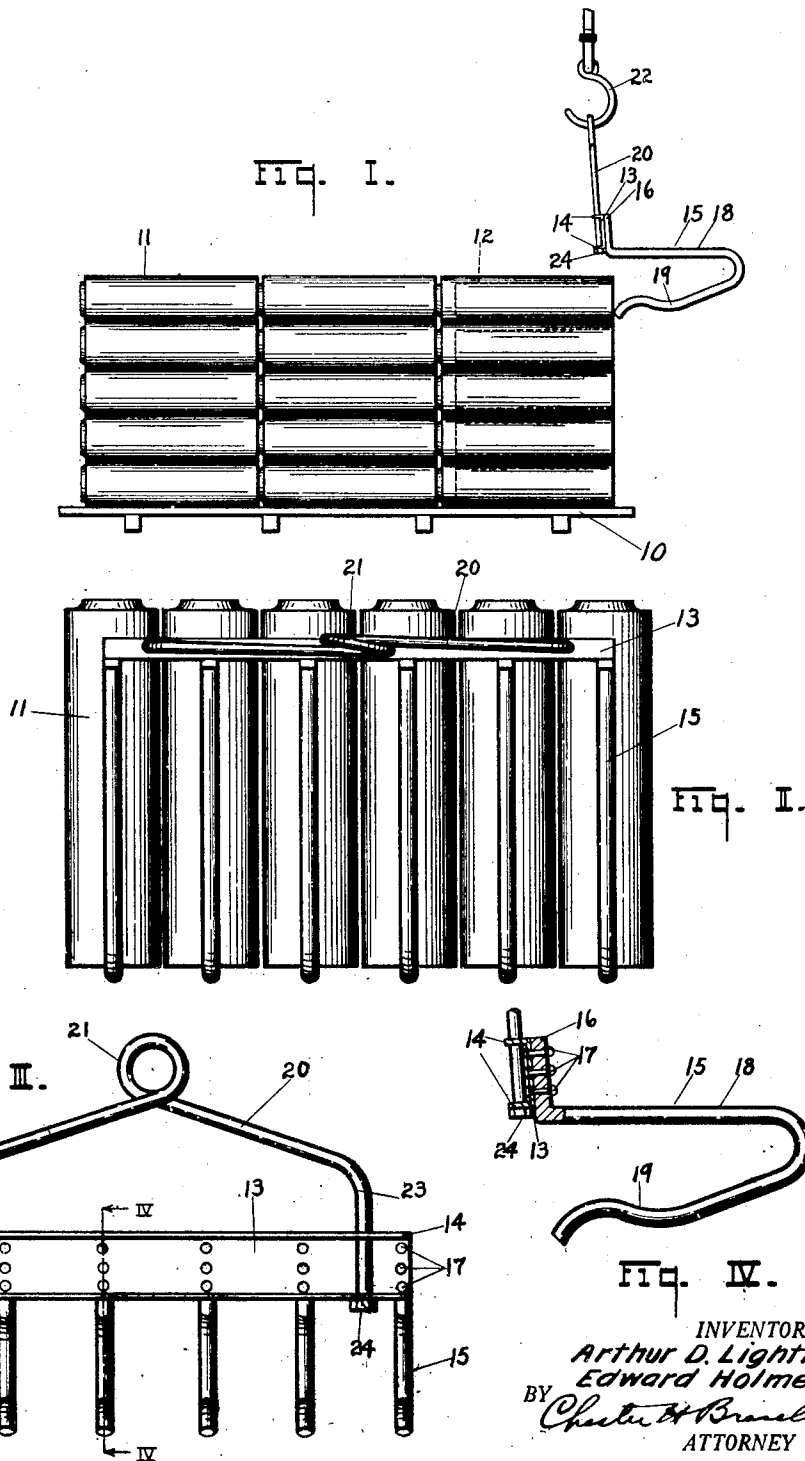


A. D. LIGHTNER AND E. HOLMES.
LIFTING HOOK FOR SHELLS.
APPLICATION FILED JAN. 6, 1919.

1,376,446.

Patented May 3, 1921



UNITED STATES PATENT OFFICE.

ARTHUR D. LIGHTNER AND EDWARD HOLMES, OF TOLEDO, OHIO, ASSIGNORS TO THE
WILLYS-OVERLAND COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

LIFTING-HOOK FOR SHELLS.

1,376,446.

Specification of Letters Patent.

Patented May 3, 1921.

Application filed January 6, 1919. Serial No. 269,919.

To all whom it may concern:

Be it known that we, ARTHUR D. LIGHTNER and EDWARD HOLMES, citizens of the United States, residing at Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Lifting-Hooks for Shells, of which we declare the following to be a full, clear, and exact description.

10 This invention relates to improvements in lifting hooks, such as are particularly adapted for use in handling artillery shells before the explosive charge and the timing mechanism has been placed in position
15 therein. While this invention is particularly adapted for use in handling shells, it may be used with equal facility for handling a variety of other articles, such as short lengths of hollow pipe or other material of that nature which admits of being
20 corded in piles.

One object of the invention is to provide a device of this character which is capable of handling a plurality of shells, and
25 depositing them in proper position parallel with each other.

A further object of this invention is to provide a device of this character which will readily engage a plurality of shells,
30 in their usual position parallel to each other and transfer them to a pile in substantially the same position.

A further object of this invention is to provide a device of this character which is
35 of simple construction and efficient in operation.

Further objects of this invention relate to economies of manufacture and details of construction as will hereinafter appear
40 from the detailed description to follow.

We accomplish the objects of our invention in one instance by the devices and means described in the following specification, but it is evident that the same may be varied
45 without departing from the scope of the invention, as pointed out in the appended claims.

A structure constituting one embodiment of our invention, which may be the preferred,
50 illustrated in the accompanying drawing, forming a part hereof, in which:

Figure I is an end elevation of a platform showing shells corded thereon, and the lifting hook positioned for engagement
55 with shells of the upper tier.

Fig. II is a plan view showing the lifting hook in engagement with a plurality of shells.

Fig. III is a front elevation of the improved lifting hook. 60

Fig. IV is a side view, partially in section, showing one of the lifting members in elevation taken along the line IV—IV of Fig. III.

In the drawing, corresponding reference
65 characters refer to similar parts throughout the several views. 10 designates a platform of suitable construction having corded thereon a plurality of tiers and shells 11, the shells being provided with cylindrical
70 recesses 12, as shown by the dotted lines applied to the shells at the right of Fig. I.

When the unfinished shells are received for further machining, it is necessary that they be removed from the cars upon which they have been shipped and placed in piles which are readily accessible, so that a part of the shells may be taken therefrom and transferred to the shop as they are required. In unloading the cars, it has been customary
75 to use a magnet for lifting the shells from the cars and depositing them in position to be piled. When this method of unloading the shells is employed, the shells, as released by the magnet, fall in a variety of
80 angular positions with respect to each other, and it is necessary to employ laborers to cord the shells properly upon skids or platforms so that they will be protected from coming into engagement with the ground
85 and placed in proper position so that they may be readily removed for transport to the shop. By the use of this improved lifting hook, the shells are lifted from the car in their original position parallel to each
90 other, and retained in that position as they are transferred to the skids upon which they are to be piled, and may be lowered upon the skids in such a manner as to retain their original position with respect to
95 each other, and may be properly positioned upon the skids. Thus it will be seen that the necessity of having the shells placed in proper position upon the skids after they have been unloaded is essential, and
100 that with our improved lifting hook the shells are unloaded and piled by one operation.

The lifting member is preferably formed of a channel base portion 13 having angu- 110

lar flanges 14 extending from the opposite longitudinal edges of the base portion and serving as an additional strengthening means for the same. A plurality of hook members 15 are provided with angular extensions 16 which are secured to one face of the base portion by bolts or rivets 17. The hook members 15 are attached to the base portion in such a manner that they are spaced substantially an equal distance from each other, and the plane of each hook member is at substantially a right angle to the length of the base portion.

Each hook member 15 comprises the angular extension 16, a straight portion 18, and a curved portion 19, adapted for insertion in the cylindrical opening of a shell.

A bail 20 is provided with an eye 21 for attachment to the hook 22 of a hoisting cable, and has parallel arms 23 adapted to pass through openings formed in the flanges of the base portion and to be held in position therein by nuts 24. It will be noted that the straight portions 18 of the hook members 15 lie in a common plane which forms an obtuse angle with the plane of the base portion, so that when shells are carried by the curved portions 19 of the hook member, and the base portion consequently held in substantial vertical position, the free ends of the curved portions 19 will extend upwardly to prevent the shells from being accidentally removed therefrom. The hook members 15 are bent in such a manner that the free ends thereof are spaced from the base plate and the various members are bent to a substantially equal extent so that they occupy a position as shown in Fig. I, all lying substantially within a surface generated by the displacement of one of the hooks in a direction longitudinally of the base portion, which ar-

range ment enables the hooks to hold a plurality of shells in such a position that they will be retained parallel to each other as shown in Fig. II, and thus may be deposited in proper position relative to each other.

While we have shown and described in considerable detail a specific embodiment of our invention, it is to be understood that this showing and description is illustrative only, and for the purpose of rendering our invention more clear, and that we do not desire to regard the invention as limited to the details of construction illustrated or described, nor any of them, except in so far as we have included such limitation within the terms of the following claims, in which it is our intention to claim all novelty inherent in our invention broadly, as well as specifically.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. In a device of the class described, in combination, a channeled base portion, a bail passed through the flanges of the base portion and fixed thereto, and a plurality of hooks secured to the base portion and extending therefrom at an angle to the plane of the base portion.

2. In a device of the class described, in combination, a channeled base portion, a bail passed through the flanges of the base portion and fixed thereto, and a plurality of hooks secured to the base portion, each of said hooks lying substantially within a surface generated by the displacement of one of the hooks in a direction longitudinally of the base portion.

In testimony whereof we affix our signatures.

ARTHUR D. LIGHTNER.
EDWARD HOLMES.