April 8, 1930. G. RAYMOND 1,753,578

PLATE CONVEYING HOOK

Filed Oct. 22, 1928

Fig. 1.

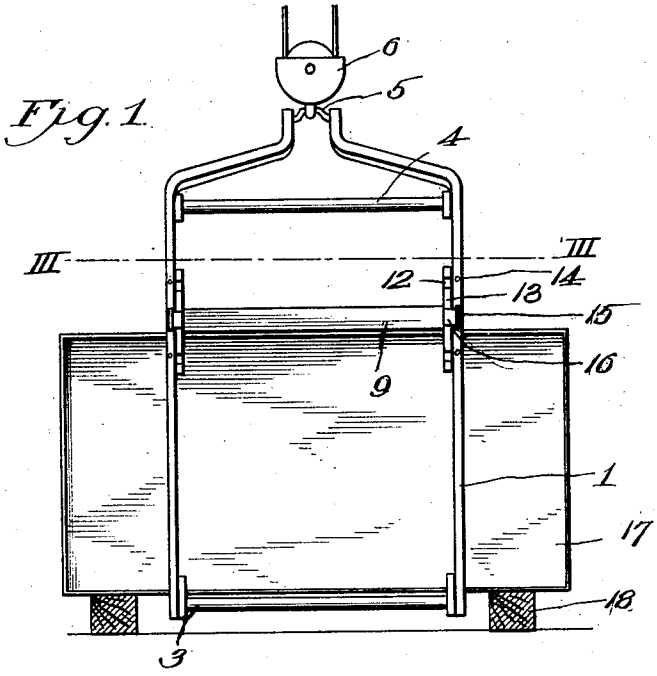


Fig. 2.

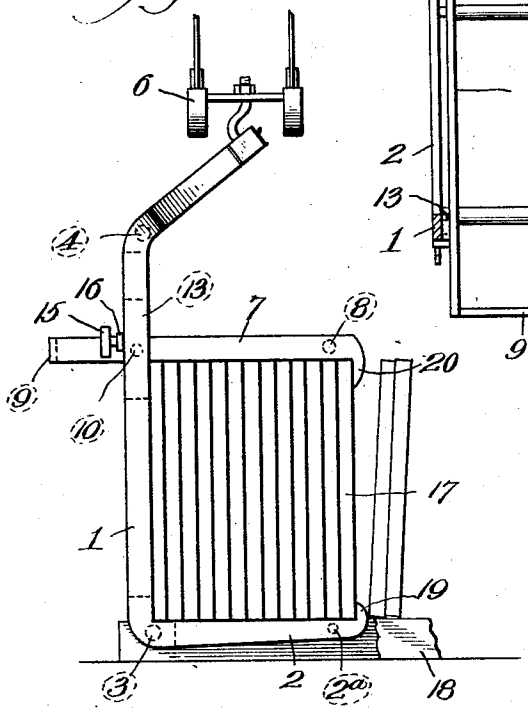


Fig. 3.

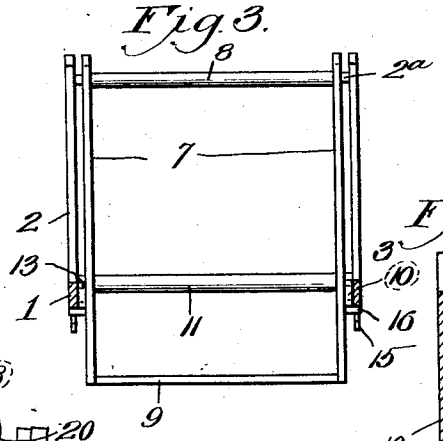
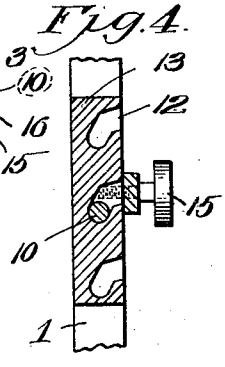


Fig. 4.



INVENTOR.
Gwynne Raymond
BY Thorpe & Thorpe
ATTORNEYS.

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UNITED STATES PATENT OFFICE

GWYNNE RAYMOND, OF KANSAS CITY, MISSOURI

PLATE-CONVEYING HOOK

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This invention relates to conveyor hooks and is particularly adapted for the transporting of a plurality of identical units, such as steel plates or the like, from a storage stack or rack on which the plates or units have been placed in edgewise relation, whereby it is possible to dispense with a great deal of manual labor in the handling of plates and which will consequently speed up the work and effect a material saving in labor.

A further object of the invention is to produce a hook of the general character outlined which will securely hold the load against accidental falling from position and from which the load may be easily unloaded without disarrangement of the relationship of its individual units.

Another object of the invention is to produce a device of the general character mentioned which is adjustable for plates or units of varying width.

A still further object of the invention is to produce a conveyor hook which is of strong, durable, efficient and inexpensive construction; and in order that it may be fully understood, reference is to be had to the accompanying drawing, in which:

Figure 1 is a rear elevation of the hook as it will appear when being engaged with a row of edgewise arranged flanged plates.

Figure 2 is an end view of the same with the supporting sleeper in the foreground broken away.

Figure 3 is a section on the line III—III of Figure 1 with the load omitted.

Figure 4 is an enlarged detail of a feature for adjustably supporting a part of the conveyor hook.

In the said drawing, where like reference characters identify corresponding parts in all of the figures, 1 and 2 respectively indicate the vertical and horizontal arms of a conveyor hook, said arms being in duplicate and being spaced any suitable distance apart depending upon the length of the load to be carried so that such load may be readily balanced. The arms 1 and 2 at their juncture or bend may be reinforced as shown and are braced by a cross rod 3. The arms 1 at their upper ends are braced by a cross rod 4 and beyond said rod converge inwardly and extend forwardly and terminate in a connecting cross member 5 so positioned that the hook, loaded or unloaded, will substantially balance with the arms 2 in a horizontal plane, said hook being illustrated as suspended from a block 6. The arms 2 at their ends are braced by a cross brace 2^a.

Pivotally mounted between the arms 1 and at such a distance above the arms 2 as to accommodate the height of the load, that is the width of the plates, is a load locking hook comprising a pair of arms 7, braced at their forward ends by a connecting cross bar 8, their rear ends being extended beyond the pivotal point and being connected by an operating handle or cross bar 9, whereby the hook may be manually swung around its pivotal point.

The device as illustrated is provided with adjustable pivots, although the adjustable feature is not essential to proper operation, comprising a pair of trunnions 10 one being secured to each of the arms 7, the bars being held spaced apart in line with their pivots by a cross bar 11. The trunnions are received within bayonet slots 12 in reinforcing bars 13 welded or otherwise secured to the vertical arms 1 as illustrated, with the open ends of the bayonet slots at the rear edges of the arms so that the strain of the load, as will hereinafter appear, will tend to more firmly seat the trunnions in position. To prevent accidental dislodgement of the locking hook or arms 7, the rear edges of the bars 1 may be provided with tapped holes 14 to receive the threaded shank of a locking bolt 15 carrying a locking plate 16 which will overlie and close the open ends of the bayonet slots as illustrated.

The load 17, as indicated in Figures 1 and 2, comprises a plurality of edgewise arranged similar flanged plates supported by a pair of parallel sleepers 18, all of the plates being ordinarily slightly inclined from the vertical as two of them are shown. When the hook is used to convey such material the sleepers are spaced a sufficient distance apart to permit the arms 2 to be thrust between them and under the load, the hook being pushed or

moved under the load until the first plate is substantially in abutment with the vertical arms 1, it being thus apparent that the length of the arms 2 determines the number of units or plates which may be conveyed as a single load. The hook is now given a vertical lift and the bevelled hook ends 19, formed on and extending above the plane of the load carrying portions of the arms 2, force their way between adjacent plates, it being understood that during the positioning of the hook, the operator, by pulling downwardly on the handle 9, elevates the locking arms 7 so that they do not interfere with the proper positioning of the device.

After the arms 1 and 2 have been properly positioned as described, the operator releases locking arms 7 and their bevelled hook ends 20 enter between the upper edges of the plates and thus hook over the edge of the last plate of the load, as shown in Figure 2. It will be apparent that the load may now be elevated without any possible accidental displacement of any part of the load to the injury or damage of workmen or equipment, and that it can be deposited on sleepers by a reverse of the operations above described without necessitating a great deal of manual effort in loading or unloading the plates whereby it is possible to materially speed up the work with a resultant saving in labor and an assurance of safety.

From the above description, it will be apparent that I have produced a device which embodies all the features of advantage set out as desirable in the statement of the objects of the invention, and while I have described and illustrated the preferred embodiment, it is to be understood that I reserve the right to make all changes properly falling within the spirit and scope of the appended claims.

I claim:

1. A device of the character described, comprising a pair of substantially vertical right angle shaped similarly facing angle members connected together at their upper ends and having upturned hooks at the free ends of their lower or substantially horizontal arms, a pair of similar hooks relatively inverted with respect to the first-named members and adapted to extend substantially parallel with the lower arms of the latter and pivotally mounted on the vertical arms of the latter at an intermediate point in their length.

2. In a device of the character described, a pair of angle shaped upwardly-facing hook members connected together at their upper ends and provided with a vertical series of bayonet slots in their upper arms, a pair of connected hooks inverted with respect to the first-named hook members and provided with pivots engaging certain of said bayonet slots, locking bars bridging the engaged locking slots to retain said pivots therein, and clamping screws secured to said locking plates and to said first-named hook members for retaining the locking plates in operative position.

In testimony whereof I affix my signature.

GWYNNE RAYMOND.