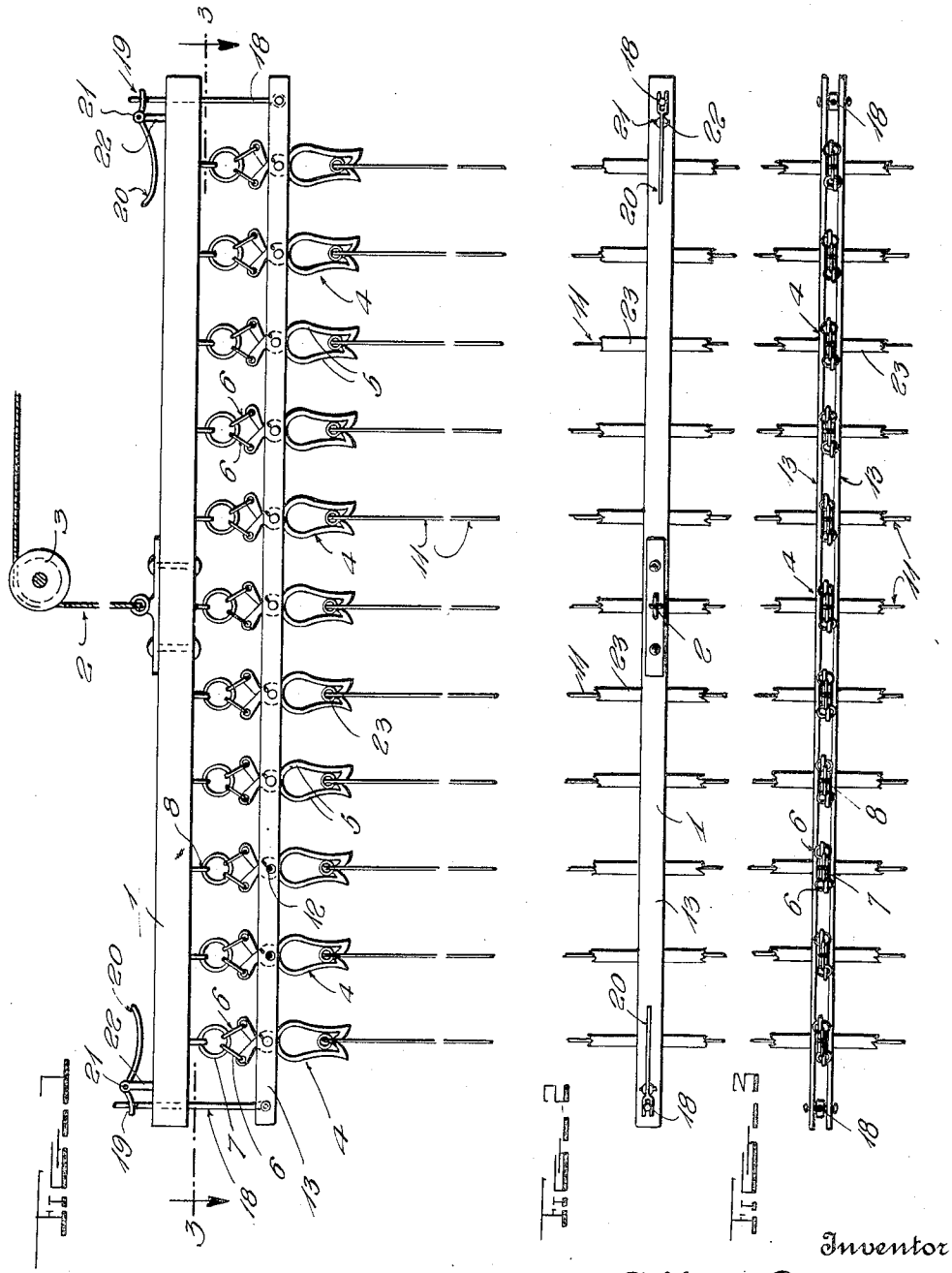
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A. PANKO

PLATE HOIST

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Witness

Inventor

Albert Panko

By H. B. Williamson & Co

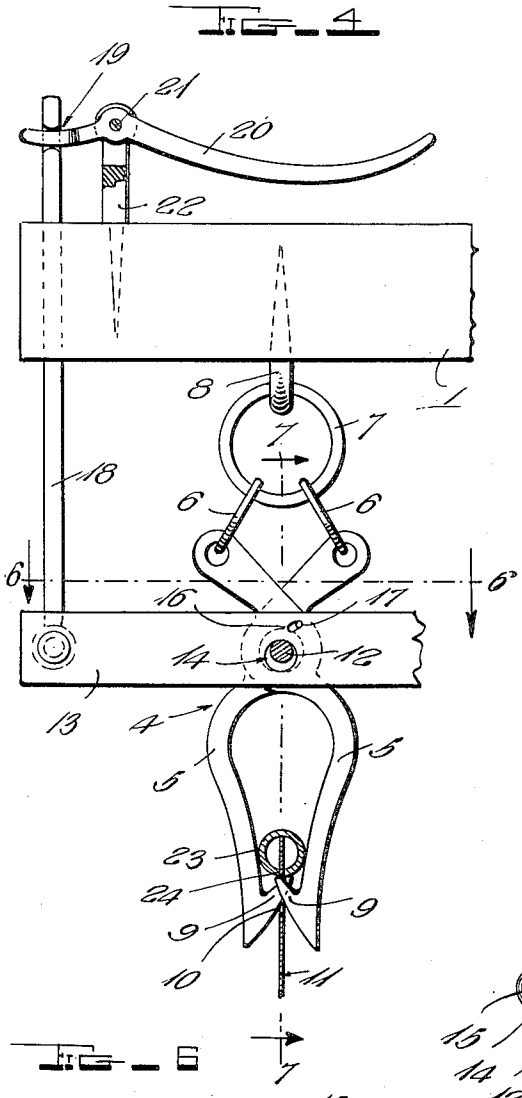
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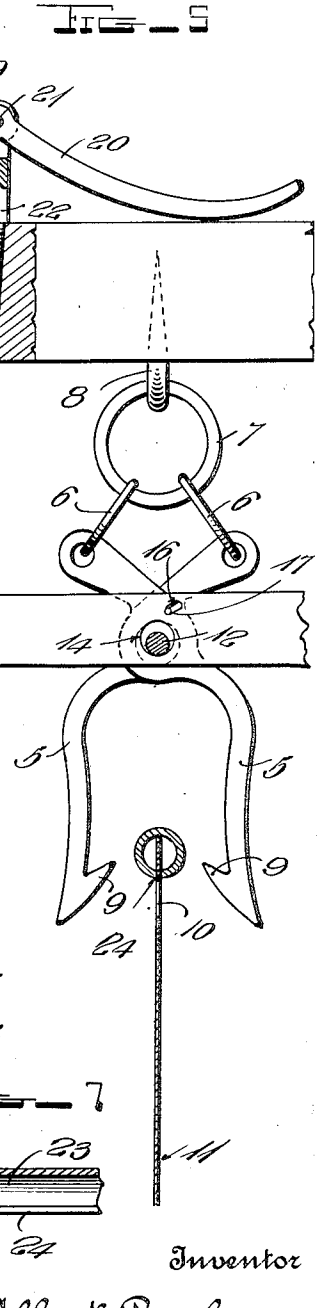
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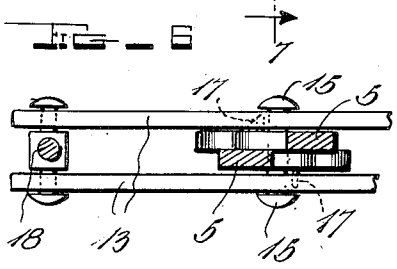
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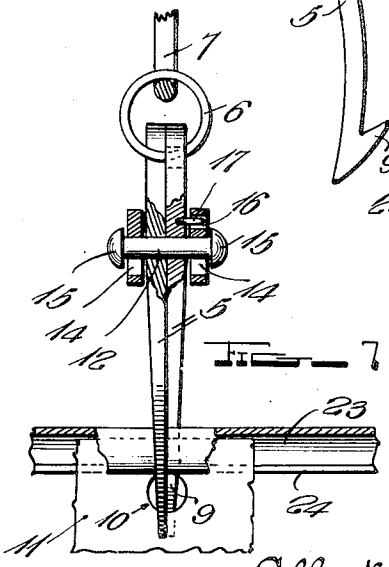
PLATE HOIST

Filed May 1, 1924 2 Sheets-Sheet 2









Witness

Inventor

Albert Panko

By H. B. Williamson & Co

Attorneys

Patented Dec. 9, 1924. 1,519,045

UNITED STATES PATENT OFFICE.

ALBERT PANKO, OF WOODBRIDGE, NEW JERSEY.

PLATE HOIST.

Application filed May 1, 1924. Serial No. 710,402.

To all whom it may concern:

Be it known that I, ALBERT PANKO, a citizen of Hungary, residing at Woodbridge, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Plate Hoists; and I do 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.

When immersing numerous kinds of plates in baths, for instance, when plating them, it is customary to use a hoist comprising an overhead beam having a plurality of loosely hung grapples whose jaws are adapted to engage openings near one edge of the plates. A great deal of time and trouble are necessary to release the grapples from the plates, when desired, and it is the principal object of my invention to overcome this difficulty, by the provision of novel means for simultaneously releasing the jaws of all of the grapples.

Another difficulty often encountered, is that the jaws improperly engage the openings in the plates and hence the latter often slip from the grapples. A further object of my invention is to provide a novel form of bar adapted to be temporarily secured along the edge of a plate to be lifted, so that the jaws of the grapple may engage the bar, in case they should slip from the opening of the plate or should not properly enter said opening.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawings.

Figure 1 is a side elevation of a hoist constructed in accordance with my invention, showing it in operative position for raising a plurality of metal plates.

Figure 2 is a top plan view.

Figure 3 is a longitudinal horizontal sectional view as indicated by line 3—3 of Fig. 1.

Figure 4 is an enlarged side elevation partly in section, showing the grapple closed.

Figure 5 is a duplicate of Fig. 4 with the exception that it illustrates the grapple in open position.

Figures 6 and 7 are sectional views on lines 6—6 and 7—7 of Fig. 4.

In the drawings above briefly described, the numeral 1 designates a horizontal beam which may be movably supported in any desired manner, for instance, by a cable 2 passing over a sheave 3. Loosely suspended from the beam 1, are a number of grapples 4, each of which preferably comprises a pair of crossed levers 5 having diverging upper ends connected by links or rings 6 with another ring 7 which is in turn connected by an eye-bolt or the like 8 to the beam 1. The lower ends of the levers 5 are provided with jaws 9 which are adapted to engage openings 10 in the metal plates 11, to be handled. Between their ends, each pair of levers 5 is pivoted together by a rivet or the like 12 and when a plate is being held by one of the grapples, the links 6 pull inwardly upon the diverging upper ends of the levers and hence hold their lower ends toward each other.

Under the beam 1 and extending longitudinally thereof, at opposite sides of the grapples 4, I employ a pair of parallel bars 13, said bars having relatively large openings 14 alined with the openings of the levers 5, through which the pivots 12 pass, said pivots also passing loosely through the openings 14 and preferably having heads 15 on their ends, somewhat larger than said openings 14. At suitable points, preferably above the openings 14, the bars 13 are formed with slots 16, and pins or the like 17 project outwardly from the levers 5 into said slots, the arrangement being such that when the bars 13 are raised, the pin and slot connections between said bars and the levers, will swing the latter to the open position shown in Fig. 5, thus quickly releasing the plate previously held by the grapple.

For raising the bars 13, I prefer to connect vertical rods 18 to the ends of said bars, said rods passing slidably through openings 18^a in the ends of the beam 1 and having their upper ends suitably connected, as at 19, with a pair of hand levers 20 which are disposed over the aforesaid beam, said levers being fulcrumed at 21 to suitable brackets or the like 22 which are carried by the beam. When the grapples are in operation, that is, supporting the plates 11, the parts stand as shown in Figs. 1 and 4, but when all of the grapples are to be released, it is simply necessary to move the hand-levers 20 to the position shown in Fig. 5. This elevates the bars 13 and causes the pin and slot connections 16—17, to release the grapples, as clearly shown in Fig. 5.

Preferably used with the features above described, are a plurality of metal bars 23 which may well be formed of piping. These bars are adapted to be temporarily secured to the upper ends of the sheets 11 and for this purpose, they are provided with slits 24 which snugly receive said edges of the plates. If desired, after slipping these edges into the tubular bars, the edges in question may be bent slightly to positively prevent them from withdrawing from the slits until desired, but in some instances, friction may be relied upon to hold the bars and sheets in proper relation. It will be seen that if the jaws 9 fail to properly engage the openings 10, or if they slip from said openings after being engaged therewith, they will engage the bars 23, so that no dropping of plates will take place. Furthermore, the bars in question stiffen the plates and the latter may therefore be much more easily handled.

Excellent results may be obtained from the general construction herein disclosed, but it is to be understood that this disclosure is for illustrative purposes only and that within the scope of the invention as claimed, numerous modifications may be made.

I claim:

1. In a hoist, a horizontal supporting beam adapted for direct non-sliding connection to a hoisting member, a plurality of grapples suspended from said beam, a horizontal grapple-releasing bar under said beam free of connection with the hoisting member and operatively associated with said grapples for releasing the latter when the bar is raised with respect to the beam, and manually-operated means connected with said bar and engaged with said beam for raising the former with respect to the latter to effect release of the grapples.

2. In a hoist, a horizontal supporting beam adapted for direct non-sliding connection to a hoisting member, a plurality of grapples suspended from said beam, a horizontal bar under said beam free of connection with the hoisting member and operatively associated with said grapples for releasing the latter when the bar is raised with respect to the beam, and manually-actuated means connected with said bar and re-acting on said beam for raising the former with respect to the latter to effect release of the grapples.

3. In a hoist, a horizontal supporting beam, a plurality of grapples loosely hung from said beam at longitudinally spaced points and disposed in a common vertical plane, a pair of closely spaced parallel bars under said beam and disposed at opposite sides of said grapples to prevent turning thereof on vertical axes, said bars being operatively associated with said grapples to release the latter when the bars are moved vertically with respect to the beam, and means connected with said bars and re-acting on said beam for vertically moving the former with respect to the latter to effect release of the grapples.

4. In a hoist, a horizontal supporting beam, a plurality of grapples suspended therefrom and having pivoted jaws, a horizontal bar under said beam having pin and slot connections with certain jaws of said grapples for opening the latter when said bar is vertically moved, said bar having openings loosely receiving the pivots of said jaws to retain the bar and grapples in close relation, and means connected with said bar and re-acting on said beam for vertically moving the former to effect release of the grapples.

5. In a hoist, a horizontal supporting beam, a plurality of grapples suspended therefrom and each having a pair of jaws, a pair of horizontal bars under said beam at opposite sides of said grapples, said bars and jaws having transversely alined pivot openings, the openings of the bars being larger than those of the jaws, pivots passing through said alined openings and loosely received in the openings of said bars to permit vertical movement of the latter with respect to the grapples, connecting means between said jaws and bars for opening the former when the latter are vertically moved, and means connected with said bars and re-acting on said beam for vertically moving the former to effect opening of the grapple jaws.

In testimony whereof I have hereunto affixed my signature.

ALBERT PANKO.