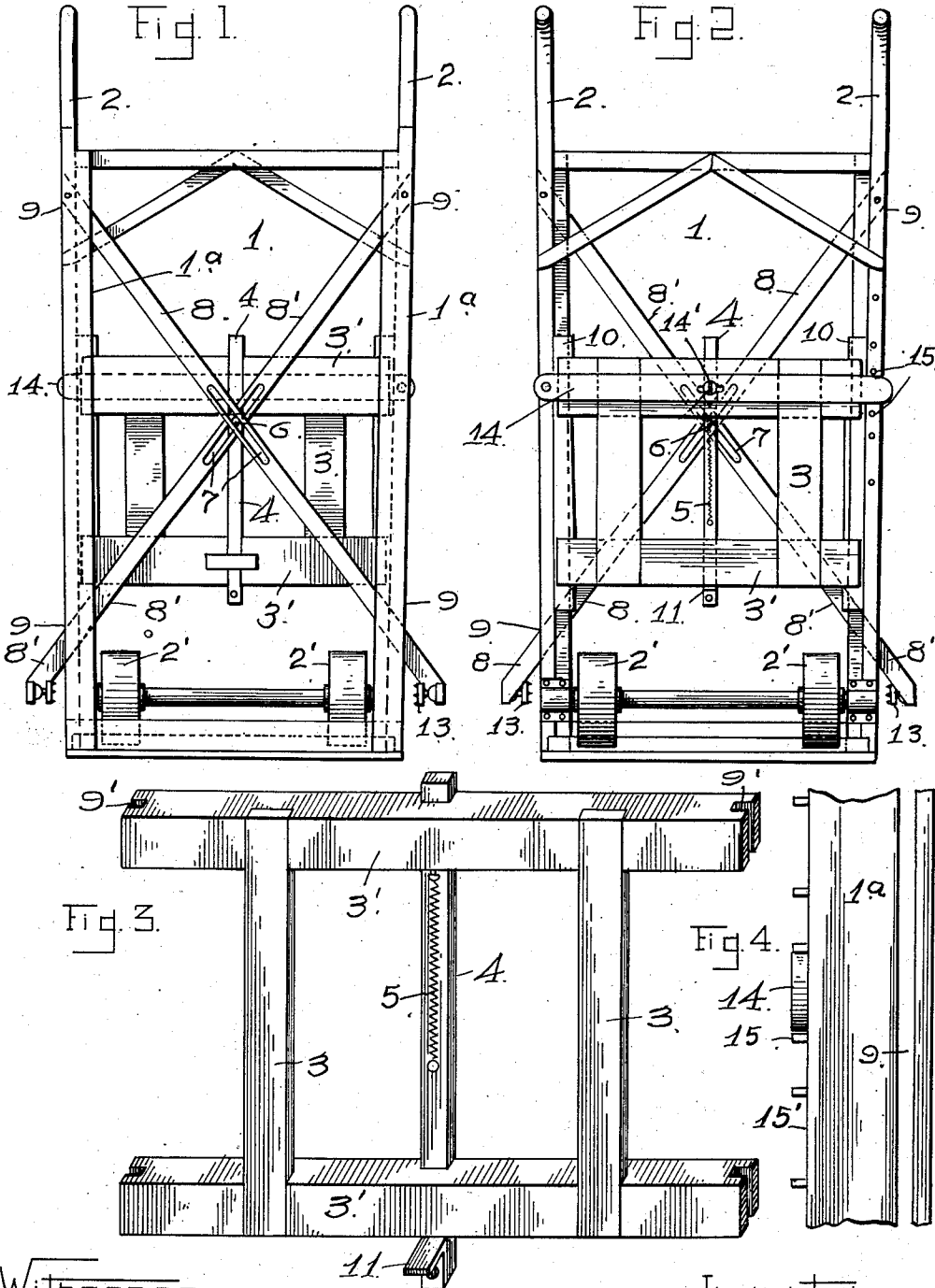


G. BARR.
CLAMP TRUCK.
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1,022,812.

Patented Apr. 9, 1912.



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UNITED STATES PATENT OFFICE.

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CLAMP-TRUCK.

1,022,812.

Specification of Letters Patent.

Patented Apr. 9, 1912.

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To all whom it may concern:

Be it known that I, GEORGE BARR, a citizen of the United States, residing at La Center, in the county of Clarke and State of Washington, have invented certain new and useful Improvements in Clamp-Trucks, of which the following is a specification.

The hereinafter described invention relates to that class of trucks designed for automatically clamping boxes or other articles desired to be moved from place to place, more particularly for the moving of boxes in and out and within factories and warehouses, the invention residing essentially in the means for actuating the clamping members and adjusting the throw thereof to different sizes of boxes, the object being the production of a clamp truck wherein the clamping means are adapted for a reasonable variation as to the sizes of the boxes or packages to be handled by the truck, and one wherein a strong and effective gripping of the boxes is obtained, the positioning of the actuating means for the gripping arms or clamps being such as fully protect the same from damage by the rough handling or usage to which the trucks are subjected.

To comprehend the invention reference should be had to the accompanying sheet of drawings, wherein—

Figure 1 is a front elevation of the improved clamp truck, the parts being in position for holding a box. Fig. 2 is a rear elevation of the truck. Fig. 3 is a perspective view of the inner slide frame and the clamping means removed from the truck frame. Fig. 4 is a broken detail side elevation of one of the side pieces of the truck frame.

In the drawings, the numeral 1 is used to designate any suitable form of truck frame provided with the usual handles 2, and the frame supporting rollers or wheels 2'. Within the truck frame is mounted for vertical movement an adjustable slide-frame 3, through the cross end pieces 3' of which works a longitudinally movable actuating rod 4, normally held upward by the tension of a spring 5 connecting the same to the upper end cross piece of the adjustable frame 3. The said actuating rod 4 is provided adjacent its upper end with a vertically projecting pin or stud 6, which extends through the slotted portions 7 of the crossed clamp carrying arms or levers 8 and 8'. The upper and lower ends of these

clamp carrying arms or levers work freely within the slotted guide portions 9 formed in the upper face portions of the side pieces 1^a of the frame 1, the said clamping arms or levers crossing about the center of the truck frame 1, the pin or stud 6 serving as a fulcrum for the same.

The slide frame 3 is provided in its side edges with the channels or grooves 9' into which fit the guide pieces or rails 10 inwardly projecting from the side pieces 1^a of the truck frame 1. The frame 3 is thus mounted within the truck frame for vertical movement for varying or adjusting the position of the clamp arms or levers relative to the truck frame for regulating the range of movement of the clamp heads carried thereby, as hereinafter explained.

The actuating rod 4 which extends through the end pieces of the slide frame 3 is limited as to vertical movement by reason of the angular play permitted the clamp arms movable thereover, each being pivoted at its upper end to the side pieces 1^a of the truck frame, which play is controlled by the adjustable frame 3, normally held against movement within the truck frame 1. At its lower end the actuating rod 4 carries a foot extension 11, by means of which the said rod is depressed by the foot of the operator in order to cause the stud 6 extended through the slotted portion of the crossed arms 8 and 8' to depress or swing inwardly the lower ends of the pivoted levers for drawing together the clamp heads 13, which, when closed, engage with the sides of the box to be removed by the clamp truck, the said clamp heads being thrown outwardly by the upward movement of the actuating rod 4 due to the pressure of the spring 5 on the weight of the load being removed therefrom. The said clamp heads or engaging devices 13 are carried by the angular extension 12 projected from the lower end of each of the pivoted crossed clamp arms 8 and 8', extended through the lower slotted portions of the side pieces 1^a and projected a slight distance beyond the same.

To the upper face of one of the side pieces 1^a of the truck frame 1 is pivoted a lock-bar 14, which is also centrally pivoted by a pin 14' to the upper end or head cross piece of the adjustable slide frame 3—Fig. 2 of the drawings. The free end of the said lock-bar 14 rests between the pins 15 downwardly projected from the opposing side

piece 1^a of the frame 1, the said pins serving as lock devices for the inner or free end of the lock bar 14. By changing the position of the lock bar 14, the slide frame 3 is raised or lowered within the truck frame 1, and the adjustability thus permitted the said frame 3 varies the angular position of the crossed clamp arms or levers 8 and 8' relative to the truck frame and likewise the range of movement as to the clamping heads 13 in order that the distance thereof from the nose of the clamp truck and the throw thereof may be properly positioned relative to the box or package to be clamped onto the truck.

In operation, the truck is run up to the box to be moved having a width between the maximum limits of separation of the clamping heads 13, and when within the sphere thereof the operator by foot pressure applied to the foot extension 11 depresses the actuating rod 4, which, through the connection of the pin or stud 6 with the crossed pivoted clamp arms or levers 8 and 8', swings inwardly the lower end of the pivoted clamp arms or levers, placing the clamping heads 13 into engagement with the sides of the box to be moved.

As the clamp truck is withdrawn the load is balanced on the truck wheels, and the weight thereof falling onto the clamping heads or clamps depresses the same to firmly clamp the box, and the greater the applied load the more the pressure of the clamping heads thereon, causing the same to firmly grip and hold the load relative to the clamp truck. It is obvious that as the load is deposited the weight thereof is released from the clamping heads, when the tension of the spring 5 automatically exerts itself to force upwardly the actuating rod 4 and through its described connection throws outwardly the lower ends of the pivoted crossed clamp arms or levers and by so doing separating or spreading apart the clamp heads or clamps 13, so that the clamp truck is free to be released from the box.

The projecting pins 15 form a series of seats 15' for the free end of the lock bar 14 of the adjustable frame 3. By shifting the engaging end of the lock-bar 14 from the lower seat 15' of the series and placing the same into the upper seat of the series, the slide frame 3 is raised within the truck frame 1, carrying the actuating rod 4 therewith, which, through its connecting pin or stud 6 throws outwardly the pivoted arms or levers 8 and 8' and by so doing giving a greater spread or separation to the clamp heads or clamps 13, thereby enabling the same to receive therebetween a box of greater width than when the lock-bar 14 is in engagement with the lower seat 15' of the series of seats. This adjustment for the clamp head or clamps is not only desir-

able, but the same is necessary where boxes of varying sizes are to be handled by the clamp trucks, as is the case in packing-houses, inasmuch as one clamp truck is capable of use in conjunction with the removal of different size boxes.

While in the present case a series of spaced projections, studs, or pins 15 are employed to provide the retaining seats for the free end of the lock-bar 14 for varying the position of the adjustable slide frame 3 relative to the truck frame 1, it is obvious that any desired form of locking means for securing the free end of the lock-bar in its adjusted position may be utilized, and it is equally obvious that the clamp heads or clamps 13 may be varied as desired.

Having thus described the invention what is claimed as new and desired to be protected by Letters Patent is—

1. In a clamp truck, the combination with the truck frame, of a pair of crossed clamp levers pivoted at one end to the said frame, clamping means carried by the free ends of the clamp levers, a spring controlled foot actuated rod for operating the clamp levers, and an adjustable slide frame for varying the throw of the said lever to adjust the clamping means to boxes of different sizes.

2. In a clamp truck, the combination with the frame thereof, of a pair of crossed clamp levers pivoted at their upper ends to said frame, clamping devices carried by the lower ends of the clamp levers, vertically adjustable means slidably mounted within the truck frame for varying the throw of the said clamp levers, and a movable connection between said means and the clamp levers for permitting free movement of the latter without disturbing the adjusted position of the said adjustable means.

3. In a clamp truck, the combination of a pair of crossed fulcrumed clamp levers, of pivotal connections between the upper ends of the said levers and the truck-frame, clamping means carried by the lower ends of the levers, an adjustable frame slidable within the truck frame for varying the throw of the clamp levers, lock means for securing the adjustable frame in locked position relative to the truck frame, and devices for actuating the clamp levers without disturbing the adjusted position of the slide frame.

4. In a clamp truck, the combination with the frame thereof, of clamping devices pivoted thereto, an adjustable frame slidable within the truck frame for controlling the throw of the clamping means, connections between the adjustable frame and the clamping means for permitting free movement of the latter without disturbing the position of the slide frame, a lock bar fulcrumed to the said frame and pivoted at one end to the truck frame, and lock means

for securing the free end of the said bar to hold the slide frame in any of its adjusted positions relative to the truck frame.

5 5. In a clamp truck, the combination with the truck frame having its opposing side pieces provided with longitudinal slots, of a pair of slotted crossed clamping levers pivoted at one end to said frame and working in and projected at opposite sides of the said slotted side pieces, an adjustable
10 slide frame within the truck frame for regulating the throw of the clamping levers, of clamping means carried by the free ends of said levers, spring held foot operated
15 devices for actuating the said levers, and means for holding the slide frame against movement during the operation of the clamp levers.

20 6. In a clamp truck, the combination with the truck frame, of clamping members carried thereby, of adjustable means within the frame for regulating the throw of the clamping members, devices within the adjustable means for actuating the clamping

members, and lock means for holding the adjustable means against movement during the operation of the clamping means.

7. In a clamp truck, the combination with the frame thereof, of the crossed fulcrumed clamping levers pivoted at one end to the truck frame, clamping devices carried by the free ends of the clamp levers, a vertically adjustable frame slidably mounted within the truck frame, a spring held actuating rod slidably mounted within the adjustable frame for operating the clamp
30 levers, and means for locking said vertically adjustable frame to the truck frame against movement during the operation of the clamping levers. 40

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE BARR.

Witnesses:

JOSEPH BROTHERS,
H. E. CHAPMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."