

No. 714,140.

Patented Nov. 25, 1902.

E. J. BRYAN.
HAND TRUCK.

(Application filed Nov. 30, 1901.)

(No Model.)

2 Sheets—Sheet 1.

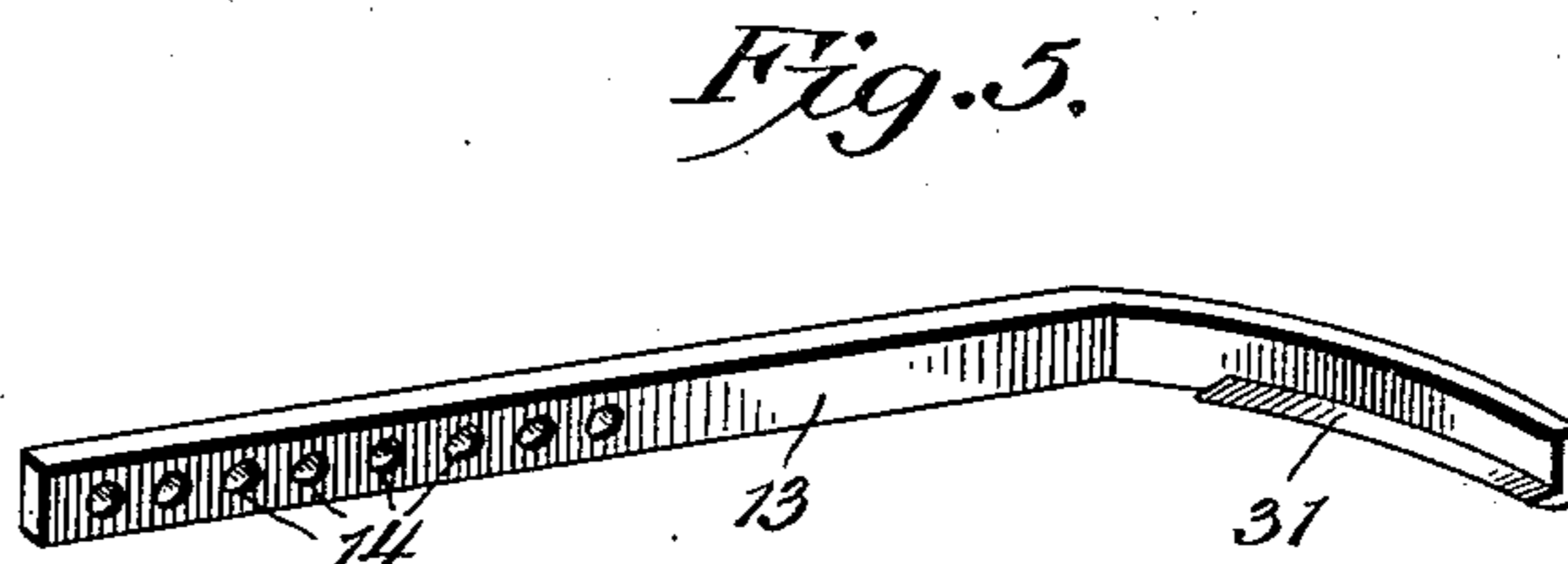
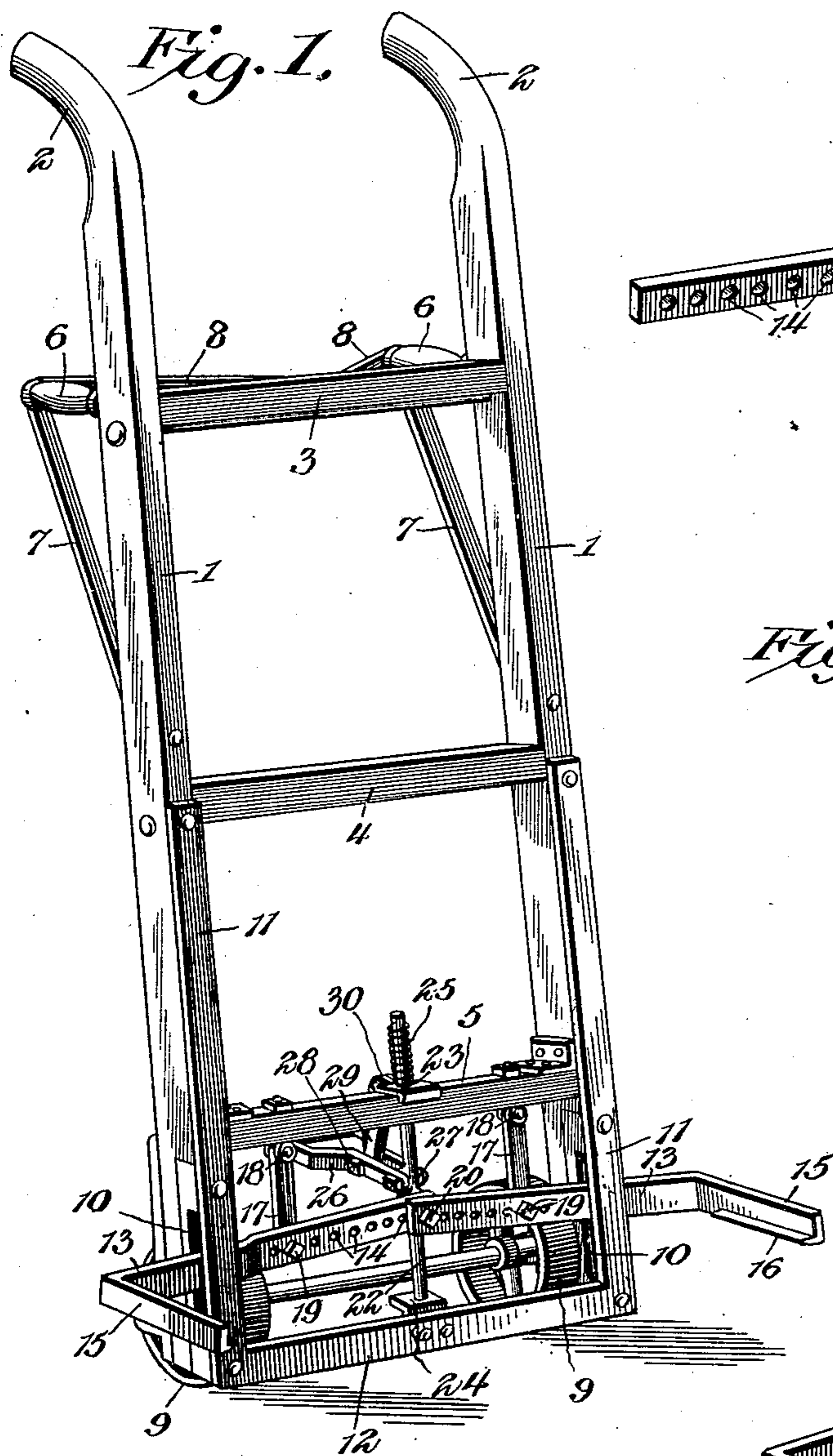


Fig. 6.

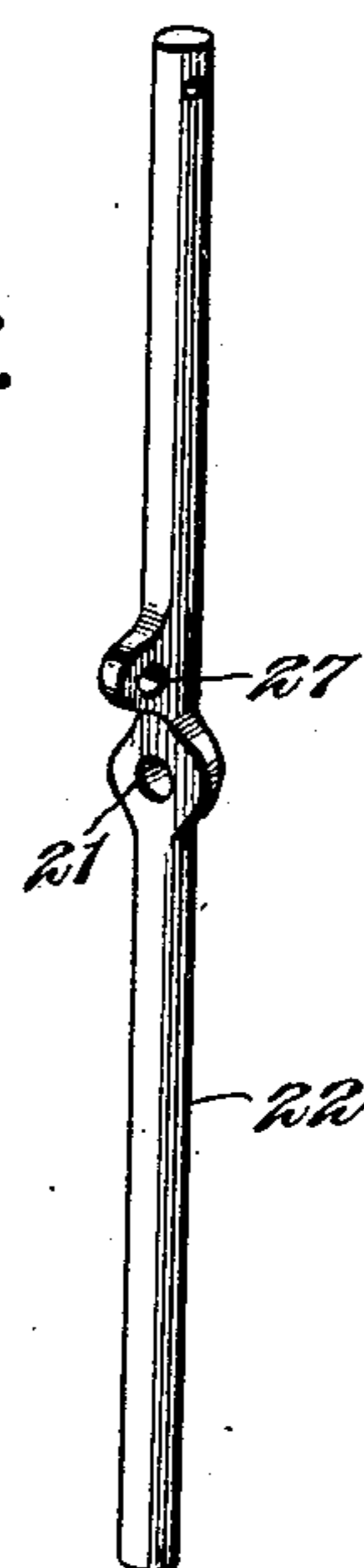
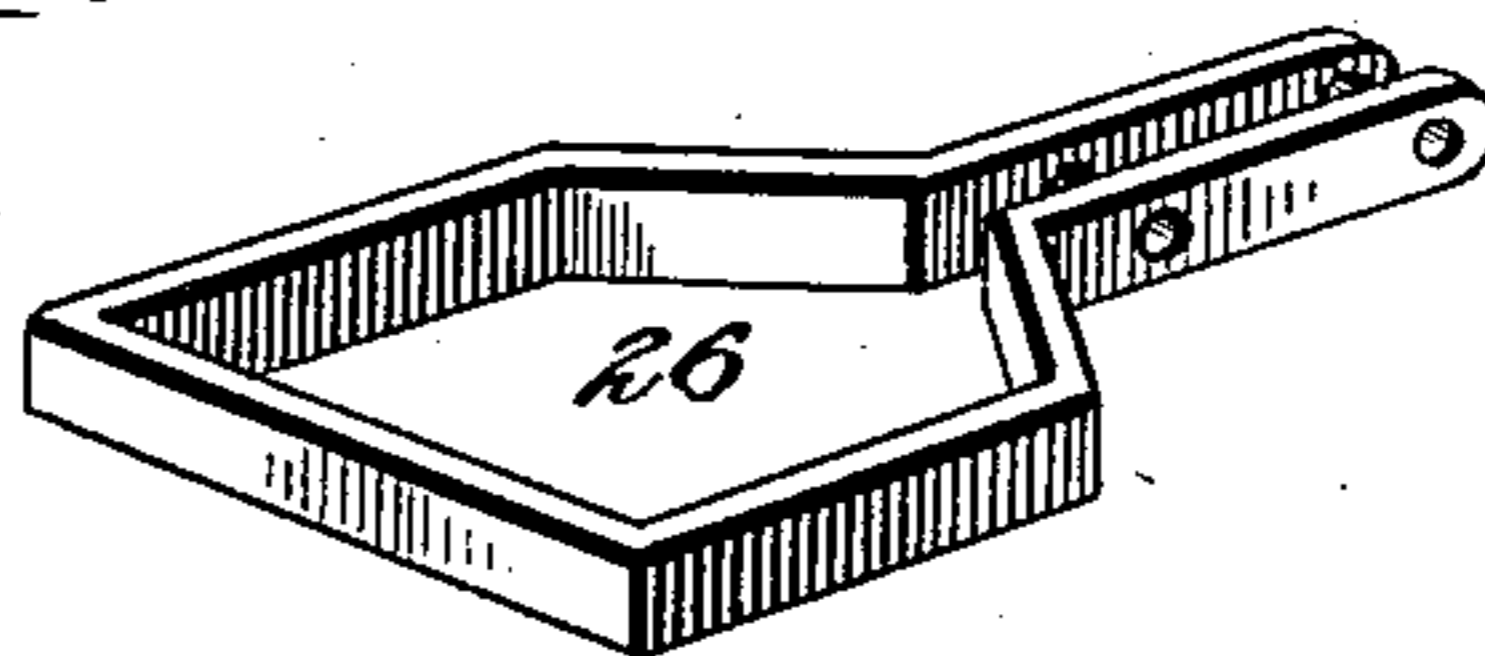


Fig. 7.



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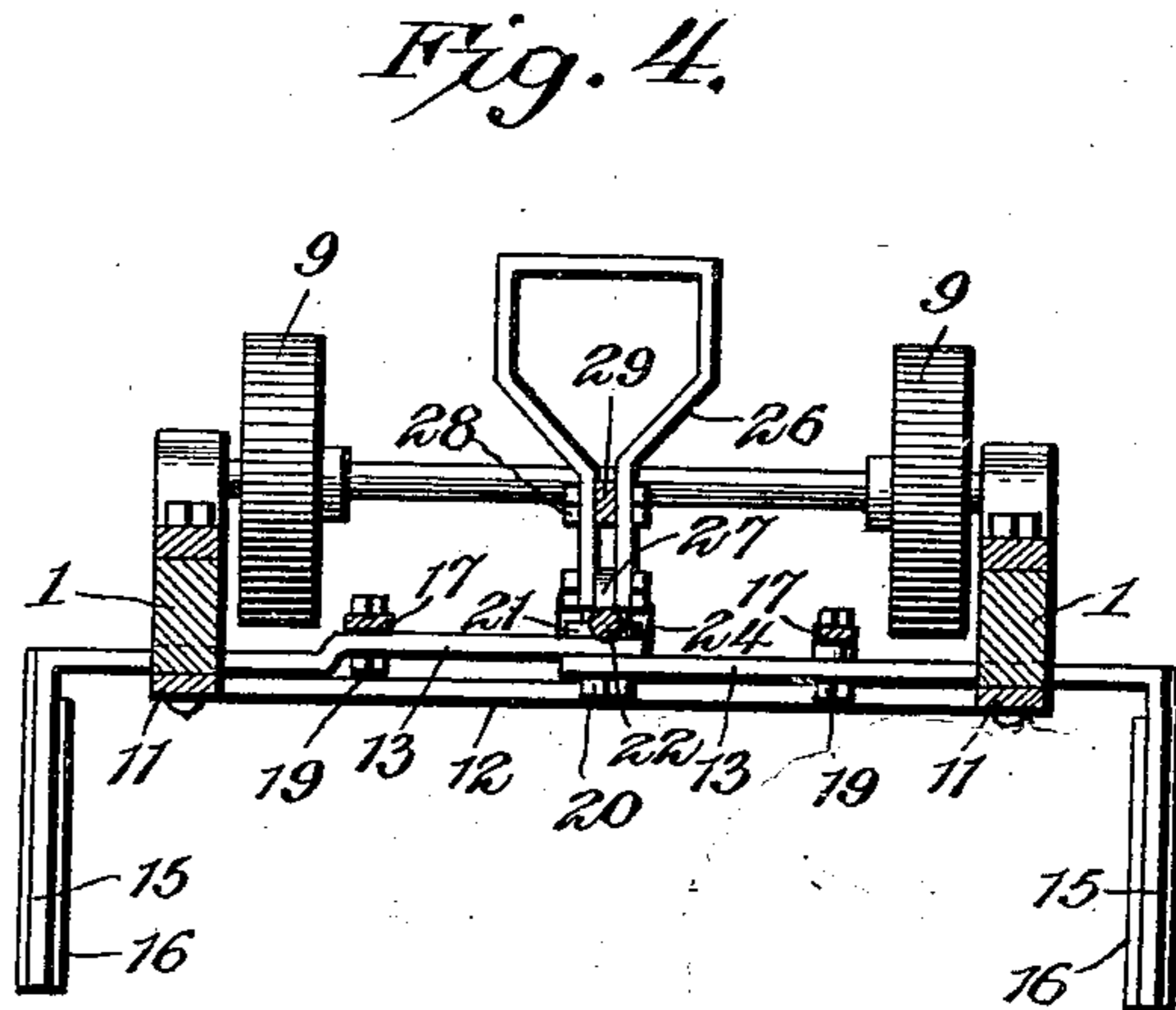
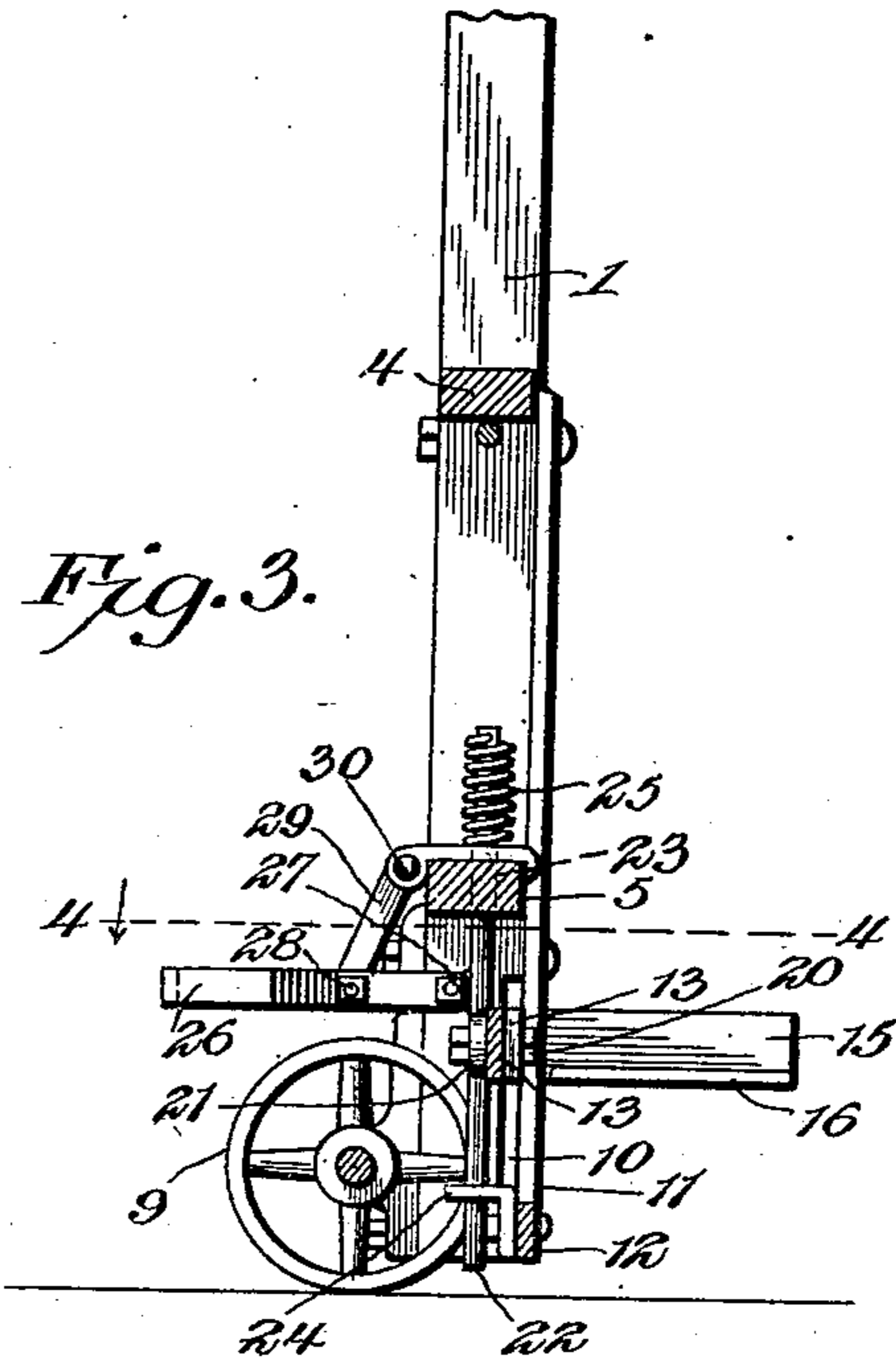
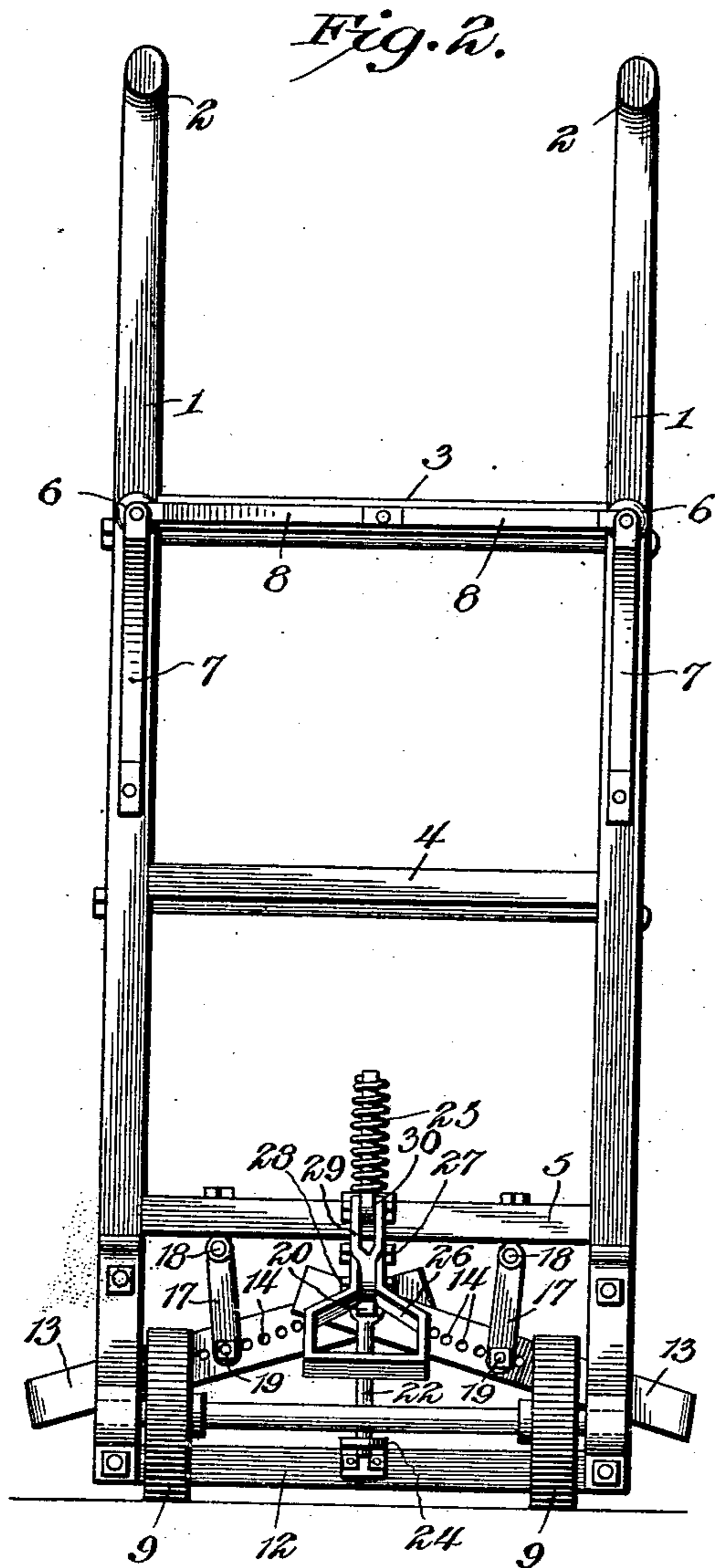
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

EDGAR J. BRYAN, OF RIVERSIDE, CALIFORNIA, ASSIGNOR OF ONE-HALF
TO ALBERT W. MILLER, OF RIVERSIDE, CALIFORNIA.

HAND-TRUCK.

SPECIFICATION forming part of Letters Patent No. 714,140, dated November 25, 1902.

Application filed November 30, 1901. Serial No. 84,242. (No model.)

To all whom it may concern:

Be it known that I, EDGAR J. BRYAN, a citizen of the United States, residing at Riverside, in the county of Riverside and State of California, have invented a new and useful Hand-Truck, of which the following is a specification.

This invention relates to hand-trucks for moving boxes, barrels, kegs, and the like, and has for its object to provide for conveniently engaging the truck with a box or the like without tilting the latter, as is commonly required to engage the nose portion of the truck beneath the box. It is furthermore designed to provide improved means to clamp a package upon the truck and to have said means under the control of the operator's foot, so that it may be conveniently engaged with a box and also automatically released therefrom when the box has been placed upon the ground or floor by tilting the truck into upright position.

Another object is to arrange for mounting the box-engaging means upon any ordinary hand-truck now in common use without materially altering the same and without obstructing the upper side thereof, against which the boxes are adapted to lie.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a hand-truck embodying the present invention. Fig. 2 is a bottom plan view thereof with the clamping members thrown out of alinement. Fig. 3 is a longitudinal sectional view of the truck in its normal position. Fig. 4 is a cross-sectional view on the line 4-4 of Fig. 3. Fig. 5 is a detail perspective view of a modified box-engaging clamp member. Fig. 6 is a detail view of the spring-actuated rod. Fig. 7 is a detail perspective view of the foot-lever.

Like characters of reference designate corresponding parts in all the figures of the drawings.

To illustrate the application and operation of this invention, there has been shown in the drawings an ordinary hand-truck embodying a frame comprising opposite longitudinal side bars 1, which have their rear ends formed into the usual handles 2 and are connected by the cross-bars 3, 4, and 5. Suitable leg-standards 6, which are shaped to form hand-grasps, project from the under faces of the respective bars, which are braced by means of inclined brace rods or straps 7, extending between the outer ends of the leg-standards and the adjacent side bars, and the braces 8, extending between the standards and the adjacent rear cross-bar 3. Suitable wheels or rollers 9 are mounted upon the under faces of the side bars and located as near as possible to the forward extremities of said side bars. The truck thus described will be recognized as of the type now commonly employed for various purposes, with the exception that the usual transversely-disposed nose is omitted from the forward portion of the frame.

In carrying out the present invention the upper face of the forward extremity of each side bar is notched, as indicated at 10, and across each notch is secured a metallic plate or strap 11, so as to close the notch, and thereby form a longitudinal slot. The forward ends of the opposite straps or plates are connected by a flat cross plate or bar 12 to connect the forward ends of the side bars. As indicated in the drawings, it is preferable to have the parts 11 and 12 formed integral, so as to form a substantially rectangular metallic frame applied to the main wooden frame of the truck to stiffen and strengthen the same.

Projected through each slot 10 is a box-clamping member 13, consisting of a flat metal bar having its inner end provided with a plurality of perforations 14 and its outer end bent to form a laterally-projected jaw 15, which has an outer laterally-directed terminal projection 16, having a sharp edge to bite into the side of a box or package. It will here be noted that the opposite jaws are separated by a space greater than the width of

the truck. For the support of each clamping member there is provided a link 17, which has a pivotal or hinged connection 18 with the front side of the adjacent cross-bar 5 and
 5 capable of swinging laterally in the plane of the truck. The adjacent clamping member is adjustably pivoted or fulcrumed intermediately upon the forward free end of the link by means of a removable bolt or fastening 19,
 10 which is passed through any one of the perforations in the clamping member, thereby forming an adjustable swinging fulcrum for the clamping member. For controlling these members the inner ends thereof are mutually
 15 pivotally connected by means of a removable pivot-fastening 20, which is passed through corresponding perforations in the overlapped inner ends of the members and then passed through an eye 21, formed in a flattened in-
 20 termediate portion of the endwise-movable rod 22, which works through an opening 23, formed in the intermediate portion of the cross-bar 5 and having its lower end working through a guide 24, secured to the rear
 25 side of the end cross-bar 12. A helical spring 25 embraces the upper end portion of the rod and has its opposite ends connected, respectively, to the cross-bar and the rear end of the rod, so as to normally hold the latter at
 30 its forward limit with the clamp members in mutual longitudinal alinement, and thereby at the limit of their outward movement.

To move the spring-actuated rod upwardly or rearwardly for the purpose of drawing the
 35 clamping members inwardly to engage a box or package, there is provided a yoke-shaped foot-lever 26, which is located in rear of the rod and has its forward end or neck portion pivotally connected to the rod, as indicated
 40 at 27 in Fig. 3 of the drawings, said lever being intermediately fulcrumed, as at 28, to the lower end of a link 29, which has its upper end pivotally connected to the rear side of the cross-bar 5, as indicated at 30.

In applying the present truck to a box or package the former is run up alongside of the latter and tilted into a vertical position upon the wheels or rollers as a support, with the jaws of the clamp members embracing oppo-
 50 site sides of the package. The foot-lever 26 is then depressed, so as to elevate the rod 22, thereby also elevating the inner ends of the clamp members upon their fulcrums 19, and thus swinging the outer terminal jaws thereof
 55 inwardly into snug engagement with the opposite sides of the package. The foot is not removed from the lever until the truck has been tilted downwardly into the usual inclined position, and when the foot has been
 60 removed from the lever the weight of the package is supported upon the outer ends of the clamp members, which are held in their depressed positions or still further depressed, according to the weight of the package, and
 65 against the tension of the spring 25, whereby the jaws are caused to snugly grip the

package by reason of the weight of the latter. To release the clamps from the pack-
 age, it is merely necessary to tilt the truck into a vertical position, so as to again place
 70 the package in contact with the ground or floor, thereby relieving the weight thereof from the outer ends of the clamp members, which latter will then be automatically
 75 thrown out of engagement with the package by reason of the tension of the spring 25, which normally acts to depress the inner ends of the clamp members, so as to bring the latter into mutual alinement with the
 80 jaws thereof at the limit of their separation, which is slightly greater than the width of the package. It is thus apparent that it is not necessary to tilt the package or to handle the same in any manner whatsoever, as
 85 the clamping-jaws are engaged and disengaged from the package while the latter remains in its normal position standing upon the ground or floor.

A very important advantage of the present device resides in the fact that the clamp-
 90 ing-jaws 15 are separated by a space greater than the width of the truck, whereby packages of greater width than the truck may be carried thereby.

When in use, the truck assumes an incline
 95 of about sixty degrees to the horizontal in order that a considerable part of the weight of the object may be supported by the clamping-jaws to insure a proper gripping thereof
 100 upon the object and also to maintain the foot-lever out of contact with the ground or upon whatever the truck may be supported. In view of the comparatively upright position of the truck when in use it is somewhat difficult
 105 to manipulate the same by the handles 2, and therefore it has been found desirable and, in fact, indispensable to employ the hand-grips 6, which are projected at substantially right angles from the rear or inner side of the truck,
 110 so as to be in position to be conveniently grasped by the operator to tilt the truck rearwardly and to move the same forwardly or rearwardly upon the supporting-wheels 9. Should the rear end of the truck be depressed
 115 sufficiently to bring the foot-lever into engagement with the ground, said lever will yield rearwardly and upwardly by reason of the spring 25, whereby the lever and its connections will not be broken or injured. How-
 120 ever, should the lever thus contact with the ground the jaws would be moved outwardly from each other, and thereby loosen their grip upon the object supported, and therefore when loaded the rear end of the truck should
 125 never be depressed sufficiently to bring the foot-lever into contact with the ground.

By means of the perforations 13 in the clamp members the latter may be adjusted
 so as to accommodate for packages of different widths, and by reason of the swinging ful-
 130 crum-supports 17 the clamp members have a slight endwise movement to increase the

range of the clamping-jaws beyond what the latter would have if the fulcrum were fixed against lateral movement.

To accommodate the present device for engagement with barrels and casks in addition to boxes, I provide the same with supplemental clamp members, one of which has been illustrated in Fig. 5, the only difference being in the provision of a bowed or arcuate jaw 31 to snugly fit the side of a cask or barrel. It will of course be understood that other modifications (not shown) may be made in the shape of the jaws to accommodate the device to any particular shape of packages.

What I claim is—

1. The combination with a truck, of a pair of pivoted clamp members, and a foot-lever fulcrumed upon the truck adjacent to the front end and arranged at the inner side thereof of within reach of the foot of an operator while grasping the handles of the truck in the elevated position of the latter, said foot-lever being connected to both clamp members for simultaneous operation thereof.

2. The combination with a truck, of a pair of clamping members intermediately fulcrumed upon the truck and normally lying in longitudinal alinement transversely thereof with their inner ends overlapped and pivotally connected, gripping-jaws carried by the outer ends of the clamping members, and a clamp-controlling foot-lever fulcrumed upon the truck adjacent to the front end, and arranged at the inner side thereof within reach of the foot of an operator while grasping the handles of the truck in the elevated position of the latter.

3. The combination with a truck, of a pair of links pivoted thereto and swinging transversely in the plane of the truck, a pair of clamping members intermediately fulcrumed upon the swinging links and normally lying in longitudinal alinement transversely of the truck with their inner ends overlapped and pivotally connected, and a clamp-controlling foot-lever connected to the pivotal connection of the clamping members, and located at the forward portion of the inner side of the truck, in reach of an operator's foot while grasping the handles of the truck in the elevated position thereof.

4. The combination with a truck, of a pair of clamping members intermediately fulcrumed thereon and normally lying in longitudinal alinement transversely of the truck with their inner ends overlapped and pivotally connected, an endwise-shiftable spring-actuated rod connected to the pivotal connection of the clamping members, and a clamp-controlling foot-lever fulcrumed at the forward end of the inner side of the truck, in reach of an operator's foot while grasping the handle of the truck in the elevated position thereof, said foot-lever being connected to the spring-actuated rod.

5. The combination with a truck, comprising opposite side bars, and cross-bars connect-

ing the same, of opposite clamping members fulcrumed intermediate of their ends upon the frame, and having outer terminal gripping-jaws, an endwise-movable rod mounted upon the adjacent cross-bar and working transversely across the inner ends of the clamp members, the inner ends of said members being overlapped and provided with a mutual pivotal connection with the rod, a helical spring embracing the rod and connected at opposite ends thereto and to the cross-bar to normally hold the clamp members in mutual alinement, and means for moving the rod against the tension of the spring.

6. The combination with a truck comprising opposite side bars, and cross-bars connecting the same, of opposite intermediately-fulcrumed clamp members normally lying transversely across the truck and having their outer ends provided with gripping-jaws whereby the fulcrums lie between the jaws, an endwise-movable spring-actuated rod mounted upon the adjacent cross-bar, the inner ends of the clamp members being overlapped and provided with a mutual pivotal connection with the rod, and a foot-lever fulcrumed upon the said cross-bar and also connected to the rod for moving the same in an endwise direction.

7. The combination with a truck, comprising opposite side bars, and cross-bars connecting the same, of intermediately-fulcrumed clamp members having their outer ends provided with gripping-jaws, an endwise-movable spring-actuated rod mounted upon the adjacent cross-bar, the inner ends of the clamp members being overlapped and provided with a mutual pivotal connection with the rod, a fulcrum-link carried by said cross-bar, and a foot-lever fulcrumed intermediate of its ends upon said link and having its inner end pivotally connected to the spring-actuated rod.

8. The combination with a truck, comprising opposite side bars and cross-bars connecting the same, of a pair of fulcrum-links pivotally connected to the forward cross-bar, a pair of clamp members intermediately fulcrumed upon the respective links, the inner ends of the members being overlapped and their outer ends having gripping-jaws, an endwise-movable rod mounted upon the said cross-bar, a mutual pivotal connection between the inner overlapped ends of the clamp members and the rod, a helical spring embracing the rod and connected at opposite ends to the latter and the cross-bar, a fulcrum-link carried by the cross-bar and located in rear of the rod, and a foot-lever fulcrumed intermediate of its ends upon the link and having its forward end pivotally connected to the spring-actuated rod.

9. The combination with a truck having its opposite side bars provided with longitudinal slots, of a pair of fulcrum members normally alined transversely of the truck and working in and projected at opposite sides of the re-

spective slots, the outer ends of the members being provided with gripping-jaws which are separated by a space greater than the width of the truck, intermediate fulcrums for the
5 clamp members located externally of the slots and between the side members and the truck, and means for swinging the members upon their fulcrums.

10 10. The combination with a truck comprising opposite side bars, and cross-bars connecting the same, the side bars having longitudinal slots, of fulcrum-links carried by the cross-bar which is adjacent to the slots, clamp members working in the respective slots and projected at opposite sides of the side bars, the
15 clamp members being intermediately fulcrumed upon the respective links, and also provided at their outer ends with gripping-jaws, and means for swinging the clamp members upon their fulcrums.

20 11. The combination with a truck, comprising opposite side bars and cross-bars connecting the same, the upper faces of the side bars being provided with corresponding notches, of
25 a substantially rectangular metallic frame applied to the side bars and across the notches and thereby forming longitudinal slots, the outer end of the frame forming a terminal cross-bar, clamp members working in and
30 projected in opposite directions through the respective slots, fulcrum connections between the clamp members and the adjacent cross-bar, and means for simultaneously swinging the clamp members upon their fulcrums.

35 12. The combination with a truck, of a pair of clamp members which normally lie in longitudinal alignment transversely of the truck, and have intermediate fulcrum connections therewith, spring-actuated means to normally
40 hold the clamp members in mutual alignment, and controlling means to overcome the tension of the spring and to throw the clamp members out of alignment.

45 13. The combination with a truck, of a pair of intermediately-fulcrumed clamp members which are normally aligned transversely of the truck and have their inner ends overlapped and pivotally connected, spring-actuated
50 longitudinal alignment, and a foot-lever ful-

crumed intermediate of its ends upon the truck and having one end connected to the pivotal connection of the clamp members to overcome the tension of the spring-actuated means.

55 14. The combination with a truck, of a pair of clamp members, and means for manipulating the same to grip an object to be carried upon the truck, each clamp member embodying a shank which is disposed transversely
60 of the truck and projected in opposite directions across the adjacent side of the truck, the shank being intermediately fulcrumed within the area of the truck to swing longitudinally thereof, and the outer free end of
65 the shank being provided with a jaw which is set at an angle to the plane of the truck and works in an arc of a circle disposed longitudinally of the truck.

70 15. The combination with a hand-truck, of foot-controlled object-supporting means carried by the forward end portion of the truck, and hand-grips projected rearwardly at substantially right angles from the opposite side
75 members of the truck and located intermediate of the ends thereof and near the rear end of the truck.

80 16. The combination with a hand-truck having the rear ends of its side members formed into handles, of object-engaging means working at the front of the truck, a foot device for controlling the object-engaging means, said device being arranged adjacent to the front end of the truck and at the
85 inner side thereof within reach of the foot of an operator when the truck is in an elevated position, and hand-grasps projected rearwardly at substantially right angles from the opposite side members of the truck and located adjacent to and independent of the
90 handles at the rear ends of the side members of the truck.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EDGAR J. BRYAN.

Witnesses:

GRACE ROBERTS,
W. T. DINSMORE.