A. O. BRIGANCE.

BOX AND PACKAGE ELEVATING APPARATUS.

APPLICATION FILED NOV. 9, 1909.

956,756. Patented May 3, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

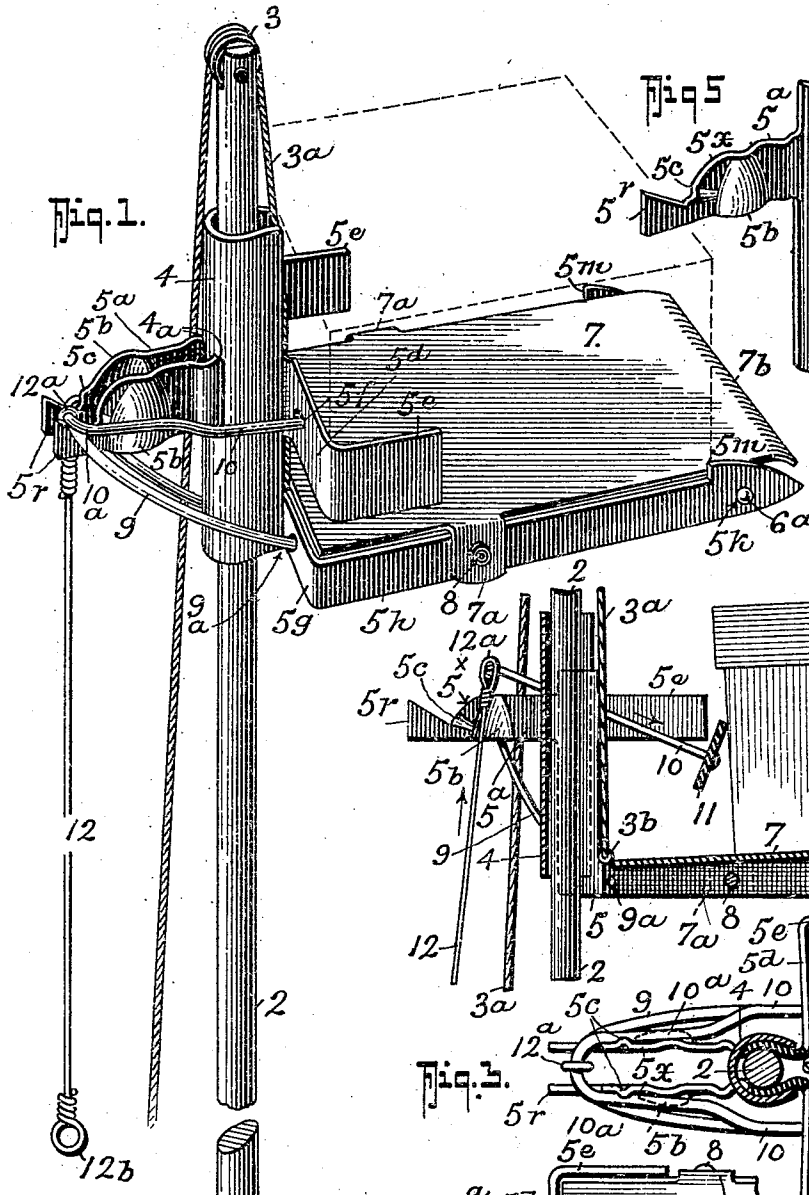


Fig. 5.

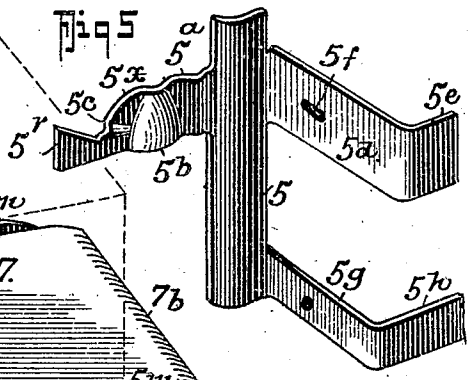
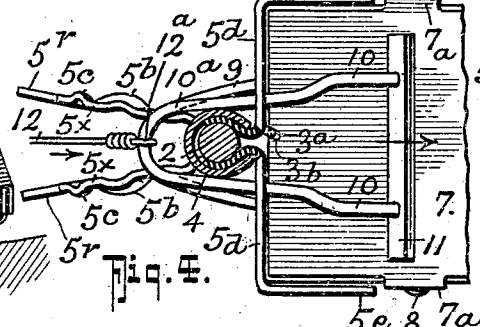


Fig. 2.

Fig. 3.

Fig. 4.



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2 SHEETS—SHEET 2.

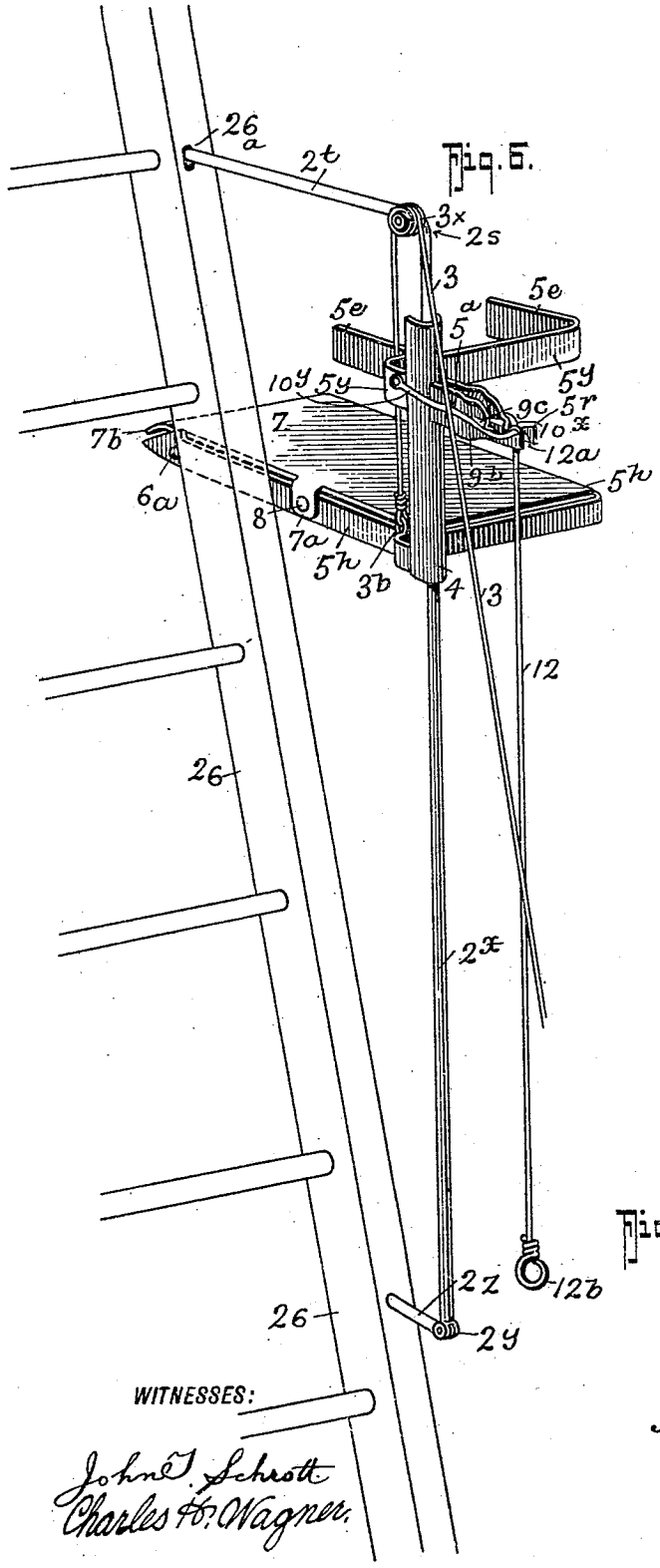

Fig. 6.

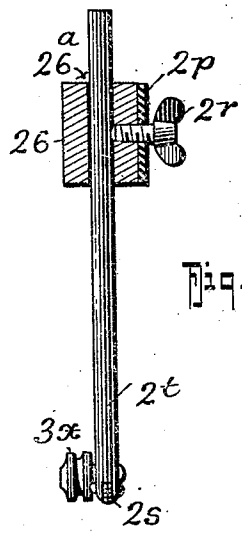

Fig. 8.

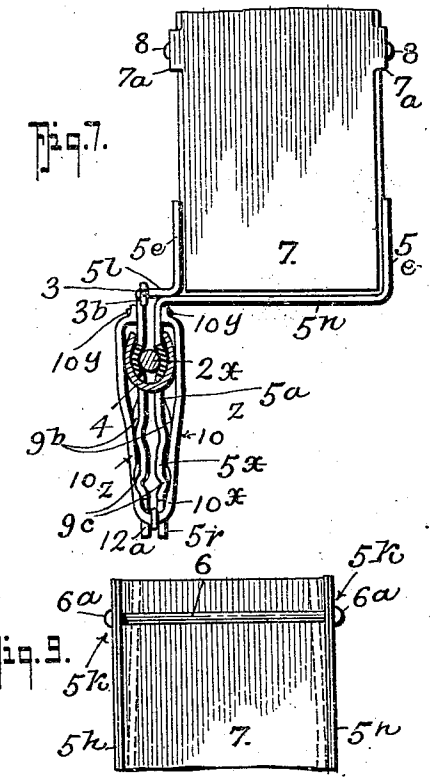

Fig. 7.

Fig. 9.

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UNITED STATES PATENT OFFICE.

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BOX AND PACKAGE ELEVATING APPARATUS.

956,756. Specification of Letters Patent. Patented May 3, 1910.

Application filed November 9, 1909. Serial No. 527,048.

To all whom it may concern:

Be it known that I, ALICE O. BRIGANCE, residing at Navasota, in the county of Grimes and State of Texas, have invented a new and Improved Box and Package Elevating Apparatus, of which the following is a specification.

My invention is an improved apparatus for elevating boxes, etc., to and placing them on shelving in a store, as well as for removing such boxes from the shelving.

Generically, my invention embodies a standard or support which may be fixed or portable and on which a shelf or platform is mounted, means being provided for raising and lowering the shelf or platform and for retaining it in position on the support, the shelf and platform forming a package or box elevator.

In its more subordinate nature the invention includes a pair of friction plates to engage the support and be held in engagement with said support by a resilient clamp member, the friction plates having projecting arms on which the platform or shelf is mounted and having other arms to embrace the box or package and prevent lateral movement. The friction plates are also provided with arms having wedge portions to be engaged by a movable bail member to cause the friction plates to separate or spread to release their grip on the support at times. Means are also provided for automatically pushing the box from the elevator onto the store shelving.

In its more detail nature the invention resides in those novel details of construction, combination and arrangement of parts, all of which will be first fully described in detail, and then be specifically pointed out in the claims, and illustrated in the accompanying drawings, in which:—

Figure 1, is a perspective view of one form of my invention, the elevator being loose on the support. Fig. 2, is a detail central longitudinal section thereof, the elevator being clamped to the support. Fig. 3, is a horizontal cross section, the parts being positioned as shown in Fig. 1. Fig. 4, is a view similar to Fig. 3, the parts being positioned as shown in Fig. 2. Fig. 5, is a detail view of one of the friction plates and its attached parts. Fig. 6, is a perspective view of another form of the invention. Fig. 7, is a plan view and part section thereof, the front part of the platform being broken away. Fig. 8, is a detail sectional view showing the manner of securing the adjustable support to the ladder. Fig. 9, is a detail view of a portion of the invention.

Referring now to the accompanying drawings in which like letters and numerals of reference indicate like parts in all of the figures, and referring particularly to Figs. 1 to 5, inclusive, it will be noticed that I provide a support or standard 2 which is portable and may be set into a socket 1^a in a carriage 1 on the counter. The rod 2 carries a pulley 3 at its upper end over which a cable 3^a passes, the cable 3^a being secured at one end 3^b to the elevator and having its other end passed down into a convenient position to be grasped by the operator.

4 designates a split ring or tubular clamp having a pair of parallel longitudinally arranged slots 4^a to permit passage of the arms 5^a of friction plates 5, which are held within the clamp 4 to tightly embrace the rod 2 when in their normal position.

The friction plates 5 (one of which is best shown in Fig. 5 of the drawings) have the arms 5^a, hereinbefore referred to, which arms have their outer ends curved as at 5^x and provided with a stop nib 5^c. The arms 5^a also are provided with a wedge or cam-like swell 5^b for a purpose hereinafter explained. The plate 5 and arm 5^a are preferably formed of rigid material and the plate 5 has laterally projecting arms 5^d, the outer ends of which are bent at right angles as at 5^e to engage the sides of the box or package 25 and prevent its falling off of the platform in removing the box from the store shelf, (not shown). The plate 5 is also formed with shelf carrying arms 5^h which are joined to the plate 5 by portions 5^g, the arms 5^g—5^h being of a resilient nature. The front ends of the arms 5^h are joined as at 5^k and have hook-like shoulders or stops 5^m for a purpose hereinafter explained. The ends of the arms 5^h are joined by a rod 6 which is headed at 6^a at its ends to prevent spreading of the arms in opposite directions and to permit the arms to spring toward one another when the platform 7 is in the position shown in Fig. 2, to support such platform over the hook members 5^m, as shown in Fig. 2. The platform 7 is formed with downwardly bent ears 7^a which are pivoted at 8 to the arms 5^h so that the platform may have a limited pivotal movement. The arms 5^a

are also provided with projections 5^r to form stops for the bails 9 and 10 hereinafter again referred to.

9 designates a bail which has its ends 9^a passed through the portions 5^g of the arms and riveted. A second bail 10 has its ends passed through slots or apertures 5^t in the arms 5^d, and bail 10 has a reduced or inwardly bent portion 10^a—10^a to coöperate with the wedge-like portions 5^b of the arms 5^a and with the locking nibs 5^c. The bails 9 and 10 are joined at 12^a to a rod 12 which may be provided with a hand engaging portion 12^b so that the bails 9 and 10 may move up and down, it being understood that the bail 9 may be of resilient material or it may be resiliently connected to the arms 5^g, as shown, or both, while the bail 10 is of a rigid material so that when the reduced or narrowed portion 10^a of the bail is in the position shown in Figs. 1 and 3, the arms 5^a in the plates 5 will be brought toward one another to spread the clamp 4 and release the frictional engagement between the plates 5 and rod 2, so that the shelf 7 may be raised and lowered by the cable 3, as conditions may make necessary, to move the platform 7 into alinement with the particular box it is desired to remove from the store shelf.

When it is desired to remove a box from the store shelf the arms 5^b are spread at their front ends to permit the shelf 7 dropping between the hook or shoulder portions 5^m and resting on the rod 6, the front end of the shelf 7 being curved to conform to the curvature of the upper surface of the end of the arms 5^h or as nearly as practicable thereto. After the shelf or platform 7 has been elevated by the cable 3^a to bring it into alinement with the desired box to be removed from the shelf the operator then pushes upwardly on the rod 12 in the direction of the arrow in Fig. 2, to release the bail 10 from the arms 5^a and permit the resilient clamp 4 to hold the plate 5 in tight frictional engagement with the rod 2 to retain the shelf or platform 7 in place. The operator then removes rod 2 from the socket 1^a and forces the shelf or platform 7 beneath the box 25 on the store shelf until such box passes the shoulders or hook portions 5^m, and is positioned as shown in dotted lines in Fig. 1. Then the operator removes the box from the shelf by pulling the platform 7 with the box back. The operator may then return the rod 2 to its socket 1^a, pull down on the rod 12 to release the clamp and lower the box by the cable 3.

When it is desired to return the box to its shelf, the operator sets the platform to the position shown in Fig. 2, with the shoulders 5^m beneath the platform 7, places the box on the platform, raises the platform by the cable 3^a to the desired position in alinement with the shelf and then pushes upwardly on the rod 12 to simultaneously permit the clamp 4 to force the plates 5 into engagement with the rod 2 and to push the box 25 off the platform 7 by the pusher 11 that is carried by the bail 10, as shown in Figs. 2 and 3 of the drawings.

When my improved elevating mechanism is applied to store ladders, as shown in Fig. 6, of the drawings, the support 2^x is pivoted at 2^y to a rod 2^z that is secured in the ladder 26 near the bottom and it is also pivoted at 2^s to a rod 2^t that projects through an aperture 26^a in the ladder and is held by a set screw 2^r, a threaded plate 2^p being secured to the ladder side, if desired, to coöperate with the screw 2^r. Thus, regardless of the slant of the ladder 26, the rod 2^x may be held vertical, it being understood that the distance between the rods 2—2^x and the face of the store shelving is substantially the length of the platform or shelf 7.

The operation of the form of my invention shown in Fig. 6 is similar to that of the form shown in Fig. 1 with the exception that the shelf 7 is not inserted beneath the box when removing the box from the store shelf, the box being removed from the store shelf onto the platform or shelf 7 by the usual box engaging hook (not shown), or in any other convenient way, it being replaced on the shelf in the same manner, the pusher 11 being omitted in the form of my invention shown in Fig. 6. In the form of the invention shown in Fig. 6, the arms 5^h—5^h are bent at 5^l—5^n, instead of bending them as at 5^g in the form shown in Figs. 1 to 5 inclusive, so that the shelf 7 may lie to one side of the ladder 26 and support 2^x. The bail 10^x of the form shown in Fig. 6 is pivoted at 10^y to the portions 5^y, of the arms 5^e instead of passing through apertures in said arm portions, as in the form shown in Fig. 1. A pulley 3^x is provided at the top of the rod or support portion 2^x, over which the cable 3 passes, as in the other form of my invention, the cable 3 being secured at 3^b. The rod 12 is also provided by means of which the bail 10^x may be moved up or down, so that its clamping portions 10^z may engage the swelled portions 9^b and lock with the nibs 9^c of the arms 5^a, the construction of the arms 5^a being precisely the same as those in the form shown in Figs. 1 to 5 inclusive of the drawings.

From the foregoing description taken in connection with the accompanying drawings it is thought the complete construction, operation and advantages of my invention will be readily understood by those skilled in the art to which the invention appertains.

What I claim is:

1. A support, a platform, means for supporting said platform on said support, said supporting means including a resilient clamping member, means within the clamp-

ing member for frictionally engaging said support, means for relieving said frictional engagement, and means for raising and lowering said platform on said support.

2. A support, a clamp on said support, a platform supported by said clamp, means for holding said clamp out of action, and means for simultaneously releasing said holding means and pushing an article off of said platform.

3. A support, a clamp on said support, a platform carried by said clamp, said clamp including a resilient clamping member, and support engaging spreader members within said clamping member and having arms projecting through said clamping member, means for holding said arms in a position to cause said spreader members to disengage said support, and means for moving said holding means out of engagement with said arms to permit said spreader members to be tightly held in engagement with said support.

4. A support, a clamp on said support, a platform carried by said clamp, said clamp including a resilient clamping member, and support engaging spreader members within said clamping member and having arms projecting through said clamping member, means for holding said arms in a position to cause said spreader members to disengage said support, means for moving said holding means out of engagement with said arms to permit said spreader members to be tightly held in engagement with said support, and means for simultaneously pushing an article off of said platform.

5. A support, a clamp on said support, a platform carried by said clamp, said clamp including a resilient clamping member, support engaging spreader members within said clamping member and having arms projecting through said clamping member, means for holding said arms in a position to cause said spreader members to disengage said support, means for moving said holding means out of engagement with said arms to permit said spreader members to be frictionally held in engagement with said support, and a cable and pulley device for raising and lowering said platform.

6. A support, a clamp on said support, a platform carried by said clamp, said clamp including a resilient clamping member, support engaging spreader members within said clamping member and having arms projecting through said clamping member, means for holding said arms in a position to cause said spreader members to disengage said support, means for moving said holding means out of engagement with said arms to permit said spreader members to be frictionally held in engagement with said support, means for simultaneously pushing an article off of said platform, and a cable and pulley device for raising and lowering said platform.

7. In a device of the character stated, a support including a rod member, a clamp movable on said rod member, said clamp comprising a pair of friction and spreader plates, and a resilient clamp embracing said plates and support, said spreader plates having arms projecting through said resilient member, a platform supported by said clamp, said arms having wedge-like portions and a movable member for embracing said arms to coöperate with said wedge-like portions to move said arms together to spread said resilient member and release said friction spreader plates from frictional engagement with said support rod.

8. In a device of the character stated, a support including a rod member, a clamp movable on said rod member, said clamp comprising a pair of friction and spreader plates, a resilient clamp embracing said plates and support, said spreader plates having arms projecting through said resilient member, a platform supported by said clamp, said arms having wedge-like portions, a movable member for embracing said arms to coöperate with said wedge-like portions to move said arms together to spread said resilient member and release said friction spreader plates from frictional engagement with said support rod, and means for moving said embracing member into and out of engagement with said arms.

9. In a device of the character stated, a support including a rod member, a clamp movable on said rod member, said clamp comprising a pair of friction and spreader plates, a resilient clamp member embracing said plates and support, said spreader plates having arms projecting through said resilient member, a platform supported by said clamp, said arms having wedge-like portions, a movable member for embracing said arms to coöperate with said wedge-like portions to move said arms together to spread said resilient member and release said friction spreader plates from frictional engagement with said support rod, means for moving said embracing member into and out of engagement with said arms, and means for retaining said embracing member in its arm engaging position.

10. In a device of the character stated, a support including a rod member, a clamp movable on said rod member, said clamp comprising a pair of friction and spreader plates, a resilient clamp embracing said plates and support, said spreader plates having arms projecting through said resilient member, a platform supported by said clamp, said arms having wedge-like portions, a movable member for embracing said arms to coöperate with said wedge-like portions to move said arms together to spread said

resilient member and release said friction spreader plates from frictional engagement with said support rod, means for moving said embracing member into and out of engagement with said arms, and means carried by said movable embracing member for pushing an article off of said platform as said embracing member is moved out of engagement with said arms.

11. In a device of the character stated, a support including a rod member, a clamp movable on said rod member, said clamp comprising a pair of friction and spreader plates, a resilient clamp member embracing said plates and support, said spreader plates having arms projecting through said resilient member, a platform supported by said clamp, said arms having wedge-like portions, a movable member for embracing said arms to coöperate with said wedge-like portions to move said arms together to spread said resilient member and release said friction spreader plates from frictional engagement with said support rod, means for moving said embracing member into and out of engagement with said arms, means for limiting said embracing member in its arm engaging position, and means carried by said movable embracing member for pushing an article off of said platform as such embracing member is moved out of engagement with said arms.

12. In an apparatus of the character stated, a rod support and a clamping member carried thereby, platform supporting arms carried by said clamping member, said arms having pointed outer ends and a platform pivotally connected to said arms, said arms at their outer ends having hook-like shoulder portions projecting above said platform when said platform is in one position.

13. In an apparatus of the character stated, a rod support and a clamping member carried thereby, platform supporting arms carried by said clamping member, said arms having pointed outer ends and a platform pivotally connected to said arms, said arms at their outer ends having hook-like shoulder portions projecting above said platform when said platform is in one position, said platform having its front end curved to conform substantially to the shape of said pointed ends of said arms.

14. In an apparatus of the character stated, a rod support and a clamping member carried thereby, platform supporting arms carried by said clamping member, said arms having pointed outer ends and a platform pivotally connected to said arms, said arms at their outer ends having hook-like shoulder portions projecting above said platform when said platform is in one position, said platform supporting arms being resilient to move toward one another to bring said hook-like shoulder members under said platform when said platform is rocked to an elevated position.

15. In an apparatus of the character stated, a rod support and a clamping member carried thereby, platform supporting arms carried by said clamping member, said arms having pointed outer ends and a platform pivotally connected to said arms, said arms at the outer ends having hook-like shoulder portions projecting above said platform when said platform is in one position, and means for limiting the movement of said arms away from one another.

16. In an apparatus of the character stated, a rod support and a clamping member carried thereby, platform supporting arms carried by said clamping member, said arms having pointed outer ends and a platform pivotally connected to said arms, said arms at the outer ends having hook-like shoulder portions projecting above said platform when said platform is in one position, and supplemental arms carried by said clamp for embracing an article on said platform to prevent lateral movement thereof.

17. In an apparatus of the character stated, a rod support, a pair of plates engaging said rod support, and a split tubular resilient clamp member for holding said plates in tight engagement with said rod, said plates having arms projecting through apertures in said clamp member, said plates having platform carrying arms, a platform carried by said platform carrying arms, said plates having lateral projections, a bail member having its ends passed through apertures in said lateral projections to hingedly connect therewith, said arms that project through said clamp member having portions to be engaged by said bail to force said arms to spread said clamp member and release said plates from engagement with said support.

18. In an apparatus of the character stated, a rod support, a pair of plates engaging said rod support, and a split tubular resilient clamp member for holding said plates in tight engagement with said rod, said plates having arms projecting through apertures in said clamp member, said plates having platform carrying arms, a platform carried by said platform carrying arms, said plates having lateral projections, a bail member having its ends passed through apertures in said lateral projections to hingedly connect therewith, said arms that project through said clamp member having portions to be engaged by said bail to force said arms to spread said clamp member and release said plates from engagement with said support, means for moving said bail into and out of engagement with said bail engageable arms, and a cable for raising and lowering said clamp and platform.

19. In an apparatus of the character

stated, a rod support, a pair of plates engaging said rod support, and a split tubular resilient clamp member for holding said plates in tight engagement with said rod, said plates having arms projecting through apertures in said clamp member, said plates having platform carrying arms, a platform carried by said platform carrying arms, said plates having lateral projections, a bail member having its ends passed through apertures in said lateral projections to hingedly connect therewith, said arms that project through said clamp member having portions to be engaged by said bail to force said arms to spread said clamp member and release said plates from engagement with said support, means for moving said bail into and out of engagement with said bail engageable arms, a cable for raising and lowering said clamp and platform, and a pusher carried by said bail, and means causing said bail to move said pusher to push an article off of said platform when said bail is moved out of engagement with said bail engageable arms.

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Witnesses:
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