Oct. 4, 1949. M. C. RANSEEN 2,483,844

BAG HOLDER

Filed Oct. 23, 1944 3 Sheets-Sheet 1

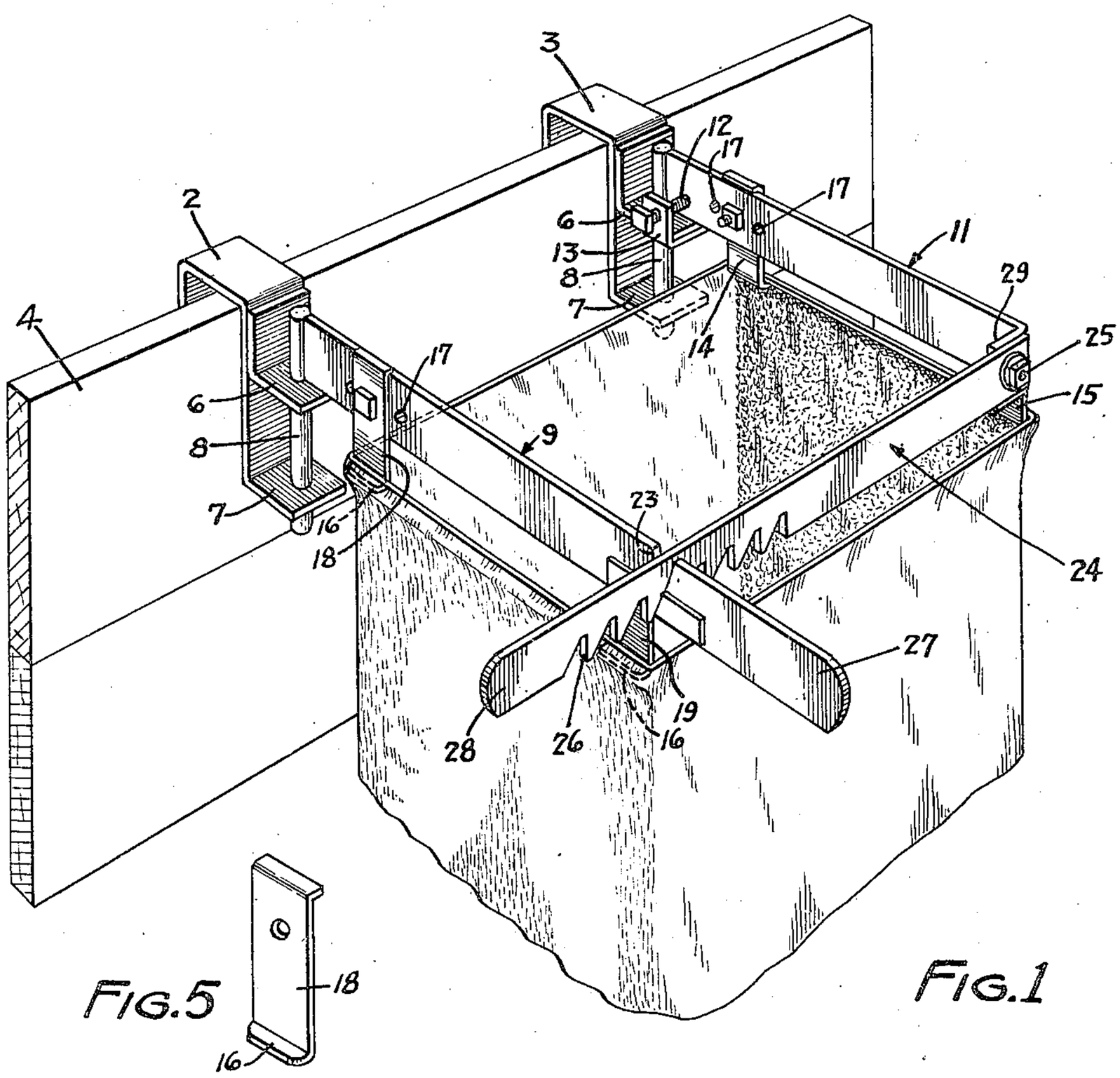

FIG. 1

FIG. 5

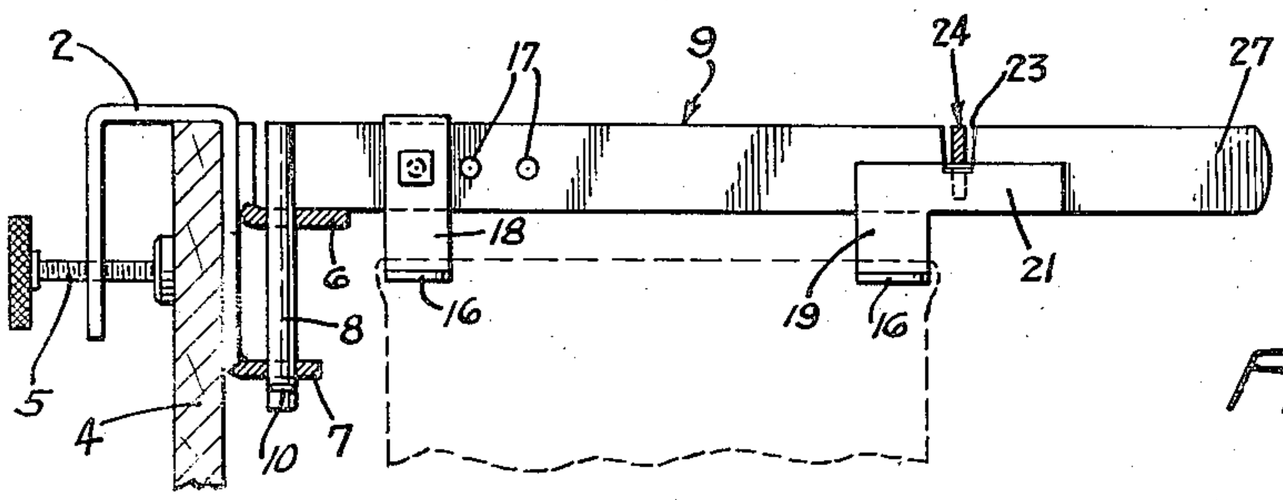

FIG. 3

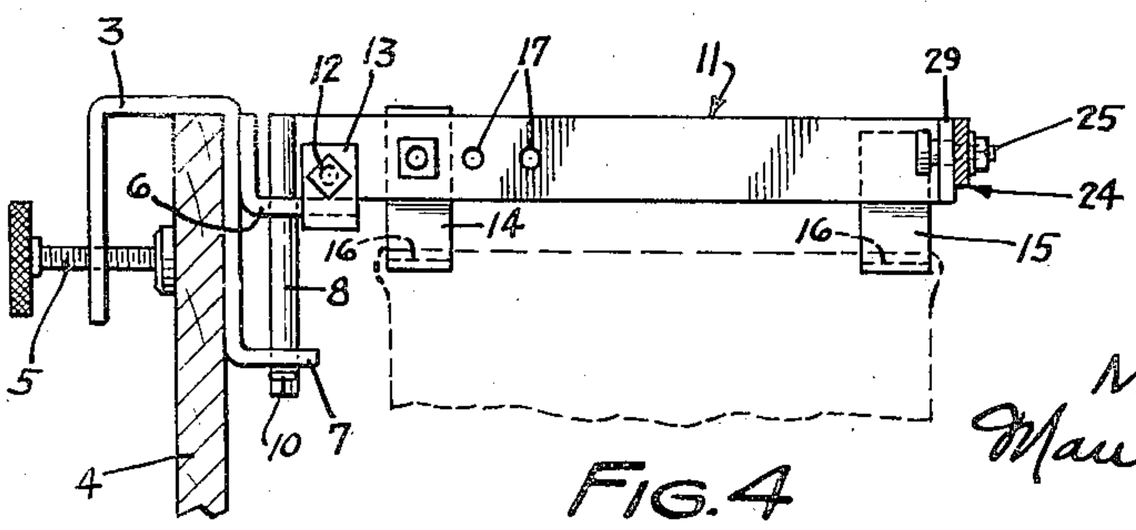

FIG. 4

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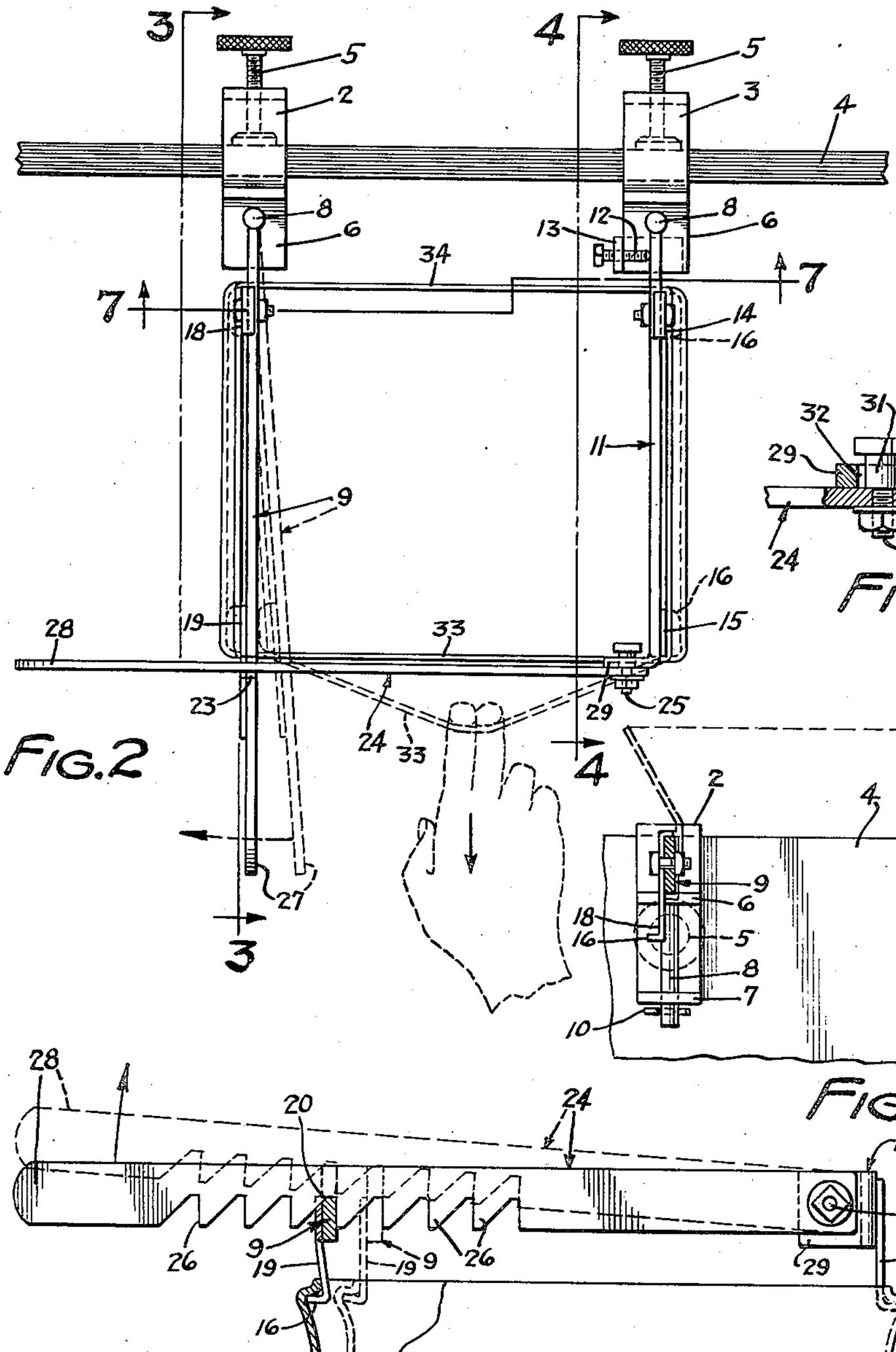

FIG. 2

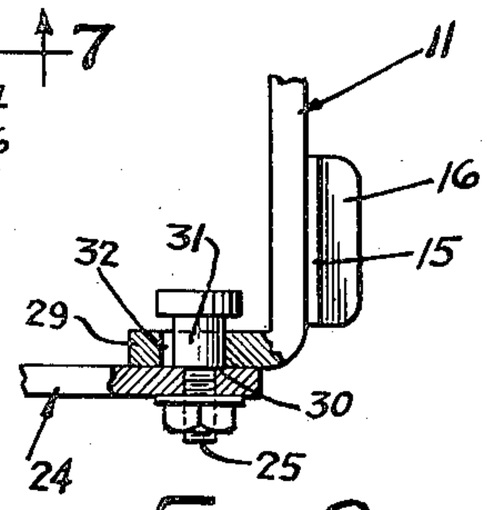

FIG. 8

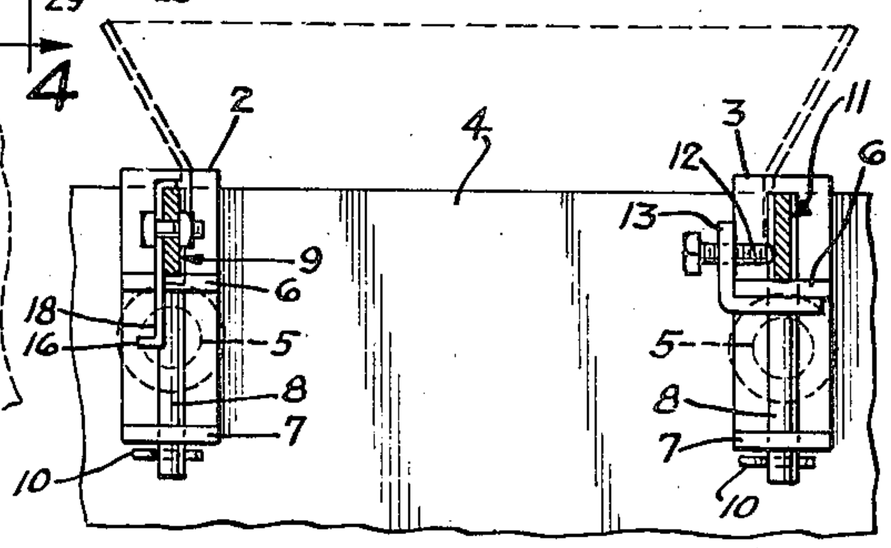

FIG. 7

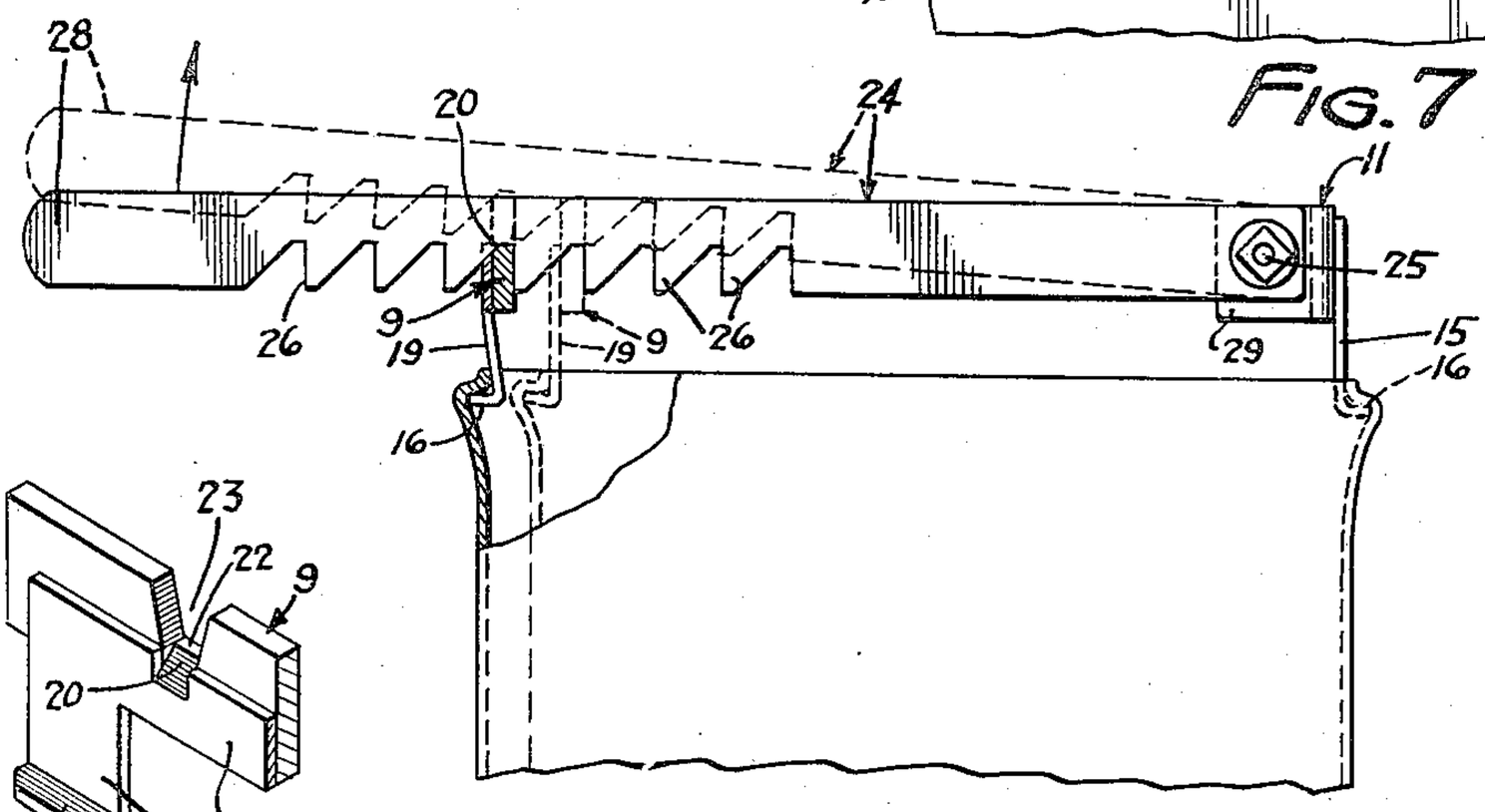

FIG. 6

FIG. 9

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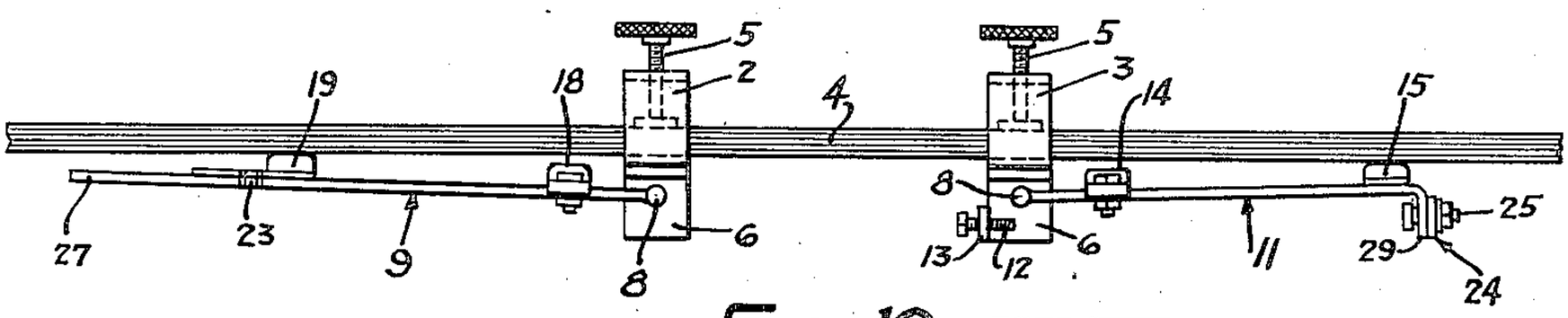

FIG. 10

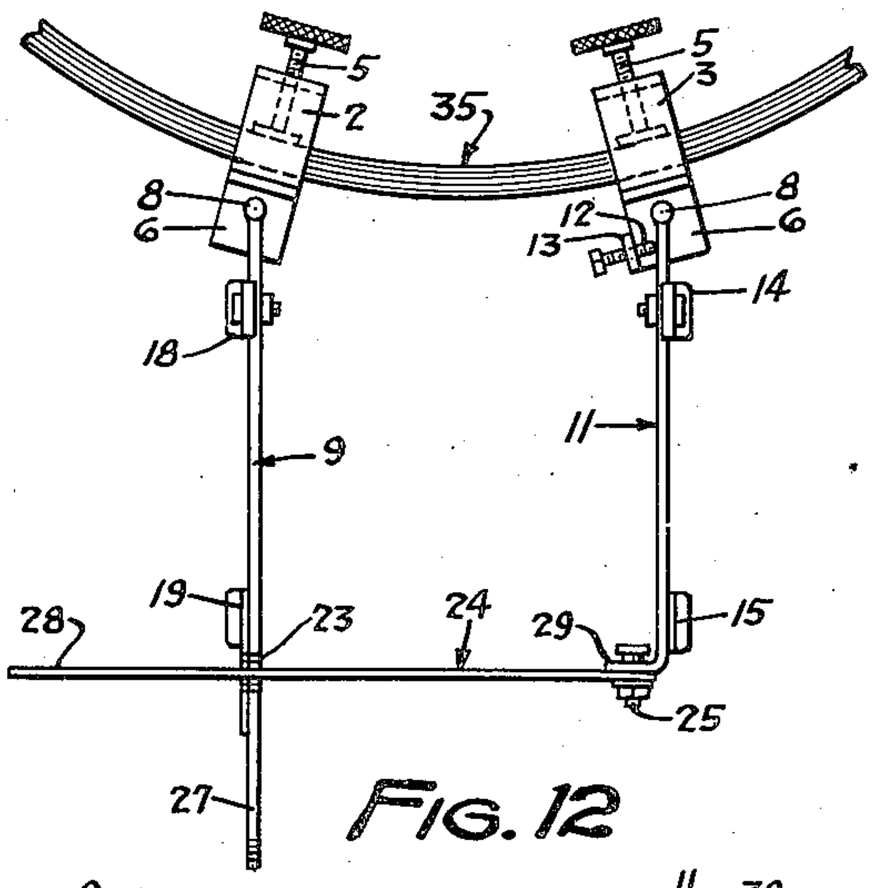

FIG. 12

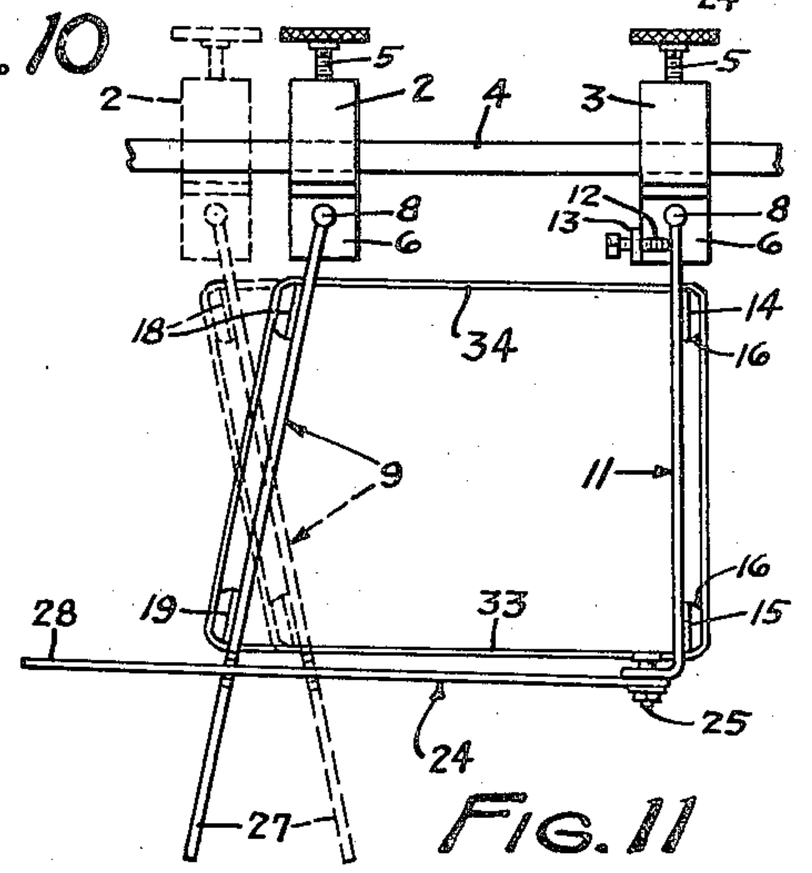

FIG. 11

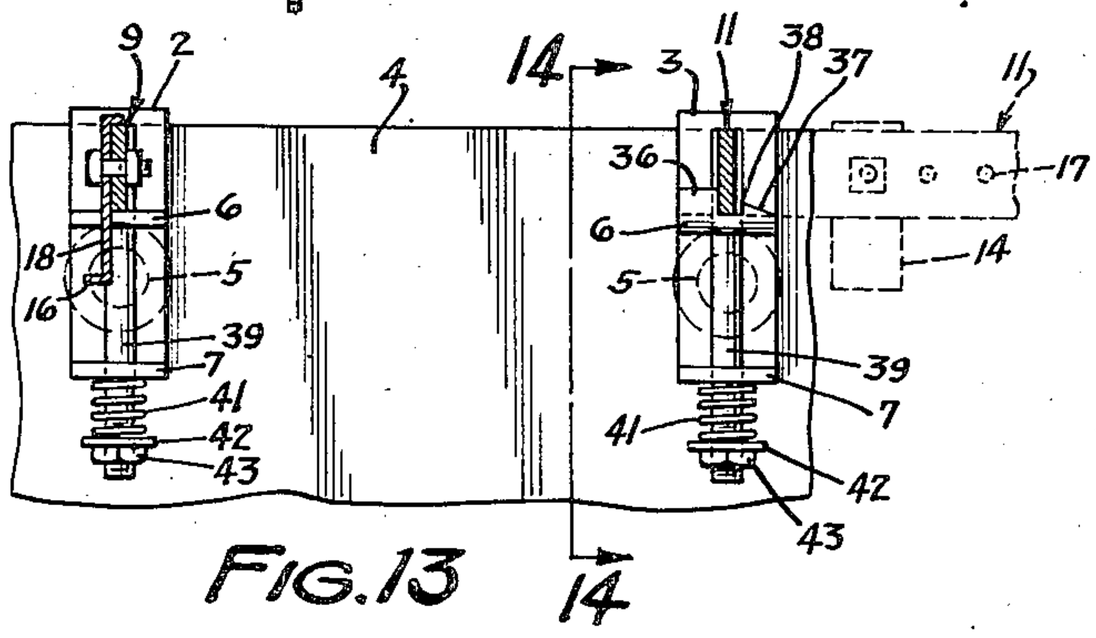

FIG. 13

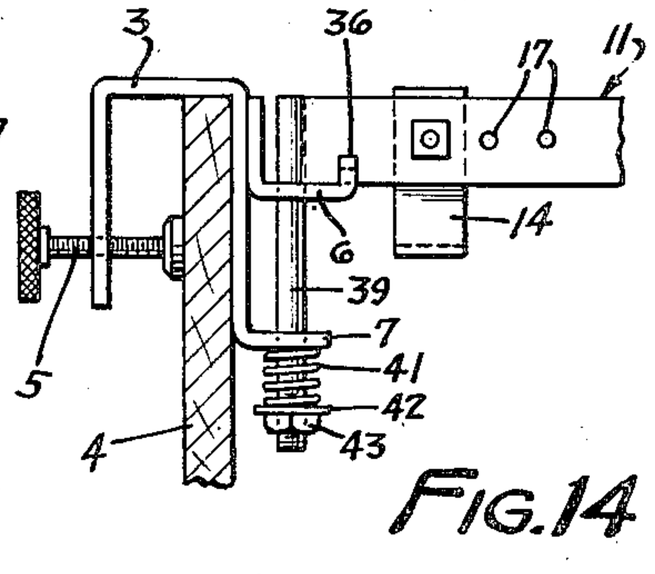

FIG. 14

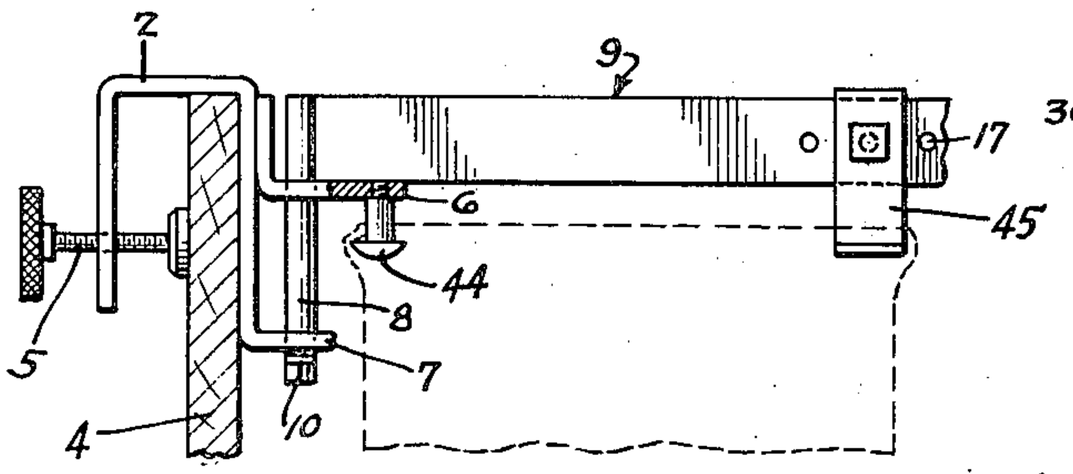

FIG. 16

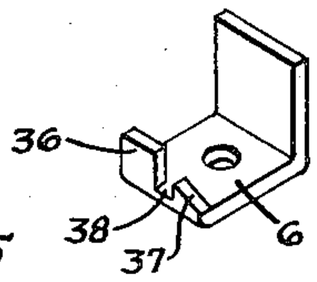

FIG. 15

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UNITED STATES PATENT OFFICE

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BAG HOLDER

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Application October 23, 1944, Serial No. 559,981

5 Claims. (Cl. 248—99)

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This invention relates to new and useful improvements in bag holders, and more particularly to such a holder adapted to be removably attached to a suitable support in position to support an empty bag with its mouth fully open whereby a charge may readily be delivered into the bag.

An object of the invention is to provide a bag holder of simple and inexpensive construction, comprising a pair of supporting arms having means for quickly clamping them in operative position upon a suitable supporting member such as an edge of a wall of a potato or grain bin, a wagon or truck body, or to the edge of the wall of an open barrel, vat, box, or any other suitable support to which it may be attached.

A further object is to provide a bag holder for supporting a bag with its mouth open to receive a charge, and having means for protecting the walls of the bag mouth against damage from a shovel or other device used in the operation of filling the bag.

A further object is to provide a bag holder of the character described whose clamping means is so fashioned that no parts of the bag supporting arms or members project above the upper edge of the supporting wall upon which the holder is mounted, whereby the holder will present no obstructions to objects passed over the bin wall when the device is in use, and said clamping means also permitting the bag supporting arms to be folded snugly against the bin wall when the device is not in use, and whereby the device need not be taken down when not in use.

A further object is to provide a bag holder which may be fabricated almost entirely of standard stock material, and wherein the various parts of the device may be blanked out on a punch press in quantity production at extremely low cost.

A further object is to provide a bag holder that is quickly adjustable for various sizes of bags by simply changing the spacing between the bag supporting arms, and wherein the supporting arms and lock bar lie substantially above the bag mouth walls, thereby to provide a protective means for the bag walls to prevent heavy particles from contacting the top edges of the tensioned bag when the bag is being filled.

A further object is to provide a device of the class described comprising complemental supporting arms and a lock bar for retaining said arms in spaced operative relation while a bag is being positioned upon the supporting lugs of the arms, and means being provided on the lock bar and one of said arms for conveniently tensioning the bag walls to fully expand the bag mouth.

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Other objects of the invention reside in the provision of an adjustable stop for regulating the pivotal movement of one of the arms in a direction towards the other; in the provision of at least one resilient bag supporting lug whereby the tensioning arm may continue its pivotal movement after the bag wall has been fully expanded, thereby to move said arm into locking engagement with a tooth of a lock bar; in the provision of a device wherein the contour of the open bag mouth may be changed to various configurations; in the provision of means for clamping the device on a suitable base whereby the arm-supporting brackets are prevented from shifting, when the bag mouth is tensioned; in the unique mounting of the supporting arms whereby the weight of a charge contained in a bag supported on said arms will be transmitted to the arms in a direction edgewise thereof, thereby utilizing the greatest rigidity of the arms; in the arrangement of arms and lock bar whereby the bag mouth walls may be conveniently tensioned with one hand, and whereby the operator may temporarily support the bag upon the supporting lugs with his other hand, if necessary; in the provision of a device that may readily be knocked down to facilitate shipment and storage, and which may be quickly assembled and mounted upon a suitable support ready for immediate use, without the use of tools; in the resilient mounting of the bag supporting arms and the means for locking one of said arms against swinging movement when in operative position; and in the provision of a bag holder which may be quickly manipulated to tension the walls of a bag mouth for receiving a charge, and which may as quickly be manipulated to release the bag, when the latter has been filled.

Other objects of the invention will appear from the following description and the accompanying drawings and will be pointed out in the annexed claims.

In the accompanying drawings there has been disclosed a structure designed to carry out the various objects of the invention, but it is to be understood that the invention is not confined to the exact features shown, as various changes may be made within the scope of the claims which follow.

In the drawings:

Figure 1 is a perspective view showing the bag holder mounted upon a suitable support and supporting a bag;

Figure 2 is a plan view of Figure 1;

Figure 3 is a sectional view on the line 3—3 of Figure 2;

Figure 4 is a sectional view on the line 4—4 of of Figure 2;

Figure 5 is a perspective view showing one of the bag mouth engaging elements or lugs detached from the holder;

Figure 6 is a front view of the holder, partially in section, showing the lock bar in operative engagement with the bag holding arms, and also showing one of the bag engaging lugs flexed as a result of the tension in the bag mouth walls;

Figure 7 is a sectional view on the line 7—7 of Figure 2, showing the pivotal mounting of the bag holding arms, and also indicating in dotted lines a hopper attached to said arms to facilitate filling the bag;

Figure 8 is a fragmentary view, partially in section, showing the pivotal mounting of the lock bar on one of the bag holding arms;

Fig. 9 is a detail perspective view showing a notch on one of the bag holding arms whose bottom is adapted to be engaged by the lock bar to secure the bag holding arms in operative spaced relation;

Figure 10 is a view showing the bag holding arms swung back into inoperative positions in substantially parallel relation to the supporting wall upon which the holder is mounted;

Figure 11 is a plan view showing in full and dotted lines, different positions of one of the bag holding arms to indicate how the contour of the bag mouth may be varied by the position of said arm;

Figure 12 is a plan view showing the holder mounted on an arcuate supporting wall such as the upper edge of a barrel or tank wall;

Figure 13 is a detail sectional view showing a holder wherein the bag supporting arms are mounted for limited upward movement against resilient means;

Figure 14 is a detail sectional view on the line 14—14 of Figure 13;

Figure 15 is a perspective view showing the upper bearing bracket of one of the bag holding arms and the means provided thereon for locking said arm in operative position; and

Figure 16 is a view showing a construction wherein one of the bag wall engaging lugs is in the form of a headed stud secured directly to one of the bearing brackets for one of the bag supporting arms.

The novel bag holder herein disclosed, and as illustrated in Figure 1, comprises a pair of suitable U-shaped mounting brackets 2 and 3 shaped to be fitted over the edge of a suitable support such as the wall 4 of a grain bin, a wagon box, or other similar support to which the holder is to be attached. The mounting brackets 2 and 3 are provided with suitable clamping screws 5 whereby they may readily and conveniently be secured to the support 4, as shown in Figures 1, 2 and 3.

One leg of each mounting bracket is shown provided with outwardly extending bearing portions 6 and 7 apertured to receive spindles or posts 8 of a pair of suitable bag holding arms 9 and 11.

The bag holding arm 11 is preferably mounted for limited swinging movement in one direction by a suitable stop screw 12 secured in a bracket 13 fixed to the upper bearing portion 6 of the bracket 3. When the bag holder is in operative position, as shown in Figures 1 and 2, the

stop screw 12 is positioned to retain the arm 11 at substantially right angles to the support 4. Suitable hook elements 14 and 15 are shown secured to the arm 11 and have outwardly turned lip portions 16 adapted to be engaged by the bag top walls as shown in Figures 1 and 2. The hook element 14 may be adjusted lengthwise of the arm 11 to adapt the holder for bags of different sizes. To thus adjust the position of the element 14 on the arm 11, a series of spaced apertures 17 are provided in said arm.

The arm 9 is mounted for free swinging movement in either direction from the position shown in Figures 1 and 2, and like the arm 11, has hook elements 18 and 19 secured thereto for engaging the bag top walls. The hook element 18 is longitudinally adjustabe on the arm 9 in a manner similar to the corresponding element 14 of the arm 11. The hook element 19 is shown provided with a lateral extension 21 whose upper edge is disposed adjacent the bottom wall 22 of a notch 23 extending downwardly from the upper edge of the arm 9, as shown in Figure 3. The outer edge of the bottom wall 22 of the notch 23 is preferably beveled to coincide with the bevel of the ratchet teeth 26 of the lock bar 24 as shown in Figures 6 and 9. The hook elements 15 and 19 may be secured to their respective arms 11 and 9 by suitable means such as spot welding or riveting, whereby they are firmly affixed thereto.

To retain the arms 9 and 11 in bag holding positions as shown in Figures 1 and 2, a suitable lock bar 24 is shown interposed between the outer ends of the arms 9 and 11 to retain them in bag holding position wherein the bag mouth may be expanded to full opening, as clearly illustrated in Figure 1. The lock bar 24 is preferably inseparably connected to the arm 11 by a suitable bolt or stud 25 which permits pivotal movement of the lock bar 24 on the arm 11, as indicated by the full and dotted lines in Figure 6.

The opposite end of the lock bar 24 is adapted to be received in the notch 23 provided in the arm 9. A plurality of ratchet-like teeth 26 are formed in the bottom edge of the lock bar 24 adapted to engage the arm 9, as shown in Figures 1 and 6, thereby to lock the bag supporting arms 9 and 11 in bag holding positions, when the bag is attached to the hook elements of the arms as shown in Figure 1. One corner of the bottom wall of the notch 23 in the arm 9 is preferably beveled, as shown at 20 in Figure 6, and the upper edge of the extension 21 of the hook element 19 is similarly beveled, thereby to permit the effective face of the particular ratchet tooth 26 of the lock bar 24, which may be engaged with the arm 9, to so engage the arm with substantially its entire face, as will be clearly understood by reference to Figure 6.

Thus, by means of the ratchet teeth 26 the bag mouth walls may readily be tensioned, as shown in Figure 1, by pivotal movement of the arm 9 in a direction away from the arm 11, the teeth 26 of the lock bar engaging the arm 9 and securing it in the position shown in Figure 1.

To facilitate swinging the arm 9 into locking engagement with the tooth of the lock bar whereby the bag walls are placed under tension, as shown in Figure 1, one or more of the hook elements secured to the arms may be made of a suitable resilient or spring-like material whereby they may flex or yield as a result of the tension imparted to the bag top walls, when the pivoted bag supporting arm 9 is swung into locking engagement with a tooth of the lock bar 24, as

shown in Figure 6. The end portion 27 of the bag supporting arm 9 serves as a handle for manipulating said arm, and the end portion 28 of the lock bar 24 serves as a handle whereby said bar may be conveniently manipulated in the operation of attaching a bag to the hook elements of the arms 9 and 11 or removing it therefrom.

The ratchet teeth 26 of the lock bar 24 provide a very simple and efficient means for securing the bag holding arms 9 and 11 in bag holding positions, as shown in Figure 1, and whereby variations in the sizes of the bag mouths, within reasonable limitations, will not require readjustment of the brackets 2 and 3 upon the supporting wall 4, nor relative adjustment of the hook elements 14 and 18 upon the arms, as will readily be understood. The lateral extension 21 provided on the hook element 19 provides a reinforcement for the arm 9 at the bottom of the notch 23 as may be best understood by reference to Figures 6 and 9.

The pivotal mounting of the lock bar 24 upon the offset end portion 29 of the arm 11 may be conveniently constructed, as shown in Figure 8, wherein it will be noted the bolt or stud 25 has an annular shoulder 30 whereby it may be securely fastened to the bar 24 so that its body 31 is freely rotatable in the aperture 32 provided in the offset portion 29.

In Figure 10 the bag holding arms 9 and 11 are shown swung outwardly into inoperative positions against the supporting wall 4, whereby they require very little space and are not in the way nor will they obstruct passage adjacent to the supporting wall 4. When so supported the lock bar 24 is pendently supported from the outer end of the arm 11, as will be noted.

In Figure 11 the full lines show the supporting brackets 2 and 3 so spaced as to cause the front wall 33 of the bag top to be relatively wider than its rear wall 34, which may be desirable when filling certain size bags as greater room is provided at the front of the bag, assuming that the lock bar side of the holder is considered the front. The mounting brackets 2 and 3 may also be spaced as indicated in dotted lines in Figure 11, whereby the front wall 33 of the bag may be relatively shorter than the rear wall.

In Figure 12 the holder is shown mounted upon an arcuately shaped wall 35, such as the upper edge of a barrel wall or the wall of a cylindrical tank. In this figure it will be noted that the bag holding arms 9 and 11 are not aligned with their respective mounting brackets 2 and 3, but that they are positioned in substantially parallel relation as in Figures 1 and 2. This may readily be accomplished by adjustment of the adjusting screw 12 in the mounting bracket 3, the position of the arm 9 with respect to its complemental arm 11 depending upon the size of the bag mouth and the spacing between the mounting brackets 2 and 3, as will be understood.

Figures 13 and 14 illustrate a construction wherein the upper bearing portion 6 of the mounting bracket 3 is provided with an upstanding flange 36 having a cam face 37 terminating in a notch 38 adapted to receive the bottom edge of the arm 11, when said arm is in bag holding position, as illustrated in Figure 13. In the construction hereindisclosed, the arm 11 may be provided with a relatively longer shaft or spindle 39 whose lower end extends a distance below the bearing portion 7 and has a suitable

spring 41 coiled thereabout whose opposite ends engage respectively the bottom face of the bearing portion 7 and a washer 42 secured in position on the spindle 39 by a nut 43 received in threaded engagement with the lower end of the spindle, as shown. The spring 41 constantly exerts a downward pull on the spindle 39, but yields when the arm rides over the cam face 37, as when it is swung into the notch 38, as when it is swung into bag holding position. The notch retains the arm 11 in operative position, as will be readily understood by reference to Figure 13.

The bag holding arm 9 shown in Figure 13 is secured to a similar spindle 39 having a spring 41 mounted on the lower end thereof and constantly urging the arm and spindle downwardly as will be understood. The spring 41 of the arm 9 holds the arm downwardly against the upper face of the bearing part 6 of the bracket 2, whereby the arm is frictionally retained in position, but may readily be swung from one position to another as will be understood.

In Figure 16 I have shown a construction wherein headed rivets or studs 44 have been substituted for the hook elements 14 and 18 shown at the inner ends of the bag holding arms in the previous figures. The headed rivets 44 are secured to the bearing portions 6 of the mounting brackets and are adapted to be engaged by the bag top walls, as clearly illustrated. When such a construction is used, hook elements 45, similar to the ones shown in Figure 5, are adjustably mounted on the arms at the outer ends thereof in a manner similar to the hook elements 14 and 18 shown in Figure 1.

When the bag holder is to be used, its arms 9 and 11 are swung outwardly to approximately the positions shown in Figures 1 and 2. The operator or user then attaches a wall of the open bag top to the hook elements 18 and 14 of the arms 9 and 11, respectively. During this operation, the lower edges of the arms may serve as guides in that the operator may initially bring the edge of the bag top upwardly into engagement with the lower edges of the arms, and then forwardly into engagement with the hook elements 18 and 14. Suitable means, such as cotter pins 10 may be provided in the spindles 8 of the arms, as best shown in Figure 7, to prevent upward movement of the arms. The operator then brings the bag top walls forwardly into engagement with the hook elements 19 and 15, as shown in Figures 1 and 2, after which the operator may grasp the front wall of the opened bag top with one hand, as indicated in dotted lines in Figure 2, and with his other hand swing the arm 9 from the dotted to the full line position shown in said figures, into locking engagement with the lock bar 24, whereupon the walls of the bag top are placed under tension. The bag mouth is then wide open to receive a load, as shown in Figure 1.

When the bag has received a charge, the operator simply moves the lock bar 24 out of locking engagement with the arm 9, thereby to release the bag top walls from the hook elements of the arms.

The novel bag holder herein disclosed is extremely simple and inexpensive in construction. It may be manufactured almost entirely of stock material which may readily be bent and formed to the required shapes in a conventional press at low cost. The ratchet-like teeth provided on the lock bar 24 may also be inexpensively formed on a press, as the teeth 26 do not require accurate machining.

An important feature of the invention, as hereinbefore stated, resides in the independent mounting of the supporting brackets 2 and 3 and the manner of clamping said brackets to the fixed support 4 whereby the spacing therebetween may readily be varied in accordance with the size of the bag to be supported. It will also be noted by reference to Figure 12, that the holder readily lends itself for mounting on supports of various shapes and sizes without requiring any alterations in the construction of the holder as a whole. By pivotally mounting the arms 9 and 11 in the mounting brackets 2 and 3, respectively, said arms may readily be swung into inoperative positions against the support 4 as shown in Figure 10, when not in use. The apparatus may also be packed into a small bundle for shipment or storage, the lock bar 24 being readily detachable from the arm 11 by removal of the nut on the end of the shouldered stud 25, shown in Figure 8.

Because of the unique mounting of the bag holding arms 9 and 11 the apparatus has been found very practical for holding bags of various sizes when being filled with a suitable material. The bag holder may be clamped to a side wall of a wagon box whereby the contents of the box may be filled into sacks in a very simple and practical manner, and, in like manner, the bag holder may be supported on the wall of a grain bin or other bin to facilitate filling bags with the contents of such bins. The construction of the bag holder is such that when mounting it on a support such as shown in Figures 1 and 2, the holder may be utilized for supporting bags which may vary considerably in size cross sectionally, as the pivoted lock bar utilized for holding the bag supporting arms in bag holding positions provides for considerable movement of the pivoted arm 9 with respect to the arm 11 to accommodate bags of different sizes.

In some instances, it may be found desirable to utilize a hopper of some sort for guiding the material into the open mouth of the bag supported on the holder. In Figure 7 I have indicated in dotted lines a simple form of hopper which is shaped to be fitted between the bag holding arms 9 and 11, thereby to guide the material into the bag as will readily be understood.

It will be apparent to those skilled in the art that I have accomplished at least the principal objects of my invention, and it will also be apparent to those skilled in the art that the embodiments herein described may be variously changed and modified without departing from the spirit of the invention, and that the invention is capable of uses and has advantages not herein specifically described; hence it will be appreciated that the herein disclosed embodiments are illustrative only, and that my invention is not limited thereto.

I claim as my invention:

1. A bag holder comprising a pair of independent supporting brackets adapted to be attached to a suitable support, a bag holding arm pivoted to one of said brackets, means for limiting swinging movement of said arm on said bracket in one direction, a second bag holding arm pivoted to the other of said brackets and arranged for relatively greater swinging movement than said other arm, thereby to permit a bag top to be attached to said arms after which said arms may be manipulated to tension the bag top walls, and a lock bar pivoted to one of said arms and engageable with the other of said arms to retain said arms in bag holding positions.

2. A bag holder comprising a pair of independent supporting brackets adapted to be attached to a suitable support in spaced relation, each bracket having a bearing aperture therein a bag holding arm having a pivot pin secured thereto and received in the bearing aperture of one of said brackets, means for limiting swinging movement of said arm on said bracket in one direction, a bag holding arm similarly pivoted to the other of said brackets and arranged for free swinging movement towards or away from said other arm, thereby to permit a bag top to be attached to said arms or removed therefrom, and spring means associated with said pivot pins and brackets for retaining the bag holding arms in position with their respective brackets, a lock bar interposed between the outer ends of said arms for retaining them in bag holding positions, and each bracket and its bag-supporting arm being independently removable from its supporting means, whereby the entire device may readily be folded into a compact bundle when not in use.

3. A bag holder comprising a pair of independent mounting brackets having means for securing them to a suitable support in spaced relation, a bag holding arm mounted on one of said brackets, cam means for retaining said arm in bag holding position, a second bag holding arm pivoted to the other of said brackets and arranged for swinging movement towards or away from said other arm, thereby to permit a bag top to be attached to said arm after which said arms may be manipulated to tension the bag top walls, and a rigid member operatively engaged with the outer end portions of said arms to retain them in bag holding positions.

4. A bag holder comprising a pair of brackets having means for securing them to a suitable support in spaced relation and independently of one another, each of said brackets having a vertically disposed bearing aperture therein, a bag holding arm constructed of strap metal and having a pivot pin secured to one end thereof receivable in the bearing aperture of one of said brackets, the opposite end of said arm being laterally offset from the plane of said arm, a locking bar pivoted to the offset end portion of said arm and disposed in substantially right-angular relation to the arm, said locking bar being swingable in a vertical plane, a second bag holding arm constructed of strap metal and having a pivot pin secured to one end thereof receivable in the bearing aperture of the other of said brackets, said second arm being relatively longer than the first arm to provide a hand grip at its outer end, means on said arms for engaging the bag top walls, and coacting means on said second arm and locking bar for retaining said arms in bag holding positions, when said second arm is activated to expand the bag mouth, said arms and locking bar, when in operative positions, being disposed over their respective bag top walls thereby to protect the upper edges of the bag top walls during the filling operation.

5. A bag holder comprising a pair of brackets constructed of strap metal and each having means for securing it to a suitable support, each of said brackets having vertically spaced bearing apertures therein, a bag holding arm constructed of strap metal and having a pivot pin secured to one end thereof receivable in the bearing apertures of one of said brackets, means for limiting swinging movement of said arm in one

direction, a flat locking bar pivoted to the swingable end of said arm and adapted for swinging movement in a vertical plane, a second bag holding arm constructed of strap metal and having a pivot pin secured to one end thereof receivable in the bearing apertures of the other of said brackets, said second arm being relatively longer than the first arm to provide a terminal hand grip, and means on said arms for engaging the bag top walls, and spaced teeth on the locking bar for interlockingly engaging said second bag holding arm, when said arm is actuated to cause the bag top engaging means on said arms to expand the bag mouth and thereby retain the bag top in open position for filling.

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