July 26, 1949. A. B. STAGGS 2,477,213

STOCK HANDLING APPARATUS

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FIG. 1.

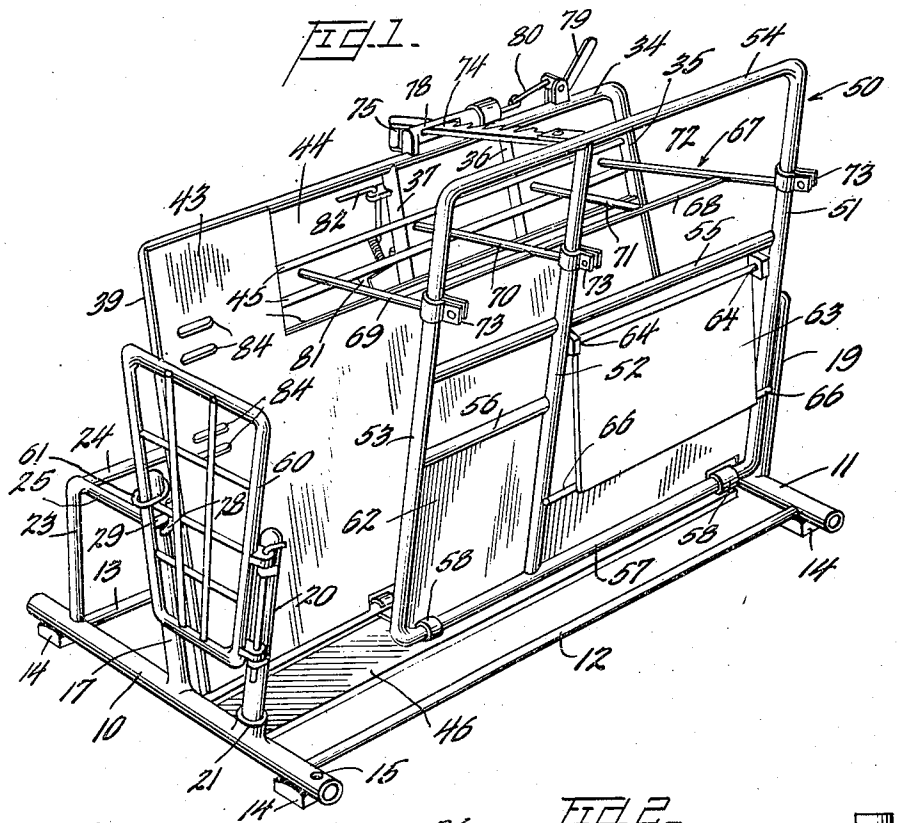
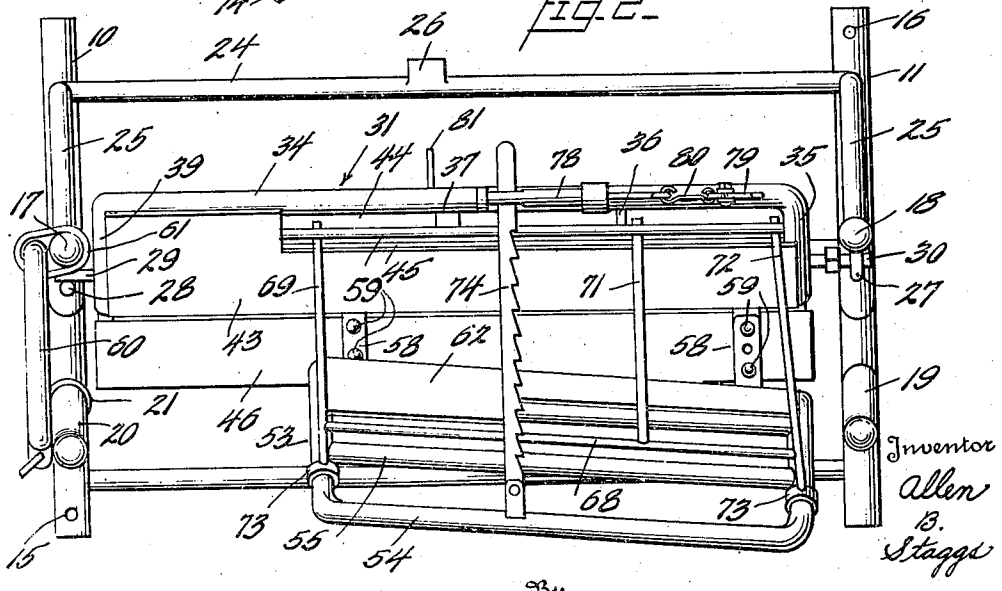


FIG. 2.



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FIG. 3.

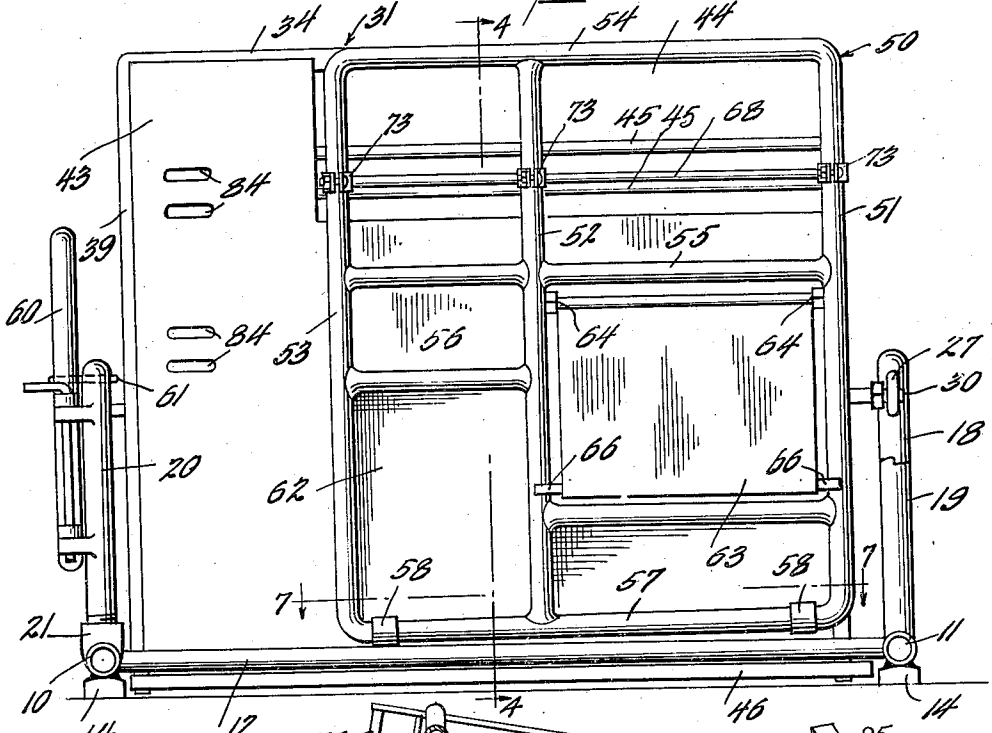


FIG. 4.

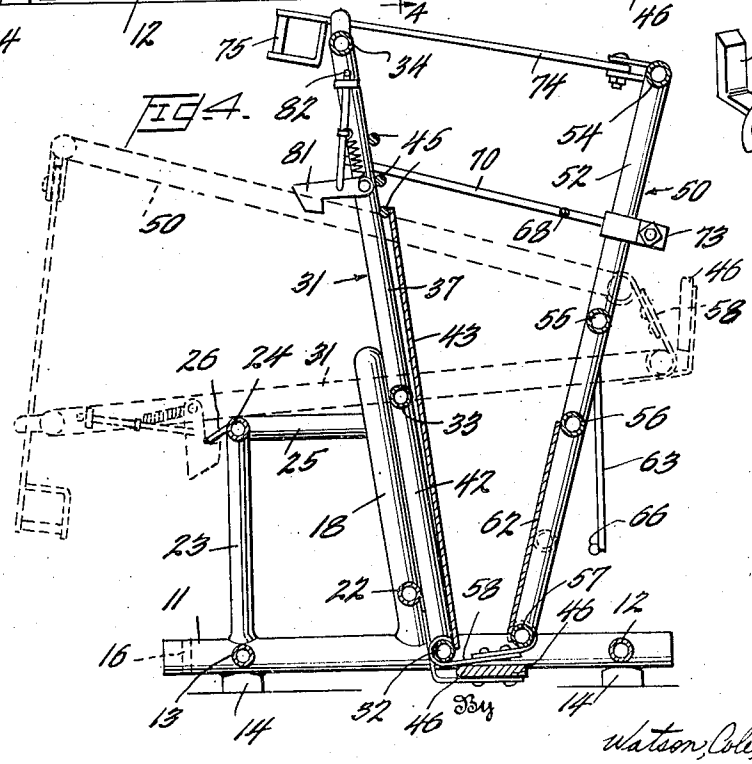
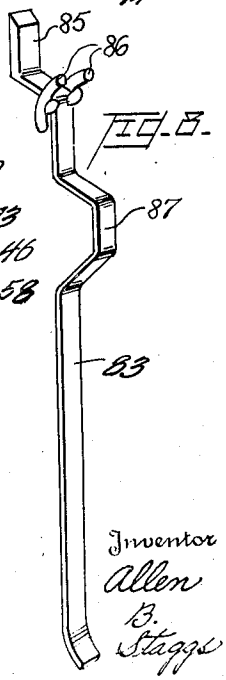


FIG. 5.



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FIG. 5.

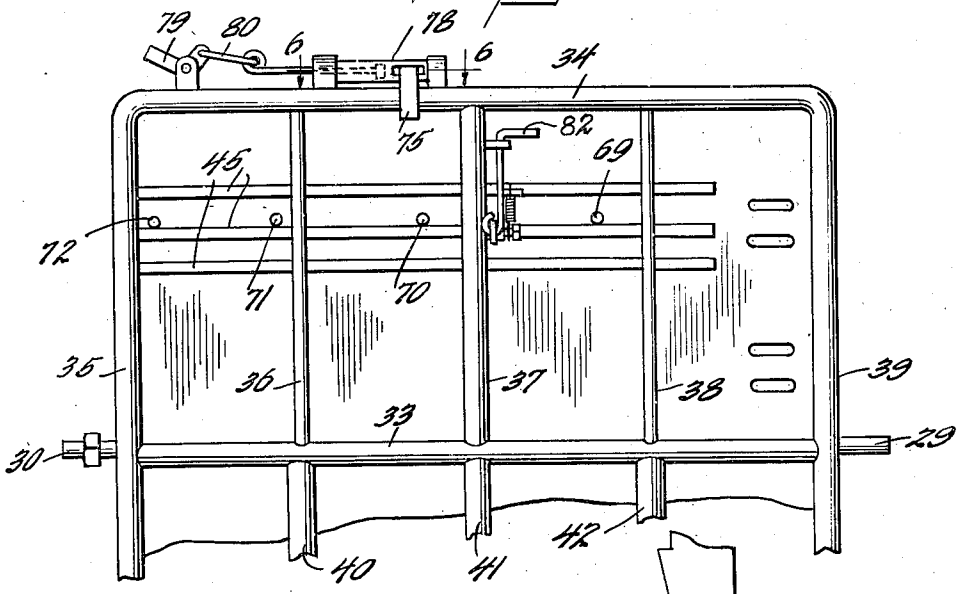


FIG. 6.

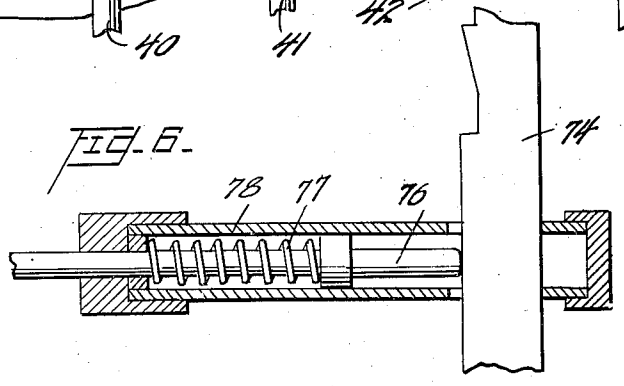
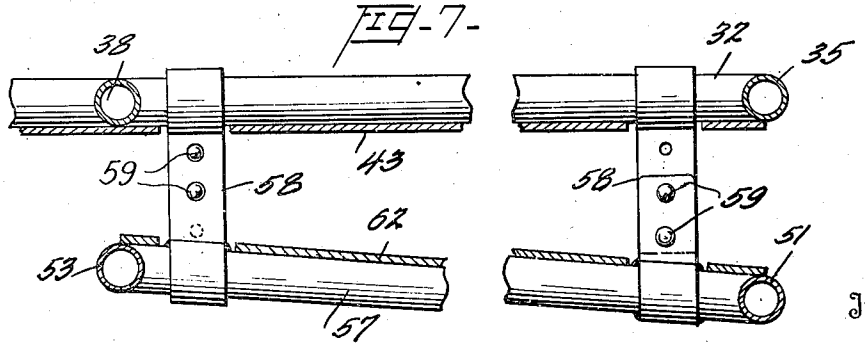


FIG. 7.



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UNITED STATES PATENT OFFICE

2,477,213

STOCK HANDLING APPARATUS

Allen B. Staggs, Henrietta, Tex.

Application January 22, 1946, Serial No. 642,614

8 Claims. (Cl. 119—98)

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This application is a continuation-in-part of my application Serial No. 493,069, filed July 1, 1943.

The present invention relates to an improved stock handling apparatus especially adapted for handling calves, although the same may be employed for use with other livestock. It is a general object of the present invention to provide an improved stock handling apparatus by means of which a calf or other animal may be firmly secured and supported in a convenient position for the performance of the various operations customarily performed upon livestock, such as branding, inoculating, castrating, de-horning and the like, the animal being supported out of contact with the ground whereby danger of infection is reduced and the convenience of the operators is promoted, while at the same time the number of men required to perform the various operations is reduced due to the fact that the animal is secured in position by mechanical means.

A further object is the provision of a stock handling device of the character described in which, by a single operation, the animal is securely clamped against a swinging table while the latter is in generally vertical position and, as the pressure upon the animal becomes sufficient to secure it in place, continued effort applied to the securing means results in tilting the table into operative position, the securing or clamping means being at the same time automatically held in position in respect to the table.

A further object is the provision of a device of the character described comprising generally a supporting base, a swingable table mounted thereon, and a clamp member spaced from but pivotally mounted on or adjacent the lower edge of the swingable table by means of hinges which are adjustable in length, whereby the spacing of the clamp member from the table may be varied to accommodate animals of different sizes, and whereby, likewise, the spacing of the clamp member from the table may be varied at its respective ends, so that at the centering end of the device the clamp member may be spaced further from the table than at the opposite end whereby a funnel-like effect is achieved.

A further object is the provision of a device of the character described in which means are provided for engaging the back of an animal to prevent the latter from jumping or moving upwardly in the device before being securely clamped therein, said back engaging means being adjustable in height for the accommodation of animals of different sizes.

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A further object is the provision of a device of the character described comprising an animal supporting platform secured to and swingable with the table, said platform being in horizontal position when the table is in generally vertical position as when an animal first enters the device, the clamp member being so pivoted relative to the table that as the animal is clamped against the table its feet are removed from the supporting platform whereby the animal is prevented from exerting effort against the platform and is thus more firmly secured between the clamp member and the table.

A further object is the provision of a device of the character described in which the clamp member is of lesser dimensions longitudinally than the swingable table whereby, when the device is tilted into operating position, the head of an animal clamped therein is freely accessible from above for de-horning, or other operations.

A further object is the provision of a device of the character described in which the clamp member is provided with a swingable portion, normally lying substantially in the plane of the clamp member but which may be lifted after the device is tilted into operative position for the purpose of exposing the rearward portion of the animal's body to permit the performance thereon of such operations as are desirable.

Other and further objects, features and advantages will be apparent from the description which follows, read in connection with the accompanying drawings in which

Figure 1 is a perspective view of the stock handling device;

Figure 2 is a top plan view of the device of Figure 1;

Figure 3 is a side elevation of the device of Figures 1 and 2;

Figure 4 is a vertical section on line 4—4 of Figure 3;

Figure 5 is a partial side elevation, seen from the side opposite that seen in Figure 3;

Figure 6 is a horizontal section on line 6—6 of Figure 5;

Figure 7 is a horizontal section on line 7—7 of Figure 3; and

Figure 8 is a perspective view of a neck holding bar employed with the device of Figures 1 to 7.

In order to facilitate an understanding of the invention, reference is made to the embodiment thereof shown in the accompanying drawings, and detailed descriptive language is employed. It will nevertheless be understood that no limitation of the invention is thereby intended and

that various changes and alterations are contemplated such as would ordinarily occur to one skilled in the art to which the invention relates.

Referring now to Figures 1 and 2 it will be seen that the device comprises a generally rectangular base consisting of transverse members 10 and 11 and longitudinal members 12 and 13, which may be conveniently formed of tubing connected by welding or other suitable means but may be of any suitable material and construction. Preferably the base structure is supported above the ground by pads 14 welded thereto, and each of the transverse members 10 and 11 is provided with an aperture 15, 16 to receive anchoring devices such as spikes whereby the structure may be secured in place. Transverse member 10 is provided with a generally vertical post or support member 17 and transverse member 11 is provided with a similar support member 18, the vertical supports being preferably secured to the transverse members by welding. Transverse member 11 is provided with a second support member 19 permanently secured thereto and which inclines outwardly opposite to the inclination of the support 18 forming a V-like opening therebetween. Transverse member 10 is similarly provided with a detachable support member 20, which may be threaded into a boss 21 formed on the transverse member 10, and which likewise forms with the support 17 a V-like opening therebetween. For reasons hereinafter explained, the support 20 may be dispensed with in certain circumstances.

Referring now to Figure 4 is will be seen that the base structure comprises, further, a longitudinal member 22 extending between the supports 17 and 18, vertical members 23 rising from either transverse member 10, 11 and longitudinal member 24 extending between the vertical members 23. Each vertical member 23 is connected at its upper end with the adjacent support member 17, 18 by a horizontal transverse member 25. The longitudinal member 24 is provided, centrally, with a projection 26 which serves as one portion of a latching device as hereinafter described.

The support member 18 is provided near its upper end with an eye 27 while the support 17 is provided near its upper end with an outwardly and upwardly extending projection 28 forming with the support 17 a U-shaped socket, such socket and the eye 27 being adapted, respectively, to receive trunnions 29 and 30 by which a tilting table 31 is supported upon the members 17 and 18. For purposes of transport the table and associated mechanism may be easily and quickly removed from the base structure, and the two parts handled separately.

The table 31 comprises a framework preferably constructed of tubular material and consisting of horizontal members 32, 33 and 34 connected by vertical members 35 to 42, inclusive (Figure 5). Said framework is preferably provided on its inner surface with a cover 43 of sheet metal except for the portion 44 which is left open. Horizontal members 45 extend across the open portion 44 of the table 31 and provide stop means for the back engaging member to be later described. An animal supporting platform 46 is rigidly secured to the lower edge of the table 31 and extends laterally therefrom in a plane parallel to the ground when the table 31 is in its generally vertical position.

For cooperation with the tiltable table 31 a clamping member 50, which comprises vertical members 51, 52 and 53 connected by horizontal members 54, 55, 56 and 57, is hingedly secured to and supported upon the lowermost horizontal member 32 of the table 31. As best seen in Figure 7, the hinges 58 are rigidly secured to the horizontal member 57 of the clamp, and are pivoted upon the horizontal member 32 of the table. The hinges 58 are adjustable in length, being constructed in two parts connected by bolts 59, one or both of the parts being provided with a plurality of apertures to receive said bolts. In this manner, the spacing of the clamp from the table may be varied to accommodate larger or smaller animals. Further, as illustrated in Figure 7, the clamp may be spaced further from the table at the entering end of the device than at the opposite end, thereby creating a funnel-like effect whereby the animal becomes jammed in the device as it moves forwardly therein.

A gate 60 may be employed if desired, the gate being mounted in any suitable manner upon the support 20 and being adapted to be secured by means of a loop 61 to the support 17 when in closed position. However, it has been found that when the spacing of the clamp from the table is adjusted as illustrated in Figure 7, so that the animal becomes jammed between the clamp and table as it progresses forwardly therebetween, the gate 60 may be dispensed with and the support 20 may be detached from the device and temporarily discarded.

The lower portion of the clamp 50 is preferably provided on its inner surface with a covering 62 of sheet metal which serves to prevent the animal from attempting egress between the several frame members. At the entering end of the device, the clamp 50 is provided with a swingable flap portion 63, pivoted at 64 upon vertical members 51 and 52, respectively, which flap portion likewise serves as a screen while the animal is entering the device, but may be raised after the device is tilted to operative position for the purpose of performing any desired operations upon the rearward portion of the animal. The lower edge of the flap portion 63 is provided with a stop member 66 which abuts against the adjacent verticals 51 and 52.

A back engaging device 67, comprising a longitudinal member 68 and transverse members 69, 70, 71 and 72, is adjustably mounted upon the vertical members 51, 52 and 53 of the clamp 50 by means of bolted clips 73, and serves to prevent an animal entering the device from jumping upwardly and becoming displaced as the clamp is tightened upon him. In order to prevent the transverse members of the back engaging device from being bent upwardly by the animal, they are arranged to project through the space between the horizontal members 45 of the table, which thus serve as stops for the upward movement of the back engaging device caused by contact with the animal. When the back engaging device is in its highest position the top horizontal member 34 of the table serves as such stop means.

The clamp 50 is adapted to be moved toward the table 31 by means of a rack bar 74 which is provided with a handle 75 (Figure 4) for this purpose. The teeth of the rack bar cooperate with a latch 76 (Figure 6) which is pressed against the bar by means of a spring 77 retained in a barrel 78 secured to the top of the table 31, the rack bar extending through a suitable aperture formed in the barrel 78. The latch 76 may be retracted by means of a lever 79 which is connected to the latch by means of a link 80.

The central vertical member 37 of the table 31 is provided with a spring latch device 81 for engagement with the projection 26 (Figure 4) when the table is tilted to operative position, thus holding the table in such position, in which it and the animal held thereon are in substantially horizontal position, resting upon the horizontal member 24. The latch 81 may be retracted by means of the handle 82.

At times it is desirable to employ means for holding the animal's neck tightly against the table 31, and for this purpose the neck holding bar 83 of Figure 8 is provided, apertures 84 being formed in the table for cooperation with the bar 83.

From the foregoing description it is believed that the operation of the device will be readily understood. The device is placed with its entering end adjacent the exit end of a corral chute, from which the animals may be driven one by one into the entering end of the device. As an animal enters the device and stands upon the platform 46 an operator grasps the handle 75 and pulls the clamp 50 toward the table 31. The device is so balanced and proportioned that as the pressure upon the animal becomes sufficient to secure him firmly between the clamp and table, the table is tilted until it is substantially horizontal when it is latched in position by the spring latch 81 as just described. Meanwhile, the relation between the clamp and the table is maintained by cooperation between the rack bar 74 and the latch 76. As the clamp is pulled toward the table, and due to the fact that the hinges 58 are pivoted on or adjacent the lower edge of the table, the lower edge of the clamp rises above the platform 46, thus lifting the animal slightly so that its feet are no longer in contact with the platform, and thus serves to completely immobilize the animal.

If desired, the end 85 of the neck bar 83 may be inserted in one of the apertures 84 of the table and the neck of the animal clamped by exerting pressure upon the free end of the neck bar, the rockers 86, welded to the bar 83, serving as stop members to prevent the bar from penetrating too far through the aperture 84 and also serving as rocking pivots or bearings for the bar, the surface of the table adjacent the aperture 84 serving as a fulcrum. The offset portion 87 of the bar fits over the animal's neck.

As will be readily appreciated the head of the animal is entirely accessible from above, for dehorning, or branding, or the like, while the rearward portion of the animal is accessible by lifting the flap 63, for inoculation, castration, or other operations.

When all desired operations have been performed, an operator simultaneously releases the latches 76 and 81, by means of the handles 79 and 82, respectively, whereupon the table reverts to vertical position and the clamp 50 is retracted, freeing the animal to move forwardly out of the device.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a stock handling device, a base structure, spaced, generally vertical, supports mounted thereon, a table mounted between and carried by said supports for tilting movement about a horizontal axis from an initial position, an animal supporting platform secured to the lower edge of said table and extending laterally therefrom, a clamping member spaced from said table and pivotally mounted adjacent the lower edge of said table and swingable toward and away from said table, a table supporting member adapted to support said table when the latter is in a final position, means for successively swinging said clamping member toward the table to secure an animal and tilting the table to said final position, means including said last-named means for releasably securing said clamping member in operative position, and means for releasably securing said table in horizontal position.

2. In a stock handling device, a base structure, spaced, generally vertical, supports mounted thereon, a table mounted between and carried by said supports for tilting movement about a horizontal axis from an initial position, an animal supporting platform secured to the lower edge of said table and extending laterally therefrom, a clamping member spaced from said table and pivotally mounted adjacent the lower edge of said table and swingable toward and away from said table, a back engaging member adjustably mounted on said clamping member, a table supporting member adapted to support said table when the latter is in a final position, and means for successively swinging said clamping member toward the table to secure an animal and tilting the table to said final position.

3. In a stock handling device, a base structure, spaced, generally vertical, supports mounted thereon, a table mounted between and carried by said supports for tilting movement about a horizontal axis from an initial position, an animal supporting platform secured to the lower edge of said table and extending laterally therefrom, a clamping member spaced from said table and pivotally mounted adjacent the lower edge of said table and swingable toward and away from said table, said clamping member being spaced further from said table at one end thereof than at the other end, a table supporting member adapted to support said table when the latter is in a final position, and means for successively swinging said clamping member toward the table to secure an animal and tilting the table to said final position.

4. In a stock handling device, a base structure, spaced, generally vertical, supports mounted thereon, a table mounted between and carried by said supports for tilting movement about a horizontal axis from an initial position, an animal supporting platform secured to the lower edge of said table and extending laterally therefrom, a clamping member spaced from said table and pivotally mounted adjacent the lower edge of said table and swingable toward and away from said table, a table supporting member adapted to support said table when the latter is in a final position, and means for successively swinging said clamping member toward the table to secure an animal and tilting the table to said final position, said clamping member being mounted at its lower edge on hinges, said hinges extending laterally across said animal supporting platform and being pivoted adjacent the lower edge of said table, said hinges normally resting on said platform when said table is in vertical position, and being drawn away from said platform when said clamping member is drawn toward said table.

5. In a stock handling device, a base structure, spaced, generally vertical, supports mounted thereon, a table mounted between and carried by said supports for tilting movement about a horizontal axis from an initial position, an animal supporting platform secured to the lower edge of said table and extending laterally therefrom, a

clamping member spaced from said table and pivotally mounted adjacent the lower edge of said table and swingable toward and away from said table, a table supporting member adapted to support said table when the latter is in a final position, and means for successively swinging said clamping member toward the table to secure an animal and tilting the table to said final position, said clamping member being mounted at its lower edge on hinges, said hinges extending laterally across said animal supporting platform and being pivoted adjacent the lower edge of said table, said hinges normally resting on said platform when said table is in vertical position, and being drawn away from said platform when said clamping member is drawn toward said table, said hinges being adjustable in length whereby the spacing of said clamping member from said table may be varied.

6. In a stock handling device, a base structure, spaced, generally vertical, supports mounted thereon, a table mounted between and carried by said supports for tilting movement about a horizontal axis from an initial position, an animal supporting platform secured to the lower edge of said table and extending laterally therefrom, a clamping member spaced from said table and pivotally mounted adjacent the lower edge of said table and swingable toward and away from said table, a table supporting member adapted to support said table when the latter is in a final position, and means for successively swinging said clamping member toward the table to secure an animal and tilting the table to said final position, said table being formed to provide a fulcrum adjacent one end thereof, and a neck clamping lever an end of which is adapted to seat on said fulcrum, and by which the neck of an animal may be clamped against said table by exerting pressure on the opposite end of said lever.

7. In a stock handling device, a base structure, spaced, generally vertical, supports mounted thereon, a table mounted between and carried by said supports for tilting movement about a horizontal axis from an initial position, an animal supporting platform secured to the lower edge of said table and extending laterally therefrom, a clamping member spaced from said table and pivotally mounted adjacent the lower edge of said table and swingable toward and away from said table, a table supporting member adapted to support said table when the latter is in a final position, and means for successively swinging said clamping member toward the table to secure an animal and tilting the table to said final position, said clamping member being of lesser longitudinal extent than said table, whereby the head of an animal gripped in said device is freely exposed.

8. In a stock handling device, a base structure, spaced, generally vertical, supports mounted thereon, a table mounted between and carried by said supports for tilting movement about a horizontal axis from an initial position, an animal supporting platform secured to the lower edge of said table and extending laterally therefrom, a clamping member spaced from said table and pivotally mounted adjacent the lower edge of said table and swingable toward and away from said table, a table supporting member adapted to support said table when the latter is in a final position, and means for successively swinging said clamping member toward the table to secure an animal and tilting the table to said final position, said clamping member having a swingable portion normally lying substantially in the plane of said member and raisable to expose a rearward portion of an animal gripped in said device.

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