Feb. 5, 1952 J. H. WUNDERLICH 2,584,377

SUPPORT AND SHACKLE FOR FOWL

Filed June 12, 1947 2 SHEETS—SHEET 1

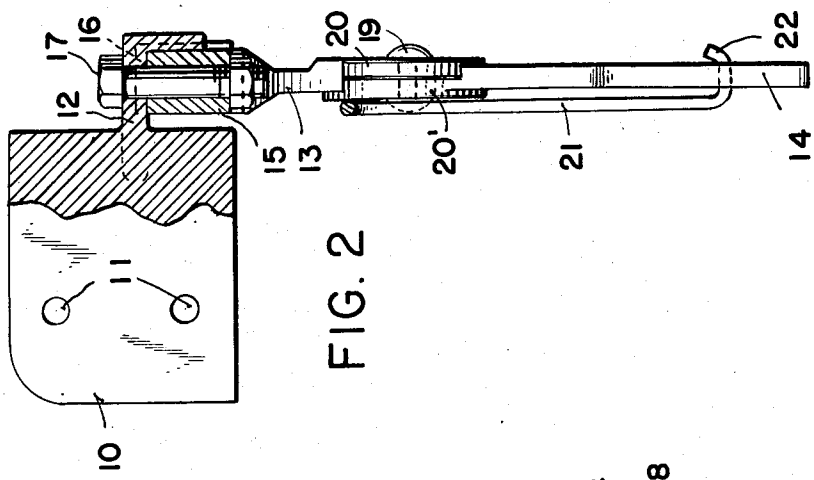


FIG. 2

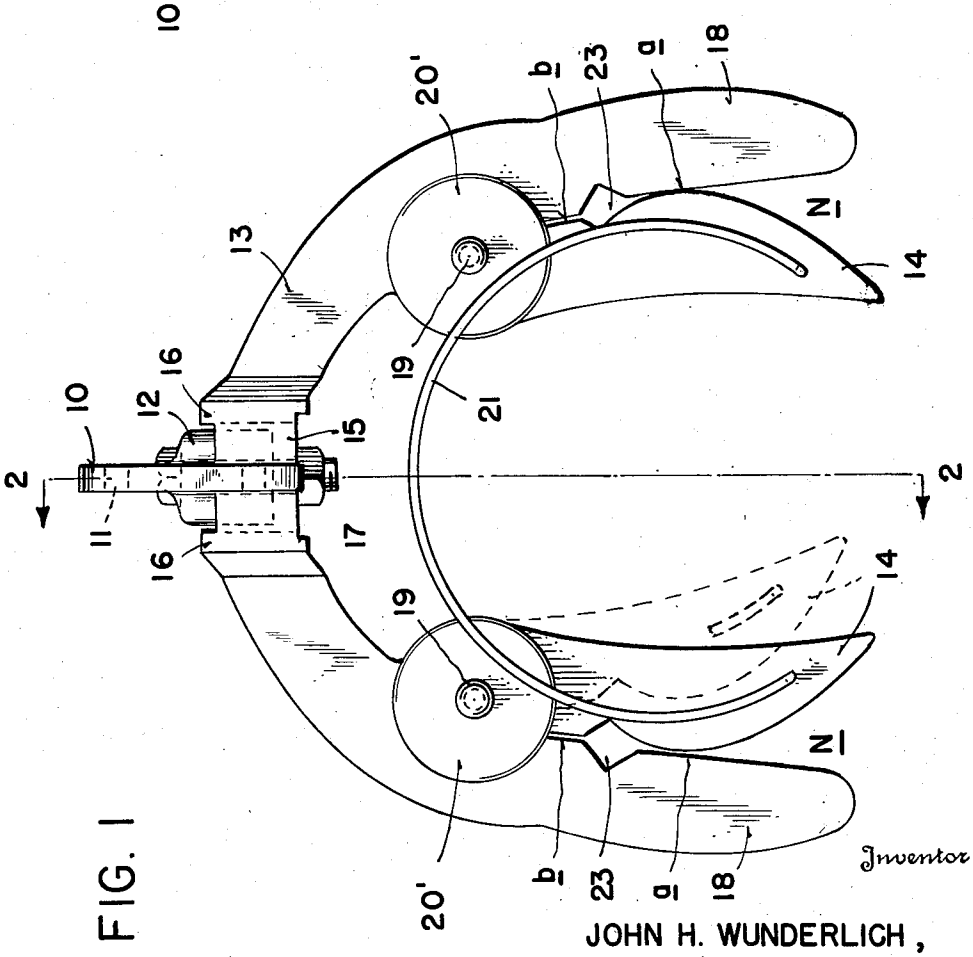


FIG. 1

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SUPPORT AND SHACKLE FOR FOWL

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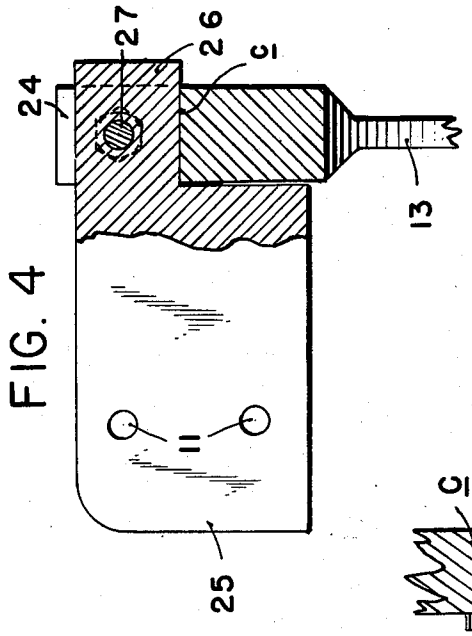


FIG. 4

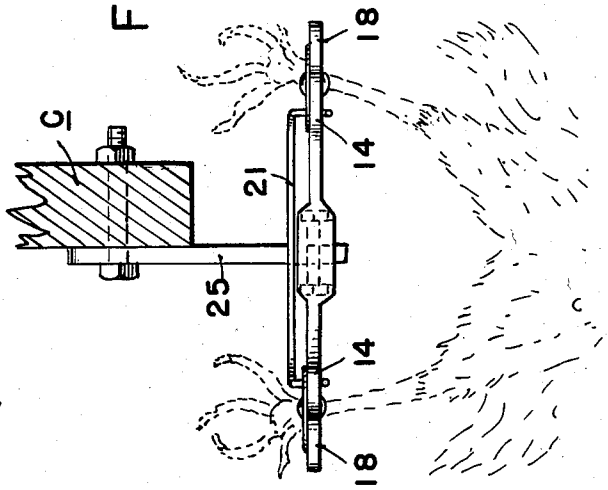


FIG. 5

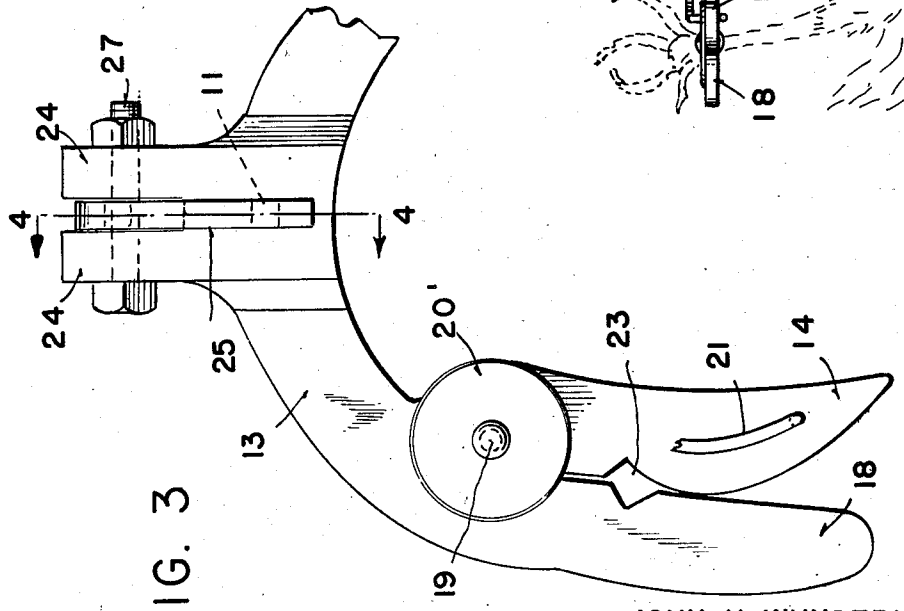


FIG. 3

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SUPPORT AND SHACKLE FOR FOWL

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Application June 12, 1947, Serial No. 754,126

3 Claims. (Cl. 17—44.1)

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The present invention relates to a new and improved relationship of parts in a so-called hook and shackle device for fowl, such as chickens, turkeys and the like. More specifically, the invention has especial relation to a type of hook and shackle construction particularly adapted for use in connection with a conveyor mechanism, which per se is of essentially conventional construction in the art, whereby the chickens or other fowl may be moved successively, and in more or less continuous manner, from station to station, at which they may be successively killed, scalded, picked, eviscerated and otherwise treated, in the processing plant, the birds being supported throughout in inverted depending position whereby they are readily accessible to the operators.

There are several desiderata in this type of device. In the first place, the chicken must be readily insertable into position on the hook and shackle. By the same token, the fowl must be capable of immediate removal from the device. This is of paramount importance since otherwise, if a single bird becomes tangled up in a manipulating device, as for example in a plucker, the entire processing line may become disrupted unless the bird can forthwith be dissociated from its support.

Another desideratum is that the apparatus be of simple and relatively inexpensive construction but nevertheless capable of efficiently effecting the desired functions. To this end, a minimum number of constituent parts so arranged as to operate positively and in simple manner is desirable.

While, as aforesaid, ready dissociation of the fowl from the shackle is important, it is equally important that undesired dissociation be prevented and that the bird be securely retained in position during the processing operations.

It is an object of the present invention to embody a novel relationship of parts in a chicken hook and shackle construction whereby the several aforementioned desiderata are realized.

A further object of the invention is to provide a construction whereby the fowl may be associated with the shackle by a simple essentially horizontal movement in one direction and may be dissociated therefrom by a similar simple essentially horizontal movement in the opposite direction.

Still another object of the invention is the realization of a device whereby all danger of undesired dissociation of the bird from the shackle is obviated.

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To these ends, briefly stated, the device according to the present invention consists essentially of a yoke-shaped member adapted to be arranged in substantially horizontal position, each leg of the yoke defining a fixed jaw element of a shackle jaw, two of which are provided. A spring-pressed movable jaw member is pivotally connected to each fixed jaw element, and the several jaw parts are so configured as to define an outwardly flaring inlet notch for each shackle jaw and a lanciform aperture intermediately of each jaw for the reception of the legs of the fowl, all as hereinafter described in greater detail with particular reference to the presently preferred illustrative embodiments shown, by way of example, on the accompanying sheet of drawings.

On the said sheet of drawings:

Fig. 1 is a top plan view showing one assembly of shackle and bracket according to the present invention;

Fig. 2 is a view taken along line 2—2 of Fig. 1;

Fig. 3 is a view similar to that of Fig. 1 (with a part broken away), and showing a second form of shackle-and-bracket assembly according to the invention;

Fig. 4 is a view taken along line 4—4 of Fig. 3; and

Fig. 5 is a view showing the device in operative relationship.

On the said drawings, and referring first to the embodiment shown more particularly in Figs. 1 and 2 of the drawings, a first form of bracket is shown at 10. The bracket 10, which may be of red brass, aluminum, cast iron or the like, comprises a flat body portion provided with means (openings 11) through which may extend fastening means (bolts or the like; see Fig. 5) for securing the bracket to essentially conventional conveying means (shown diagrammatically at C in Fig. 5). The bracket 10 is intended to depend vertically and is so associable with the shackle that the latter is arranged in horizontal disposition (see Fig. 5). Constituting an integral portion of the bracket 10 and depending therefrom is means enabling interconnection of bracket and shackle. This integral portion 12 is L-shaped in configuration and of a width considerably greater than the thickness of the bracket body.

The shackle itself may also be of red brass, aluminum, cast iron or the like. It consists essentially of a flat arcuate yoke-shaped body member 13 and a pair of movable jaw elements 14 articulated thereto. The yoke-shaped body member 13 is provided at the rear thereof with

a rectilinear portion 15. The rear flat edge surface of the said rectilinear portion, defined between a pair of vertically extending, rearwardly projecting ribs 16, bears against the juxtaposed flat surface of the vertical leg of the L-shaped part 12. The bottom flat surface of the rectilinear portion 15 rests on the flat upper surface of the horizontal leg of part 12. Parts 12 and 15 are provided with aligned bores for the reception of a securing bolt 17, whereby the parts are securely held together.

The terminal or free ends of the yoke-shaped body member severally constitute the fixed elements 18 of the two shackle jaws. Each fixed element 18 is associated, through the medium of a pivot-forming bolt or rivet 19, with one of the two movable jaw members 14, hereinbefore mentioned. In order to provide an extended bearing surface, each fixed jaw element is provided with a circular enlargement or bearing-plate 20 (Fig. 2) at the point of articulation of the corresponding jaw member 14. A similar enlargement 20' is provided at the inner end of each movable jaw element 14 which bears against the corresponding pivot- or bearing-plate 20.

Each movable jaw element 14 is yielding retained in firm abutting relationship, at abutment points *a* and *b*, with its associated fixed jaw member 18 by means of a so-called "Murphy and Read" spring 21, i. e. an arcuate or yoke-shaped member of sturdy spring wire, the terminal ends 22 of which are securely retained in bores provided for this purpose adjacent the outer ends of the elements 14. The inherent spring tension of the member 21 keeps the latter securely in place.

Beyond the point of abutment *a*, the outer end of each fixed element 18 and movable element 14 is configured as shown in order to define what may be termed an "inlet" notch N therebetween.

In the inner edge of each jaw element, at aligned intermediate points, there is provided a recess 23 of such configuration that each pair defines, when the jaw elements are in closed position, an aperture which is essentially lanciform in cross-section, i. e. is particularly designed to conform as closely as is practicable to the cross-section of the leg of the bird in a zone where it is to be gripped.

The embodiment of the invention according to Figs. 3 and 4 differs from that of Figs. 1 and 2 only in so far as the form of bracket and the mode of interconnecting the latter with the shackle are concerned. In lieu of the rectilinear rear portion 15 of the first form, the yoke-shaped body of the present embodiment is provided at the rear thereof with a pair of spaced perforated lugs 24. In lieu of the L-shaped member 12 of the first embodiment of bracket, the flat body portion of the second embodiment of bracket 25 is provided with a simple perforated lug extension 26 which is adapted to fit into the space between the perforated lugs 24, with surfaces *c* (Fig. 4) in abutting relationship. Bolt 27 holds the parts securely together.

Operation of the device will be clear from a consideration more particularly of Fig. 5 of the drawings. The shackle in this figure is suspended from conveying means *c* through the bracket which is bolted to the latter. In order to load the device, it is only necessary that that portion of the legs of the fowl above the claws

be inserted in the respective inlet notches N and then forced in a horizontal direction against the tension of the spring member 21 until they are lodged in and gripped between the side walls of the lanciform apertures. Accidental disengagement under the force of gravity or otherwise is avoided by the fact that the claws of the bird extending above the shackle jaws are larger than than the legs. Accidental disengagement in the horizontal direction is prevented by the action of the spring 21 which keeps the jaw elements in securely closed position. Nevertheless, this retention of the bird is a yielding one, so that upon the exertion of an abnormal pull—as when the bird gets caught in a processing apparatus—the force of the spring is overcome and the bird is dissociated from the shackle. Similarly, a pull by the operator on the bird in the horizontal direction toward the inlet notch will open the respective shackle jaws whereupon the bird is readily removed.

It is clear from the foregoing that the present invention provides a new constructional relationship of parts whereby the introductorily-discussed desiderata are realized.

Having thus disclosed the invention and its mode of operation, what is claimed is:

1. A device of the class described comprising a vertical bracket adapted to be associated with conveyor means, a shackle horizontally mounted on said bracket and consisting essentially of a flat arcuate yoke-shaped body member provided with means for retaining the shackle against displacement from its horizontal position and with means for associating a bird with and dissociating it from the shackle by movements relative thereto in the horizontal direction, said last-named means comprising two pairs of jaws between which the respective legs of the bird may be received and retained, each pair of jaws including a fixed jaw constituted by a terminal portion of the body member and a movable jaw connected to the fixed jaw pivotal movement about an axis disposed perpendicularly to the plane of said body member, and resilient means for urging said movable jaws toward their respective fixed jaws.

2. The relationship of parts defined in claim 1, said jaws being configured to define an inlet notch between each pair thereof at their outer ends and to define a lanciform recess between each said pair intermediately thereof.

3. The relationship of parts defined in claim 1, wherein said resilient means is constituted by an arcuate wire spring, each terminal end of which is secured to a movable jaw, the arch of the spring being substantially parallel to the arch of the arcuate body member.

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