

H. L. NASH.
ANIMAL JAW PULLER.
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1,048,335.

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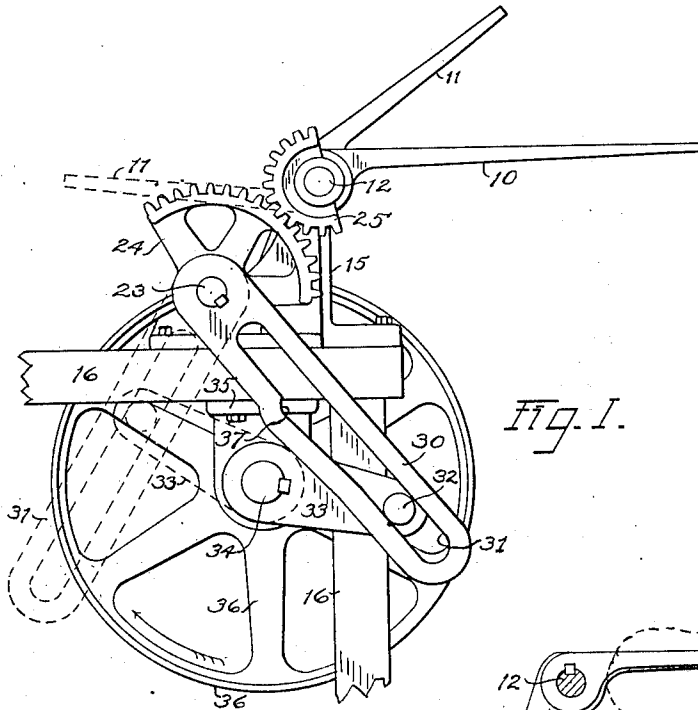


Fig. 1.

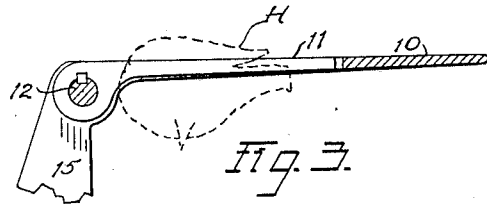


Fig. 3.

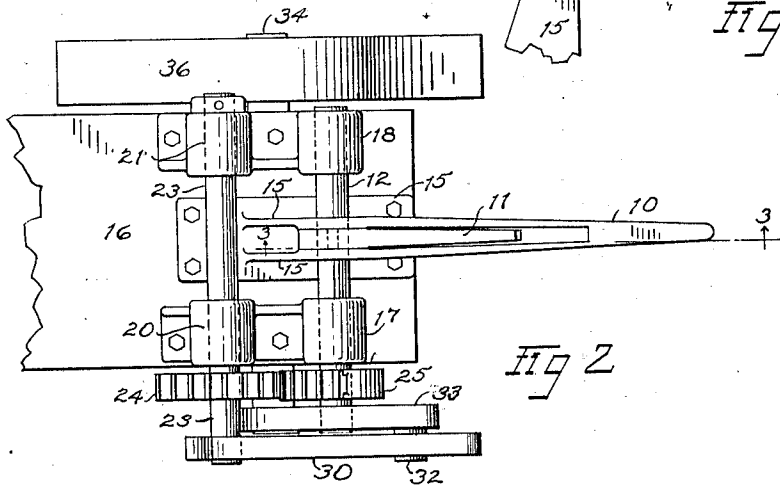


Fig. 2.

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ANIMAL-JAW PULLER.

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To all whom it may concern:

Be it known that I, HUMPHREY L. NASH, a subject of the King of England, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Animal-Jaw Pullers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to a device for use in packing houses for automatically severing the jaws from the heads of animals, as such heads are fed to the device,—this severing being necessary in order that the different operations desired may be performed on the head.

The object of my invention is to provide such mechanism in a form which shall be very simple in construction and shall operate with great rapidity to remove the jaws.

To this end my invention comprises a pair of fingers which are adapted to be inserted together between the jaws of the animal, and mechanism for then separating such fingers to pull the jaw from the head and cast it to one side.

My invention also includes means for quickly returning the fingers into position for action on the next head.

The invention is hereinafter more fully explained and the essential characteristics summarized in the claims.

In the drawings, which clearly illustrate my invention, Figure 1 is a side elevation of the mechanism; Fig. 2 is a plan with the parts in position shown in Fig. 1; and Fig. 3 is a fragmentary vertical section illustrating the fingers in normal position with a head placed thereon.

Referring to the drawings, the stationary and movable fingers which operate to tear the jaw from the rest of the head are designated respectively 10 and 11. The finger 10 has a recess which the finger 11 may occupy, as shown in Fig. 3, where there is also shown the head of the animal, in dotted lines designated H. The movable finger 11 is keyed to a shaft 12, and, when this shaft is rocked, the movable finger is raised, as illustrated in Fig. 1, to tear the jaw from the rest of the head and cast it to the left of the machine, the head dropping beneath the stationary finger.

As shown, the stationary finger 10 projects from a bracket 15 which is mounted on a suitable frame 16. The shaft 12 is

journaled in bearings 17 and 18, also carried by this frame. To rock the shaft 12 comparatively slowly in a direction to tear the jaw from the head and then to give it a quick return to normal position to receive the next head, I provide the following driving mechanism: Mounted in bearings 20 and 21 (which are shown as part of the brackets 17 and 18) is a shaft 23 parallel with the shaft 12. On the shaft 23 is a gear segment 24 meshing with a gear segment 25 on the shaft 12. Keyed on the shaft 23 is an arm 30 having a slot 31 into which extends a pin 32 on a crank 33. This crank is keyed on the main shaft 34. This shaft is shown as mounted in bearings 35 (carried by the frame) and having on its other end a driving pulley 36.

With the driving mechanism described, it will be seen that when the pulley 36 is driven in the direction of the arrow in Fig. 1, the revolving pin 32 operates the arm 30, to rock the segment 24 first in one direction and then in the other. The rocking of this segment in the right direction occupies approximately three-quarters of the rotation of the driving pulley. During this time, the finger 11 is being swung by such rocking from alinement with the stationary finger (as in Fig. 3) into a position indicated by dotted lines in Fig. 1. By this movement, the jaw of the animal is effectively ripped from the head and cast to the left of the machine. Then, while the pulley is completing its rotation the finger 11 is quickly returned into alinement with the stationary finger so that the apparatus is ready for another head.

With my apparatus, the head of the animal may be fed manually or by mechanism, onto the fingers 10 and 11, the time of the feed being regulated according to the speed of operation of the mechanism, so that as soon as the finger 11 returns to alinement with the finger 10, a new head is placed on the two fingers. By tapering the finger 10 as shown and having the finger 11 rest within it, an effective prong is provided which may be quickly inserted through a restricted cavity in the animal's head. The head is put on with its body-end toward the shaft, so that the latter makes an abutment therefor, and a very effective leverage results for separating the jaws.

As the rotation of the driving pulley is preferably continuous, it may be desired to provide for a slight dwell of the movable

finger in alinement with the stationary finger to enable the head to be more easily placed. This is easily accomplished by recessing the wall of the slot 31 on the side which drives on opening movement at the point where the direction of movement changes. This is illustrated at 37 in Fig. 1.

Having thus described my invention, what I claim is:

1. In a device of the character described, the combination of a pair of fingers adapted to be inserted between the jaws of animals, and mechanism for periodically separating such fingers to separate the jaws.

2. In a device of the character described, the combination of a stationary finger, a movable finger, mechanism for relatively positioning such fingers so that the head of an animal may be passed over the two together, and power mechanism for moving the movable finger away from the stationary finger and returning it thereto.

3. In a device of the character described, the combination of a stationary finger, a pivoted movable finger adapted to stand alongside of the stationary finger, and mechanism for periodically swinging the movable finger on its pivot to separate the jaws of the heads of animals which have been placed on the fingers.

4. In a device of the character described, the combination of a pair of fingers, and mechanism for periodically separating them and returning them to adjacent position, the separation being comparatively slow and the return comparatively rapid.

5. In a device of the character described, the combination of a stationary finger, a movable finger adapted to stand adjacent to the stationary finger or be moved therefrom, mechanism for moving the movable finger at a comparatively slow speed away from the stationary finger and returning it thereto at a comparatively rapid speed.

6. The combination of a stationary finger, a pivotally mounted movable finger adapted to substantially aline with the stationary finger or be swung on a pivot at an angle thereto, and mechanism for automatically rocking the movable finger slowly in a direction away from the stationary finger and rapidly in a direction toward the stationary finger.

7. The combination of a stationary finger, a movable finger adapted to stand adjacent to the stationary finger, a rock shaft on which the movable finger is mounted, another rock shaft geared with the rock shaft first mentioned, an arm on said other rock shaft, and a rotatable crank having a sliding connection with said arm, whereby the fingers may be slowly separated and quickly returned.

8. The combination of a stationary finger having a recess, a movable finger occupying the recess of the stationary finger, the movable finger being pivotally mounted adjacent to the support of the stationary finger, and means for swinging said movable finger by means of its pivot to separate the fingers.

9. In a device of the character described, the combination of a slotted stationary finger, a movable finger adapted to occupy such slot, a rock shaft on which said movable finger is mounted, and mechanism for rocking the shaft to move the movable finger out of the slot.

10. In a device of the character described, the combination of a stationary finger supported at one end and free at the other, said finger having a recess leading from a point adjacent to its supported end toward the other end, a movable finger adapted to occupy such recess, a transverse rock shaft on which the movable finger is mounted, and means for rocking said shaft.

11. In a device of the character described, the combination of a stationary finger supported at one end and free at the other, said finger having a recess, a movable finger adapted to occupy such recess, a transverse rock shaft on which the movable finger is mounted, an oscillating arm connected with said rock shaft, and a driving crank having a sliding connection with said arm, whereby the movable finger is swung on its pivot comparatively slowly away from the stationary finger and returned to the stationary finger comparatively rapidly.

12. In a device of the character described, the combination of a frame, a stationary finger carried thereby projecting substantially horizontally and having a free end, said finger having an intermediate recess extending from a point adjacent to its support toward its free end, a movable finger adapted to occupy said recess and substantially aline with the stationary finger, whereby the head of an animal may be easily passed over the two fingers together, a transverse rock shaft mounted in bearings carried by the frame and having the movable finger rigid on it, a pinion on said rock shaft, a shaft parallel on the rock shaft, a gear thereon meshing with said pinion, a slotted arm rigid on the last mentioned rock shaft, and a driving shaft having a crank whose crank pin occupies the slot of said arm.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

HUMPHREY L. NASH.

Witnesses:

ALBERT H. BATES,
BRENNAN B. WEST.