

(No Model.)

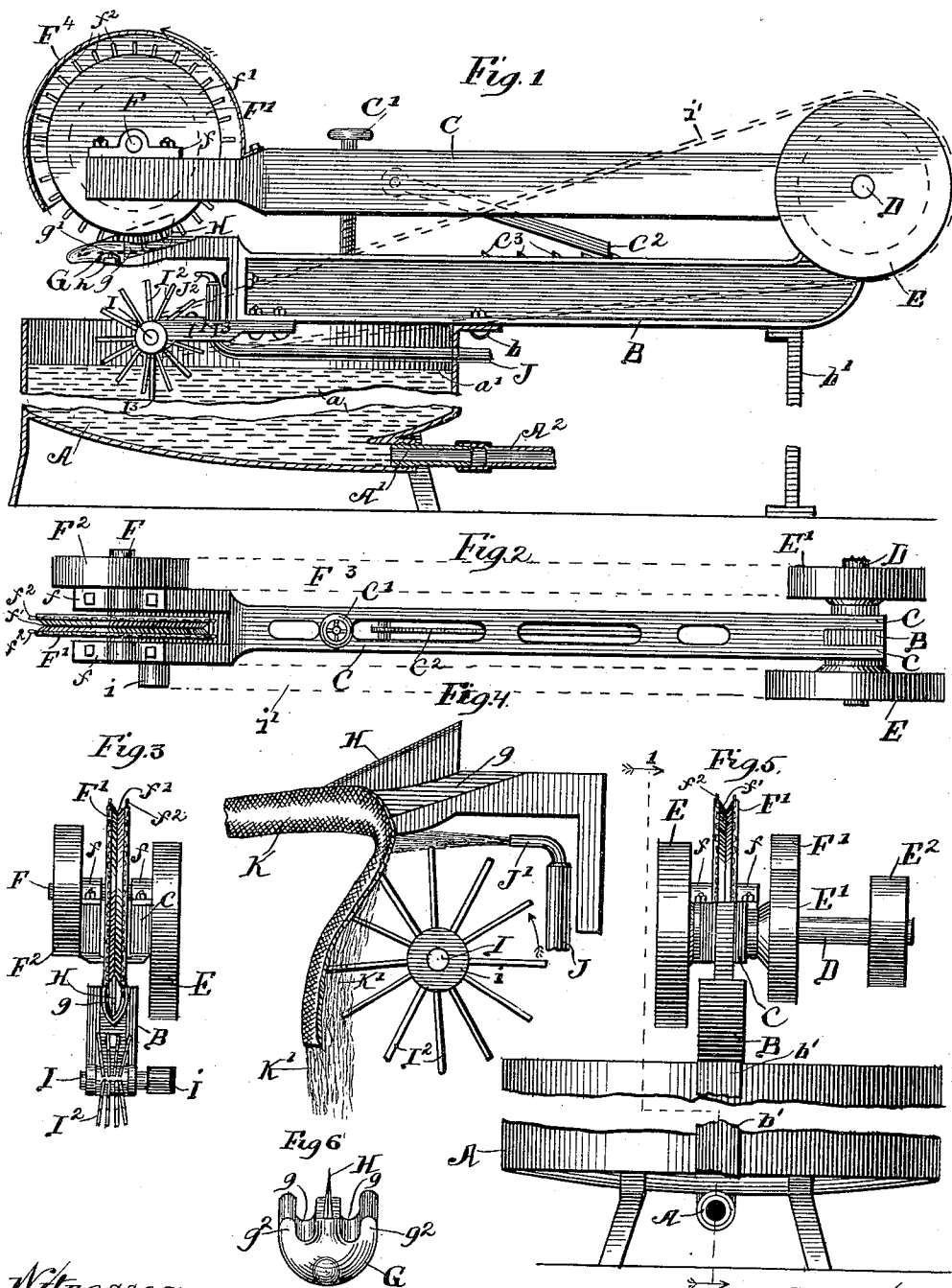
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L. M. HOFFMANN.

MACHINE FOR CUTTING AND CLEANING ENTRAILS.

No. 461,804.

Patented Oct. 20, 1891.



Witnesses;
Lute S. Alter
Flora L. Brown.

Inventor;
Louis M. Hoffmann,
By Charles T. Brown,
Atty.

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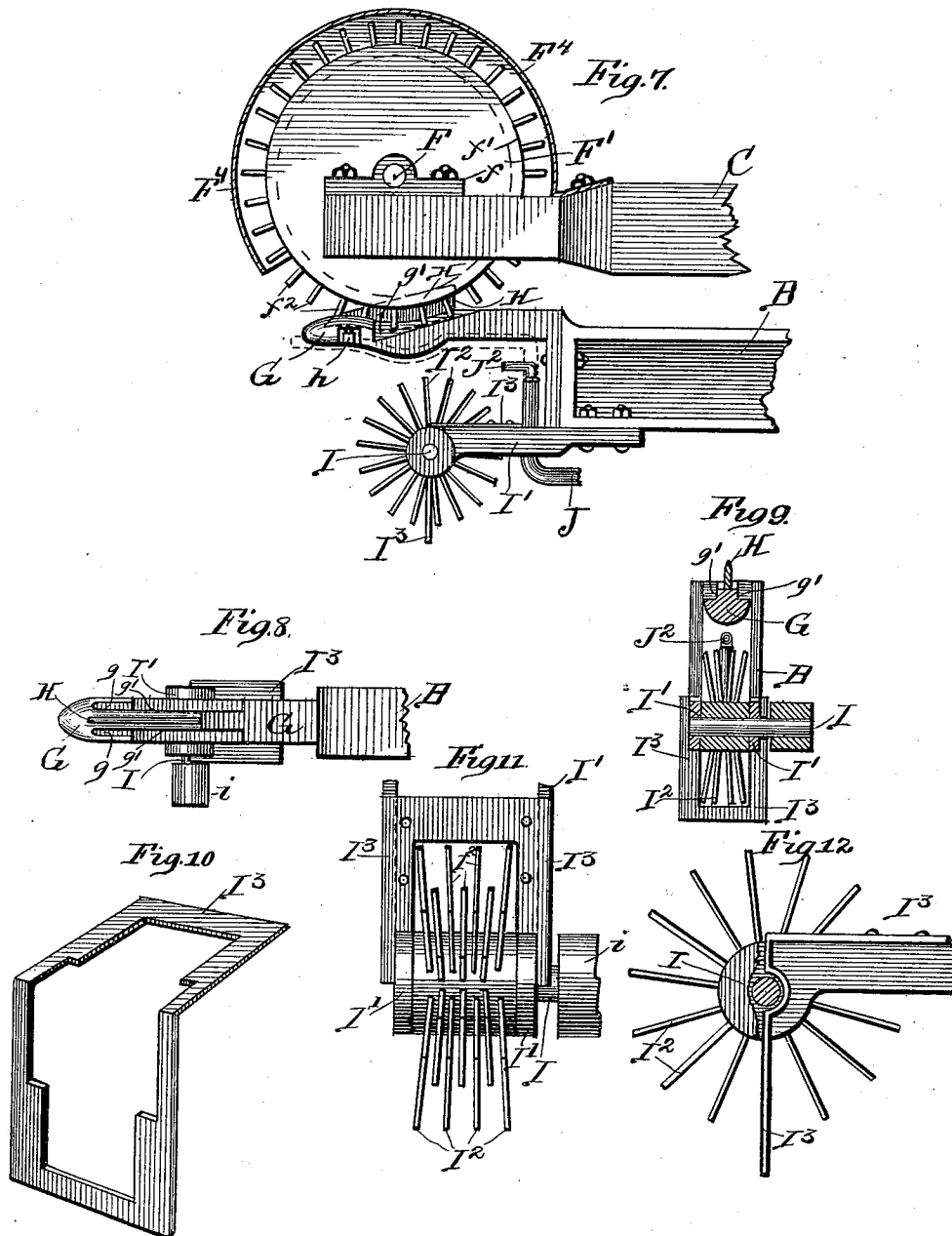
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UNITED STATES PATENT OFFICE.

LOUIS M. HOFFMANN, OF CHICAGO, ILLINOIS.

MACHINE FOR CUTTING AND CLEANING ENTRAILS.

SPECIFICATION forming part of Letters Patent No. 461,804, dated October 20, 1891.

Application filed April 9, 1891. Serial No. 388,200. (No model.)

To all whom it may concern:

Be it known that I, LOUIS M. HOFFMANN, resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Machine for Cutting and Cleaning Entrails, of which the following is a specification.

At the present time the practice in many packing-houses is to slit or cut open the entrails of hogs by hand—that is, with a knife held in the hand of the operator—to afterward clean such entrails from the contents thereof, and then to place the entrails so cut and cleaned in a rendering-tank with other parts of the hog and reduce the same to lard. It is found when entrails are cleaned in this manner—that is, by hand—that at times the amount of work to be done by the workman engaged therein is so great as to cause him to imperfectly clean such cut entrails, and the quality of the lard obtained therefrom is thereby affected.

The object of this invention is to obtain a machine by means of which a single operator can cause to be cut and cleaned a large number of entrails and a machine in which such cleaning shall be done in a more perfect manner than has heretofore been possible.

I have illustrated my invention by the drawings accompanying and forming a part of this invention, in which:—

Figure 1 is a side elevation of the operative parts of the machine, with a sectional view of the tub or tank over which the machine is placed, such elevation and section being obtained on line 1 1 of Fig. 5 and viewed in the direction of the arrows; Fig. 2, a top plan view of a machine embodying my invention with the cover protecting the feed-wheel of the machine removed to expose such feed-wheel to view; Fig. 3, a front end elevation of the machine; Fig. 4, a side elevation of a part thereof, with a small section or part of the entrails of a hog in the process of being cut and cleaned by the machine; Fig. 5, a rear end elevation of the machine and of the tub or tank thereunder, and Fig. 6 a front view of a finger over which the entrails partially extend in the operation of the machine. Fig. 7 is an elevation of a portion of the device, on an enlarged scale, from which the same is

viewed in Fig. 1. Fig. 8 is a plan view of the finger illustrated in Fig. 6. Fig. 9 is a sectional view of the finger and the brush-wheel underneath it. Fig. 10 is a perspective view of the guard of the revoluble brush-wheel of the device. Fig. 11 is a plan view of such wheel and of the horizontal part of such guard, and Fig. 12 is a side-elevation thereof.

The same letter of reference is applied to a given part throughout the several views.

A is a kettle or tub.

A' is a metal spout at the bottom of kettle A, and A² is a flexible hose secured to spout A'. It is not essential that hose A² be flexible, but I prefer to so construct it, as in such case by simply raising or lowering the free end thereof the flow of water and other material from the kettle A can be controlled.

a is water contained in kettle A, and a' is the line of the surface of such water.

B is a beam secured by bolt b to kettle A, and having leg b' extending therefrom to the surface upon which the machine is placed. Where the kettle A is sufficiently large to entirely support the beam B, the leg b' may be dispensed with, such leg not being an essential part of the device.

C is a beam, and D is a rotatable shaft extending through beams B and C and pivotally connecting such beams together.

C' is an adjustable screw extending through beam C and resting at its lower end upon the upper surface of beam B. By the turning of this screw the free end of the beam C is adjusted with reference to the beam B, together with the working parts of the device, hereinafter described, which are placed on such beams.

C² is an arm or lever pivoted to beam C and adapted to engage at its lower end in the steps C³. The purpose of this pivoted lever C² is, when for any reason the free end of the beam C is raised by being turned upward on shaft D, such lever will retain it in its raised position until the lower end of the lever is disengaged from the steps C³, while at the same time a slight upward and downward movement of such free end of the beam C may take place, the beam C turning pivotally on shaft D without such beam being held in its extreme upward position by the lever

C², the first one of such steps or ratchet-teeth C³ being so placed that beam C must be raised a certain distance, and that a greater distance than it is ever likely to be raised 5 during the running of the machine before the lever C² will engage with the first one of the steps or ratchet-teeth C³.

E E' are respectively driving-wheels on shaft D, and E², Fig. 5, is a pulley rigidly secured to the shaft D, by which such shaft is 10 driven

F is a rotatable shaft journaled in boxes *f* on beam C.

F' is a feed-wheel having therein groove *f'*, 15 and also having teeth *f*² thereon, which is rigidly secured to and rotates with shaft F.

F² is a wheel rigidly secured on shaft F, and F³, Fig. 2, are dotted lines indicating a belt extending from wheel E' to wheel F². Feed-wheel F' is rigidly secured on shaft F and is 20 rotated by the turning of wheel F².

F⁴ is a cover on wheel F', forming a protection therefor.

G is a finger secured to the beam B and 25 having thereon grooves *g g*, extending along the upper surface thereof, through which grooves teeth *f*² *f*² pass in the rotation of the wheel F'.

g' is a vertical face on finger G, produced 30 by cutting away the inner end of the outer walls *g*² *g*² of the grooves *g g* in finger G. Entrails when forced upon finger G are caught by the teeth *f*², such teeth penetrating the entrails, and are dragged upon the finger and upon the knife H, the teeth *f*² passing downward through the entrails into the grooves *g'* 35 *g'* in the finger. As the entrails are thus dragged over the knife H they are cut. The cut entrails, after passing the vertical face *g*², will fall off the teeth *f*² or be drawn off therefrom by the rotating brush I², hereinafter described, as, the outer walls of the grooves being cut away from the vertical 40 faces *g*² *g*², the cut entrails are not held on the teeth *f*² *f*².

H is a knife secured to finger G, and *h* is a set-screw for adjusting the forward end of knife H. This knife H can be removed for the purpose of grinding or sharpening, but is 50 held firmly in one position when the device is in operation. The knife H extends upward into the grooves *f'* on wheel F'.

I is a shaft journaled in beam B, (or in bracket I', extending from the beam B,) and I² 55 is a rotatable brush secured on shaft I.

i is a pulley, also secured on shaft I, and *i'*, Figs. 1 and 2, are dotted lines, indicating a belt extending over pulley E and pulley *i*, by which the shaft I and the brush I² thereon 60 are rotated in the operation of the machine.

I³ is a shield through which brush I² passes, such shield preventing the cut entrails from being carried around with the brush I².

It will be evident that the belts F³ and *i'* 65 may, respectively, be constructed of rawhide, leather, or metal links, as preferred.

J is a water-pipe, and J' is the nozzle there-

of, through which water is supplied to and thrown against the entrails and contents thereof being cut and cleaned by the device 70 when in operation.

K is a small section of the entrails of an animal, a portion thereof being on finger G and another portion or part thereof having been cut by the knife H, extending down from 75 the finger G in front of the brush I².

K' is a representation of the water thrown against the inner side of the entrails K, mixed with the contents of the entrails and being brushed therefrom by brush I² in contact 80 therewith.

In the operation of this machine the entrails are thrown when taken from the animal into the tub A and form a mass composed of coils or convolutions, and when the 85 entrails of any animal so contained in the tub or kettle A are to be cut and cleaned one end thereof is lifted from the mass, preferably by a forked or pronged instrument and carried over the finger G until the teeth *f*² on 90 wheel F' engage therewith, and thereafter such teeth will, as the wheel is rotated in the direction indicated by the arrow thereover in Fig. 1, draw the entrails upon and over the finger, and as they are so drawn the knife H 95 will cut or slit the same the entire length thereof. The cut portion of such entrails being released after passing the vertical face *g'* on finger G from the teeth *f'* on wheel F' will fall downward, together with the contents of such entrails, in front of the rotating wire 100 brush I². The current of water from the nozzle J' being directed against the inner surface of the cut entrails and the contents thereof above the rotating brush I², such brush turning in the direction of the arrow thereon in Fig. 4, the contents of such cut entrails will be brushed therefrom into the water in the kettle A and the entrails will be thereby 110 cleaned and also drop into such water. The stream of water thus flowing through the nozzle J' against the entrails and ultimately falling into the kettle is allowed to escape from the kettle through the flexible pipe A², the end of such flexible pipe not attached to 115 the kettle being raised or lowered until the outgoing current of water and material from the entrails is sufficient to maintain the water in the kettle at about a given height and as indicated by line *a'*. The free end of the 120 beam C rests upon the adjusting-screw C', and when, as will sometimes occur, solid contents are contained in the entrails, as nails, such solid contents coming against the knife H, the feed-wheel F' will readily raise and 125 allow them to pass by the knife H and fall into the kettle A.

As the knife H is worn the feed-wheel F' can be adjusted thereto by this vertical 130 screw C'.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an entrail cutter and cleaner, a finger

over which entrails may be drawn, grooves on the upper face of the finger, a knife secured on the finger between the grooves, a feed-wheel, a groove in the feed-wheel into which the knife is adapted to enter, teeth on the feed-wheel adapted to enter and pass through the grooves on the finger, a rotatable brush underneath the finger, and a frame on which the finger is secured and to which the feed-wheel and rotatable brush are suitably journaled to permit rotation thereof, substantially as described.

2. In an entrail cutter and cleaner, the combination of a frame consisting of a base and an arm pivoted to such base, with a rotatable shaft forming the fulcrum upon which the arm is pivoted, pulleys rigidly secured to the shaft, a rotatable feed-wheel journaled at the free end of the pivoted arm, a rotatable brush journaled in the base of the frame, and belts extending over wheels secured on the shafts of the rotatable feed-wheel and the rotatable brush, respectively, and over pulleys on the first-named shaft, a finger underneath the feed-wheel and over the rotatable brush, and a knife on the upperside of the finger, whereby the feed-wheel and the rotatable brush may be turned by the turning of the first-named shaft and the feed-wheel may be made to engage with entrails drawn upon the finger

and to be disengaged therefrom while turning, substantially as described.

3. In an entrail cutter and cleaner, the combination of a frame consisting of a base and an arm pivoted to such base, with a rotatable shaft forming the fulcrum upon which the arm is pivoted, pulleys rigidly secured to the shaft, a rotatable feed-wheel journaled at the free end of the pivoted arm, an adjustable screw extending through the pivoted arm and engaging with the base of the frame, whereby the position of the feed-wheel is determined, a finger underneath the feed-wheel, grooves in the finger, and a knife upon the upper side thereof, the outer walls of the grooves being cut away in the back part thereof, whereby entrails drawn over the finger by the feed-wheel and cut by the knife can be released from engagement with the feed-wheel and drop from the finger, and a feed-pipe having a nozzle whereby fluid passing through the feed-pipe will be directed against the inner surface of the entrails dropping from the knife and against the contents thereof, substantially as described.

LOUIS M. HOFFMANN.

Witnesses:

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