No. 873,311. PATENTED DEC. 10, 1907.

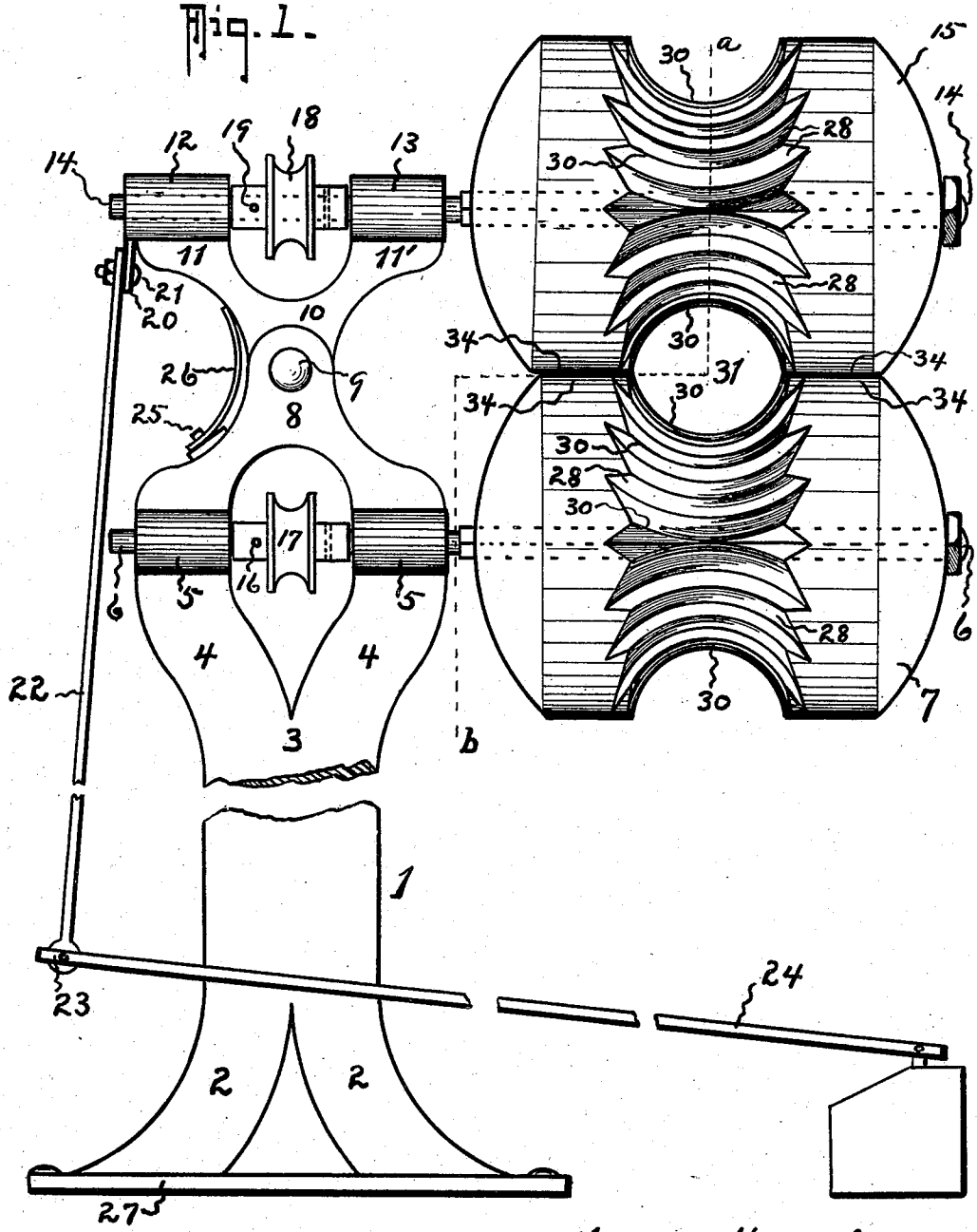
H. HAKENHOLZ.

ENTRAIL CLEANING MECHANISM.

APPLICATION FILED APR. 4, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



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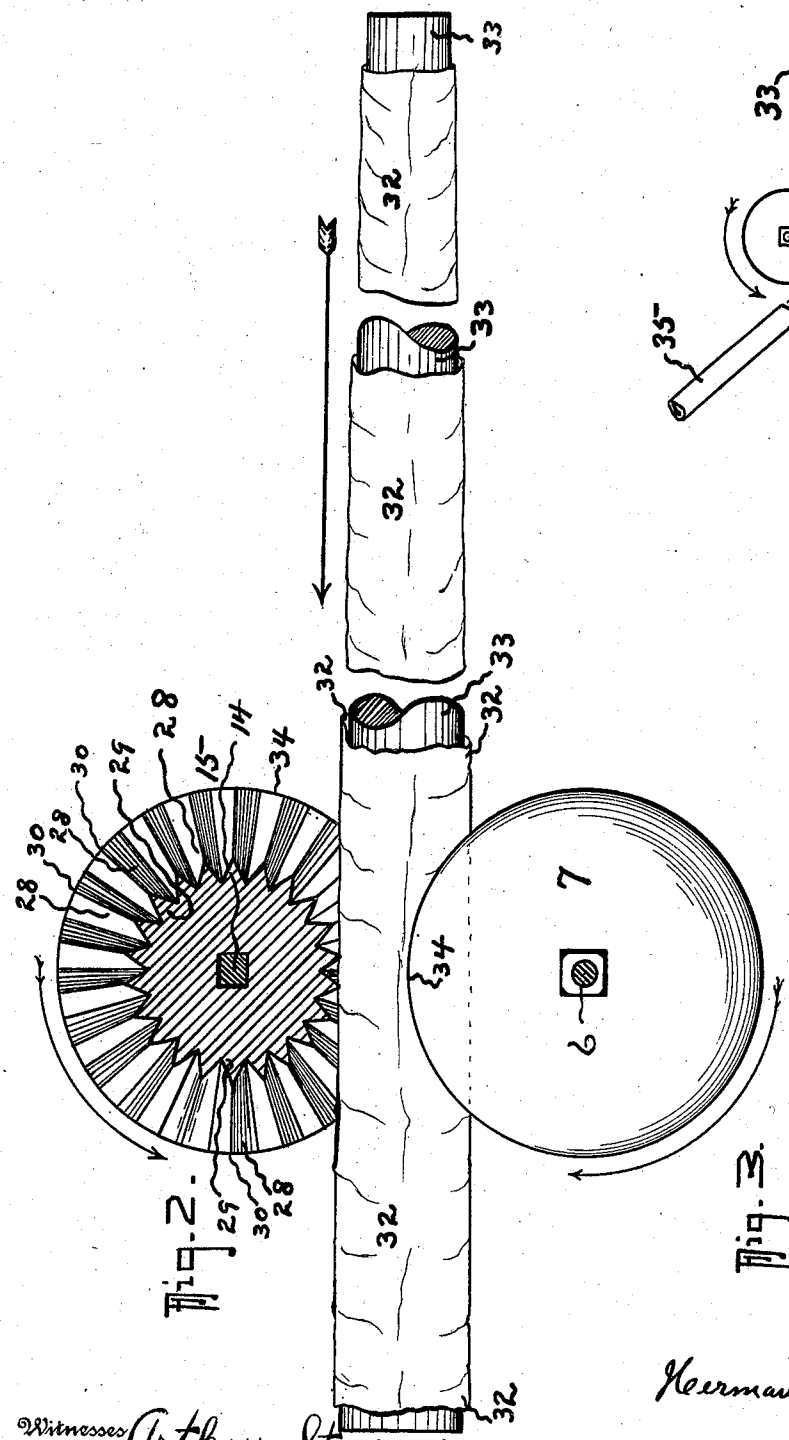


Fig. 2.

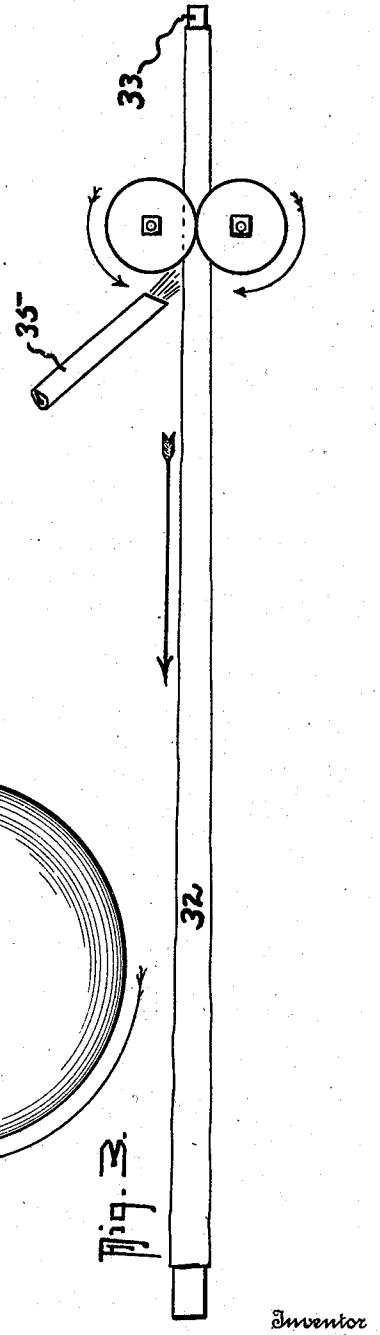


Fig. 3.

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HERMAN HAKENHOLZ, OF SOUTH OMAHA, NEBRASKA.

ENTRAIL-CLEANING MECHANISM.

No. 873,311. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed April 4, 1907. Serial No. 366,439.

To all whom it may concern:

Be it known that HERMAN HAKENHOLZ, a citizen of the United States, residing at South Omaha, in the county of Douglas and State of Nebraska, has invented certain new and useful Improvements in Entrail-Cleaning Mechanism, of which the following is a specification.

This invention relates to improvements in entrail cleaning mechanism for use in connection with packing houses where entrails of slaughtered animals, especially of swine, are cleaned and prepared for use in the manufacture of sausages, and has for its object the presentation of a means for cleaning entrails more effectively and with less expense than formerly. The larger entrails are covered with adhesive fat which must be removed to prepare them as coverings for sausages, and heretofore these parts have been cleaned manually at a considerable expense for labor. The mechanism now presented is for the purpose of performing this work by machinery.

The devices employed and their operation will be readily understood from the description hereinafter given, pointed out by the claims and illustrated in the drawings, wherein,—

Figure 1 is a vertical side elevation of a machine embodying my invention, the frame, treadle and treadle-rod being partly broken. Fig. 2 is a sectional view on line *a b* of Fig. 1, looking to the right of that figure, a cleaning-rod incased by an entrail, and broken away, being added. Fig. 3 is a detail relating to Fig. 2, introduced to illustrate relative position of parts, and to show convenient method for the application of water.

Referring now to the drawings for a more particular description, I employ the frame 1, having legs 2, a body-portion 3 having side sections 4. In suitable bearings 5 upon side sections 4 is seated the horizontal shaft 6 upon which is secured the lower roller 7. Side sections 4 are extended upwardly and united to form a head 8 in which, at 9, is pivotally mounted the yoke 10 having upwardly-extending arms 11 and 11′ to furnish suitable bearings 12 and 13, within which is seated shaft 14 upon which is secured the upper roller 15. Upon shaft 6 between bearings 5 is secured, as by means of set-screw 16, the pulley 17, and pulley 18 is secured, as by screw 19, upon shaft 14, and these pulleys may receive rotation from any convenient exterior source of power, it being understood that they are to be rotated in opposite directions. Mounted upon the outer end of bearing 12 is arm 20, and secured thereon as by bolt 21 is a downwardly-extending treadle-rod 22, pivotally mounted at 23 upon treadle 24, and upon the outer part of head 8 is secured at 25, the spring 26; the opposite end of this spring has a bearing upon the face of arm 11 of yoke 10, and is adapted, on occasion, to cause the yoke to make a downward swinging movement upon its pivotal mounting 9, as will presently be explained; the base 27 may be rigidly secured in any convenient manner, so that the frame may be maintained in a vertical position. As thus constructed, shaft 6 has a mounting so that it may not be moved from, substantially, a horizontal position; a downward movement, however, of treadle 24 will cause a vertical swinging movement of yoke 10, as is evident, which will cause an upward movement of roller 15, spring 26 yielding to this movement. The normal position of rollers 7 and 15 is that of contact, since roller 15 is forced downward to this contact by spring 26, this spring being adequate in its resiliency to also sustain the weight of treadle-rod 22 and the treadle.

Rollers 7 and 15 are preferably formed of wood, and each is incised to form a series of cleaning-combs or scrapers, each comb being formed convergingly from its base 29 to form an edge 30 and curved longitudinally so that the comb will present a concaved edge. The rollers may be considered as a pair of cylinders having similar parts of their circumferences incised to form oppositely-disposed annular recesses, these recesses being provided with inwardly curved combs with walls outwardly convergent, so that when the parts are mounted operatively and the cylinders in contact, a round or oval opening 31 is formed centrally between the adjacent combs of the cylinders.

In operation, an entrail 32 to be cleaned, is placed upon a cleaning-rod 33; the cleaning-rod with the entrail thereon is then inserted in opening 31. Rollers 7 and 15 are adapted to have rotations in opposite directions, or in directions indicated by the curved arrows in Figs. 2 and 3. An operator stands opposite the free ends of the rollers, and by passing and repassing rod 33 with the entrail

thereon, lengthwise within opening 31, all fatty substances will be readily removed from the entrail; at this time, the operator controls foot-treadle 24 so that the contact of the combs upon the surface of the entrail may not be too close, and by use of the mechanism described, the work of cleaning entrails may be rapidly performed, and in a manner to thoroughly clean them.

Cleaning-rod 33 is shown as having a diameter greater at one end than at its opposite end; while this difference is not considered material, it is thus shown since it corresponds to the form of the larger entrail used for the casings of larger sausages, and this form for the cleaning-rod is employed while cleaning large entrails.

It will be noted that the end-portions of rollers 7 and 15 may have parts 34 of their peripheries in contact, and this is a desired construction since it prevents the combs upon one roller from approaching the combs of the opposite roller only a limited distance.

A downward movement of the treadle will cause an upward movement of roller 15, at which time the curved combs will not contact with all of the surface of an entrail coming within the plane of the rollers during the cleaning process, since a space will intervene between the cylinders, but this is not an objectionable feature; at this time the operator has a hand upon each end of the cleaning-rod in a way to confine the entrail closely thereon, and gradually moves these parts back and forth at the same time revolving these parts, and in this manner all of the surface is cleaned; the adhering fat upon the surface of entrails extends in lines, and the operator may direct the movement of the rod, so that the adhesive lines of fat to be removed, contacts with the central part of the combs, to effect a cleaning.

It will be understood that the operator manually passes the rod 33 within opening 31 and then forcibly moves the mounted entrail indicated by the straight arrows in Figs. 2 and 3, to remove the adhesive material, this being an opposite movement, generally speaking to that of the rollers, and therefore effective. At the time of this operation, water from a hose as indicated at 35, may be applied for washing away substances which have been detached or loosened by the combs. After all adhesive material has been cleaned from the outside of the entrail, the surfaces are reversed; that is to say, the inner surface of the entrail is turned outward, and the process above described is repeated so that both surfaces are thoroughly cleaned.

Having given a full description of parts, operation will be understood, it is believed, without further explanation.

While exact details have been shown, I do not limit the invention to the exactness shown or described, or to proportions.

Entrails should not be torn or injured, as a matter of course, during the cleaning process, and therefore a degree of speed in revolution must be considered, in connection with the size for the combs. While a rugose surface is desired for the rollers for cleaning purposes, the height of the combs as well as their angularity should be limited to a degree considered sufficient for effectiveness in cleaning, and safety to the material to be cleaned.

What I claim as my invention is,—

1. In a cleaning mechanism as described, the combination with a frame, a treadle and a cleaning-rod, of two rotatable cylinders journaled in the frame, each of said rotatable cylinders having an annular recess formed thereon, each of said annular recesses being provided with combs having concavedly formed edges and side-walls formed convergently from their bases; said cleaning-rod adapted to have a seating within said annular recesses transversely between said rotatable cylinders; one of said cylinders adapted to have a swinging movement under control of said treadle.

2. In combination, the herein described cleaning mechanism, comprising a frame, a treadle, a spring, a cleaning-rod; a pair of oppositely-disposed rotatable cylinders each having shafts journaled in the frame; each of said oppositely-disposed rotatable cylinders having a series of concavedly formed combs longitudinally and annularly disposed thereon; said cleaning-rod seated transversely between said oppositely-disposed rotatable cylinders, adjacent said series of concavedly formed combs; one of said oppositely-disposed rotatable cylinders adapted to have swinging movements under control of the treadle and the springs in directions from and toward the oppositely-disposed rotatable cylinder of said pair.

In testimony whereof he has affixed his signature in presence of two witnesses.

HERMAN HAKENHOLZ.

Witnesses:
FREDERIC BACON,
HIRAM A. STURGES.