

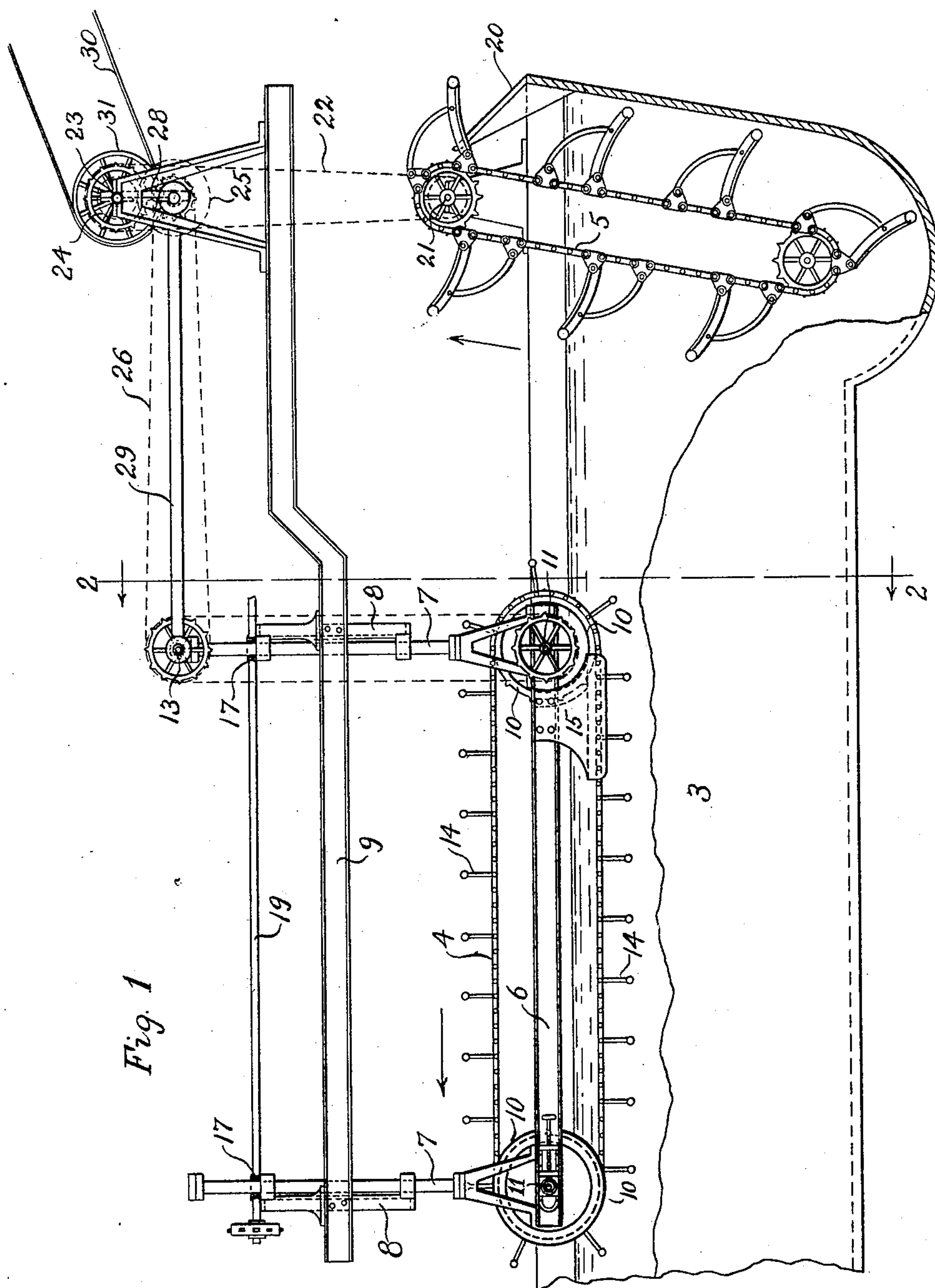
No. 814,384.

PATENTED MAR. 6, 1906.

J. N. MACLEOD.  
HOG SCALDER.

APPLICATION FILED APR. 20, 1905.

2 SHEETS—SHEET 1.



WITNESSES.

Otto E. Johnson.

*Andover Summer.*

INVENTOR.

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John N. MacLeod  
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ATTORNEYS

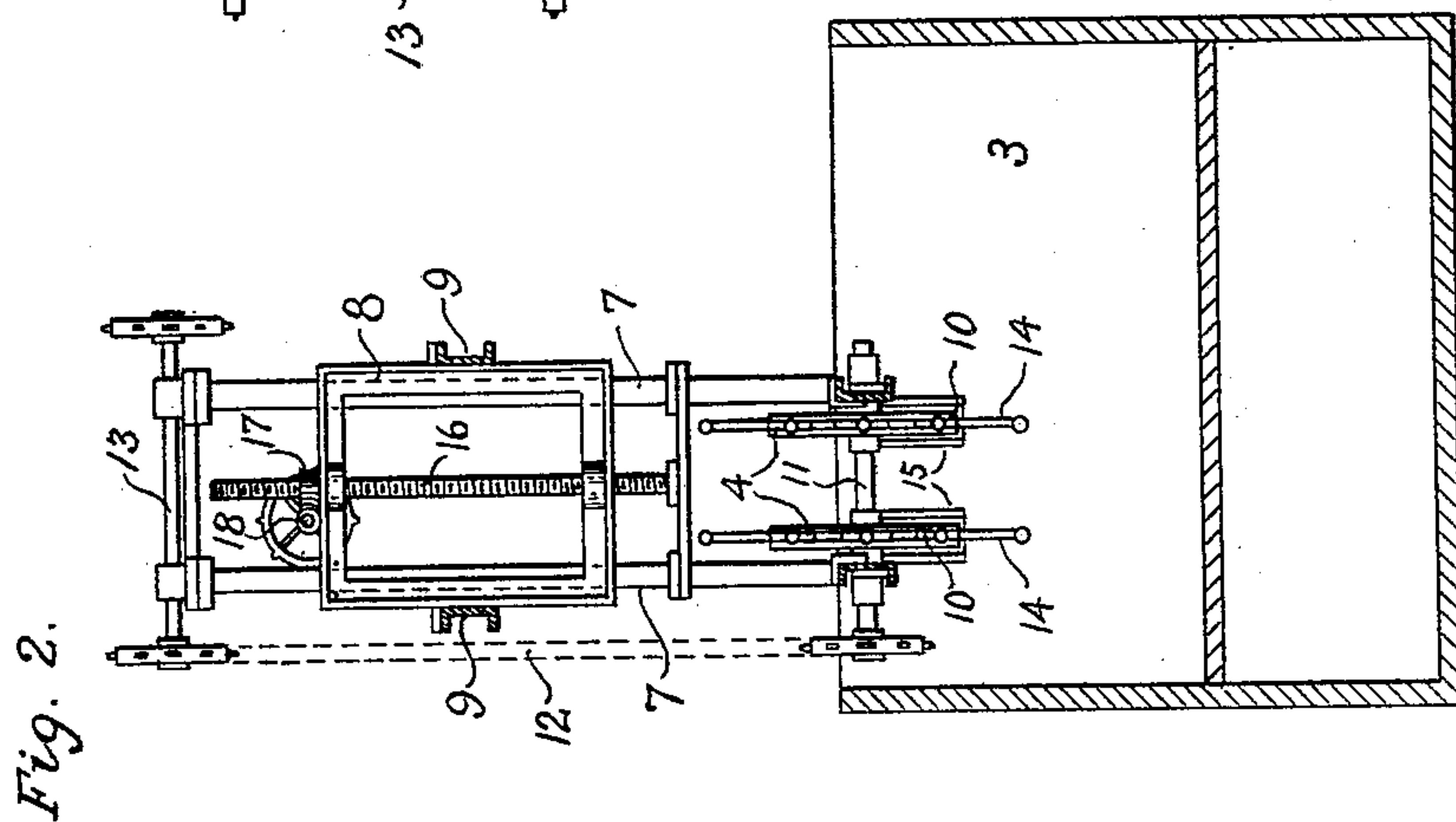
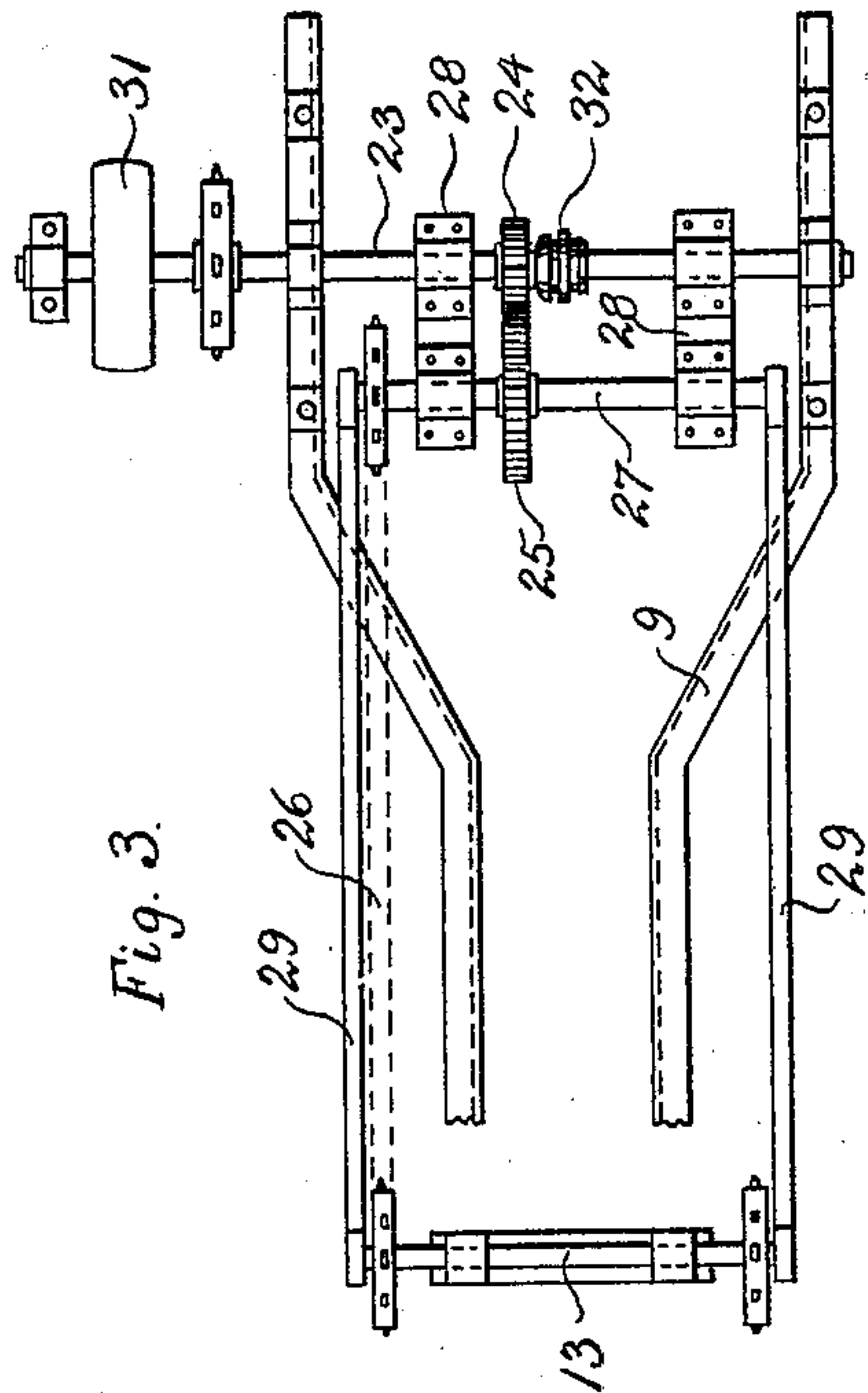
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Andrew Rimmer.

INVENTOR.

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# UNITED STATES PATENT OFFICE.

JOHN N. MACLEOD, OF CHICAGO, ILLINOIS.

## HOG-SCALDER.

No. 814,384.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed April 20, 1905. Serial No. 256,549.

*To all whom it may concern:*

Be it known that I, JOHN N. MACLEOD, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hog-Scalders, of which the following is a specification.

This invention relates to scalding-tanks and conveying mechanism for conveying hogs along the tanks and below the level of the water therein.

The main objects of this invention are to provide an improved form of conveyer which is capable of being adjusted vertically to suit changes of the level of the water in the tank and which is also adapted to be raised entirely clear of the tank in case of accident to its driving mechanism or in cases where for other reasons it is desirable to have the tank unobstructed; to provide an arrangement of conveyer mechanism for scalding-tanks in which certain hogs that are more thickly covered with bristles than the ordinary run may be drawn to one side of the regular path of the hogs and allowed to rest at one side of the conveyer or be passed back and carried along again, so as to be subjected to a longer scalding action; to provide improved construction for scalding-tank conveyers, and to provide an arrangement of parts whereby the mechanism connecting the conveyer and throw-out may be arched overhead, so as to leave unobstructed access by workmen to the part of the tank which is between the conveyer and the throw-out mechanism. I accomplish these objects by the device shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a scalding-tank with conveyer mechanism constructed according to my invention, the tank being partly broken away to more clearly disclose the conveyer mechanism. Fig. 2 is a transverse section on the line 2 2 of Fig. 1. Fig. 3 is a top plan of the overhead mechanism connecting the conveyer and elevator or throw-out.

In general arrangement the device which is shown in the drawings consists of a tank 3, adapted to contain scalding water for removing the bristles from the hides of hogs, a conveyer 4, adapted to submerge the hogs below the surface of the water and convey them along the tank toward its delivery end, an elevator and throw-out 5 at the delivery end of the tank for discharging the hogs therefrom, and mechanism for raising and lowering

the conveyer 4 at the will of the operator. The conveyer 4 is mounted on a horizontally-disposed conveyer-frame 6, which is hung above the level of the water in the tank by means of four uprights 7, which are slidably mounted in brackets 8 in the supporting-frame 9. The frame 9 is rigidly mounted above the tank 3, being secured to the surrounding structure of the building. The supports for the frame 9 are omitted from the drawings for the sake of clearness, since they form no part of the herein-described invention.

The conveyer 4 consists of two parallel link belts mounted on sprocket-wheels 10 and flanged idle wheels 10'. The sprocket-wheels 10 are carried by a shaft 11, journaled at the delivery end of the frame 6. The idle wheels 10' are carried by a shaft 11'. The wheels 10 and 10' have a continuous web connecting their hubs and rims and have no apertures in which the feet of the hogs could become entangled. The driven shaft 11 is connected, by means of sprocket-wheels and a link belt 12, with a counter-shaft 13, which is journaled at the upper end of one pair of the uprights 7. The shaft 11', which is at the receiving end of the conveyer 4, is mounted in movable bearings to permit of taking up slack in the conveyer-belts.

Each conveyer-belt is provided with a plurality of outwardly-extending arms 14. Each arm 14 is preferably formed integral with one of the adjacent link-sections, so as to always remain at right angles to the line of the belt. The arms of one belt are directly opposite those on the other, as shown, so that said arms will engage the sides of the hogs and carry the same sidewise along the tank. The conveyer 4 is preferably of considerable less width than the tank and is located at one side of the longitudinal center line of the tank, so as to allow a clear space along one side of the conveyer into which hogs which are more thickly covered with bristles than the ordinary run of those operated upon may be pulled toward one side and allowed to remain in the scalding water for a longer period of time than it requires for hogs to pass through the tank through the ordinary operation of the conveyer. Each of the sprocket-wheels 10 at the delivery end of the conveyer is provided with a guard 15, which is rigidly secured to the conveyer-frame 6 and extends around the forward end of its respective sprocket-wheel and over the



belt, so as to fill the gap between said sprocket-wheel and belt and prevent the possibility of the feet of hogs becoming entangled in the mechanism at this point.

5 The uprights 7 are free to move vertically within certain limits in the brackets 8 and their vertical position in such brackets is controlled by means of a pair of vertically-disposed threaded shafts 16. These shafts are  
10 rigidly secured at their lower ends to the conveyer-frame and pass loosely through bearings in the brackets 8. A worm-wheel 17 is loosely mounted upon each of the brackets 8 and has threaded engagement with the re-  
15 spective shaft 16. These worm-wheels mesh with worms 18 on a shaft 19, which connects said worm-wheels, so as to simultaneously rotate the same for raising and lowering the conveyer 4 in a level position. The worm-  
20 shaft 19 is rotated by mechanism which is not shown and which may be independent of the driving mechanism of the conveyer. The throw-out mechanism 5 is of a form which is already well known in this art, and will there-  
25 fore be sufficiently understood from the drawings without further description. The throw-out is arranged to raise the hogs and discharge them down an incline 20, by which they are delivered upon the bristle-bench, which is  
30 not shown in the drawings. The driven shaft 21 at the upper end of the throw-out 5 is connected by means of sprocket-wheels and the link belt 22 with a counter-shaft 23, journaled on the main supporting-frame 9.  
35 The counter-shaft 23 is connected with the shaft 13 at the upper end of the uprights 7 by means of the gears 24 and 25 and the link belt 26. The gear 25 and one of the sprocket-wheels of the belt 26 are carried by a second  
40 counter-shaft 27, which is journaled in a pair of arms 28, loosely mounted upon the shaft 23. The shaft 27 is also connected with the shaft 13 by means of a pair of links 29. Power is applied to the shaft 23 by means of  
45 a belt 30, which connects the pulley 31 with the source of power.

The gear 24 is preferably loosely mounted on the shaft 23 and is connected thereto by means of a clutch 32. This clutch permits  
50 the conveyer 4 to be stopped without stopping the continuous operation of the throw-out 5. It is important, however, that the conveyer 4 and throwout 5 be operated at a fixed relative speed, and for this reason  
55 power is supplied to both from the same source.

The operation of the device shown is as follows: Assume that the conveyer 4 and the throw-out 5 are being continuously driven at  
60 corresponding speeds in the direction indicated by the arrows in Fig. 1. Hogs are then delivered into the tank at the end which is at the left in Fig. 1 and accumulate between said end of the tank and the receiving end of  
65 the conveyer 4. The hogs are fed to the

tank so as to lie crosswise therein and are guided by an operator at the receiving end of the conveyer. The hogs are then engaged by the arms 14 and carried under the surface of the water and along the tank by means of  
70 the conveyer 4. In case certain hogs are found to be more thickly covered with bristles than others such thickly-bristled hogs are drawn to one side by another operator at the delivery end of the conveyer and may  
75 then be either passed back and carried along the conveyer again or allowed to remain at rest until sufficiently scalded. The guard 15 serves to swing the legs of the hogs toward one side and prevents the possibility of their  
80 becoming entangled between the sprocket-wheel 10 and conveyer-belt. When the level of the water varies for any reason—as, for instance, during the handling of a run of smaller or larger hogs—then the conveyer 4  
85 may be instantly adjusted to the proper elevation by rotating the shaft 19. In case of breakage or other accident to the conveyer 4 the same may be lifted entirely clear of the tank, and the hogs may then be passed along  
90 the tank by hand without requiring stoppage of preceding or succeeding mechanisms for handling the hogs, as occurs when some of the old forms of conveyers must be stopped for the purpose of repair. The driving mech-  
95 anism need not be stopped to permit change in the elevation of the conveyer 4, since the link 9 and the arms 28, together with the mechanism connecting the shafts 13 and 23, will readily adapt themselves to changes in  
100 the distance between the shafts 23 and 12.

It will be seen that numerous details of the construction shown may be altered without departing from the spirit of my invention.

What I claim as my invention, and desire  
105 to secure by Letters Patent, is—

1. The combination of a tank, a supporting-frame depending from above said tank, a horizontally-disposed conveyer-frame mounted to slide vertically on said supporting-  
110 frame, a conveyer on said conveyer-frame adapted to dip below the surface of the water in the tank and move the hogs along the same, and gearing connecting said supporting-frame with said conveyer for raising and  
115 lowering the conveyer.

2. A hog-scalding, comprising a tank, a horizontally-disposed conveyer mounted above said tank and adapted to move the hogs along the tank below the surface of the water there-  
120 in, said conveyer having its bearings on one side free from the wall of the tank to provide for unobstructed access between said wall and the conveyer, said tank being widened on said side to permit hogs to be withdrawn  
125 from the side of the conveyer.

3. The combination of a tank, a supporting-frame above said tank, a horizontally-disposed conveyer-frame mounted to slide vertically on said supporting-frame, a con-  
130



veyer on said conveyer-frame adapted to dip below the surface of the water in the tank and move the hogs along the same, vertically-disposed threaded shafts carried by the supporting-frame and engaging the conveyer-frame for controlling the vertical position of said conveyer, and gearing connecting said shafts and coacting therewith for raising and lowering the conveyer.

4. The combination of a tank, a supporting-frame above said tank, uprights mounted in said frame and vertically slidable therein, a horizontally-disposed conveyer mounted upon the lower ends of said uprights, means for shifting said uprights vertically in said frame, a shaft journaled near the upper end of said uprights and connected with said con-

veyer for operating the same, a counter-shaft mounted in the supporting-frame in parallel relation to said shaft, an arm loosely mounted on said counter-shaft and carrying a second counter-shaft geared to the first, a belt connecting said shaft and second counter-shaft, and a link connecting said shaft and second counter-shaft, all arranged to permit the continuous operation of the conveyer regardless of its vertical position in the supporting-frame.

Signed at Chicago this 18th day of April, 1905.

JNO. N. MacLEOD.

Witnesses:

E. A. RUMMLER,  
GLEN C. STEPHENS.