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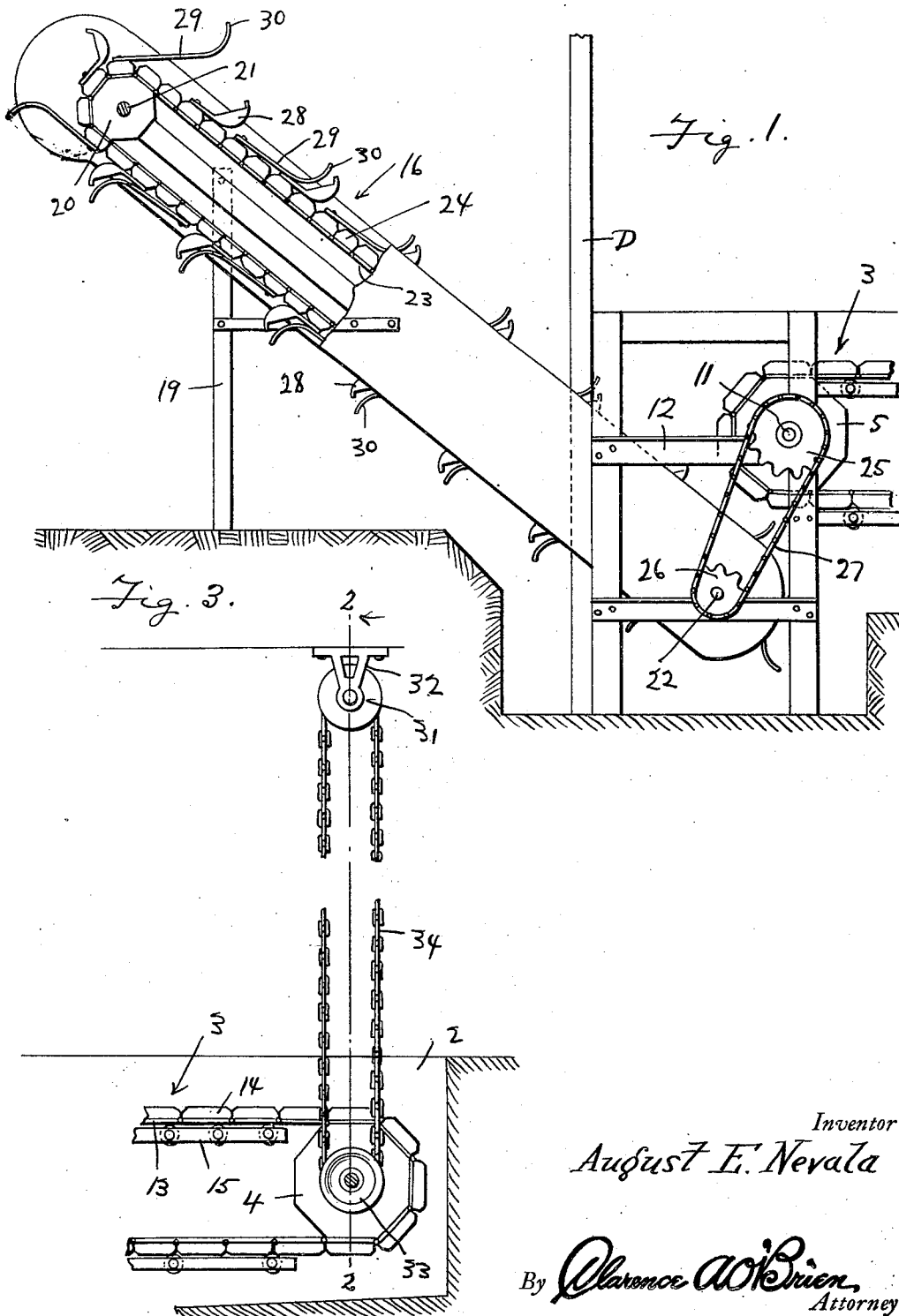
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MANURE CONVEYER FOR BARN

Filed April 28, 1927

2 Sheets-Sheet 1



Inventor
August E. Nevala

By *Clarence A. O'Brien*
Attorney

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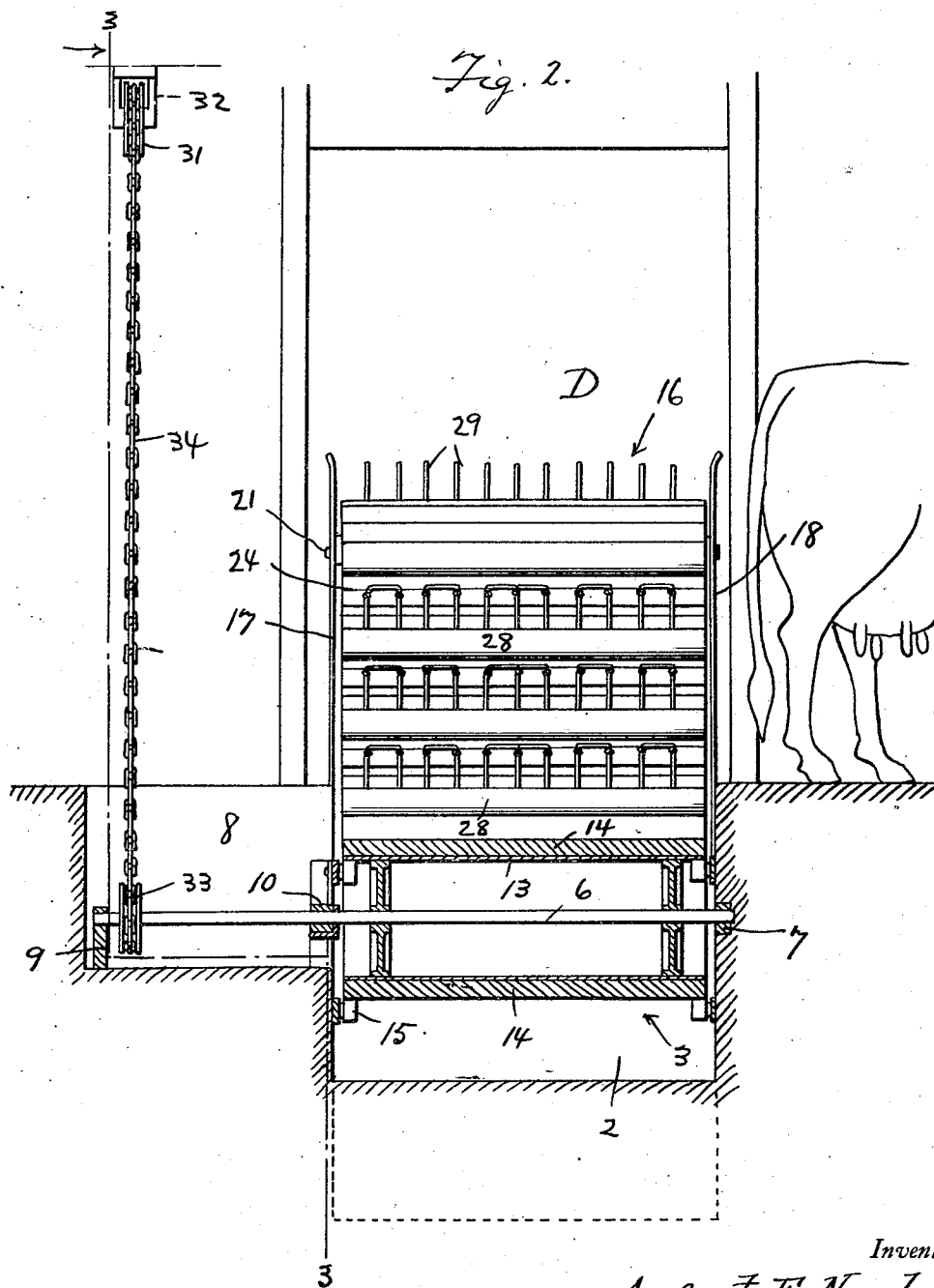
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By *Clarence A. O'Brien*
Attorney

UNITED STATES PATENT OFFICE.

AUGUST E. NEVALA, OF SEBEKA, MINNESOTA.

MANURE CONVEYER FOR BARNS.

Application filed April 28, 1927. Serial No. 187,207.

The present invention relates to improvements in conveyers and has reference more particularly to a means for facilitating the removal of manure from a barn.

5 One of the important objects of the present invention is to provide a device of the above mentioned character wherein the same includes a conveyer arranged horizontally in the gutter at the rear of the stalls, a loading conveyer being operatively associated with the horizontal conveyer for receiving the waste matter deposited on the horizontal conveyer and conveying the same out of the barn.

15 A further object is to provide a device of the above mentioned character wherein the loading conveyer is provided with buckets for receiving the waste liquid, as well as teeth for holding the waste solid matter, while the same is being conveyed out of the barn.

25 A still further object is to provide a device of the above mentioned character which may be readily and easily installed in a barn without necessitating any material alterations and which will furthermore at all times be positive and efficient in its operation.

30 A still further object is to provide a manure handling device of the above mentioned character which is simple in construction, inexpensive, strong and durable and further well adapted to the purpose for which it is designed.

35 Other objects and advantages of the invention will become apparent during the course of the following description taken in connection with the accompanying drawings.

40 In the accompanying drawings forming part of this application:

45 Figure 1 is a side elevation of the loading conveyer showing the manner in which the same is connected or associated with the feeding conveyer.

Figure 2 is a vertical sectional view taken approximately on the line 2—2 of Figure 3 looking in the direction of the arrows, and

50 Figure 3 is a fragmentary side elevation of the inner end of the horizontal feeding conveyer showing the operating mechanism therefor.

In the drawings wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 1 55 designates the floor of a barn and the gutter which extends longitudinally and is disposed adjacent the rear ends of the stalls is indicated at 2. Arranged horizontally within the gutter 2 is the endless feed conveyer designated generally by the numeral 3, the same comprising a pair of spaced octagonal shaped pulleys 4 and 5, respectively, the pulley 4 being supported on the shaft 6 which is journaled at one end in a suitable bearing 7 provided therefor in the inner side of the gutter 2 while the other end of the shaft extends into a cut out portion 8 provided therefor in the floor 1 and is journaled in a suitable bearing 9. The 70 intermediate portion of the shaft 6 further is disposed in a bearing 10 arranged at the outer side of the gutter 2 and this is clearly disclosed in Figure 2 of the drawings. The octagonal shaped pulley 5 is supported on 75 the shaft 11, the inner end of which is journaled in a suitable bearing provided therefor in the inner side of the gutter, not shown, while the outer end extends through the outer side of a supporting frame 12 arranged 80 adjacent the outer end of the gutter 2 in the manner clearly shown in Figure 1.

The endless conveyer 3 further includes the provision of the belting 13 on which is secured the transversely extending wooden 85 slats 14 in abutting relation in the manner clearly shown in Figures 1 and 2. Suitable roller bearings 15 are arranged for co-operation with the upper and lower flights of the endless conveyer to prevent sagging 90 and this feature is clearly shown in the drawings.

The loading conveyer is designated generally by the numeral 16 and the same includes a pair of spaced side plates 17 and 18 respectively. A suitable stand 19 is secured to the outer portion of the loading conveyer 16 for supporting the same at the proper inclination, while the inner end of the loading conveyer extends into the barn 100 for disposition below the outer end of the horizontal conveyer 3.

The loading conveyer includes the provision of an upper octagonal pulley which

is supported on a suitable shaft 21 which extends between the upper ends of the sides 17 and 18. A similar shaft 22 extends transversely between the sides 17 and 18 at the lower end thereof, and a similar shaped pulley is arranged on this shaft.

Trained over these pulleys is the endless belt 23 and secured on the outer face of the same are the transversely extending abutting wooden slats 24 which are similar to the wooden slats 14 which extend transversely across the belting 13 associated with the horizontal feed conveyer 3.

The lower shaft 22 of the loading conveyer 16 carries on its outer end a sprocket wheel 26 which is in alinement with the sprocket wheel 25 secured on the outer end of the shaft 11 and trained over these alining sprocket wheels is the sprocket chain 27 in the manner clearly shown in Figure 1. This provides a means whereby the horizontal feed conveyer 3 will operate simultaneously with the inclined loading conveyer 16.

Extending transversely across the wooden slats 24 of the loading conveyer 16 and arranged at spaced intervals are the waste liquid receiving buckets 28. The manner in which these buckets are associated with the wooden slats of the loading conveyer is clearly disclosed in Figure 1. Also secured on certain of the wooden slats 24 are a series of teeth 29, the free ends thereof being curved as illustrated at 30 and disposed adjacent the open sides of the respective buckets 28 for cooperation therewith in the manner to be presently described. The manner in which these teeth 29 are arranged on the wooden slats is clearly disclosed in Figures 1 and 2 of the drawings.

In Figures 2 and 3 I have shown one form of means for actuating the conveyers, and the same consists of a sprocket chain receiving pulley 31 supported in any suitable hanger 32 which is secured to the roof of the barn and a similar toothed wheel 33 is secured on the shaft 6 and trained over these alined toothed wheels 31 and 33 is the hoist chain 34. Although I have shown this form of means for rotating the conveyers, it is to be understood that any suitable means may be operatively connected to the shaft 6 for effecting the rotation thereof whereby the conveyers will be operated to carry out the purposes for which the same are designed.

In operation, the parts are arranged as shown in the drawings and by pulling on the hoist chain 34, the shaft 6 will be rotated and due to the shape or construction of the pulleys 4 and 5, the horizontal feed conveyer 3 will be actuated and all the waste matter which drops onto the wooden slats 14 will be carried outwardly toward the door D of the barn and the waste matter will drop onto the inclined loading conveyer 6 which is simultaneously operating with the hori-

zontal conveyer 3 and the teeth 30 will receive and support the solid waste matter, while the liquid waste matter will be collected in the buckets 28 and when the buckets and teeth reach the top of the inclined loading conveyer 16, the waste matter will be deposited into a wagon or the like which is disposed beneath the upper end of the loading conveyer.

It will thus be seen from the foregoing description that I have provided a pair of cooperating conveyers which will remove the droppings from the animals in the stalls from the barn and deposit the same into a wagon or the like, and in this manner, the gutter of the barn will at all times be kept clean and will furthermore save considerable time and labor in handling this waste matter. Also, the provision of a device of the above mentioned character will obviate the necessity of having to employ a number of men for cleaning the barn and the device will at all times be positive and efficient in its operation.

The simplicity with which my device is constructed enables the same to be readily and easily installed in a barn without necessitating any material alterations and furthermore when not in use, the loading conveyer can be swung inwardly inside the barn while the horizontal feed conveyer remains in the gutter.

While I have shown the preferred embodiment of my invention it is to be understood that minor changes may be made in the shape, size and arrangement of parts without departing from the spirit or scope of the appended claim.

Having thus described the invention, what I claim as new is:—

In a device of the class described, a horizontally disposed feed conveyer arranged in the gutter at the back of the stalls in a barn, a vertically disposed frame arranged in the outer end portion of the gutter, a transverse shaft supported in the inner end portion of the gutter, a transverse shaft supported on the upper portion of the frame, irregular shaped pulleys secured on the respective shafts, belting trained over the aligned pulleys, a series of wooden slats secured on the outer face of the belting in abutting relation, an inclined loading conveyer cooperating with the discharge end of the horizontal feed conveyer, a stand for supporting the upper portion of the loading conveyer, said loading conveyer including a pair of spaced guide members, transverse shafts at the upper and lower ends of the side members, irregular shaped pulleys secured on said shaft, belting trained over the last mentioned pair of pulleys, a series of wooden slats disposed on the outer face of the belting in abutting relation, buckets secured on certain of the wooden slats of the loading

conveyer for receiving the waste liquid matter discharged into the outer end of the gutter, teeth secured on certain of the wooden slats of the loading conveyer for disposition
5 adjacent the open sides of the bucket to hold the solid waste matter during its movement over the loading conveyer, means for oper-
atively connecting the feeding and loading conveyer together for simultaneous movement, and additional means for actuating 10 one of the shafts of the feed conveyer.

In testimony whereof I affix my signature.

AUGUST E. NEVALA.