

(No Model.)

C. A. MONROE.
STABLE CLEANING DEVICE.

No. 556,637.

Patented Mar. 17, 1896.

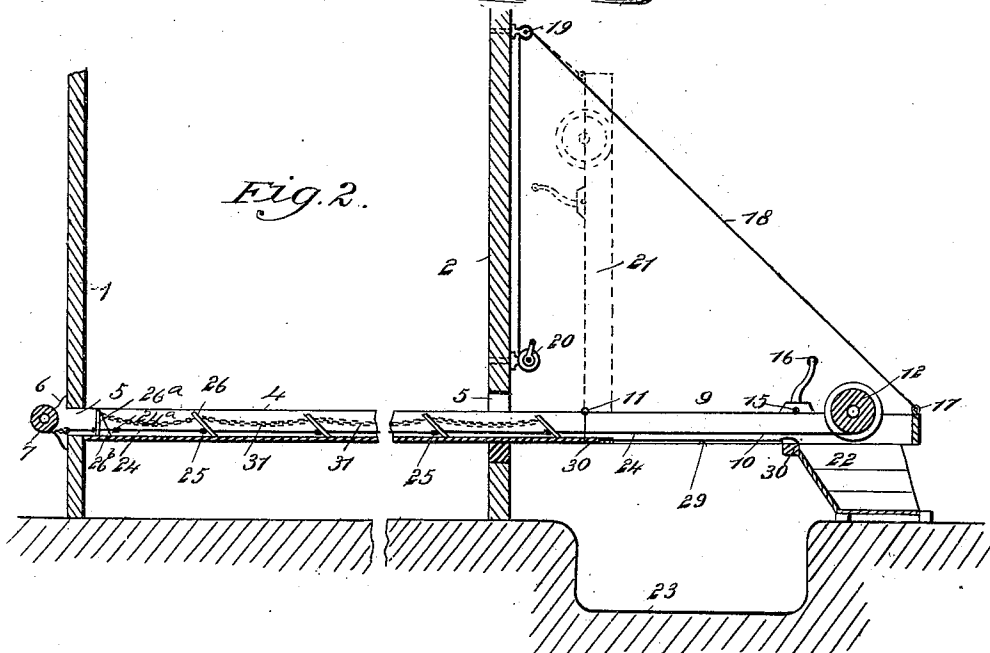
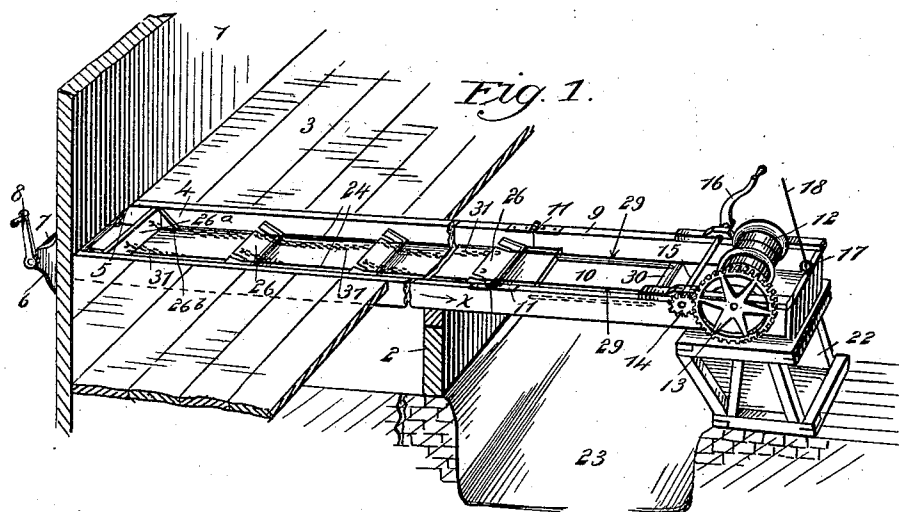
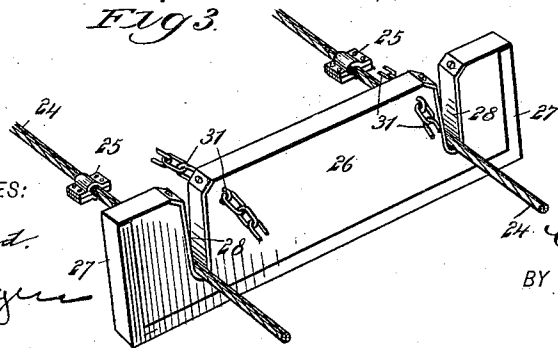


Fig. 3.



WITNESSES:

Edward C. Rowland.
J. Caplinger

INVENTOR

C. A. Monroe
BY *Munn & Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

CLARENCE A. MONROE, OF LOVELAND, COLORADO.

STABLE-CLEANING DEVICE.

SPECIFICATION forming part of Letters Patent No. 556,637, dated March 17, 1896.

Application filed May 8, 1895. Serial No. 548,460. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE A. MONROE, of Loveland, in the county of Larimer and State of Colorado, have invented new and useful Improvements in Stable-Cleaning Devices, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in that class of devices which are especially adapted for use in removing manure, &c., from stables, and the object of the invention is to provide a device of this character of a simple and inexpensive nature which shall be better adapted for use in cleaning stables and the like than other devices heretofore in use.

The invention consists in the construction and arrangement of parts as hereinafter fully described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view showing an embodiment of my invention, a portion of the length of the carrier and trench or trough between the opposite walls of a barn or stable being broken out. Fig. 2 is a vertical longitudinal section taken through the trough or trench, showing the device constructed according to my invention; and Fig. 3 is a perspective detail view drawn to an enlarged scale and showing the construction of the flights employed for the carrier.

In the views, 1 and 2 represent portions of the opposite walls of a barn or stable, and 3 represents the floor of the same. 4 is a trough or trench, which may be constructed of wood or of any other suitable material, sunk in the floor below the level thereof and having its ends passing through apertures or perforations 5, formed in the opposite walls 1 and 2, as clearly indicated in Fig. 2.

Outside of and adjacent to the wall 1 of the barn the projecting end of the trough 4 is provided with brackets 6 at its opposite sides, between which is journaled a roller or drum 7, having an operating-handle 8, whereby it may be rotated; and the opposite end of the trough 4 is provided with a hinged section 9 having an open bottom 10, the side bars of said section 9 being provided with hinges 11

at their rear ends, whereby they are connected to the forward ends of the adjacent section of the trough, and said side bars of the hinged sections 9 are connected at their forward ends by a cross-bar, and between them is journaled a drum 12, on the shaft of which is fixed a gear-wheel 13 meshing with a pinion 14 secured on a cross-shaft 15, also journaled between the side bars of said hinged section 9, and provided at its opposite end with a crank-handle 16, whereby said drum 12 may be operated.

The cross-bar at the forward end of the hinged section 9 of the trough is provided with an eye or staple 17, to which is connected a cord or rope 18 which extends diagonally upward, as indicated in Fig. 2, and passes over a sheave 19 secured to the side wall 2 of the barn or stable, being thence carried down and connected to and adapted to be wound on a windlass or drum 20, whereby when desired the hinged section 9 may be raised on its hinge-pivots to a vertical position, as indicated in dotted lines at 21 in Fig. 2.

When in its horizontal position, as indicated in full lines in Fig. 2, the hinged section 9 rests at its forward end on a support 22 formed with an interior hollow, as clearly indicated in Fig. 2, arranged directly under the drum or roller 12, and the said hinged section 9, when in its horizontal position, will be by preference at a sufficient elevation above a roadway 23, located below it, to permit a wagon to be driven along said roadway in position to receive the manure falling through the open bottom of said hinged section.

The carrier comprises wire ropes 24 or their equivalents secured at opposite ends to the respective drums 7 and 12, said ropes having fixed thereon stops 25, suitably spaced apart, the stops on the respective cables being arranged to correspond with one another and being adapted to engage the rear sides of the flights 26, as indicated in Fig. 2, said flights being formed of wood or other suitable material and being provided around their edges with wearing-strips 27 of sheet metal and being provided with vertical slots 28 adapted to receive the respective cables 24, as indicated in Fig. 3.

The flights 26 are adapted to be drawn along by the cables 24 in an inclined position,

as clearly indicated in Fig. 2, and at the outer sides of the open bottom of the hinged section 9 of the trough longitudinal guide-rods 29 are arranged, adapted to receive and support said flights, the said rods being secured at opposite ends in cross-bars 30, connecting the respective side bars of the hinged section 9 at opposite ends of the open bottom thereof. The flights 26 are connected together by chains 31 or other flexible connections secured to their upper parts in such a manner as to permit free movement of said flights, whereby when the flights have passed over the cross-bar 30 at the forward end of the open bottom of the hinged section 9 of the trough they will fall into the chamber or recess formed in the support 22 above mentioned and become disengaged from the cables 24, so as to permit the same to be properly wound upon the drum 12.

The series of flights is connected at the end adjacent to the drum 7 with a slide 26^a having end pieces 26^b adapted to hold the same in a vertical position when moved along the trough 4, and said slide 26^a is provided with perforations through which pass the cables 24, said cables being provided with stops 24^a similar to stops 25 arranged on opposite sides of said slide.

The trough or trench 4 is arranged by preference to extend along the rear ends of the stalls, and is adapted to receive the manure and other refuse, and in operation, when it is desired to remove the manure, &c., the handle 16 is manipulated to wind up the cables or ropes 24 on the drum 12, so as to cause the stops 25 to bear on the rear sides of the flights 26 and move the same in a vertical position in the direction of the arrow *x* in Fig. 1, whereby the manure is carried from the barn or stable and deposited through the open bottom 10 of the hinged section 9 into a wagon or other receptacle arranged in the roadway 23 to receive the same, the flights 26, after passing said open bottom, being deposited in the recess or chamber of the support 22, as above described.

When the trough 4 has been emptied, the handle 8 is manipulated so as to cause the stops 25^a to bear on the front sides of the slide 26^a, whereby said slide is returned to its original position, the flights 26 being drawn up one after the other into engagement with the

cables 24 and being carried to their original positions in the trough 4 in inclined positions.

When the device is not in use the windlass or drum 20 may be manipulated to elevate the hinged section 9 to the inclined position shown in dotted lines in Fig. 2, so that said section will be out of the way of teams passing along the roadway 23.

From the above description it will be seen that the device is of extremely simple and inexpensive construction and is well adapted for use in cleaning stables and the like, inasmuch as it takes up little room, it being possible to elevate the hinged section 9 to a vertical position when not in use.

It will also be seen that the device as herein shown and described is susceptible of some modification as to its details of construction, and for this reason I do not wish to be understood as limiting myself to the precise construction and arrangement of the device as herein shown.

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

1. In a device of the character described, the combination with a trough having an opening in its bottom at one end, of a drum mounted on the trough at the end provided with the opening, cables secured to the drum, and flights having a detachable engagement with the cables, whereby the flights will be disengaged from the cables and drop through the opening in the trough to permit the cables to wind upon the drum, substantially as described.

2. In a device of the character described, the combination with a trough provided with an opening in its bottom at one end, of the drum mounted on the trough at the end provided with the opening, cables secured to the drum and provided with a series of spaced stops, and flights provided with recesses in their upper edges to receive the cables, whereby provision is made for permitting the flights to be disengaged from the cables and drop through the opening in the trough, substantially as and for the purpose set forth.

CLARENCE A. MONROE.

Witnesses:

A. S. BENSON,
HAROLD FISK.