C. J. WELLS.

Apparatus for Unloading Sand, Grain, &c., from Vessels.

No. 207,229. Patented Aug. 20, 1878.

Fig. 1

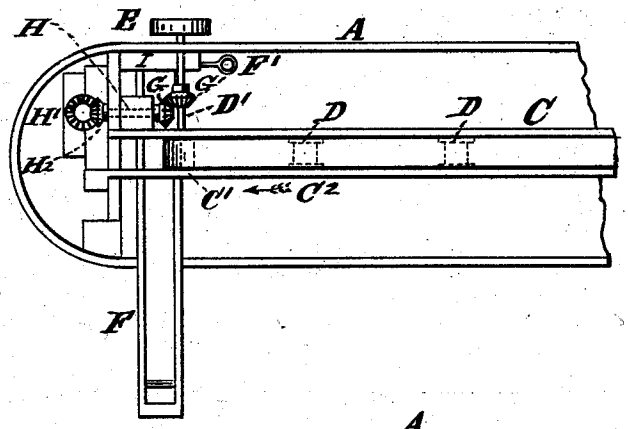


Fig. 2

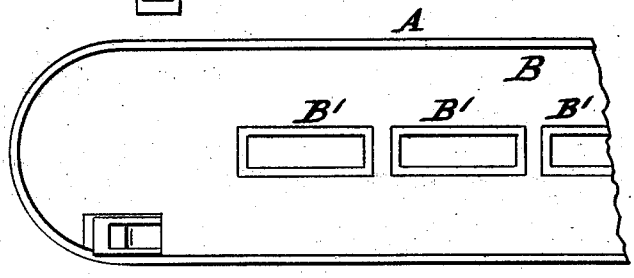


Fig. 3

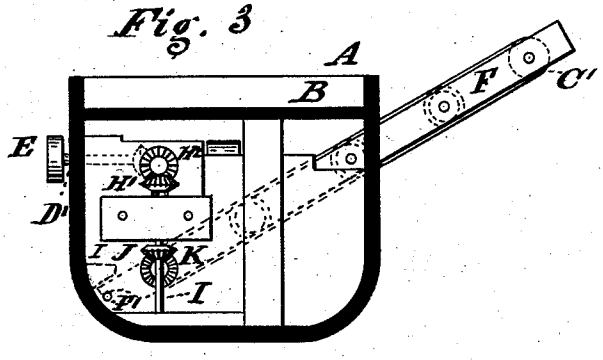
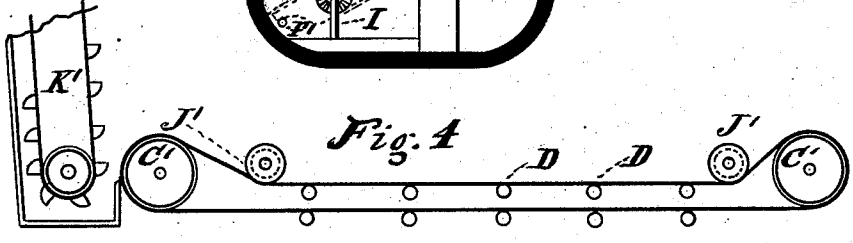


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

CHANDLER J. WELLS, OF BUFFALO, NEW YORK.

IMPROVEMENT IN APPARATUS FOR UNLOADING SAND, GRAIN, &c., FROM VESSELS.

Specification forming part of Letters Patent No. **207,229**, dated August 20, 1878; application filed July 12, 1878.

To all whom it may concern:

Be it known that I, CHANDLER J. WELLS, of Buffalo, in the county of Erie and State of New York, have invented a new and Improved Apparatus for Unloading Sand, Grain, or other Similar Material from Sailing or other Vessels, which improvements are fully set forth in the following specification and accompanying drawing, in which—

Figure 1 is a plan view of a portion of a vessel and a similar view of the machinery below the deck. Fig. 2 represents a top view of a part of a vessel, showing the removable conveyer as arranged within it when not required for use. Fig. 3 is a cross-section through the stern of a vessel, showing the gearing for operating the removable or cross conveyer; and Fig. 4 represents a conveyer arranged at or near the lowest point in the hold of the vessel.

The object of this invention is to provide a convenient and efficient means for unloading sand, grain, or other similar material from a boat; and it consists of a conveyer placed so as to operate lengthwise of the same, a supplementary conveyer arranged to operate at right angles or any required angle thereto, and made readily removable and adjustable, so as to be easily taken away and placed in some convenient part of the vessel when not required for use, in combination with the gearing by which the whole is jointly operated and a suitable means for conducting the sand or other material to the receiving-conveyer, as will be more clearly hereinafter shown by reference to the drawings, in which a portion of a vessel is shown and designated by the letter A.

B represents the deck of the vessel, provided with openings B′ to conduct the sand or other material to the conveyer C below it, which is arranged lengthwise of the vessel, and is an endless belt of some suitable flexible material, (heavy canvas, for instance,) and is held in place by pulleys or rollers C^1 at each end, and in a horizontal position by concave-faced rollers D below it. D′ is the driving-shaft by which it is operated, and E the driving-pulley, which may be arranged either outside or inside of the vessel.

F represents the conveyer, arranged to operate at right angles or at any convenient angle to the conveyer C. It is also an endless belt of some flexible material, and is supported in a similar manner to C. It is made removable, so as to be easily taken out and put in some convenient part of the vessel when not required for use. (See Fig. 2.) When in use it is held in place, as in Fig. 1, by means of a bolt, F′, which is withdrawn when it is necessary to remove it.

The operation is as follows: Rotary motion being given to the driving-shaft D′, it moves the conveyer C in the direction of the arrow C^2, and the bevel-gearing G G′ rotates the horizontal shaft H, which, by means of the bevel-gears H^1 H^2, turns the vertical shaft I and imparts the necessary movement (by means of bevel-gears J K) to operate the conveyer F. The conveyer F is formed at the foot, so as to hold and carry the bevel-gear wheel K, which is brought exactly into gear with the other wheel and held firmly there by the bolt F′.

Belts, universal gearing, or other similar devices may be used in place of the bevel-gearing for giving the necessary movements to the conveyers; but the gearing described answers a good purpose.

I represents a block for holding the upper part of the foot of conveyer F, so that when the gearing K engages with J and the pin F′ is in place it will he held securely in position. (See Fig. 3.)

In Fig. 4 I have shown a suitable arrangement for the longitudinal conveyer when it is desirable to have it as low down near the bottom of the vessel as possible. It is supported by the rollers C^1, as in Fig. 1, and kept horizontal between the rollers C^1 C^1 by rollers D, the upper side being held down as low as required by rollers J′, which are made concave on the face, so as to allow the sand or grain to pass under them and over C^1 into an elevator, K′, or conveyer F.

When sand is to be carried, it is placed on the deck of the vessel, so that when unloading it may be shoveled through the openings B′ onto the horizontal conveyer C.

I claim as my invention—

In a sailing vessel or boat, a deck, B, provided with openings B′, in combination with a horizontal longitudinal conveyer, C, removable conveyer F, arranged at an angle thereto, as specified, and a suitable gearing for operating them, substantially as and for the purposes described.

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