June 16, 1925. 1,542,057

O. HOVDEN

PORTABLE COOLING, TURNING OVER, AND SACKING APPARATUS

Filed March 23, 1922

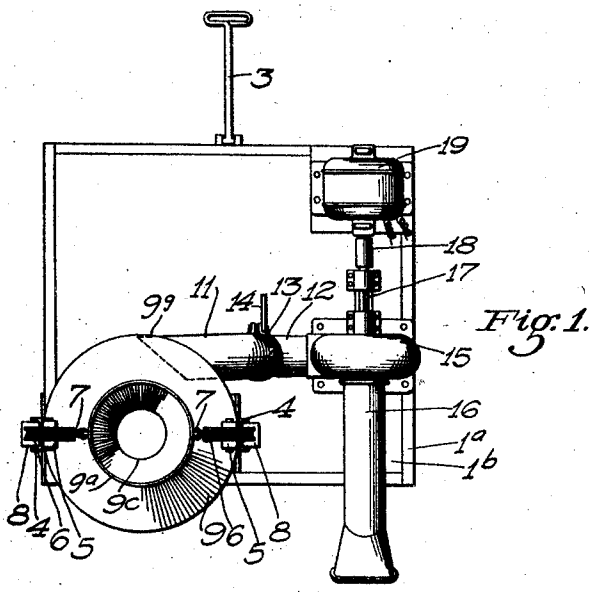

Fig. 1.

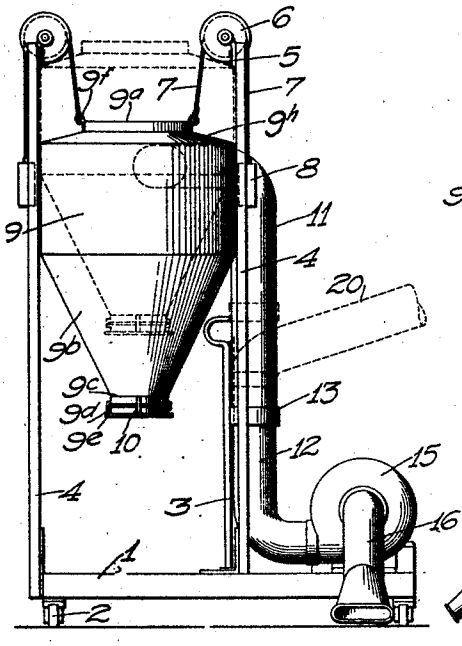

Fig. 2.

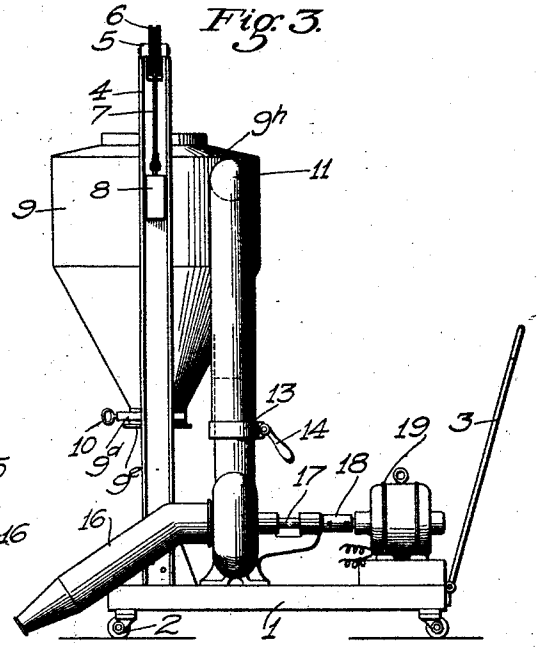

Fig. 3.

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Patented June 16, 1925. 1,542,057

UNITED STATES PATENT OFFICE.

OLAV HOVDEN, OF POINT LOMA, CALIFORNIA.

PORTABLE COOLING, TURNING-OVER, AND SACKING APPARATUS.

Application filed March 23, 1922. Serial No. 546,197.

To all whom it may concern:

Be it known that OLAV HOVDEN, a citizen of the United States, residing at Point Loma, in the county of San Diego and State of California, has invented a certain new and useful Portable Cooling, Turning-Over, and Sacking Apparatus, of which the following is a specification.

My invention relates to an apparatus for picking up substance from a floor or piles, cooling, turning-over and sacking the same and the objects of my invention are: First, to provide an apparatus of this class which is portable and therefore can be conveniently moved from one place to another; second, to provide an apparatus of this class which is so constructed that all parts of the floor of a building may be reached by the intake of my apparatus; third, to provide novel means for picking the material or products from the floor or piles and sacking the same; fourth, to provide novel means for taking the products from one pile, cooling, and carrying the same over and discharging the same onto another pile; fifth, to provide an apparatus of this class with a vertically adjustable storage hopper so that various sized receptacles and distributing means can be secured to its discharge end; sixth, to provide an apparatus of this class which can be readily secured to a larger stationary storage hopper; seventh, to provide a novelly constructed apparatus of this class, and eighth, to provide an apparatus of this class which is very simple and economical of construction, durable, easy to adjust and operate and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon which form a part of this application in which:

Figure 1 is a top or plan view of my apparatus; Fig. 2 is a side elevational view thereof showing by dotted lines the extreme upward position of a vertically adjustable storage hopper and showing by other dotted lines a pipe connected to the blower of my apparatus and leading to a stationary storage hopper not shown, and Fig. 3 is another elevational view taken at a right angle to that of Fig. 2.

Like characters of reference refer to similar parts and portions throughout the several views of the drawings.

The truck member 1, casters 2, draft member 3, upright members 4, brackets 5, sheaves 6, cables 7, weights 8, storage hopper 9, gate 10, conductors 11 and 12, take-up band 13, lever 14, blower 15, suction nozzle 16, shaft 17, coupling 18, motor 19 and conductors 20 constitute the principal parts and portions of my apparatus.

The truck member 1 consists preferably of a frame 1^a and a bottom 1^b (see Fig. 1) within said frame. Said truck member is provided with casters 2 secured to the lower side thereof and is also provided with a draft member secured to one side thereof to facilitate the handling or moving of the truck. Two upright members preferably structural channels spaced apart from each other are secured at their lower ends to the truck member 1. Said upright members are provided at their upper ends with brackets 5 secured thereto adapted to receive the sheaves 6 which are revolubly mounted therein. The storage hopper 9 is cylindrical in shape and provided with a central opening 9^a at the upper portion thereof and with a cover portion 9^h thus providing a cyclone hopper and it is provided with a funnel shaped portion 9^b. The lower end of said funnel shaped portion is provided with an opening 9^c and guide slots 9^d adapted to receive the gate member 10 extending inwardly under said opening 9^c of said funnel shaped portion. An annular flange 9^e is also provided at the lower end of said storage hopper to continuously assist in supporting the upper open end of sacks used for packing the products. Said storage hopper is guided between the upright members 4 and suspended by the cables 7 secured to the eye members 9^f at the upper portion of said storage hopper and passes over the sheaves 6. Said cables 7 are provided with counterweights 8 at their free ends to assist the operator in moving the storage hopper up or down. Another hole 9^g is provided in the upper end of the cylinder portion of said storage hopper adapted to receive the conductor 11 which extends substantially tangentially therein and the other end of said conductor extends

downwardly and is provided at its lower end with a take-up band 13 and a lever 14 secured thereto adapted to contract said take-up band 13 and secure said conductor 11 to the conductor 12, the upper end of which is shiftably mounted therein. The conductor 12 is directly connected with the blower 15 which is driven by the shaft 17 coupled with the motor shaft of the motor 19 by the coupling 18 mounted on said truck member. The suction end of said blower is provided with an elongated suction nozzle 16 extending outwardly from said blower and downwardly toward the floor level.

It is obvious that with the apparatus I have shown I have provided an efficient means for picking or sucking up the product to be sacked through the suction nozzle 16, passing the same through the blower 15 and forcing the same through the conductors 12 and 11 into the cyclone tank or storage hopper 9, thus cooling the product as it passes through the conductors dropping the same at the bottom or lower end of said storage hopper and permitting the air mixed with said product by said operation to escape through the upper opening 9^a of said hopper.

It will be noted that since the conductor 11 is shiftable over the lower conductor 12, that the hopper 9 can be conveniently shifted vertically between its limits and secured in said position by the take-up band 13 and the lever 14 clamped to the upper portion of the conductor 12. It will be further noted that when the hopper 9 is in an extreme upward position (as shown by dotted lines in Fig. 2 of the drawings) that the conductor 11 is disengaged from the pipe 12, as also shown by the dotted line. Another conductor 20 leading to any other convenient place or stationary hopper is adapted to be secured to the upper free end of the pipe 12 (as shown by the dotted lines in Fig. 2).

Though I have shown and described a particular construction, combination and arrangement of parts and portions I do not wish to be limited to this particular construction, combination and arrangement but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In an apparatus of the class described, a truck, a suction nozzle secured to said truck, spaced from and obliquely with the floor, a suction producing means secured to said suction nozzle, support members extending upwardly from said truck, a cyclone hopper adjustably suspended from said support member and conductors communicating with said suction producing means at one end and tangentially with the cyclone hopper at the other.

2. In an apparatus of the class described, a truck, a suction nozzle secured to said truck, spaced from and obliquely with the floor, a suction producing means secured to said suction nozzle, support members extending upwardly from said truck, a cyclone hopper adjustably suspended from said support member and conductors communicating with said suction producing means at one end and tangentially with the cyclone hopper at the other, and a gate secured to the lower open end of said hopper.

3. In an apparatus of the class described, a truck, a suction nozzle spaced from the floor and secured to said truck, a suction means communicating with said suction nozzle, support members extending upwardly from said truck, a cyclone hopper adjustably mounted on said support members and adjustable conductors secured to the suction producing means at one end and to the upper portion of the cyclone hopper at the other end.

4. In an apparatus of the class described, a truck, a suction nozzle secured to said truck, a suction means communicating with said suction nozzle, support members extending upwardly from said truck, a cyclone hopper adjustably mounted on said support members and adjustable conductors secured to the suction producing means at one end and to the upper portion of the cyclone hopper at the other end, and a gate secured to the lower open end of said cyclone hopper.

5. In an apparatus of the class described, a truck provided with casters and a draft member, a blower mounted thereon, a means for driving said blower, a suction nozzle spaced from the floor at its nozzle end and connected to the suction opening of the blower at its other end, upright members spaced apart from each other and secured to the truck at their lower ends, sheaves revolubly mounted at the upper end of said upright member, a cyclone hopper provided with openings at its upper and lower ends, suspended between said upright members, counterweights, cables connecting the upper part of said cyclone hopper with said counterweights and extending over said sheaves and adjustable conductors communicating with the blower end of the blower at one end and the cyclone hopper at the other end.

In testimony whereof, I have hereunto set my hand at San Diego, California, this 16th day of March, 1922.

OLAV HOVDEN.