J. F. DORNFELD.

MALT HOUSE.

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Fig. 1.

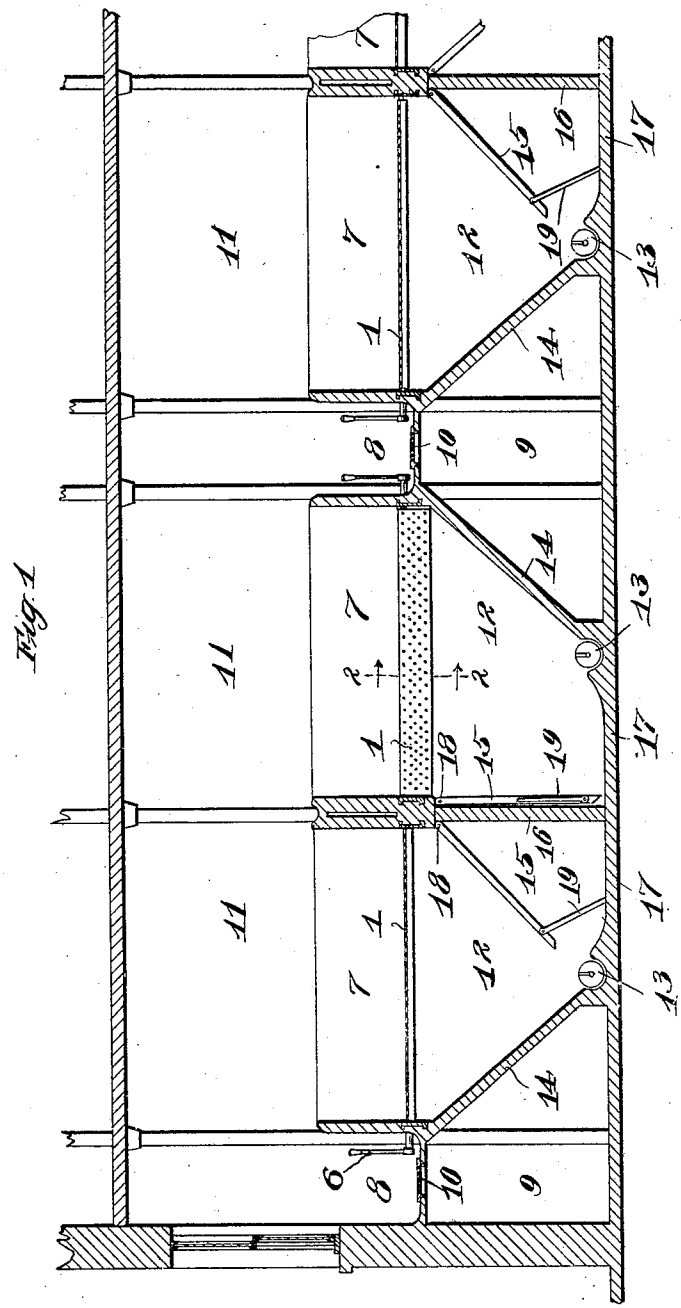
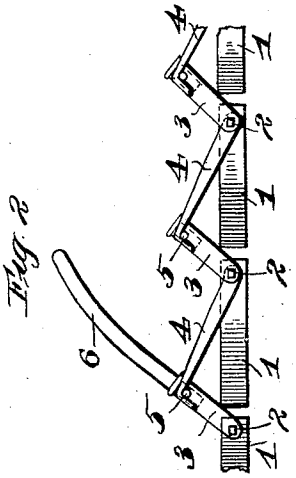


Fig. 2.



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MALT-HOUSE.

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To all whom it may concern:

Be it known that I, JOHN F. DORNFELD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Malt-Houses, of which the following is a specification.

This invention relates to that type of malt house in which the malt is germinated upon floors, and one of its objects is to provide mechanical means for removing the germinated malt.

Another object is to arrange the parts of the building and the apparatus therein so as to facilitate thorough cleaning thereof.

The invention also relates to the other improvements in malting apparatus hereinafter set forth.

The accompanying drawings are largely illustrative, Figure 1 being a vertical section through a malt house embodying the features of my invention. Fig. 2 is a fragmental transverse section through the malting floor, illustrating the means for holding the floor sections in operative position and for dumping said sections.

The embodiment selected for illustration comprises a dumping floor, means for passing at temperated air through the grain, means for conducting away the exhaust air, and means for withdrawing the germinated grain.

In the drawings I have illustrated a perforated malting floor comprising parallel sections 1 pivotally mounted upon shafts 2, each shaft having a socketed arm 3 fixed thereto. A hook 4 rotatably mounted upon an adjacent shaft is adapted to engage a stud 5 upon said crank arm for holding the floor-section in operative position. Each section is dumped in turn by disengaging the hook 4 with the crank-arm 3. A lever or bar 6 adapted to be inserted into the socketed crank arm 3 provides means for restoring the sections to operative position.

The malting floor just described is a common form of floor. Any other well known or preferred construction may be employed in lieu thereof.

In Fig. 1 I have represented the malting floor as divided into longitudinal sections 7 of convenient size for operation, each section having along one side thereof an aisle or gangway 8. Below said aisle is a tunnel 9 into which, properly attemperated air is admitted. The attemperated air passes through gratings 10 placed in the floor of the gangway and into the space 11 above the dumping floor, and is drawn through the grain lying upon said floor and through an exhaust air tunnel 12 located directly below the dumping floor, by means of an exhaust fan (not shown) or by any other suitable means.

Below each longitudinal section of the malting floor I place a conveyer of any suitable type, such as a screw conveyer 13. For directing the malt into the conveyer 13 I provide inclined walls or guides 14 and 15, the lower ends of which converge in hopper fashion so as to direct the malt into the conveyer. One of said inclined members may be fixed in position and constitute one side wall of the exhaust air tunnel 12. 16 is the other side wall of said tunnel, and 17 the floor thereof. In order that workmen may enter the tunnel 12 when the latter and the dumping floor require cleaning, I preferably arrange the guide 15 so that it may be folded into a vertical position against the wall 16. The upper end of the guide 15 is pivotally supported at 18, the lower end of said guide being held in proper position to direct the malt into the conveyer 13, by legs 19. When the exhaust air tunnel 12, the dumping floor, and the conveyer 13 are to be cleaned, the legs 19 are turned up to permit of dropping the guide 15 into a vertical position, as indicated at one point in Fig. 1.

In operation, the grain to be germinated is placed upon the malting floor and attemperated air admitted into the cool-air tunnel 9 and drawn through the grain upon the floor. When the grain has been properly germinated, the floor-sections 1 are tilted to dump their contents into the conveyer 13, the inclined guides 14 and 15 directing the malt into said conveyer.

The malting floor, the exhaust air tunnel 12 with the guides therein, and the conveyer 13 require to be thoroughly cleaned at stated intervals. The exhaust air tunnel provides a place within which the workmen have convenient access to the floor above, the conveyer and the walls and floor of the tunnel, thus facilitating a thorough cleansing of the entire apparatus.

It will be understood that various changes in the construction herein shown and in the method of using the apparatus may be made without departing from the scope of the invention.

I claim as my invention:

1. A malt house comprising a dumping floor, an air tunnel below said floor, a conveyer in said air tunnel, and means in said tunnel for directing the malt into said conveyer, a portion of said directing means being withdrawable out of operative position.

2. A malt house comprising a dumping floor, an air tunnel below said floor, a conveyer in said tunnel, a stationary inclined wall extending from one side of said floor to the conveyer, and a withdrawable wall adapted to extend from the other side of said floor to said conveyer.

3. A malt house comprising a dumping floor, a conveyer below said floor, and means for directing the malt into said conveyer, a portion of said directing means being withdrawable out of operative position.

4. A malt house comprising a malting floor, an air tunnel below said floor, a conveyer within said air tunnel, two inclined guides for directing the malt into said conveyer, one of said inclined guides being pivotally supported at its upper end, and withdrawable means for holding said last mentioned guide in an inclined position.

5. A malt house comprising a dumping floor divided into longitudinal sections, a gangway extending beside each of said sections, a cool-air tunnel below said gangway, the floor of said gangway having openings therein, and said gangway communicating with the space above the floor, an exhaust-air tunnel below each longitudinal section of said floor, a conveyer below each longitudinal section of said floor, and means for directing the malt into said conveyer.

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Witnesses:

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