No. 683,327. Patented Sept. 24, 1901.

W. H. PRINZ.

APPARATUS FOR STEEPING AND WASHING GRAIN.

(Application filed Feb. 11, 1901.)

(No Model.) 2 Sheets—Sheet 1.

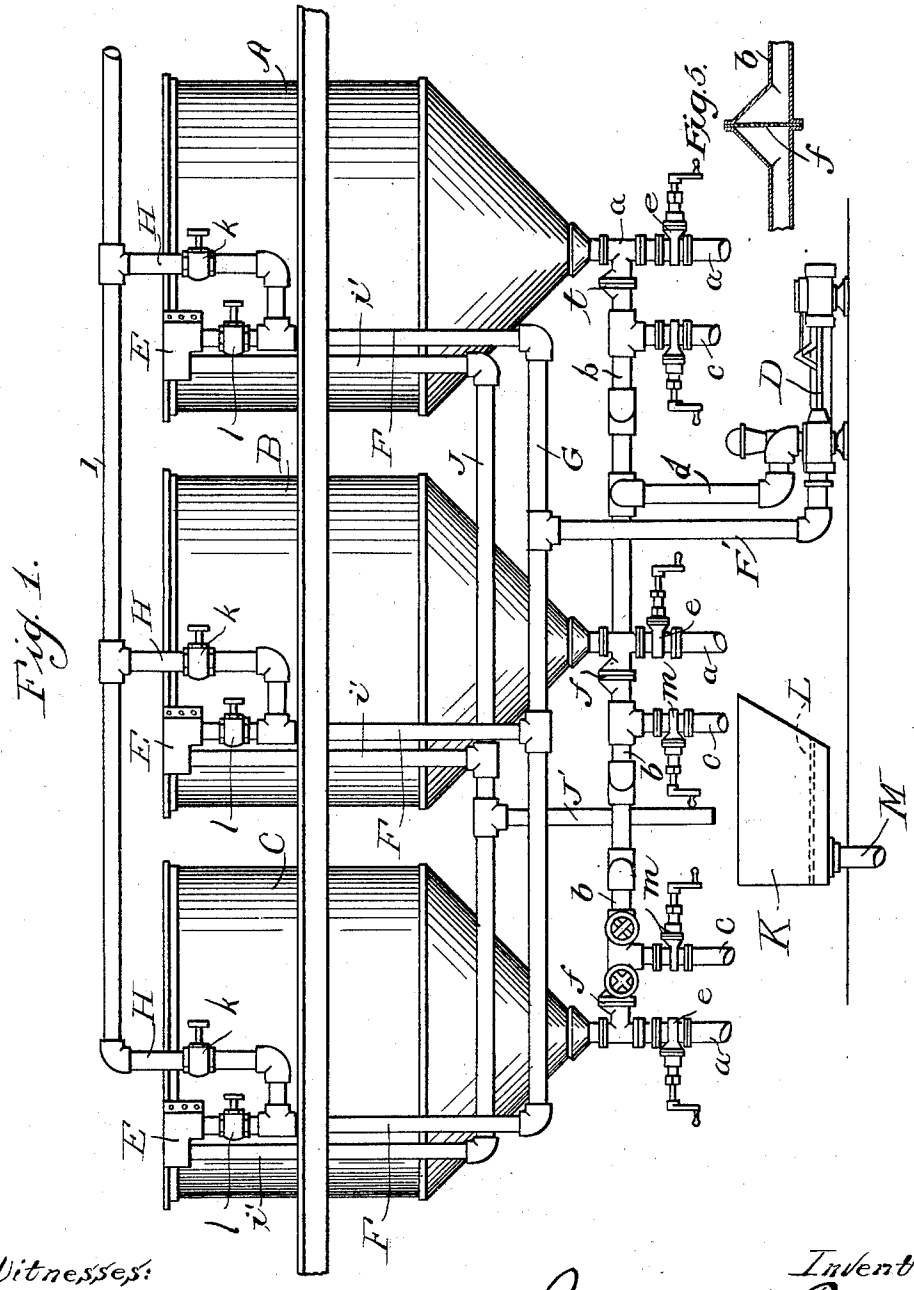


Fig. 1.

Fig. 5.

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Fig. 2.

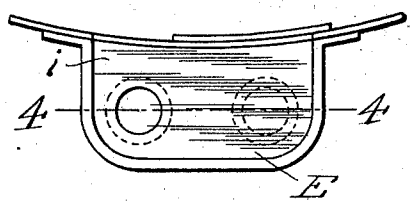


Fig. 3.

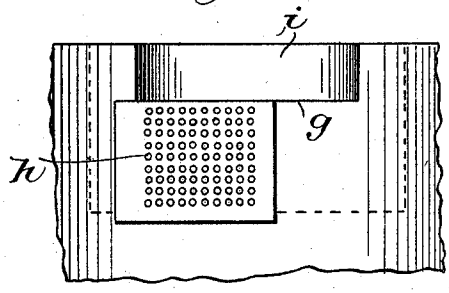
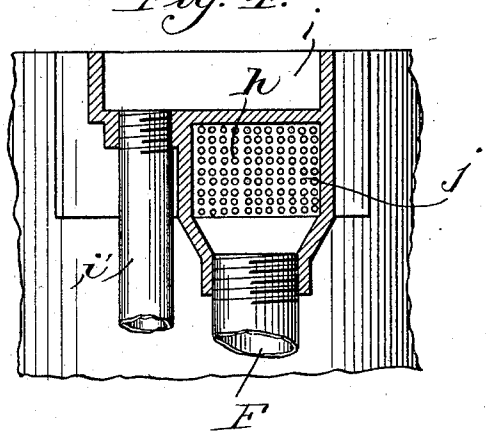


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. PRINZ, OF AUSTIN, ILLINOIS, ASSIGNOR TO THE SALADIN PNEUMATIC MALTING CONSTRUCTION CO., OF CHICAGO, ILLINOIS.

APPARATUS FOR STEEPING AND WASHING GRAIN.

SPECIFICATION forming part of Letters Patent No. 683,327, dated September 24, 1901.

Application filed February 11, 1901. Serial No. 46,882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. PRINZ, a citizen of the United States, residing at Austin, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for Steeping and Washing Grain; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a novel construction in an apparatus for steeping and washing grain, the object being to provide an apparatus of this character in which the grain is kept in constant agitation, the water in constant circulation, and part of such water, together with diseased germs, is removed and fresh water introduced to take the place of the water withdrawn; and it consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a view in elevation, showing an apparatus constructed in accordance with my invention. Fig. 2 is a detail top elevation of the overflow device. Fig. 3 is an elevation of same looking from the inside of the steep-tank. Fig. 4 is a section of same on the line 4 4 of Fig. 2. Fig. 5 is a detail sectional view showing a strainer interposed in one of the pipes.

Referring now to said drawings, A, B, and C indicate steep-tanks which are connected at their lower ends with pipes *a*, which in turn are connected with pipes *b*, connecting said pipes *a* with waste-pipes *c* and water-supply pipe *d*. Said pipes *a* are provided with valves *e* below the connections with said pipes *b*, so that the contents of the tanks can be drawn off directly through said pipe *a*. A strainer *f* is interposed in pipe *b* between pipes *a* and *c*, so that water can be drawn off from said tanks without withdrawing grain therefrom. Said supply-pipe *d* is connected with the delivery end of a pump D, the water from which passes through pipes *d* and *b* and thence through pipes *a* into the lower ends of steep-tanks, thereby agitating the grain therein. The water-level in said steep-tanks is regulated by means of an overflow E, consisting of a small casing secured to the outer wall of each tank at its upper end and communicating with the latter through openings *g* and *h*. Said overflow E is divided into two chambers *i* and *j*, the former of which is fed from said opening *g* and the latter from said opening *h*. Said opening *h* is covered by a strainer to exclude grain from said chamber *j*, so that only water enters the latter. A pipe F connects said chamber *j* of each of said overflows E with a pipe G, which in turn is connected with the suction end of the pump D by means of a pipe F'. Pipes H connect each of said pipes F with a water-supply pipe I, through which fresh water is constantly introduced into the system. A valve *k* is interposed in each of said pipes H and a valve *l* in each of said pipes F between said overflow E and the connection with said pipes H. The chamber *i* of each of said overflows E is connected, by means of a pipe *i'*, with a waste-pipe J, leading to a tank K, having a false perforated bottom L, adapted to catch the grain, while allowing the water to run off into the sewer through pipe M. Diseased or dead grain always floats on the surface of the water, and such grain is released by agitating the mass and permitted to reach the surface, whence it is carried by the water into chamber *i* of said overflow E, and thence into said tank K, where it is caught. The water thus withdrawn from the system is replaced by fresh water from the supply-pipe I. In this manner the entire steep-water is gradually renewed, which is advantageous for several reasons, while at the same time the presence of diseased germs in the malt is obviated, thus producing a very high grade of malt.

When it is desired to entirely renew the water in the tanks, the valves *m* in pipes *c* are opened, thus withdrawing the water and leaving the grain in the tanks. When it is desired to withdraw the grain, the valves *e* are opened, thus withdrawing the grain, together with the water.

I claim as my invention—

1. In an apparatus for steeping grain, the combination with a steep-tank, an overflow at its upper end, and a pump connected at its suction end with said overflow and at its

delivery end with the lower end of said tank to produce circulation in said tank, of an overflow on said tank above said first-named overflow and adapted to receive water and grain from said tank, and connection between said last-named overflow and a receptacle adapted to receive grain carried off through said last-named overflow.

2. In an apparatus for steeping grain, the combination with a steep-tank, an overflow at its upper end, and a pump connected at its suction end with said overflow and at its delivery end with the lower end of said tank to produce circulation in said tank, and connection between said pump and a source of supply of fresh water, of an overflow on said tank above said first-named overflow and adapted to receive water and grain from said tank, and connection between said last-named overflow and a receptacle adapted to receive grain carried off through said last-named overflow.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. PRINZ.

Witnesses:
RUDOLPH WM. LOTZ,
E. F. WILSON.