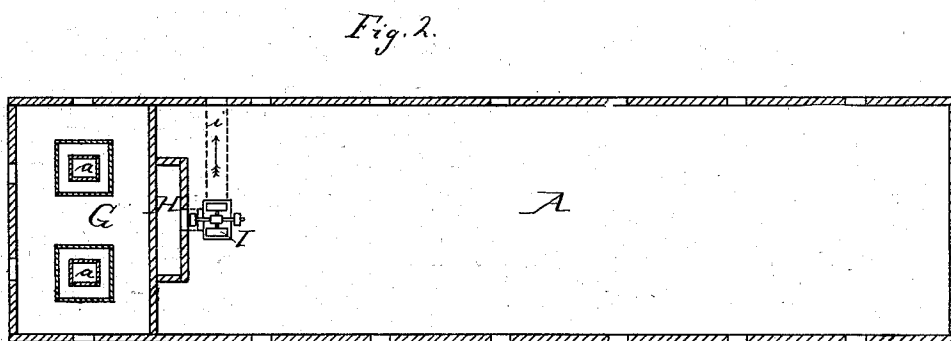
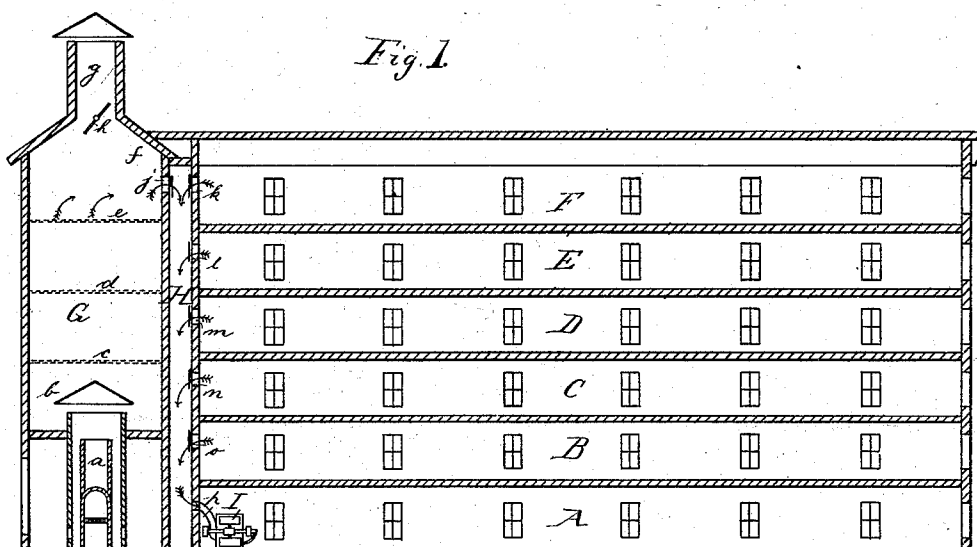


(No Model.)

L. C. HUCK.
MALT HOUSE.

No. 257,586.

Patented May 9, 1882.



WITNESSES—
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UNITED STATES PATENT OFFICE.

LOUIS C. HUCK, OF CHICAGO, ILLINOIS.

MALT-HOUSE.

SPECIFICATION forming part of Letters Patent No. 257,586, dated May 9, 1882.

Application filed March 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, LOUIS C. HUCK, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Malt-Houses; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which
10 form a part of this specification.

This invention relates to devices and arrangements in malt-houses for accelerating the drying process of the malt after it has germinated to the desired extent, and for ventilating the several floors in the building on
15 which the steeping, couching, and flooring of the barley are performed; and it consists in a vertical flue between the malt-house floors and the malt-kiln, which communicates through
20 valves or registers with the upper compartment of the malt-kiln and with the several floors of the malt-house, such flue connecting at any convenient point with an exhaust-fan that will create a strong suction and will ventilate such compartments independently of
25 any natural draft, all as more fully hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 represents a longitudinal vertical section of a
30 malt-house having my improvements, and Fig. 2 a ground plan of the same.

Like letters designate corresponding parts in all the figures.

A, B, C, D, E, and F denote the several
35 stories or floors of a malt-house; and G is the malt-kiln house, in which *a a* are the furnaces for heating the air that is to circulate through the different malt-kiln floors; *b*, the heating-room; *c*, *d*, and *e*, the three malt-kiln floors,
40 made of perforated iron, and *f* the dome, with a ventilator-stack, *g*. This ventilator-stack *g*, I provide with a valve, *h*, which is made in the style of a damper, and by which the entire opening can be closed.

45 H is a vertical flue or shaft between the malt-house and the kiln, and I an exhaust-fan that is placed on the lower floor, A, of the building, or in any other place convenient for driving it from the steam-engine. The
50 suction-opening of this fan is connected with the flue H by a pipe, *p*, and its discharge-

opening connects with a duct, *i*, that leads outside of the building. The flue H communicates through a vent, *j*, with the compartment above the upper floor, *e*, in the malt-kiln, 55 and through vents *k l m n o* with the several stories in the malt-house. Each of these vents *j k l m n o* is provided with a shutter or register for regulating the size of the opening or for closing the vent entirely. 60

For drying malt I can either open the valve *h* and close the vent *j*, and thus utilize the natural draft whenever the climatic condition— 65 as cold and dry weather—will produce a draft strong enough, or by closing the valve *h* and all the vents communicating with the malt-house floors and only opening the vent *j*. I can produce a strong suction by the exhaust-fan, that will draw away and carry off the moisture from the malt-kiln floors as fast as it 70 is taken up by the warmed air circulated through the body of the malt, thus accelerating the drying of the malt, and making the process entirely independent of the climatic changes that would affect the natural draft of 75 a chimney or ventilator-flue.

Any of the malt-house floors can be ventilated by opening the vent that communicates with flue H and a window at the opposite end 80 of such floor, when in a few minutes the foul and putrefied air will be removed and replaced by fresh air, which is of great importance during the malting process.

For producing a good quality of malt it is essential not only that during the process of 85 germination the surrounding air be pure and kept at the proper temperature and free of moldy matter, but that the drying process should be accomplished in as short a time as possible and without the use of excessive heat. 90 For this purpose it is necessary that the air that has passed through the malt and is impregnated with moisture be carried off by a strong suction as fast as it rises. With my arrangement, as will be noticed, I can utilize the 95 natural draft through the ventilator-stack as long as such draft is strong enough; or I can produce a strong artificial draft by means of the exhaust-fan, and thus I am enabled to produce a uniform and healthy quality of malt, free 100 of acidity, at all seasons of the year.

What I claim is—

1. The malt-kiln house G, having ventilator-stack *g*, with damper *h*, in combination with flue H, exhaust-fan I, and vent *j*, all arranged substantially in the manner and for the purpose set forth.

5 2. In malting establishments, the vertical flue H, connected with a suction-fan and communicating through vents with the several compartments above the malt-kiln floors, and with

all the growing-floors of the malt-house, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

LOUIS C. HUCK.

Witnesses:

F. W. KASEHAGEN,
W. C. ADAMS.