C. S. MARPLE.

Manufacture of Flour.

No. 200,621. Patented Feb. 26, 1878.

Fig. 1

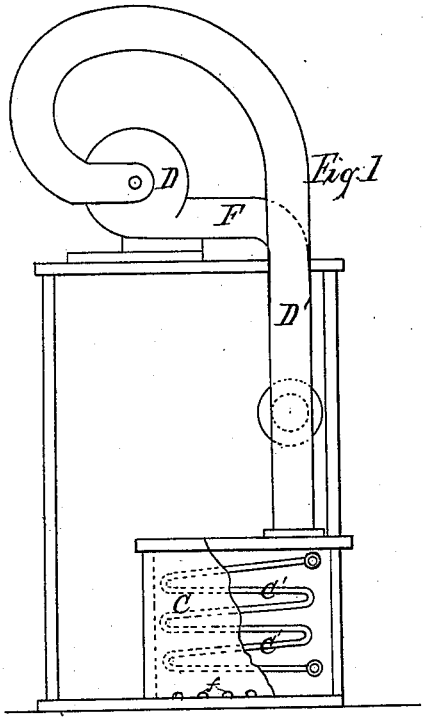


Fig. 4

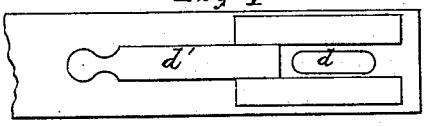


Fig. 2

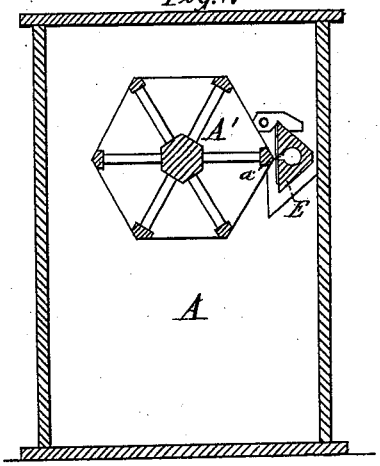


Fig. 3

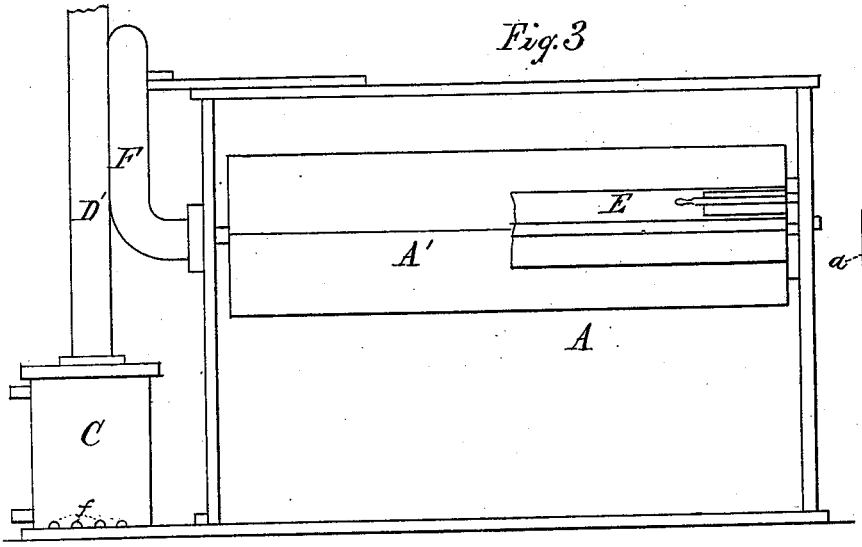
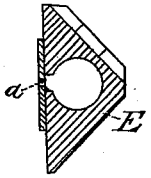


Fig. 5



Witnesses

G. H. Hoffman

N. Cowles

Inventor

Christian S. Marple

By Gridley & Shesburne

Attys

UNITED STATES PATENT OFFICE.

CHRISTIAN S. MARPLE, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN MANUFACTURE OF FLOUR.

Specification forming part of Letters Patent No. **200,621**, dated February 26, 1878; application filed October 11, 1877.

To all whom it may concern:

Be it known that I, CHRISTIAN S. MARPLE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bolting Flour; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 represents an end elevation of a flour-bolt embodying my said invention. Fig. 2 represents a transverse sectional elevation of the same. Fig. 3 represents a side elevation of the same, with the front wall of the bolting-chest and the fan-case removed. Fig. 4 represents an enlarged front view of the air-distributer, and Fig. 5 represents a transverse section of the same.

Like letters of reference indicate like parts.

The object of my invention is to provide a means of regulating the temperature of the air within the bolting-chest, and at the same time causing a series of currents or jets of heated air to pass against and through the bolting-cloth, whereby the fine impurities, which would adhere to the cloth or pass through the meshes thereof with the flour, are caused to adhere to each other, so as to pass off with the offal, and thereby produce a more free action of the bolt and a more uniform and better grade of flour.

To that end my invention consists in the arrangement of the mechanism and in the process, as hereinafter more fully described and claimed.

In the drawing, A represents the bolting-chest, and A′ the bolting-reel, which is made in the usual form and journaled at its ends to the end walls of the chest, so as to freely revolve. C represents a hot-air chamber, which is located at a point near the bolting-chest, and is provided internally with a series of coiled steam-pipes, C′, which communicate with a steam-boiler, or with other suitable steam-generator. (Not shown.) D represents an ordinary blast-fan case, which is located at a point near the bolting-chest, and is provided with fans which receive their motion from any suitable motor. D′ is an ordinary suction-pipe, which communicates at one end with the hot-air chamber C, and at the opposite end with the fan-case D. This pipe is attached to the edge of the fan-case opposite to the exhaust-opening, and extends along the side of the case to the center thereof, as shown in Fig. 1, and communicates with the interior of the case in the usual manner.

E is the air-distributer, which is arranged longitudinally within the bolting-chest in close proximity to the bolting-reel, and in a plane parallel therewith, and extends the entire length of the reel, and is provided with a series of exit air-openings, *a*, formed through the side wall thereof adjacent to the bolting-reel, as shown in Figs. 2 and 5.

F is a blast-pipe, which communicates at one end with the fan-case, and at the opposite end with the air-distributer E. This air-distributer E is provided at its end opposite to the pipe F with an escape-opening, *d*, over which is fitted a slide, *d′*, which is so arranged as to admit of being moved in the direction of its length to open or close the opening *d*, the object of which is to allow the deposit of material which may be accumulated within the distributer to be forced therefrom through the said opening by the air-current from the pipe F.

The arrangement of said parts is such that as motion is imparted to the fan the air is drawn into the air-chamber C through a series of inlets, *f*, and is heated by the radiation of heat from the coil C′, when it is drawn through the pipe D′ into the fan-case D, and forced through the pipe F into the air-distributer E, from whence it escapes in fine jets through the openings *a* against and through the bolting-cloth on the reel A′.

The temperature of the air within the air-chamber may be regulated, so as to produce a regular and uniform temperature of the air in the bolting-chest, by increasing or diminishing the amount of steam passing through the coil C′.

It is a well-established fact that it is more difficult to produce a good grade of flour in cold damp weather than in warm dry weather, the difficulty arising from the effect of the atmosphere upon the meal during the process of bolting. If cold and damp, the glutinous mat-

ter and fine fibrous impurities within the meal will adhere to the bolting-cloth, so as to partly fill the meshes thereof, when the weight of the meal within the bolt will force the glutinous matter and fine fibrous impurities from and through the meshes of the bolting-cloth, so as to cause them to mingle with the flour.

With my invention this difficulty is entirely overcome, for the jets of heated air are discharged against the outer surface of the bolting-reel, producing a uniform degree of heat within the bolting chest and reel, and so as to absorb the moisture in the glutinous matter, and thereby preventing it from adhering to the bolting-cloth, and at the same time causing the fine fibrous impurities to adhere to each other, so as to pass off with the offal.

I am aware that currents of cold air have been forced against the lower surface of bolting-screens and against the outer surface of bolting-reels, which do not change the temperature of the air in the bolting-chest; and such I do not claim; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the bolting-reel, of the air-distributer E, pipes D′ and F′, the fan and hot-air chamber C, substantially as and for the purpose specified.

2. The process herein described of regulating the temperature of the air within the bolting-chest, and preventing the glutinous matter and fine fibrous impurities from adhering to the bolting-cloth, by introducing jets or currents of heated air into the bolting-chest, and in direct contact with and against the outer surface of the bolting-cloth and through the meshes thereof, substantially as specified.

The above specification of my invention signed by me this 6th day of October, 1877.

CHRISTIAN S. MARPLE.

Witnesses:
N. H. SHERBURNE,
G. R. HOFFMAN.