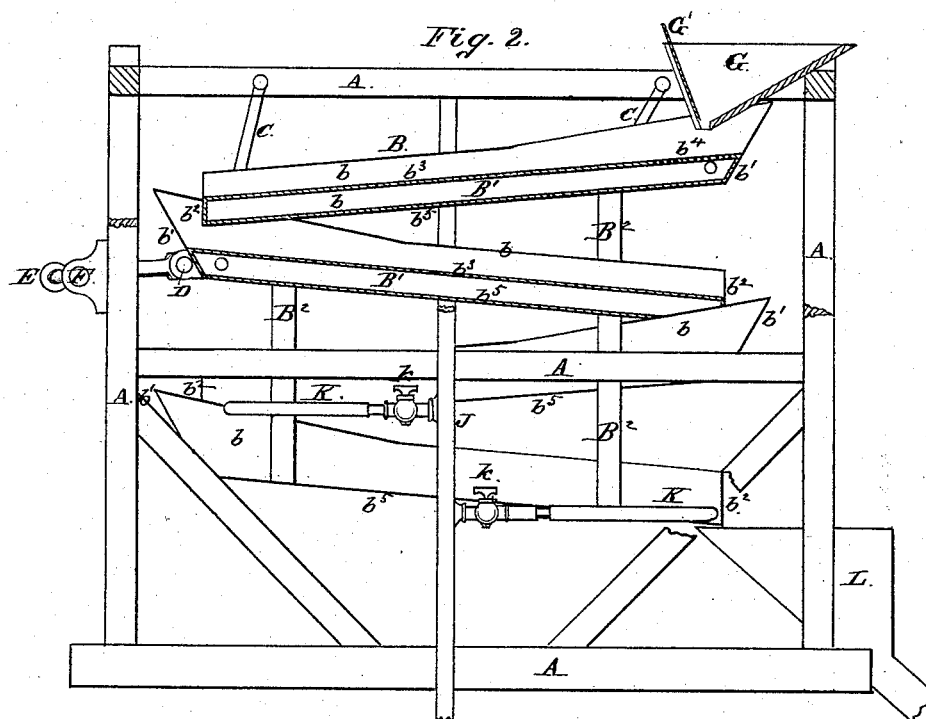
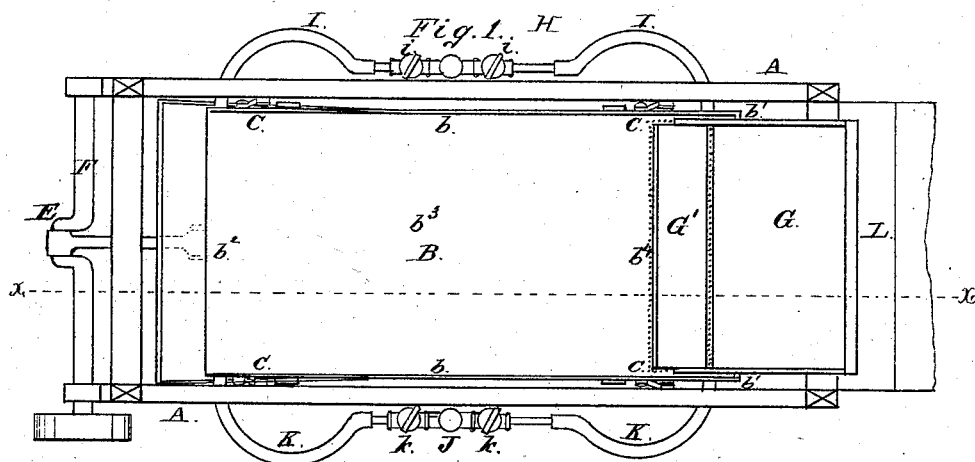


St. P. BROOKE.
Grain Steamer and Drier

No. 217,053.

Patented July 1, 1879.



Witnesses:
Geo. H. Knight.
Walter Allen

Inventor:

St Pierre Brooke
By Knight Bros.
Atty.

UNITED STATES PATENT OFFICE

ST. PIERRE BROOKE, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN GRAIN STEAMER AND DRIER.

Specification forming part of Letters Patent No. **217,053**, dated July 1, 1879; application filed December 17, 1878.

To all whom it may concern:

Be it known that I, ST. PIERRE BROOKE, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Grain Steamers and Driers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My improvement has one or more inclined shoes containing a steam-chamber for heating. A portion of the top, at the upper end, is covered with gauze or perforate metal, to allow the escape of steam to heat and dampen the wheat or other grain, and the remainder of the top is of plate metal, so that the grain is dried upon the surface when passing over the latter part.

Above the perforate part of the shoe-top is a hopper to contain the grain to be treated, and this is to be supplied with a regulating-slide to limit the feed.

The shoes are hung to a frame and have end-wise reciprocation by connection with a crank on a rotating shaft.

Steam and air pipes supplied with cocks or valves connect with the steam-chambers by means of flexible pipes.

My improvement consists in the combination of parts above described.

In the drawings, Figure 1 is a top view of the machine. Fig. 2 is a side view, partly in section, at line *x x*, Fig. 1.

A is the frame-work, to which the shoe or shoes B are suspended by links C, so as to admit of reciprocatory motion. This motion is imparted by connection D with a crank, E, on rotating shaft F.

The shoe, where there is only one, or the upper shoe, where there are more than one, has sides *b b*, back *b¹*, front *b²*, top *b³ b⁴*, and bottom *b⁵*, forming a steam-chamber, B¹, for the heating of the shoe and for the dampening of the wheat or other grain. The dampening takes place by the steam that escapes through the perforate portion *b⁴* beneath the hopper G.

The shoe is inclined so as to cause the grain to move from the back *b¹* toward the front *b²*, from which latter end it is discharged to any suitable receptacle, if there is a single shoe,

B, or into the upper end of the shoe beneath if there be more than one.

Each shoe, where there are more than one, may be placed beneath another, as shown, and in this case each shoe would incline in the opposite direction to the one above it.

The back *b¹* and sides *b* extend above the top *b³ b⁴*, so as to prevent the escape of grain at those places.

In all shoes except the top one the top and sides are flaring at the back end to receive the grain without waste from the shoe above.

H is the steam-pipe, having flexible branches I leading to each steam-chamber. Each branch has a valve or cock, *i*, to regulate the supply of steam.

J is the escape-pipe for air, steam, and the water of condensation. This pipe J is in communication with the lower part of the steam-chamber by flexible pipes K, supplied with regulating valves or cocks *k*.

Only the upper shoe has a perforate portion, *b⁴*, for the steaming only takes place at the beginning of the process, and the rest is devoted to heating the grain and drying off the surface moisture.

The hopper has a slide, G', to regulate the amount of grain passing through the apparatus.

I have shown four shoes all attached together by bars B², and all moved by the same crank E; but it is evident that each might be connected to a separate crank where there is more than one shoe.

The operation is as follows: The grain is placed or fed continuously into the hopper, and is in contact with the perforate plate or gauze *b⁴*, where it is dampened and heated by the steam ascending from the chamber B¹. After being dampened it passes over the top of the shoe or shoes B, superfluous moisture is dried up, and the grain heated.

By means of the supply-cocks *i* and exhaust-cocks *k*, the heat of the shoes can be nicely regulated, and also the amount of steam escaping through perforate part *b⁴*.

L is the discharge-spout to carry the grain from the machine.

I claim as my invention—

1. One or more reciprocating inclined steam-

shoes, B, having steam-chamber B¹, formed by the bottom and upper plates of said shoes, the upper plate of the top shoe being perforated at its rearmost end and of plate metal at its remaining portion, to permit of the grain being steamed and dried at one operation in its continuous journey along said shoe, substantially as set forth.

2. The combination, with the steam-shoes B,

the top one being perforated at its upper end, of the flexible steam and exhaust connections I and K, having valves or cocks *i*, and escape-pipe J, having regulating-valves *k*, substantially as set forth.

ST. PIERRE BROOKE.

Witnesses:

SAML. KNIGHT,

GEO. H. KNIGHT.