F. MELKERSMAN.

DRYING AND PURIFYING STARCH BY CENTRIFUGAL ACTION.

No. 195,718. Patented Oct. 2, 1877.

Fig 1

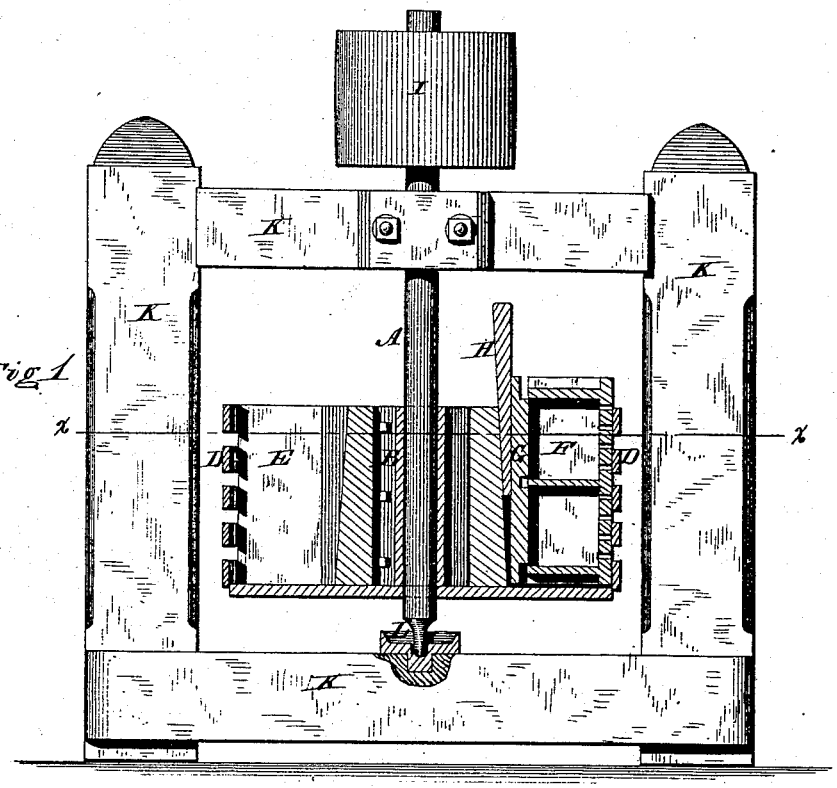


Fig 2.

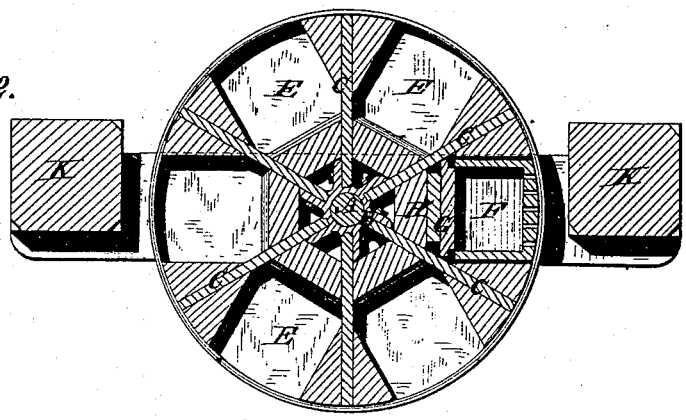
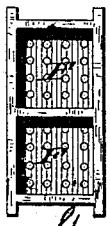


Fig 3.

Fig 4.



Witnesses.

Harry King

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UNITED STATES PATENT OFFICE.

FREDERICK MELKERSMAN, OF ST. CHARLES, MISSOURI, ASSIGNOR OF ONE-HALF HIS RIGHT TO THOMAS KINGSFORD, OF OSWEGO, NEW YORK.

IMPROVEMENT IN DRYING AND PURIFYING STARCH BY CENTRIFUGAL ACTION.

Specification forming part of Letters Patent No. **195,718**, dated October 2, 1877; application filed August 1, 1877.

To all whom it may concern:

Be it known that I, FREDERICK MELKERSMAN, of St. Charles, in the county of St. Charles and State of Missouri, have invented certain new and useful Improvements in Machinery for Drying and Purifying Starch; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of the frame, the centrifugal drying-cylinder being shown in vertical central section. Fig. 2 is a horizontal section of the frame and cylinder on line *x x* of Fig. 1. Fig. 3 is a side elevation of the box-cover, showing the projections which enter the compartments of the box. Fig. 4 is an elevation of open side of the box for the reception of the starch, showing the perforations in its outer side.

The same letter indicates the same part in all the figures where it occurs.

The object of my invention is to facilitate and improve the operation of drying and purifying starch while in the process of manufacture.

The nature of the invention consists in subjecting the moist starch in cloth-lined perforated boxes to the action of centrifugal force, by which the water and impurities are rapidly and effectually expelled, as hereinafter more fully set forth.

In the drawing, K marks a stout frame, in which turns a vertical shaft, A, resting in a step, L, in the lower part of the frame. The shaft A has a pulley, I, attached to its upper end, by means of which it is driven by a band from a prime mover. A centrifugal cylinder is attached to shaft A by the cast-iron hub B, to which the wooden arms C of the cylinder are bolted.

The cylinder is provided with receptacles or compartments E E E, &c., of proper size to receive the starch-boxes F. These boxes are perforated on their outer side, which corresponds with the periphery of the cylinder, and are provided with covers G, (see Fig. 3,) which fit their inner or open sides. These covers have projections on them, which enter the compartments of the box as the starch with which they are filled gradually shrinks in size by the expulsion of moisture, as hereinafter described.

Keys or wedges H are inserted behind the covers G of the boxes F, to drive them home as the contents of the boxes shrink in bulk.

The cylinder is bound by a number of hoops or bands, D, placed at a sufficient distance apart to allow of the free escape of water through the perforations in the outer sides of the boxes.

The boxes are to be lined with cloth to prevent the escape of the starch, which is placed in them in a liquid state. The boxes thus filled are covered and placed in the receptacles E, and the keys H inserted.

Rapid rotation is imparted to the cylinder, when the liquids and impurities contained in the starch are driven out by centrifugal force through the perforations in the outer sides of the boxes F. As the bulk of starch diminishes the wedges H are driven down, and force the covers G into the boxes to replace the escaped fluids.

When the action ceases the boxes are withdrawn and replaced by others, ready for a repetition of the operation.

I am aware that centrifugal force has been applied to the drying of starch in bulk. This I do not claim.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The process hereinbefore described for drying and purifying starch in a liquid state by subjecting it, in lined and perforated boxes, to the action of centrifugal force, which expels the contained liquids and impurities, all substantially in the manner specified.

2. The combination, with a rotary cylinder provided with receptacles E, of the perforated boxes F, covers G, and keys H, all substan-

tially in the manner and for the purposes set forth.

3. The combination of the shaft A, hub B, partitions C, hoops D, and boxes F, all constructed, arranged, and operating in the manner and for the purposes set forth.

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

FREDERICK MELKERSMAN.

Witnesses:
DAVID W. FERGUSON,
THORNTON K. ALEXANDER.