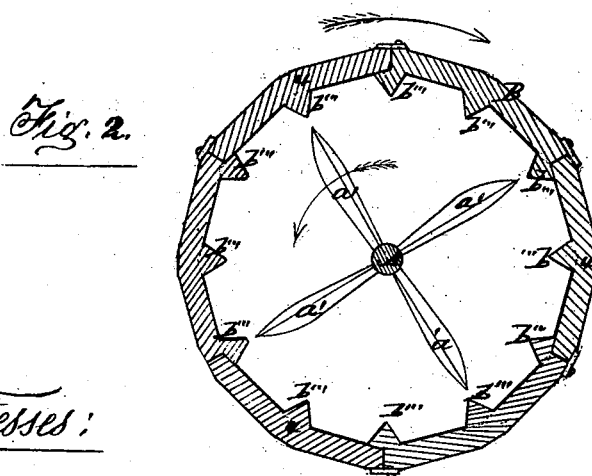
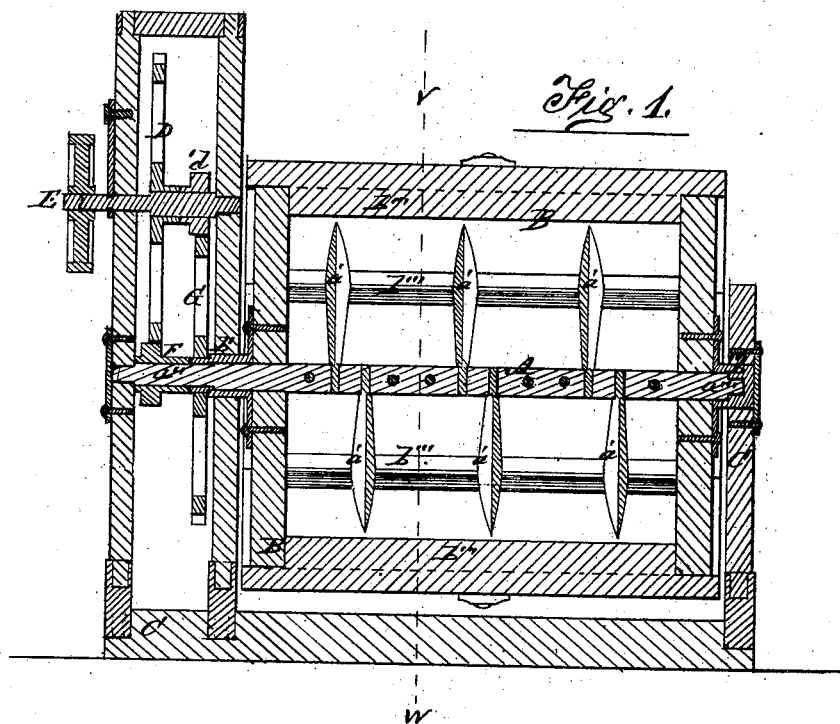


W. T. Gillinder,
Mixing Batch for Glass.
No. 110,029. *Patented Dec. 13, 1870.*



Witnesses:

Sam Morrison

Wm. H. Morrison

Inventor:

William T. Gillinder

UNITED STATES PATENT OFFICE.

WILLIAM T. GILLINDER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR MIXING BATCH FOR GLASS.

Specification forming part of Letters Patent No. 110,029, dated December 13, 1870.

To all whom it may concern:

Be it known that I, WILLIAM T. GILLINDER, of the city of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in Machines for Mixing "Batch" for Glass, of which the following is a specification.

My invention relates to the combined arrangement of a close prismatic or cylindrical rotary case provided with interior-projecting ribs fixed in longitudinal directions along its inner sides, with a rotary shaft provided with rows of radial paddle-arms, and arranged to be rotated within the rotary case in an opposite direction and at a more rapid speed, and operating together in mixing therein the dry materials for a batch, in such a manner that the ribs of the case will successively tend to throw new portions of the loose material from one side of the case toward the central shaft, while the rows of paddle-arms of the said shaft tend to move the said materials in alternating longitudinal directions within the case, the object of my invention being to produce a machine that will, in operation, effect with facility and rapidity a thorough or intimate mixture of the said dry materials required in making batch for subsequent melting into glass.

In the accompanying drawings, Figure 1 is a vertical longitudinal central section of my said improved mixing-machine, and Fig. 2 a transverse section of that part of the shaft and case on the right-hand side of the dotted line *vw* of Fig. 1.

The shaft A, provided with its radial arms *a' a'*, rotates on its own journals *a'' a'''* within the journals *b' b''* of the case B, the same being supported in the uprights of the frame C in such a manner that simultaneous rotary motions may be given to both in opposite directions by means of suitable gearing. Motion is given to the case B by means of a large spur-wheel, D, on the main driving-shaft E, (see Fig. 1,) which wheel D gears into a broad pinion, F, fixed on the shaft A, and motion in an opposite direction and slower is given to the case B by means of a pinion, *d'*, fixed to the wheel D, which pinion *d'* gears into a large spur-wheel, G, fixed on the journal *b'* of the case B. The connected wheel and pinion D *d'* are secured upon the shaft C by means of a "feather," so that the said wheel and pinion

can be slipped into and out of gear with the wheel G, while the wheel D remains in gear with the broad pinion F on the shaft A, the object of this adjustable arrangement being to enable the attendant to suspend the rotary motion of the case B without stopping that of the shaft A. The projections *b'''* on the inner side of the case B are each triangular in cross-section, are fixed at equal distances apart, and extend from end to end of the inside of the case, as represented in the drawings. The arms *a' a'* are flat tapering plates or blades, fixed in the shaft A in longitudinal rows, projecting radially nearly into contact with the projections *b'''*, or so that as they are carried around by the shaft their ends will just clear the said projections. The arms *a'* are fixed perpendicularly in the shaft A, with their broad sides arranged obliquely across the shaft, and those of each longitudinal row obliqued oppositely in their relation to those of its two nearest rows. The shell of the case B is provided with three equidistant openings fitted with adjustably-secured covers 4 4 4, (see Fig. 2,) for more readily admitting and discharging the materials and batch.

The whole machine is intended to be made strong, to be driven by steam or horse power, and the case A capable of holding about one thousand pounds (more or less) of the dry sand, powdered soda, lime, &c., required to make a batch for melting into glass.

Operation: About five hundred pounds of the materials, consisting of the sand, pulverized soda, lime, &c., having been successively thrown into the case B and the case closed, the machine is to be put in motion, thus causing a slow and regular rotary motion of the case B, and a more rapid rotary motion, in an opposite direction, of the shaft A, and the case being only about half full the contents are continually being commingled by the joint operation of the two parts, the projections or ribs *b'''* of B successively elevating and discharging new portions of the contents along one side of the case, and the rows of arms *a'* of it rapidly and continuously agitating and moving the said contents promiscuously from end to end within the case. A thorough or intimate mixture of the materials contained in the case B is thus effected in about five or six minutes, whereas by the old mode of mixing batch by

shovel in hand the time and labor required are enormously greater and the mixing never perfect. After the contents of the case are mixed perfectly, the double wheel D' is to be slipped forward on its shaft E, so as to disconnect it from the wheel G, and thus stop the rotary motion of the case. The cover nearest to the under side is then removed and the contents run out into a pit or any suitable receiver.

I claim as my invention—

The combined arrangement of the case B, shaft A, and their respective attachments *b'''* and *a'*, constructed and operating together substantially as and for the purpose hereinbefore set forth and described.

WILLIAM T. GILLINDER.

Witnesses:

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WM. M. KEEGAN.