

(No Model.)

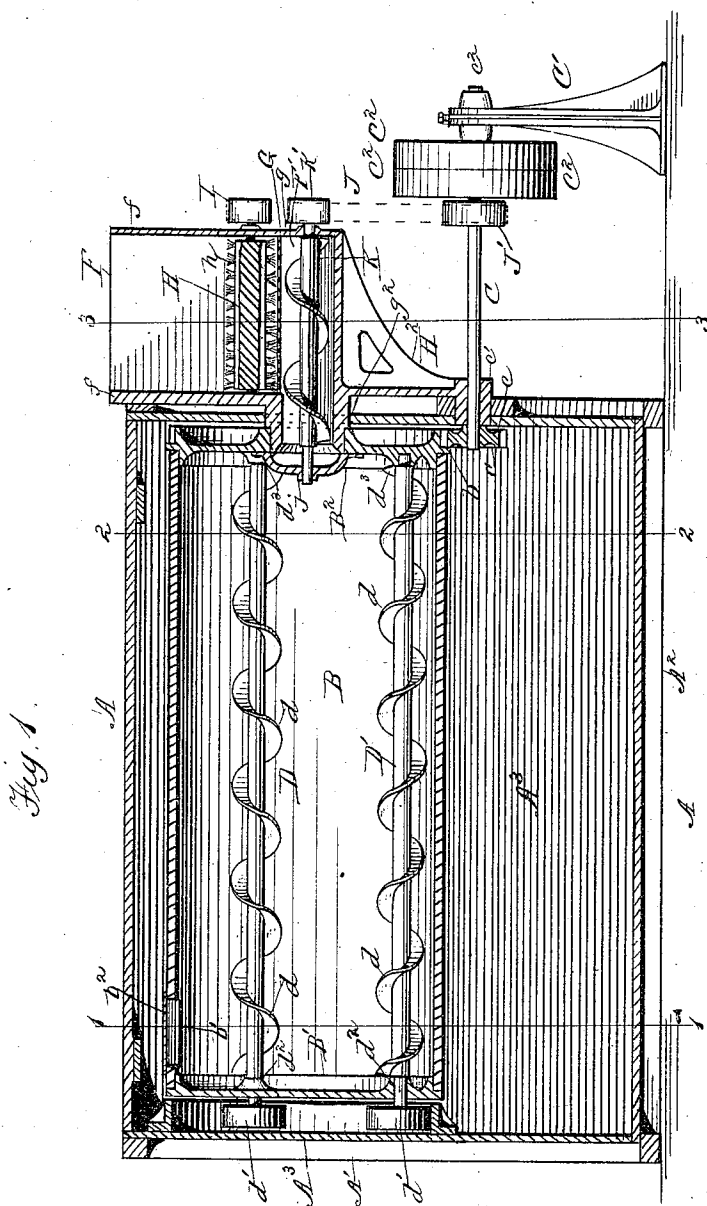
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N. BASSETT.

MIXING MACHINE FOR PAINTS.

No. 336,079.

Patented Feb. 16, 1886.



Attest:
H. A. Perhard
J. P. Reeside

Inventor:
Nathan Bassett
By his Attorneys
Edson Bros.

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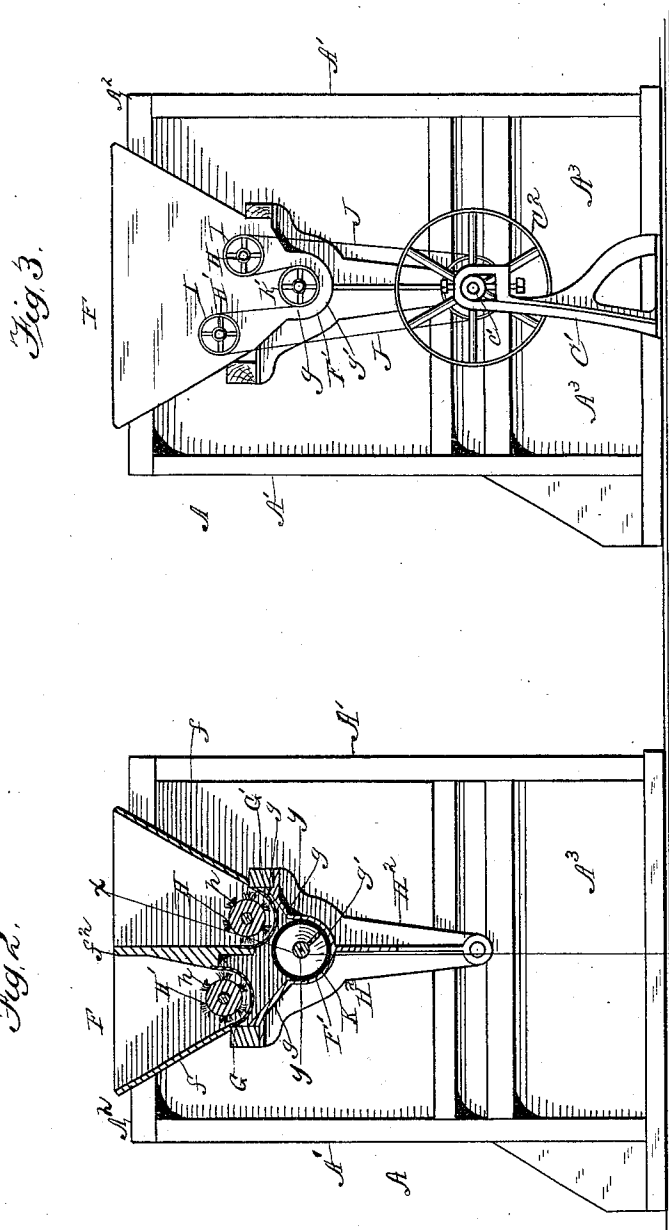
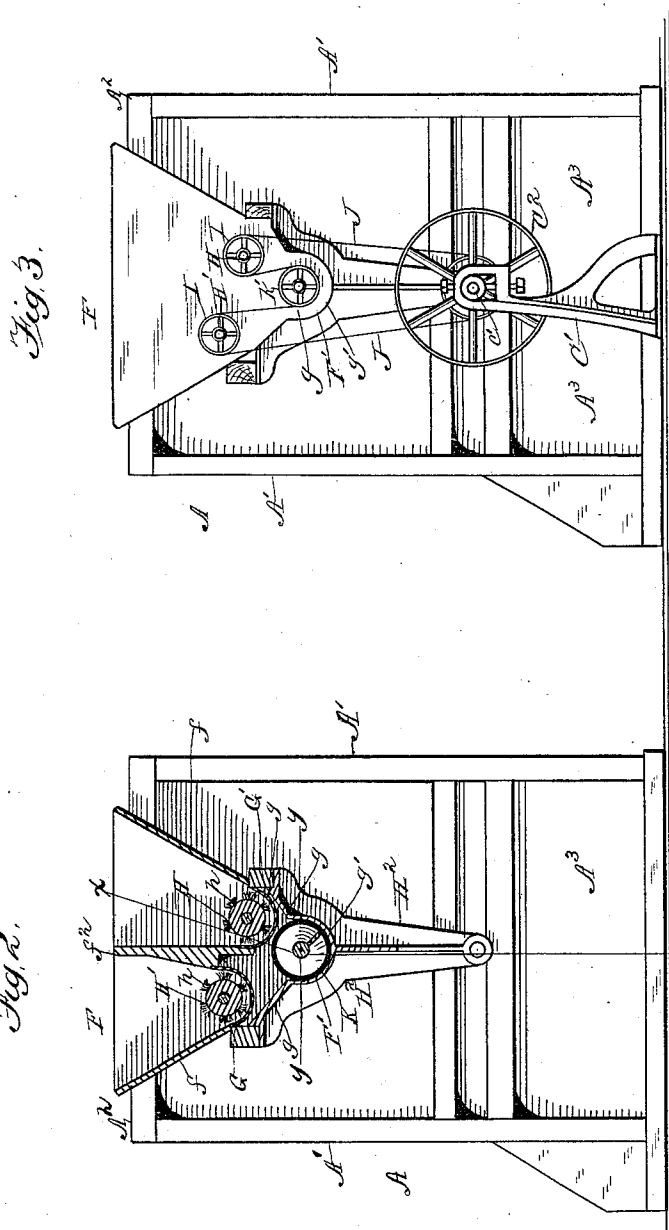
4 Sheets—Sheet 2.

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Patented Feb. 16, 1886.



Attest:
W. A. Burkhart
S. A. Kesside

Inventor:
Nathan Bassett
By his Attorney
Edson Bros.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

NATHAN BASSETT, OF HADDONFIELD, NEW JERSEY, ASSIGNOR TO BARCLAY R. LEEDS, OF PHILADELPHIA, PENNSYLVANIA.

MIXING-MACHINE FOR PAINTS.

SPECIFICATION forming part of Letters Patent No. 336,079, dated February 16, 1886.

Application filed December 16, 1884. Serial No. 150,541. (No model.)

To all whom it may concern:

Be it known that I, NATHAN BASSETT, a citizen of the United States, residing at Haddonfield, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Mixing and Sifting Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 and figures of reference marked thereon, which form a part of this specification.

My invention relates to an improved machine for making and sifting dry material—such as self-raising flour, baking-powder, colors, spices, fertilizers, and, in fact, any material that is not gummy or sticky, and has for its object to thoroughly sift and clean, and to break up lumps, before passing the material to the mixing cylinder or drum, and to thoroughly and expeditiously mix the particles of two or more ingredients together.

To these ends my invention consists of the construction, combination, and arrangement of parts, substantially as hereinafter more fully set forth, and pointed out in the claims.

In the drawings hereto attached, Figure 1 is a longitudinal vertical section on the line *x x* of Fig. 2; and Fig. 3 is an end elevation of the machine, showing the hopper and driving-gear. Figs. 4 and 5 are transverse vertical sections on the lines 1 1 and 2 2, respectively, of Fig. 1. Fig. 6 is a sectional view showing the means for supporting one end of the mixing cylinder or drum. Fig. 7 is a horizontal section on the line *y y* of Fig. 2; and Figs. 8, 9, and 10 are detail views of parts of my improvements.

Similar letters of reference in the several drawings denote like or corresponding parts.

Referring to the drawings, A designates a suitable frame composed of uprights A', connected by horizontal longitudinal and transverse timbers A², to which are secured side walls, A³, the whole constituting a casing, in which is located the mixing cylinder or drum B, having one of its heads or ends provided with a geared or toothed rim, *b*, which meshes with a pinion, *c*, on the driving-shaft C, sup-

ported at one end in a bearing, *c'*, formed in the lower end of a supporting-bracket, hereinafter described, and secured to one of the walls of the inclosing-case A, while the other end of said shaft is mounted in a box or bearing, *c''*, supported in a standard, C', firmly and rigidly bolted to the floor, said shaft being provided with fast and loose pulleys C², by means of which motion from any suitable motor is communicated to said shaft. The drum or cylinder, having ends or heads B' B², is provided with shafts D D D', arranged at equidistance apart around the circumference and within the inclosing-wall thereof, and are provided with spirally-arranged blades *d*, and pass through and bear in one of the heads, (at the left-hand end B',) where they are provided with rollers or pulleys *d'*, which bear against the inner edge of a circumferential rim, *d''*, of a bearing or journal plate or bracket, E, secured to the inner surface of one of the walls of the inclosing-casing A, near the top thereof, (see Figs. 1 and 6,) thereby wholly supporting the drum. The opposite ends of the shafts have their bearings in the head B² of the drum or cylinder, as at *d''*, (see Fig. 1,) the said head B² being provided with a central opening or aperture adapted to receive the inwardly-projecting end of the bottom of the hopper, thereby providing a support for that end of the drum, as more fully hereinafter described.

F designates a hopper suitably secured to the front wall of the frame A, having sloping side walls, *f*, and divided into two compartments by a central partition, *f''*. In the lower end of said hopper is a chamber, F', formed by converging side walls, *g*, and a bottom, *g'*, made semicircular for a portion of its length equal to the width of the hopper, and then made cylindrical, as at *g''*, for the remainder of its length, said cylindrical portion projecting through and bearing in the front wall of the inclosing-case A, and having its extreme inner end slightly reduced and fitting into the aperture or opening in the head B² of the cylinder or drum, as at *g''*, thus providing a bearing for the drum at the front end of the frame or case A. The hopper is supported by a bracket, H², having the bearing *c* for the driving-shaft C formed at its lower end, said

bracket being secured to the front wall of the case A, and supporting at its upper end the walls and bottom of the chamber F, and also the side walls of the hopper, which are secured thereto. The lower end of the hopper has openings communicating with the chamber F', and across these openings I place semicircular screens or sieves G G', having their ends secured to the walls and partition of the hopper, as shown in Figs. 1 and 2, and meshes of different sizes. Immediately above the screens G G', I place shafts H H', having a series of bristles or brushes, h, arranged spirally thereon, said shafts having their bearings in the walls of the hopper, one end of each of said shafts projecting through the front wall of the hopper, and there provided with pulleys I, driven by a belt, J, from a pulley, J', on the driving-shaft C.

K designates a conveyer-shaft, provided with a spirally-arranged plate, k, located in the chamber F' of the hopper, the outer end of said shaft bearing in and projecting through the front wall of the hopper, where it is provided with a pulley, K', driven by the belt J from the driving-shaft C, the inner end of said shaft having its bearing in a skeleton frame, j, secured to the inner surface of the head B² of the drum or cylinder B.

By reference to Fig. 1 of the drawings it will be seen that the blades of one of the mixing-shafts D D D'—preferably the shaft D'—is arranged in a direction reverse to that of the blades of its fellow shafts, whereby the materials to be mixed in the drum are conveyed back and forth therein, and forced outwardly from said shafts toward the circumference and heads thereof, thereby thoroughly mixing and commingling the particles together in a thorough manner, and requiring a minimum of time for the operation. The case A is provided with a door in one of its side walls, through which a suitable receptacle or box is passed to receive the materials from the drum or cylinder B, after the same has been cleaned and mixed. The drum is provided with an opening, b', in one end of its circumference, for discharging the materials, said opening being closed by a gate or door, b², sliding in ways or cleats b³, secured to the said drum. (See Figs. 1 and 5.)

The operation of my invention is as follows: The materials to be mixed are placed in the chambers of the hopper, and power from any suitable motor is applied to the driving-shaft through the fast pulley C. The motion of this shaft is communicated to the brush-shafts H H' through the belt J, which force the materials through the sieves G G', thus cleaning the same of any refuse matter, and breaking up any lumps therein. The materials fall through the sieves in a cleaned state into the chamber F', and are carried into the mixing cylinder or drum B by the conveyer K, driven by the belt J. The cylinder or drum is revolved by power transmitted from the driving-

shaft C through the pinion c, secured thereon, and the geared rim b of the head B² of the drum, said drum carrying the mixing-shafts D D D' with it in its revolution, and causing the rollers or pulleys d' thereof to bear or impinge against the circumferential rim of the bracket E, thus revolving the said shafts, and causing them to convey the materials back and forth in the drum, while at the same time they force the same outwardly therefrom toward the circumference and heads of the drum, as before described.

It will be observed from the foregoing description that I provide a simple and durable machine, one which requires a minimum of power to drive the same, and which will quickly and expeditiously accomplish the mixing of any materials in a thorough manner.

My machine is adapted for the mixing of paints, bran, or any other material, while at the same time the materials are thoroughly cleaned, and the lumps, if any therein, are broken, before being fed to the mixing-cylinder.

Modifications in details of construction may be made without departing from the principle or sacrificing the advantages of my invention, and I would therefore have it understood that I hold myself at liberty to make such changes and alterations as fairly fall within the scope of my invention.

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

1. In a mixing-machine, the combination of a revolving drum, shafts extending through said drum and provided with pulleys, and a journal plate or bracket, against which the pulleys bear, as and for the purpose set forth.
2. In a mixing-machine, the combination of a mixing cylinder or drum, means for revolving said drum, and two or more conveyer-shafts located within said drum around the circumference thereof, one of said shafts having its blade arranged in a reverse direction to the blades of its fellow shaft or shafts, substantially as and for the purpose set forth.
3. In a mixing-machine, the combination of a drum provided with mixing-shafts arranged equidistant apart around the circumference thereof and provided with bearing-rollers, a journal plate, and a hopper having a bottom provided with a cylindrical extension fitting in the head of said cylinder or drum, whereby the same is supported without the aid of independent bearings, substantially as shown and described.
4. In a mixing-machine, the combination of a cylinder or drum, means for revolving said drum, mixing-shafts arranged within the drum, and a hopper and a conveyer for feeding the material from the hopper to the drum, substantially as shown and described.
5. In a mixing-machine, the combination of a drum or cylinder having a toothed rim, a driving-shaft having a pinion, mixing-shafts

located within the drum, a hopper having a brush-shaft and a sieve, and a conveyer-shaft, substantially as and for the purpose set forth.

6. In a mixing and sifting machine, the combination of a drum or cylinder, a driving-shaft geared to said drum, mixing-shafts located within the drum and having pulleys, a journal-plate secured to the supporting-frame, a hopper having sieves and brush-shafts, and a conveyer for carrying the materials from the hopper to the mixing-cylinder, substantially as shown and described.

7. In a mixing and sifting machine, the combination of a mixing drum or cylinder, a driving-shaft geared to said drum, mixing-shafts located within the drum, a hopper divided into compartments, each of which is provided with a screen and a brush-shaft, and a conveyer located beneath the hopper, substantially as and for the purpose set forth.

8. In a mixing-machine, the combination of a drum or cylinder having mixing-shafts, means, substantially as described, for revolving said shafts and drum, a hopper divided into compartments by a partition, each compartment having a sieve and a revolving brush-shaft, a chamber located below said hopper, and a screw-conveyer located within said chamber, said conveyer and shafts having pulleys driven by a belt from the driving-shaft, substantially as and for the purpose set forth.

9. In a mixing-machine, the combination of a mixing cylinder or drum, B, having a gate or door, b^2 , mixing-shafts D D D', having pulleys d' , journal-plate E, secured to the sup-

porting-frame, and driving-shaft C, geared to the drum, as and for the purpose set forth.

10. In a mixing and sifting machine, the combination of a revolving cylinder or drum, B, having mixing-shafts D D D', provided with pulleys, a journal-plate, E, and a hopper, F, having a bottom, g^2 , projecting into one of the heads of the drum B, and providing a bearing therefor, substantially as shown and described.

11. The combination of the drum or cylinder B, mixing-shafts D D D', having blades d and pulleys d' , driving-shaft C, geared to said drum, as at c , hopper F, having screens G G', brush-shafts H H', and a conveyer, K, substantially as and for the purpose set forth.

12. The combination of a drum or cylinder, B, having a toothed rim, b , driving-shaft C, having a pinion, c , gearing with the toothed rim of the drum B, mixing-shafts D D D', journaled in and revolving with the drum, and provided with bearing-pulleys d' , secured thereon exteriorly to the said drum, journal-plate E, having rim d^2 , hopper F, having screens G G', brush-shafts H H', having pulleys I, chamber F', located beneath the hopper, screw-conveyer K, having pulley k' , and located in the chamber F', and driving-belt J, all arranged substantially as shown and described, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

NATHAN BASSETT.

Witnesses:

R. W. BUDD,
CHARLES LOVETT.