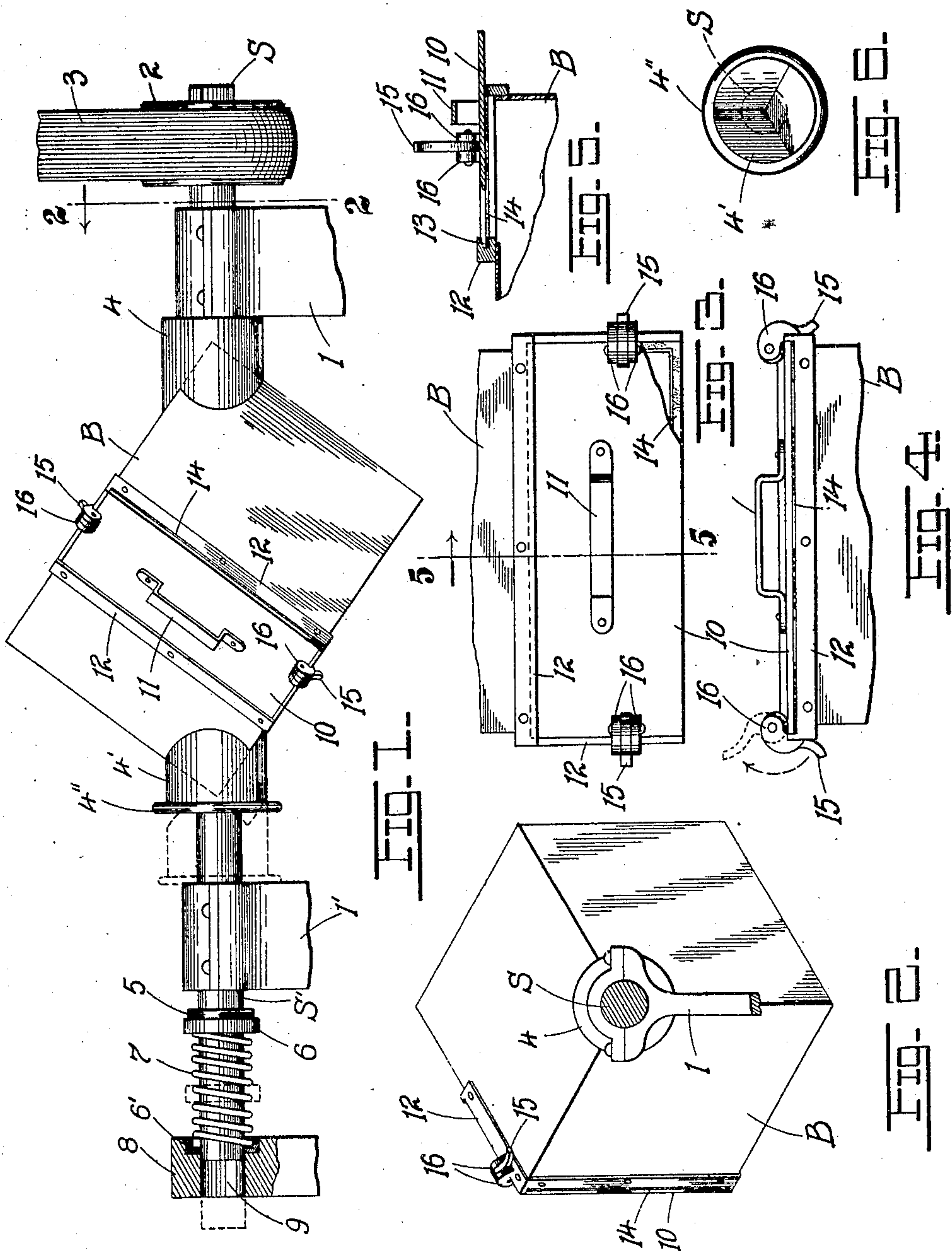


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PATENTED APR. 9, 1907.

U. A. GARRED.
SAMPLE MIXER.
APPLICATION FILED JUNE 22, 1906.



WITNESSES:

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ULYSSES A. GARRED, OF ANACONDA, MONTANA.

SAMPLE-MIXER.

No. 849,540.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ULYSSES A. GARRED, a citizen of the United States, residing at Anaconda, in the county of Deerlodge and State of Montana, have invented certain new and useful Improvements in Sample-Mixers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in sample-mixers, (particularly ore samples;) and it consists in the novel construction of mixer more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is an elevation of my invention, showing the box mounted in position for rotation. Fig. 2 is a vertical cross-section on line 2 2 of Fig. 1. Fig. 3 is a plan of the face of the box carrying the lid. Fig. 4 is an elevation of Fig. 3, showing the flanges of the lid-frame overlapping the edges of the corresponding faces of the box. Fig. 5 is a cross-section on line 5 5 of Fig. 3, showing the lid partially withdrawn; and Fig. 6 is an inside view of the socket of one of the supporting-trunnions for the box.

The present invention is designed to do away with the rolling of the ore samples on cloth—a method both tedious and unsatisfactory—and has for its object to insure a perfect mixture of the material constituting the sample.

A further object is to provide a mixer in which the thorough agitation and tumbling of the material may be accomplished in a minimum amount of time, with the least expenditure of labor, and with no loss of the material treated.

In detail the invention may be described as follows:

Referring to the drawings, B represents a (preferably) cubical box or tumbler made of any suitable material and adapted to revolve about one of its diagonal axes—that is, an axis passing through its diagonally opposite corners. Mounted in a suitable bearing 1 is a drive-shaft S, carrying a terminal belt-pulley 2, from which leads a belt 3 to any suitable source of power. (Not shown.) The inner end of the shaft S terminates in a head or trunnion 4, provided with a pyramidal socket for the reception of the corner of the box, the bounding-walls of the socket being preferably in the form of curved lobes, as shown.

Mounted in a second bearing 1' and in line

of the axis of the shaft S is a longitudinally-adjustable trunnion-shaft S', likewise terminating at its inner end in a trunnion 4', provided with a pyramidal socket for the reception of the opposite diagonal corner of the box B, the said trunnion having a basal flange 4'', as shown. Formed on the adjustable shaft S' is a collar 5, against which is adapted to bear the base of a cup-shaped washer 6, slipped over the shaft, a second cup or washer 6' being passed over the opposite end of the shaft, the two washers receiving the ends of an expansion-spring 7, coiled about the shaft S'. The washer 6' is supported in a member 8, having an opening 9 therein for the free movement of the shaft S' during the insertion of the box into the sockets of its revolving trunnions. By seizing the flange 4'' and compressing the spring 7 the trunnion 4' may be moved sufficiently to release the box B or permit its insertion into the socket of the relatively stationary trunnion 4, when by releasing the shaft S' the spring 7 will automatically force the trunnion 4' against the adjacent corner of the box, and the latter is mounted in position for rotation by the drive-shaft S.

The material is introduced into the box through an opening formed in one of the faces and closed by a lid or door 10, preferably provided with a handle 11. The door is received by a frame 12, secured to the wall of the box, the rear member of the frame being provided with a groove 13, by which the rear edge of the lid is received. The supporting-ledge for the lid and the inner wall of the groove is provided with a suitable gasket 14 to make a tight joint, the lid being forced against the gasket by the locking cam-latches 15, pivoted between the lugs 16 16 at opposite ends of the frame.

As shown by the drawings, the opening closed by the lid 10 is equal to substantially one-half of the area of one face of the cubical box B, the opening extending from the middle of said face to the end of the contiguous face. The frame 12 is composed of three marginal flanges overlapping the edges of three contiguous faces, the rear grooved member of the frame being disposed adjacent to the inner edge of the opening closed by the lid, Figs. 2, 4. This arrangement insures a rigid construction, and the box being set to revolve in a plane at an angle to the direction in which lid is inserted into or withdrawn from the frame there is no danger of the cen-

trifugal action developed in the rotation ejecting the lid should the latches 15 become loose or release their hold on the lid. This device insures a thorough mixing of the material in a minimum amount of time, the box being readily removed from its bearings or trunnions at the close of the mixing operation.

Having described my invention, what I claim is—

1. A sample-mixer comprising a box having six rectangular faces and mounted to rotate about a diagonal axis, one of the faces having an opening located adjacent to a contiguous face, and a sliding door for closing said opening movable in a plane at an angle to the direction of rotation of the box and across the meeting edge of said contiguous faces, substantially as set forth.

2. A sample-mixer comprising a cubical box mounted to rotate about a diagonal axis, one of the faces of the box having an opening

located adjacent to a contiguous face, and a sliding door for said opening movable across the meeting edge of said contiguous faces and in a plane making an angle with the general direction of rotation of the box, substantially as set forth.

3. A sample-mixer comprising, a cubical box having an opening in one face thereof adjacent to a contiguous face, a frame encompassing said opening and having flanges overlapping the edges of three contiguous faces of the box, a lid for the frame and means for mounting and rotating the box about a diagonally-disposed axis, substantially as set forth.

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

ULYSSES A. GARRED.

Witnesses:

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H. R. BURG.