No. 661,847. Patented Nov. 13, 1900.

# R. BURNS.

## APPARATUS FOR MIXING TEA, &c.

(Application filed Dec. 15, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 2.

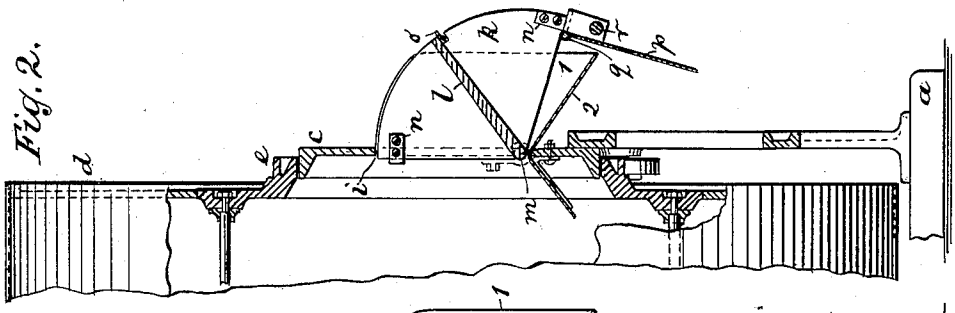
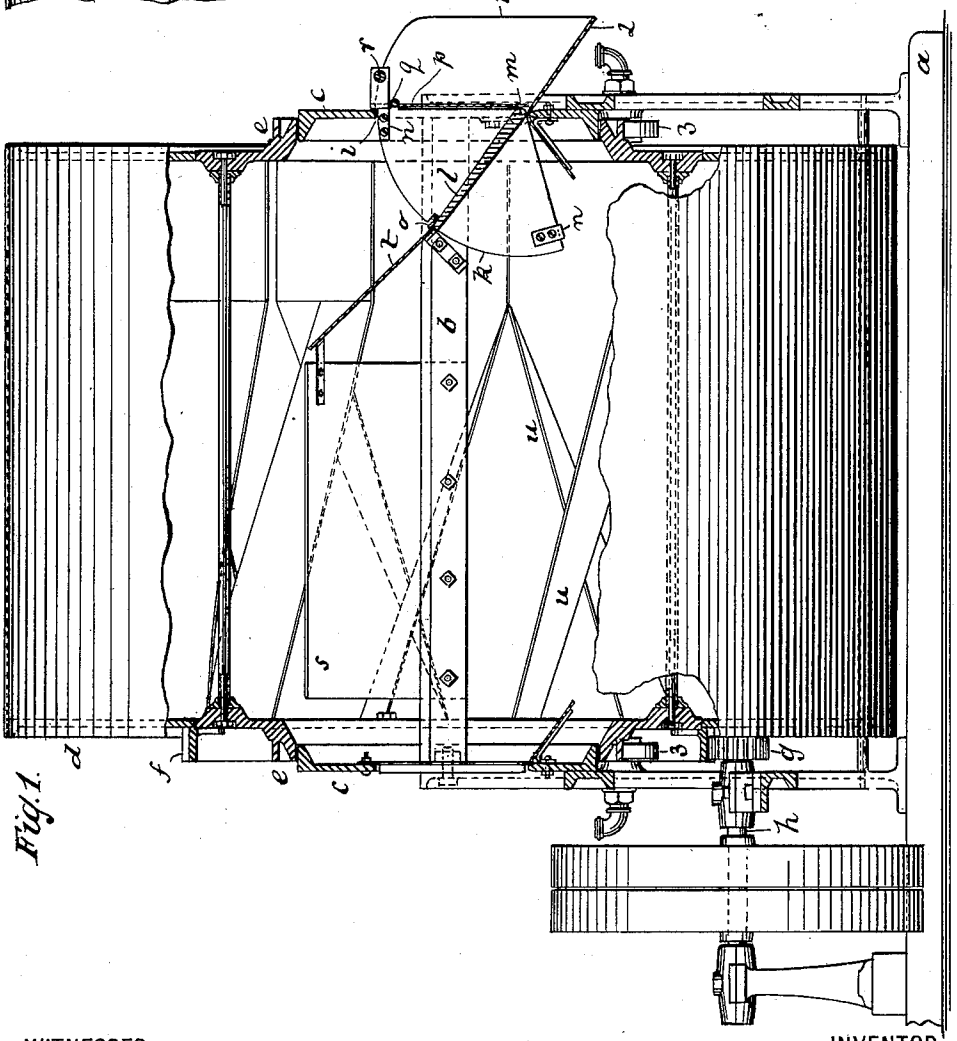


Fig. 1.



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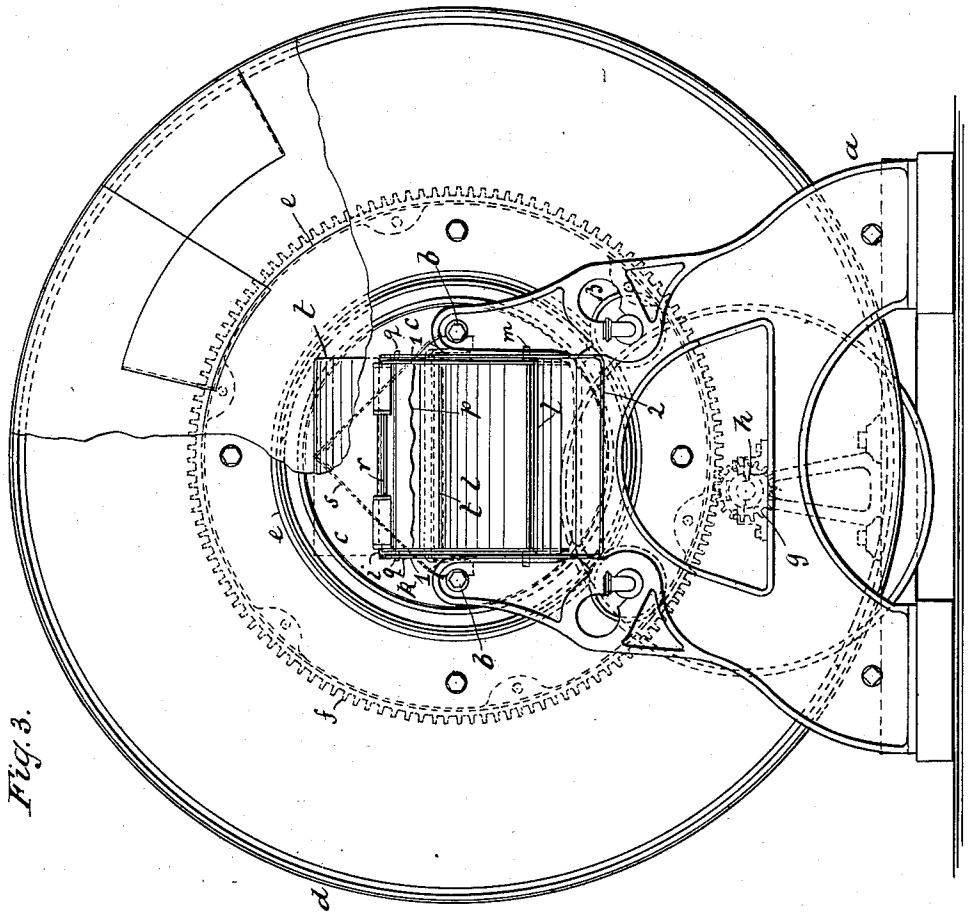


Fig. 3.

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# UNITED STATES PATENT OFFICE.

ROBERT BURNS, OF NEW YORK, N. Y.

## APPARATUS FOR MIXING TEA, &c.

SPECIFICATION forming part of Letters Patent No. 661,847, dated November 13, 1900.

Application filed December 15, 1899. Serial No. 740,428. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT BURNS, a citizen of the United States, residing at Manhattan borough, in the city, county, and State of New York, have invented new and useful Improvements in Apparatus for Mixing Tea and other Material, of which the following is a specification.

This invention relates to an apparatus by which the operation of mixing or blending can be carried on rapidly and cleanly; and the invention resides in the novel features of construction set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a side elevation of the mixer, partly in section, with the chute in discharge position. Fig. 2 is a view like Fig. 1 with the chute in feeding or filling position. Fig. 3 is an end view of Fig. 1, an end being partly broken.

A base (or legs) *a* has a brace *b*, with end pieces or disks *c*. A drum *d* has end pieces *e*, shown annular or of ring form to fit or turn about the end pieces *c*. The drum is suitably rotated. A gear-ring *f*, with wheel *g* on axle *h*, having the usual fast and loose pulleys, has been found practical, or several pulleys for varying speeds or other speed-varying mechanism can be provided for regulating the number of rotations of the drum. Such arrangements are familiar and need not be set forth in detail.

One of the stationary end pieces *c* has an opening or passage *i* of suitable shape. A four-cornered opening has been found easy to construct. A chute is shown composed of sides *k* and base or cross-piece *l*. The sides are shown of segmental or sector shape, and the chute can move or swing about the axle or pivot *m*. This chute can be moved or set to act as an inlet or feed for charging the drum, also as an outlet, and also as a door or closure for opening *i*. When the chute is swung to carry its bottom *l* outside of or beyond the edges of opening *i*, as seen in Fig. 2, material can be fed onto this outwardly-extending base *l* and will slide or pass from there into the drum. If the chute-base is turned into the drum, as seen in Fig. 1, then the contents of the rotary drum, which are carried up and fall onto the base *l*, slide or pass out. In other words, the chute now acts as a discharge instead of a feeder for the drum. Should the chute be set with its base *l* vertical or so as to close opening *i*, this chute acts as a closure to prevent the escape of dust or other material from the drum. The chute or chute sides *k*, while made to swing in opening *i*, should be preferably made to fit or sit snugly to such opening. The chute is shown with stops. The oppositely-located stops or lugs *n* alternately strike or catch at edge of opening *i* as the base *l* is in feed or discharge position. The chute is thus prevented from being swung too far. A stop *o* is adapted to hold the chute with base *l* vertical or in position to close opening *i*. This stop is practically made in the form of a spring or releasable catch, so that it can serve to arrest or hold the chute in intermediate position, while at the same time the chute can be forced or freed to move to feed or discharge positions. The chute has a lid or door *p*, hinged or swinging at *q*. Say the chute is in discharge position, then the door *p* closes automatically or drops by its weight to close opening *i*. The weight of material falling on or discharging along base *l* and pressing against the outwardly-opening lid *p* will force the latter open sufficiently to allow discharge, while said lid prevents to a greater or less extent the escape of dust from the drum. The chute is shown with a handle *r*, by which the former can be readily moved from discharge to feed position.

In the drum is shown a stationary flange, or, as it might be called, a "roof-shaped spreader," *s*. This flange *s* is serviceable, since it tends to spread or scatter material falling from the upper part of the drum, whereby the mixing or blending is aided. This flange *s* also breaks the fall of material between the upper and lower portions of the drum. Such breaking of the fall is of advantage, for example, in the blending of tea-leaves, since it is desirous to have the leaves injured or broken as little as possible. An incline *t* leads from the flange *s*. Material passing along this incline can pass from thence to the chute-base *l* when in discharge position.

In the drum are shown lifting-blades *u*. Helical blades or flanges are shown in United

States Patent No. 44,704, granted to Jabez Burns on October 18, 1864, and are not claimed herein.

At the sides of opening *i* are plates or projections 1. These plates 1 have a bottom 2, which forms a fixed outer prolongation or a continuation of the chute-bottom when in discharge position or extended into the drum.

This mixer or blender has been found to work satisfactorily with tea, since dust in the drum can be prevented from escaping, and the dust of tea is irritating and objectionable. Moreover, the operation can be carried on without interruption, since discharge can be effected by setting the chute in the required position, and after the discharge the chute can be at once set for feeding, so that the mixer can be recharged without delay and kept at work. The feed and discharge are convenient, as they take place about at the center of the machine or about at brace or center *b*. The drum can of course be made of any suitable size and material and with suitable proportion between its diameter or height and its length. The flanges *u* can be given any suitable twist or pitch. In working such tender material as tea-leaves it has been found advisable to have a less twist than can be employed for coffee or like material.

The drum or its end pieces *e* are easily rotated, as the end pieces or disks *e* run on anti-friction-rollers 3.

What I claim as new, and desire to secure by Letters Patent, is—

1. A mixer or blender comprising a revolving drum provided with lifting-blades, and a chute pivotally mounted on a stationary part independent of said drum and adapted to be moved to the outside or to the inside of said drum to act either as an inlet or as an outlet, substantially as described.

2. A mixer or blender comprising a revolving drum provided with lifting-blades, and a chute mounted on a stationary part and adapted to be moved or set in different positions to act as an inlet, as an outlet, or as a door or closure for said drum, substantially as described.

3. A mixer or blender comprising a revolving drum provided with lifting-blades, and a chute pivoted to a stationary part and communicating with the interior of said drum, the said chute consisting of segmental sides and a base or cross-piece intermediate of the ends of said sides, substantially as described.

4. A mixer or blender comprising a revolving drum provided with lifting-blades and a stationary end piece or disk provided with a suitable opening or passage, a pivotally-mounted chute having its sides made to fit and swing in the opening and means for retaining said chute in different positions substantially as described.

5. A mixer or blender comprising a revolving drum provided with lifting-blades, a chute pivoted to a stationary part independent of said drum and adapted to be moved to the outside or to the inside of said drum to act either as an inlet or as an outlet, and stops for retaining said chute in one or the other of these positions, substantially as described.

6. A mixer or blender comprising a drum, and a chute mounted on a stationary part and adapted to be moved or set to act either as an inlet or as an outlet and also as a closure, said chute having stops adapted to engage said stationary part for holding the chute in its inlet and outlet positions and a stop adapted to engage said stationary part for holding the chute in its closing position substantially as described.

7. A mixer or blender comprising a drum, a chute pivoted to a stationary part, means for moving said chute to the outside or inside of said drum to adapt the same to be used as an inlet or outlet, and a lid or door pivoted at its upper end to said chute and adapted when said chute is inside said drum to automatically close the passage leading into said drum, substantially as described.

8. A mixer or blender comprising a drum, a stationary end piece or disk provided with an opening or passage, a movable chute made to fit the opening, and a door or lid at the outer part of the chute and made to automatically close when the chute is in outlet or discharge position substantially as described.

9. A mixer or blender comprising a rotary drum, a chute adapted to be moved to different positions to serve either as an inlet or as an outlet, a fixed roof-shaped spreader in the drum, and a fixed incline leading from the spreader to the chute when the latter is in position to serve as an outlet, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ROBERT BURNS.

Witnesses:
W. C. HAUFF,
E. F. KASTENHUBER.