

No. 827,579.

PATENTED JULY 31, 1906.

A. W. STRAUB.  
GRINDING MILL.

APPLICATION FILED AUG. 17, 1905.

Fig. 1.

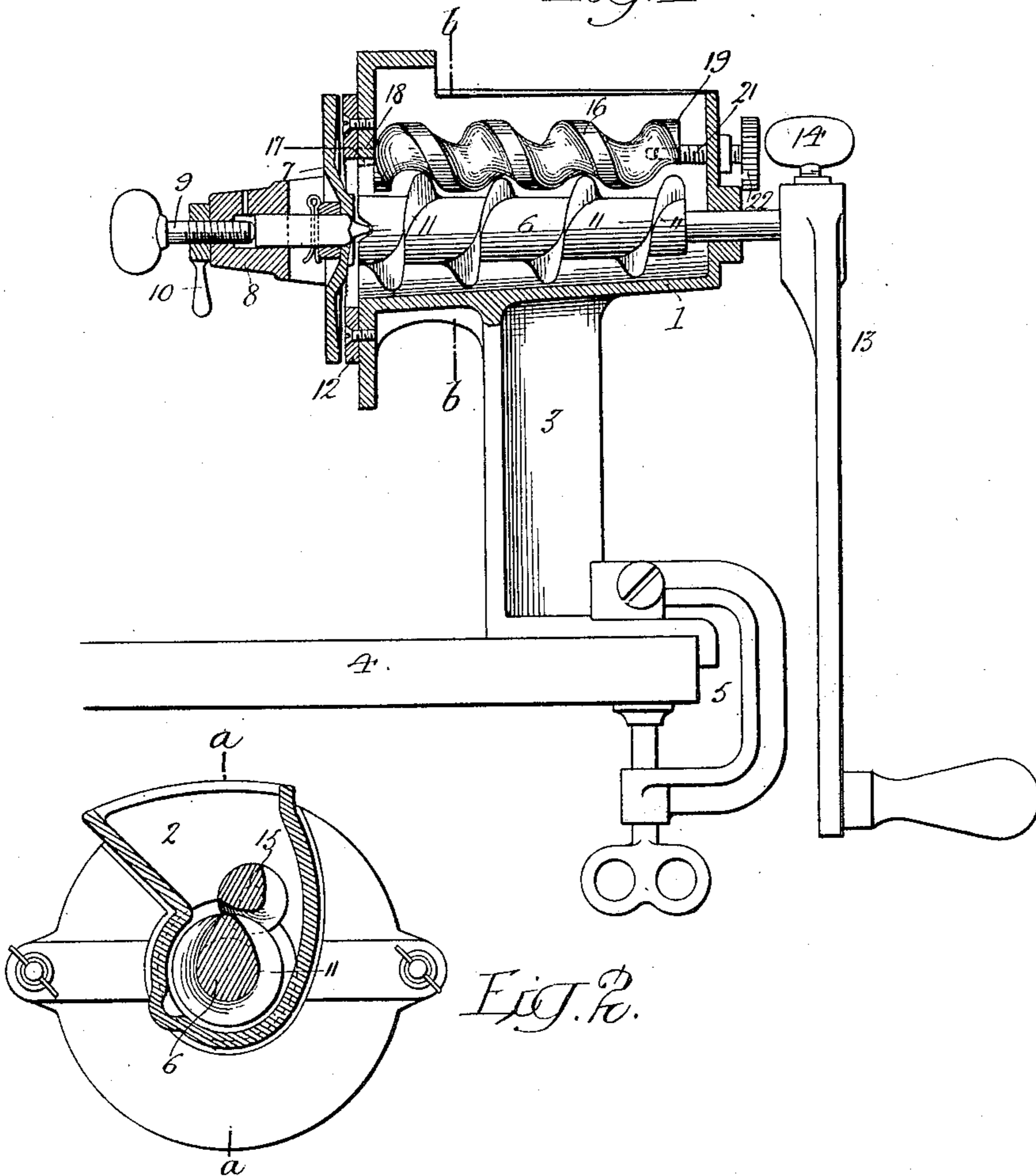
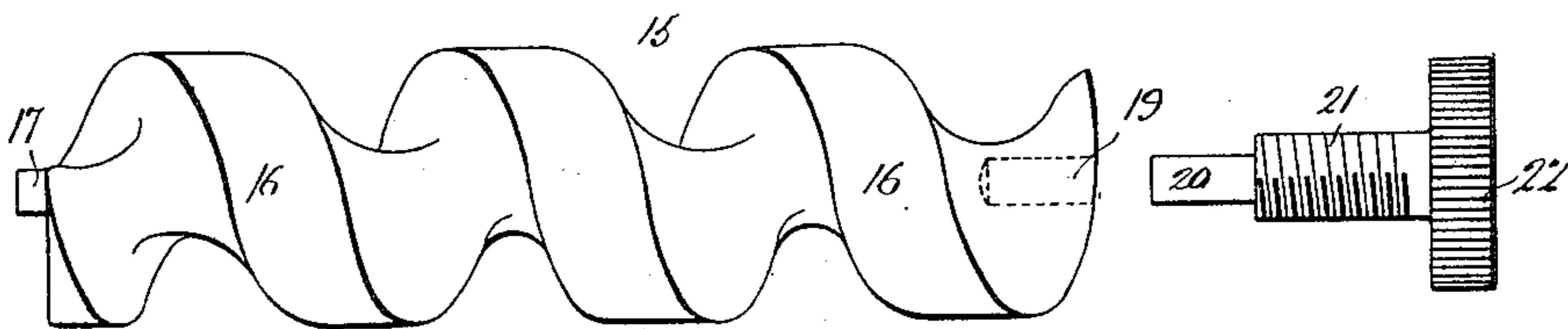


Fig. 2.

Fig. 3.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## GRINDING-MILL.

No. 827,579.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed August 17, 1905. Serial No. 274,596.

*To all whom it may concern:*

Be it known that I, AMBROSE W. STRAUB, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Grinding-Mills, of which the following is a specification.

My invention relates to grinding-mills of the character shown and described in my prior patent, No. 721,651, dated February 24, 1903, the object of my present invention being to facilitate the feeding or movement of the material being ground and its discharge from the casing of the mill, especially when such material is of a wet, sticky, or oleaginous nature.

My invention is fully shown in the accompanying drawings, in which—

Figure 1 is a sectional view of a grinding-mill containing the improvements forming the subject of my invention, taken on the line *a a*, Fig. 2. Fig. 2 is a sectional view of the grinding-mill, taken on the line *b b*, Fig. 1; and Fig. 3 is a detached view of the auxiliary feed-screw employed in my improved mill.

In grinding material to form unguents, pastes, or salves and in grinding certain oily nuts and other material of similar nature more or less difficulty is experienced in causing such material to feed to the grinding-disks. A screw is the common feeding element employed, which carries one of the grinding-disks, while the other disk is carried by the casing. In practice this feed-screw fills up with the material to be fed in the process of operating the structure; and the object of my invention is to provide means for keeping the screw clean and insuring the proper feeding of the material to the grinding-disks.

In the drawings herewith, 1 represents the casing of the mill of the usual type, having the hopper-top 2 and supported by a standard 3, which may be secured to a table 4 by means of the clamp 5 or other device, all of which is fully described in my patent above referred to.

Mounted within the casing 1 is the feed-screw 6, carrying at one end a grinding-disk 7 and held in the operative position by means of a clamp 8, having an adjusting-screw 9 with a lock-nut 10. The screw 6 is provided with a thread 11, having a coarse pitch, as shown, and the space between the body of the screw and the edge of its thread is considerable. A grinding-disk 12 is carried by the casing 1, as shown, and between this disk and the one carried by the screw the

material is ground. The opposite end of the screw is provided with an ordinary crank-handle 13, held in place by a suitable thumb-screw 14.

In practice the feed-screw fills up with the material under operation, and consequently no feeding action takes place. To obviate this, I mount above and to one side of the main feed-screw an auxiliary feed-screw 15, having a coarse thread 16 with a flat top arranged to lie between the threads of the main feed-screw 6, and by its frictional engagement with said screw it turns and serves to push out of the spaces between the threads of the latter the material collected therein.

It will be noted that the pitch of the auxiliary screw is opposite the pitch of the main screw, and such auxiliary screw will be constantly driven so that its flat-sided and comparatively sharp-cornered thread will scrape along the material caught up by the main feed-screw, which will thereby be forced into the space between the grinding-disks. While the auxiliary screw may be located directly above the main feed-screw, I prefer to place it at one side, as shown, in order that the material may be readily placed in the hopper without interfering with the auxiliary screw. The auxiliary screw 15 is provided in the present instance with journals, that at one end consisting of an integral projection 17, fitting into an aperture 18 in the end wall of the casing. At the opposite end the screw 15 has a recess 19 for the end 20 of an adjustable screw 21, fitting into a threaded opening in the opposite end of the casing and having a milled head 22, whereby it may be readily set in place.

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

1. The combination in a grinding-mill, of the casing, a feed-screw having a continuous thread, coacting grinding-disks, one of which is mounted on said feed-screw, and an auxiliary screw for clearing the spaces between the thread of the main feed-screw.

2. The combination in a grinding-mill, of the casing, a feed-screw having a continuous thread, coacting grinding-disks, one of which is mounted on said feed-screw, and an auxiliary screw rotated by the main feed-screw for clearing the spaces between the thread of the main feed-screw.

3. The combination in a grinding-mill, of a feed-screw having a continuous thread, a

cleaning-screw, said screws being so disposed as to revolve together one by the other, and means for revolving said screws.

4. The combination in a grinding-mill, of a feed-screw having a continuous thread, a cleaning-screw, said screws being so disposed as to be capable of movement one by the other, and means for actuating said feed-screw.

5. The combination in a grinding-mill, of a pair of feed-screws having continuous threads and so arranged as to roll or rotate together and clean each other and effect the feeding of material from one end to the other.

6. The combination in a grinding-mill, of a feed-screw having a continuous thread, means for operating the same, an auxiliary screw having its thread meshing with the main feed-screw so as to be driven thereby, and independent journals for said auxiliary screw whereby it may be kept in proper relative position with respect to the main feed-screw.

7. The combination in a grinding-mill, of the casing, a feed-screw mounted therein having a continuous flange or thread with a steep or coarse pitch raised up from the body of the screw, and another screw or roller having flat-topped threads to remove the paste or sticky material from the body of the main feed-screw.

8. The combination in a grinding-mill, of a feed-screw having a deep continuous thread with coarse pitch arranged on its body so as to leave a flat chambered space between the threads serving to retain a sticky emulsion, a second screw having a thread arranged to fit the spaces between the thread of the first

screw and push the emulsion out of said spaces and permit it to receive a fresh supply, and means for actuating said screws.

9. The combination in a grinding-mill, of a feed-screw having a deep continuous thread with coarse pitch arranged on its body so as to leave a flat chambered space between the threads serving to retain a sticky emulsion, a second screw having a thread arranged to fit the spaces between the thread of the first screw and to push the emulsion out of said spaces and permit it to receive a fresh supply, journals on the ends of said second screw, said second screw being revolved by contact with the main feed-screw, and means for actuating said main feed-screw.

10. The combination in a mill of the character described, of a feed-screw and a roller so journaled as to roll with their faces together, and means for operating the same, said feed-screw having a high thread to feed the material toward one end of the mill, and the roller having a groove cut in its face to receive the thread of the feed-screw, whereby as the two roll together any material under treatment will be crowded by the roller down the track of the feed-screw formed between the threads of the same toward the grinding-disks instead of revolving with said feed-screw, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AMBROSE W. STRAUB.

Witnesses:

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