No. 815,415. PATENTED MAR. 20, 1906.

W. G. GADUE.

FLOUR SIFTER.

APPLICATION FILED JULY 26, 1905.

Fig. 1.

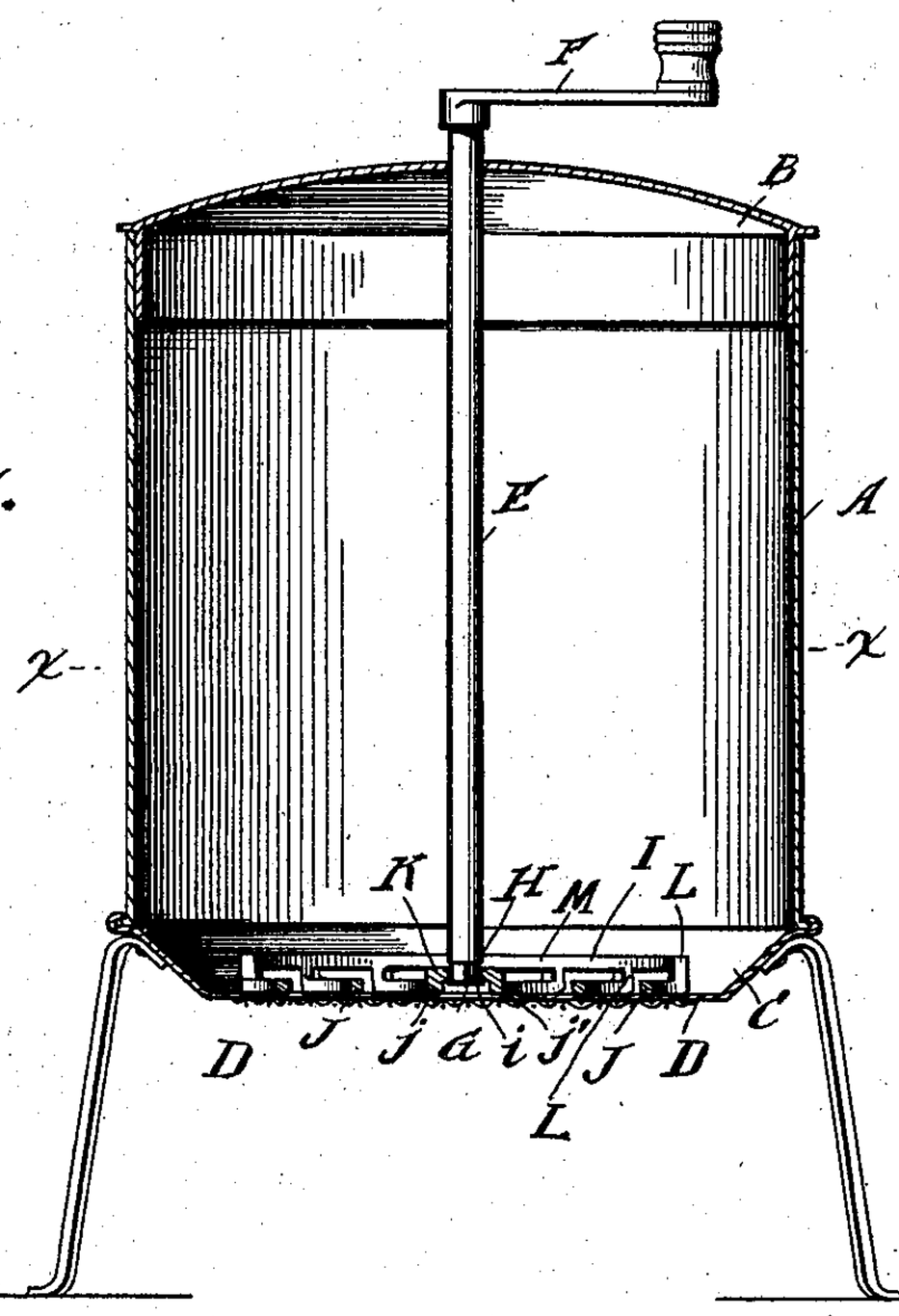


Fig. 2.

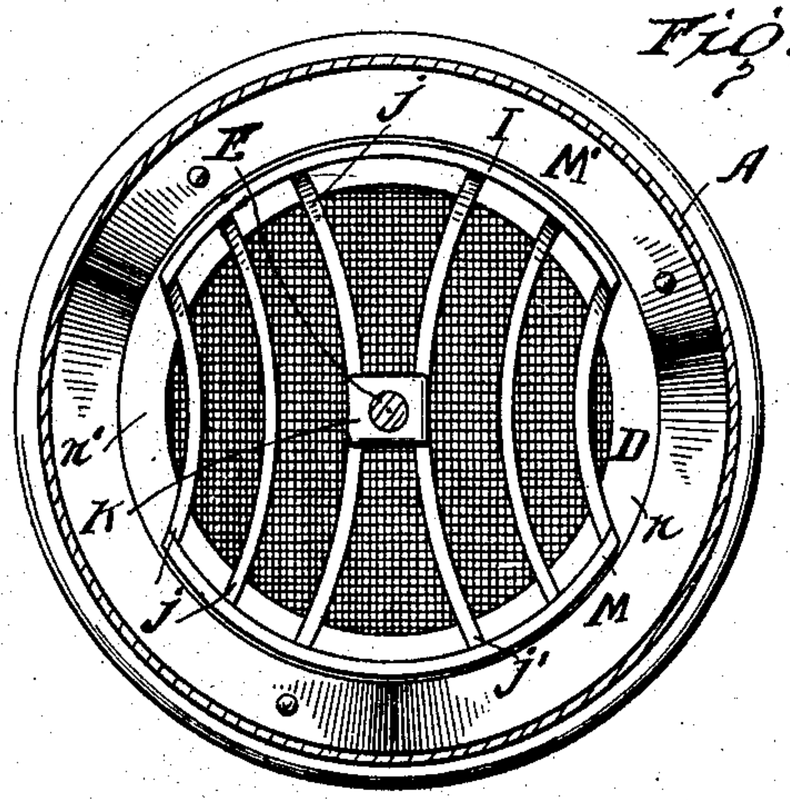
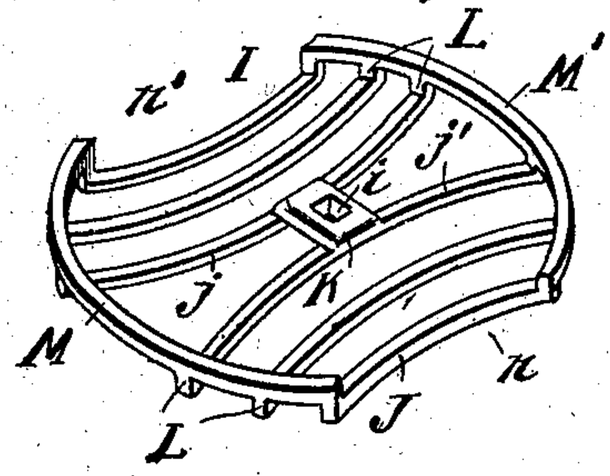


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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FLOUR-SIFTER.

No. 815,415. Specification of Letters Patent. Patented March 20, 1906.

Application filed July 26, 1905. Serial No. 271,346.

To all whom it may concern:

Be it known that I, WILLIAM G. GADUE, a citizen of the United States, residing at Burlington, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Flour-Sifters; and I do hereby 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.

My invention consists of certain improvements in flour-sifters of the general kind set forth in my Letters Patent No. 785,545, of March 21, 1905, application for reissue of which patent was filed on February 1, 1906, Serial No. 299,064, which will first be described in connection with the accompanying drawings, forming part of this specification, and will then be more particularly pointed out in the claims.

In said drawings, Figure 1 is a vertical central section of my improved sifter. Fig. 2 is a horizontal section of the same on line *x x*, Fig. 1. Fig. 3 is an enlarged perspective view of the agitator.

A is the body of the flour receptacle or can, which, as shown, is made in cylindrical form. It has at its upper end a suitable device for providing a lateral support for the upper end of the agitator-shaft, which passes loosely through it, said device being removable, inasmuch as the shaft and agitator are so connected together that they are taken out from and put into the can bodily and together, and therefore the mouth of the can must be unobstructed when the agitator is taken out or put in. The device for furnishing such lateral support consists in the present instance, as shown, of the removable cover D, formed with a central hole up through which the upper end of the agitator-shaft loosely passes, as hereinafter described.

The body A has a pan-like bottom, the sides C of which are crimped, soldered, or otherwise secured at their upper edge to the lower end of the body A. The sides C of this pan-like member are flaring, of frusto-conical shape, contracting toward the bottom, which is nearly entirely cut away, leaving only a narrow annular band or ledge D surrounding the opening, this opening being covered by a screen or netting which forms the sieve or sifting-surface. This screen is applied and secured to the exterior and under face of the band or ledge D, so that the latter will be slightly raised above the level of the sifting-surface.

The agitator is a casting similar to that set forth in my aforesaid reissued Letters Patent, being composed of curved spokes J and a rim supported upon their upturned ends. The spokes, as shown, are six in number, but may be of any desired number Those on one side are curved in one direction, while those on the other side are curved in the opposite direction. The two center spokes *j j*, as shown, are bridged by a center plate K, having in it a squared opening to receive the squared end of the shaft E for actuating the agitator. The rim supported in elevated position on the upturned ends of the spokes is, as shown, formed not as a continuous ring, but in two sections M M′, being broken away at opposite sides to leave spaces *n* and *n′*, whereby the lumps and other particles contained in the flour will be more readily thrown outward upon the ledge D and kept there, and the agitator itself will more readily and easily cut its way through the flour, thus requiring less power to operate it. The agitator is of a diameter but little less than the bottom of the pan-like member C, so that its spokes will extend beyond the sieve-surface and will lap over upon and rest on the ledge D and not upon the sieve-surface, reaching very nearly to the frusto-conical wall C, which will thus be a guide to assure the agitator from undue lateral shifting, even if, as in the present instance, it be otherwise unconfined. The rim-sections M M′ being supported in elevated position upon the upturned outer ends L of the spokes do not interfere with the outward travel of the lumps and other particles contained in the flour due to the action of the spokes when in movement. When the agitator is in operation, these lumps, &c., are by the action of the spokes thrown outwardly beyond the sieve-surface, passing under the rim M M′ and upon the ledge D, where they remain. In action the agitator does not touch the sieve-surface, nor, indeed, does it contact except at the start with the ledge D, the flour soon working between the ledge and the agitator and forming a lubricating-film, which eases the travel of the spokes. To the

same end the spokes have, preferably, a slight upward bend toward their outer ends. The agitator is provided with an actuating-shaft E, which passes loosely through the cover B and has on its end which projects above the cover an operating crank-handle F, detachably connected to it. The lower end of the shaft is reduced in diameter and squared, as at G, this portion G passing through the square opening *i* in the bridge-plate K of the agitator and having its extreme lower end upset or headed, the agitator being held between the said headed or upset end and the shoulder H, while the shaft itself at its lower end is wholly carried and supported by the agitator. The thickness of the plate K is less than the length of the squared portion G, and the opening *i* in the plate is somewhat larger than said part G, there being thus formed between the shaft and the agitator a loose connection, which will permit the agitator to rock upon the shaft while rotating with it.

To use the device, the agitator and its connected shaft E are first put into the can, the agitator resting on the ledge D in the position shown in Figs. 1 and 2. The can is then filled more or less with flour, the cover B is put on, the shaft E passing up through the hole therein, and the crank F is fitted to the shaft. The sifter is now ready for work. All that is needed is to rotate the crank F.

The shaft E is connected to the agitator and to nothing else. It rests upon and is carried by the agitator. Thus, as hereinbefore pointed out, the agitator and the shaft may be permanently connected together and can be removed from and replaced in the can bodily and together, which is not the case in the structure illustrated in my aforesaid patent. The loose joint between the two permits of a rocking motion of the agitator when in action, which facilitates the rotary movement of the same and expedites the sifting operation. The action of the spokes and of the elevated sectional rim has before been referred to and need not be repeated here.

The sifter thus made and operating has been designed principally for use as a flour-sifter; but manifestly it can be used to sift other pulverulent materials, and I desire to be understood as including such use in my claims.

Having described my improvements and the best way now known to me of carrying the same into effect, I state in conclusion that I do not limit myself strictly to the structural details hereinbefore set forth in illustration of said improvements, since manifestly the same can be varied to some extent without departure from my invention; but

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

1. A receptacle having at the bottom a screen and at the top a removable guide through which the agitator-shaft loosely passes and by which it is laterally supported, in combination with the agitator of a diameter greater than the screen, composed of curved spokes with upturned ends and a rim supported in elevated position thereon, and a vertical actuating-shaft, at its upper end loosely passing up through the removable guide for furnishing it lateral support, as aforesaid, and at its lower end resting upon, carried by, and loosely connected to, the agitator only, substantially as and for the purposes hereinbefore set forth.

2. A receptacle composed of a body, and a pan-like member closing the lower end of said body, having flaring sides, and a bottom consisting of a screen and an annular band or ledge surrounding the screen, in combination with an agitator of a diameter nearly that of the bottom of the pan-like member, consisting of curved spokes with upturned ends, and a rim supported in elevated position on said ends, a vertical shaft carried and supported by, and loosely attached to, the agitator only, and a removable guide at the top of the can through which the upper portion of the shaft passes and by which it is laterally supported, substantially as and for the purposes hereinbefore set forth.

3. The sifter herein described, comprising the receptacle-body A, the cover B, pan-like bottom C, D, with screen applied to the central opening therein, the agitator, consisting of curved spokes which extend outwardly beyond the screen-surface and overlap the band or ledge D, and a rim supported in elevated position on the upturned ends of said spokes, and the shaft E carried by and connected to the agitator only and passing up loosely through the cover, substantially as and for the purposes hereinbefore set forth.

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

WILLIAM G. GADUE.

Witnesses:
VERNON A. BULLARD,
BESSIE H. WELLER.