Jan. 2, 1923.

A. I. S. HALVORSEN.

SIFTER MECHANISM.

FILED JULY 17, 1922.

1,440,538.

2 SHEETS—SHEET 1.

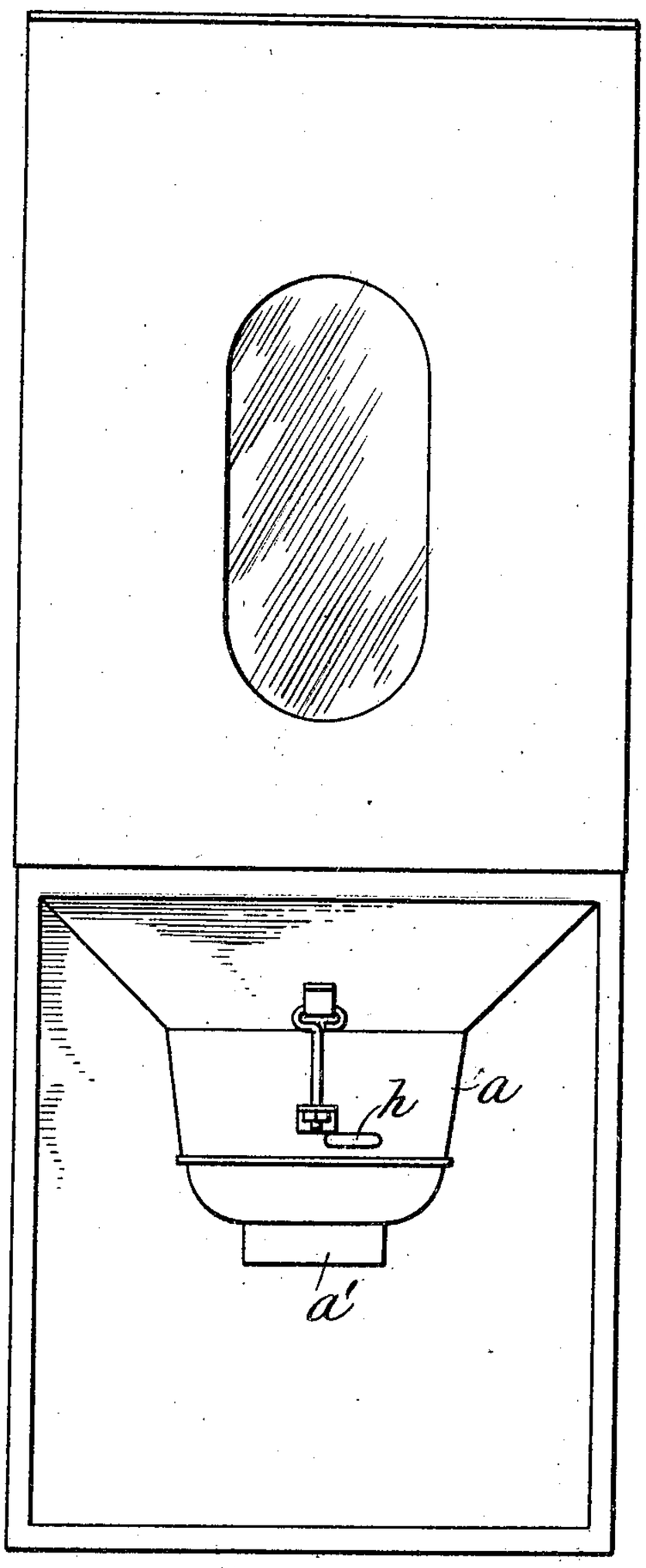


Fig. 1.

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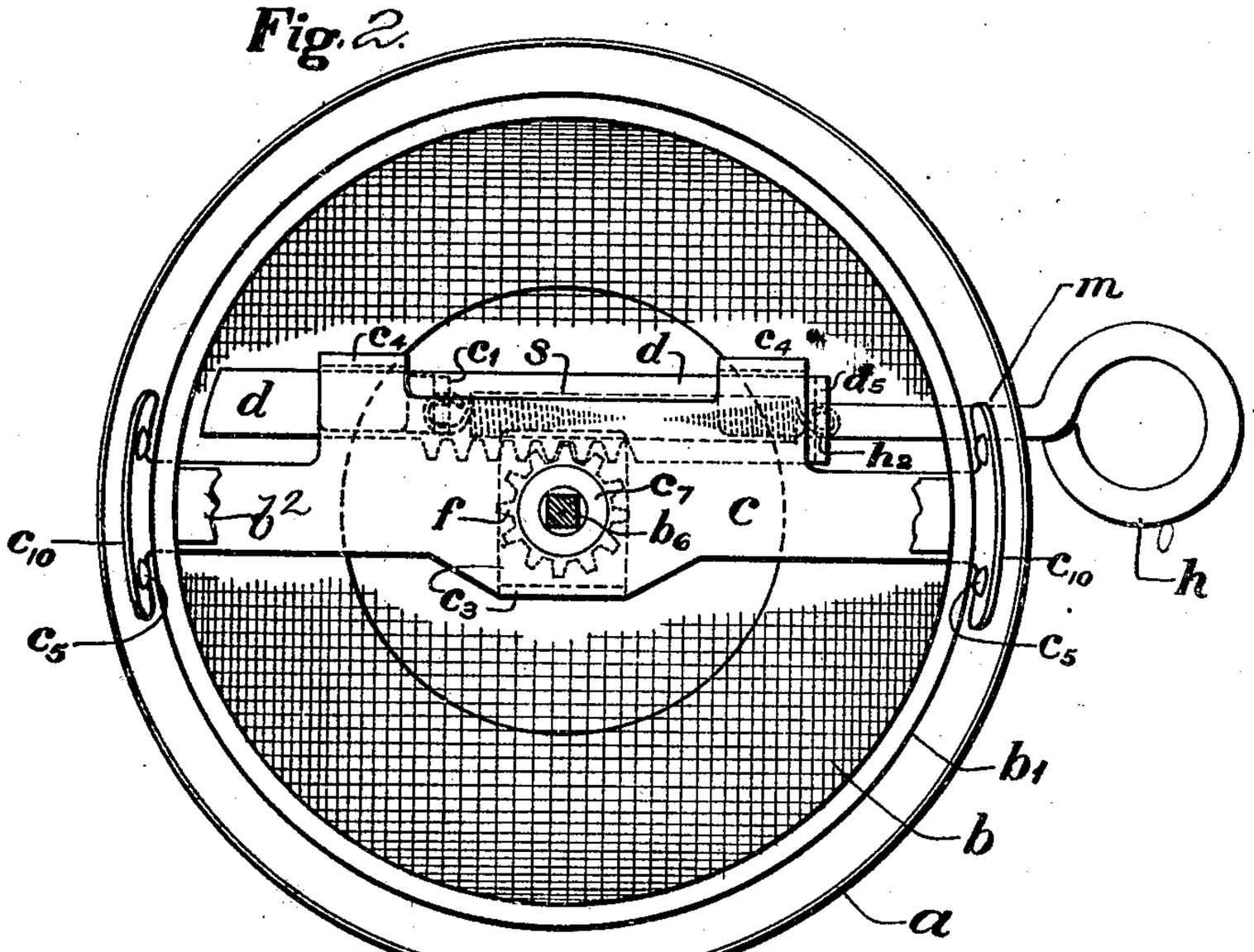
2 SHEETS—SHEET 2.

Fig. 2.



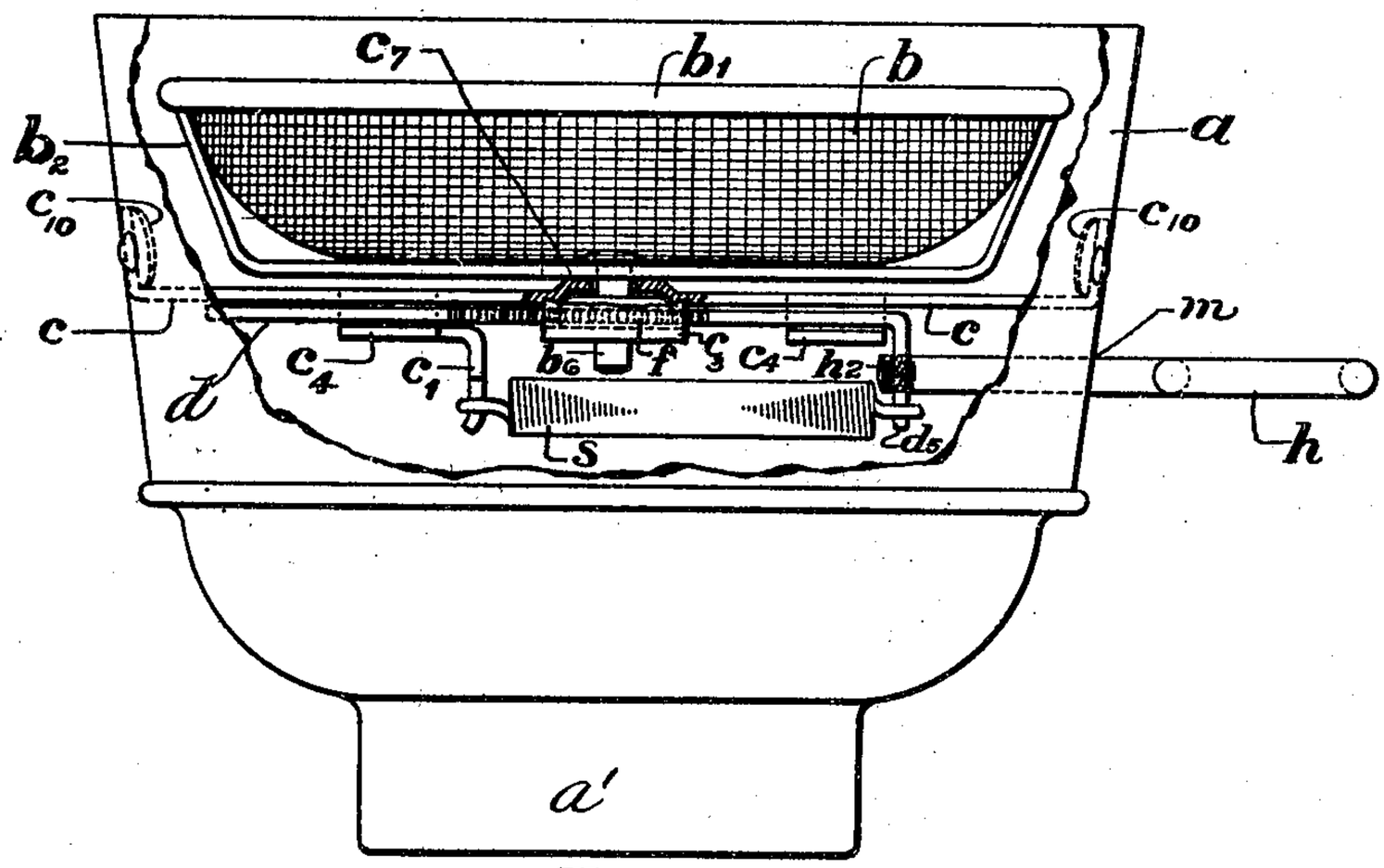




Fig. 3.

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# UNITED STATES PATENT OFFICE.

AXEL I. S. HALVORSEN, OF ALBANY, INDIANA.

## SIFTER MECHANISM.

Application filed July 17, 1922. Serial No. 575,701.

*To all whom it may concern:*

Be it known that I, AXEL I. S. HALVORSEN, a citizen of the United States, residing at Albany, in the county of Delaware and State of Indiana, have invented certain new and useful Improvements in Sifter Mechanisms, of which the following is a specification.

My invention relates to sifters for flour bins and the like and it has for its object to simplify and improve the construction thereof.

Bins such as are incorporated in kitchen cabinets and the like for holding flour are commonly constructed with a sifter outlet at their lower end within which is arranged a rotatably supported sieve that is manually oscillated to cause the flour to discharge by gravity through the same. This sieve is mounted within a sifter body detachably connected with the bin and means, including a manually operated handle upon the outside of said body, is provided by means of which the sieve is operated to cause sifted flour to be discharged from said outlet. The principal object of my invention is to improve the construction of the sieve mechanism of bins of this kind and the invention consists of a sifter mechanism having the peculiar features of construction and mode of operation hereinafter pointed out.

In the accompanying drawings:

Figure 1 is a front elevation of a flour bin including a sifter mechanism constructed in accordance with my invention.

Figure 2 is a plan view of the sifter mechanism.

Figure 3 is a side elevation, partly in section, of the sifter mechanism shown in Fig. 2.

Having reference to the drawings, $a$ is the body of my improved sifter mechanism and $b$ the sieve. The body $a$ is made from sheet metal and at its lower end is formed with a spout $a'$ adapted to receive upon it a cap or cover (not shown) by which it is closed when the sifter is not in use. The sieve $b$ is a saucer-shaped, or concaved, circular piece of wire screen having its edge or margin soldered to a chine wire $b'$ by which said marginal portion is strengthened and reinforced. The sieve $b$ is disposed within a bail-shaped yoke $b^2$ (broken away in Fig. 2) made from a narrow metal strip, the bottom portion of said sieve resting upon the middle portion of said yoke, and the ends of the latter being soldered to the chine wire $b'$ and screen $b$. At its middle the yoke $b^2$ has rigidly fastened to it a depending spindle or stud $b^6$ which, as shown in Fig. 2, is square in cross-section. This square stud occupies a square hole provided at the middle of the hub of a gear $f$ that is supported by a shelf $c^3$.

The shelf $c^3$ is a flap or tang provided upon a girder $c$ which extends diametrically across the interior of body $a$ and has its ends $c^{10}$ fastened by rivets $c^5$ to the latter. At its middle the girder $c$ is provided upon its under side with a countersink or socket $c^7$ that is occupied by the hub of gear $f$ so that the latter is held against lateral displacement, and this countersink provides a boss upon the top side of girder $c$ by which the yoke $b^2$, and parts carried thereby, are rotatably supported without liability of interference between yoke $b^2$ and girder $c$. Circular apertures formed through girder $c$ and flap $c^3$ are occupied by the stud $b^6$ so that the yoke $b^2$ and parts carried thereby are held against lateral displacement, said stud being free to rotate in said apertures.

At one side thereof the girder $c$ is made with two integral tangs $c^4$ which are bent downwardly and then laterally under the body portion of the girder to provide two shelves for supporting a metal rack $d$ provided at one side with gear teeth in mesh with the teeth of pinion $f$, the space between said shelves and the body portion of girder $c$ being slightly greater than the thickness of the rack to permit free movement of the latter. As will be clear the rack $d$ is held against lateral displacement by pinion $f$ and the two tangs $c^4$. A spring $s$ may be provided having one end thereof connected with a depending lug or tang $d^5$ at one end of rack $d$ and its other end connected with a depending lug or tang $c'$ integral with one of the shelves $c^4$. This spring serves to yieldingly hold the rack at the limit of its movement in one direction with tang $d^5$ against the other shelf $c^4$. Spring $s$, while desirable, is, however, not essential to my invention and may be dispensed with if desired.

The depending lug or tank $d^5$ of rack $d$ is made with a threaded aperture to receive

the threaded inner end $h^2$ of a handle $h$ whose shank portion extends through an aperture provided in body $a$ at $m$.

The body $a$ is telescopically fitted at its upper end upon the usual outlet spout of the bin and when a supply of flour or the like is within the bin, said flour feeds by gravity down onto the sieve $b$. It will therefore be clear that by means of handle $h$ the rack $d$ may be manually reciprocated and said rack will then act through pinion $f$ and stud $b^6$ to oscillate the sieve causing the flour to pass through the latter and discharge from nozzle $a'$.

The construction above described is efficient, simple and inexpensive and, as will be clear, the location of the rack $d$ and pinion $f$ below the girder $c$ prevents clogging of the gear teeth with flour. It will also be observed that the construction described has the advantage that the sifter may be removed for cleaning by simply removing body $a$ from the bin and lifting the sieve out, and that when so removed the pinion $f$ is held in its proper normal position by the pocket $c^7$.

What I claim is:

1. A sifter mechanism comprising a body for attachment to a bin; a girder within said body extending diametrically across the same and having its ends fastened to said body, said girder being made at its middle and upon its under side with a recess; a pinion pocketed within said recess; a spindle connected with said pinion and extending upwardly therefrom through said girder; a sieve rotatably supported upon the top side of said girder and connected with said spindle; a rack slidably supported below and by said girder, said rack being in engagement with said pinion, and means connected with said rack and extending therefrom through the wall of said body to the exterior of the latter by means of which the rack is reciprocated to oscillate the pinion, spindle and sieve.

2. A sifter mechanism comprising a body for attachment to a bin; a girder within said body extending diametrically across the same and having its ends fastened to said body, said girder being made at its middle and upon its under side with a countersunk recess; a pinion pocketed within said recess; a spindle connected with said pinion and extending upwardly therefrom through said girder; a sieve rotatably and removably supported upon the top side of said girder and connected with said spindle; a rack slidably supported below and by said girder, said rack being in engagement with said pinion and both said rack and said pinion being covered and shielded from the flour or the like by said girder, and an extension from said rack projecting through the wall of said body to the exterior thereof by means of which the rack is reciprocated to oscillate the pinion, spindle and sieve.

3. A sifter mechanism comprising a body for attachment to a bin; a girder within said body extending diametrically across the same and having its ends fastened to said body, said girder being made at its middle and upon its under side with a recess; a pinion pocketed within said recess; a spindle connected with said pinion and extending upwardly therefrom through said girder; a sieve rotatably and removably supported upon the top side of said girder and connected with said spindle; a rack slidably supported below and by said girder, said rack being in engagement with said pinion, and an extension from said rack projecting through the wall of said body to the exterior thereof by means of which the rack is reciprocated to oscillate the pinion, spindle and sieve.

4. A sifter mechanism comprising a body for attachment to a bin; a girder within said body extending diametrically across the same and having its ends fastened to said body, said girder being made at its middle and upon its under side with a recess; a pinion within said recess; a tang integral with said girder and extending beneath said pinion to support the latter within said recess; a spindle connected with said pinion extending upwardly therefrom through an aperture in said girder and downwardly through an aperture in said tang; a sieve rotatably and removably supported upon the top side of said girder and connected with said spindle; a rack slidably supported below and by said girder, said rack being in engagement with said pinion, and an extension from said rack projecting through the wall of said body to the exterior thereof by means of which the rack is reciprocated to oscillate the pinion, spindle and sieve.

5. A sifter mechanism comprising a body for attachment to a bin; a girder within said body extending diametrically across the same and having its ends fastened to said body, said girder being made at its middle and upon its under side with a recess; a pinion within said recess; a tang integral with said girder and extending beneath said pinion to support the latter within said recess; a spindle connected with said pinion extending upwardly therefrom through an aperture in said girder and downwardly through an aperture in said tang; a sieve rotatably and removably supported upon the top side of said girder and connected with said spindle; a rack immediately beneath said girder and meshing with said pinion; tangs integral with said girder extending under and slidably supporting said rack with provision for endwise movement thereof but so as to hold said rack against sidewise displacement, and means connected with said

rack and extending therefrom through the wall of said body to the exterior of the latter by means of which the rack is reciprocated to oscillate the pinion, spindle and sieve.

6. A sifter mechanism constructed in accordance with claim 1 wherein the sieve comprises a circular saucer-shaped piece of wire screen having its marginal portion reinforced and a bail-shaped yoke within which said screen is centrally disposed and to the ends of which said screen is fastened, said yoke being engaged with the spindle of the mechanism.

In testimony whereof I have affixed my signature.

AXEL I. S. HALVORSEN.