

No. 646,135.

Patented Mar. 27, 1900.

R. R. SMITH.
ROVING CAN.

(Application filed Mar. 11, 1898.)

(No Model.)

Fig. 1.

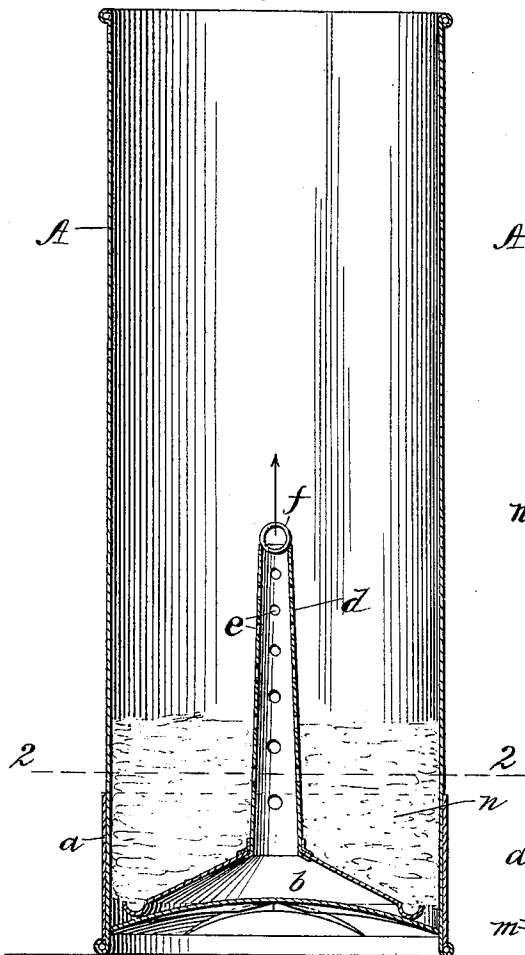


Fig. 3.

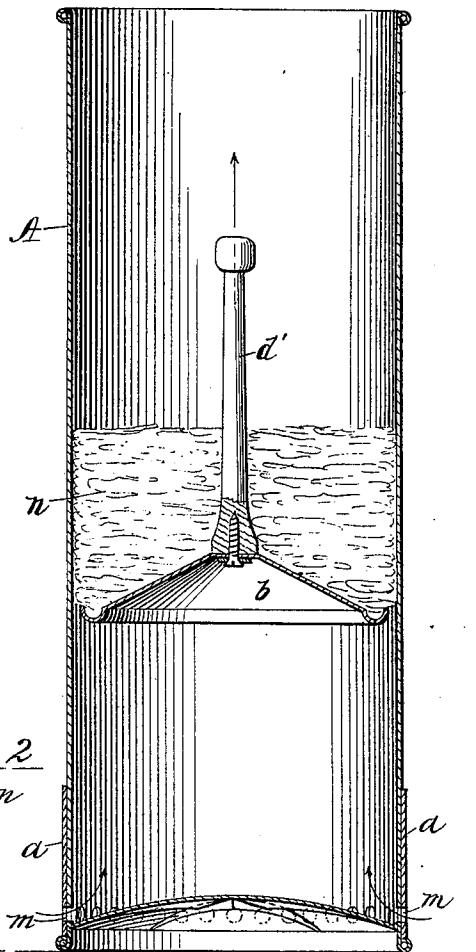
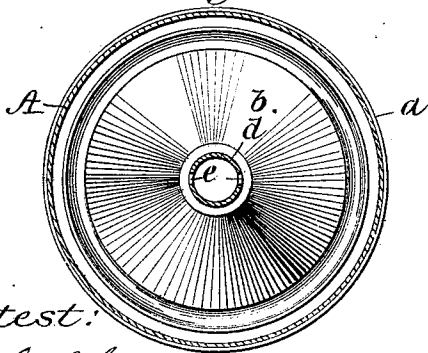


Fig. 2.



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UNITED STATES PATENT OFFICE.

ROBERT RALSTON SMITH, OF NEW HARTFORD, CONNECTICUT.

ROVING-CAN.

SPECIFICATION forming part of Letters Patent No. 646,135, dated March 27, 1900.

Application filed March 11, 1898. Serial No. 673,482. (No model.)

To all whom it may concern:

Be it known that I, ROBERT RALSTON SMITH, a citizen of the United States, residing at New Hartford, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Roving-Cans; 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 in certain new and useful improvements relating to and associated with roving-cans—the receptacles employed for receiving and conveying the sliver or roving in cotton, woolen, and other textile mills.

In the more modern operation as practiced in cotton-mills the sliver after leaving the card passes into individual roving-cans, which when full are carried forward to the railway-head. From the railway-head the cans are taken to the drawing-frame and from the drawing-frame to the back of the speeder, the sliver passing through the drawing-rolls and thence down to the flier and on to the bobbins. The cans arrive at the back of the speeder filled with roving; but the quantity of roving in the individual cans varies considerably, no two of the cans containing the same quantity unless by accident. Consequently the cans empty themselves at different times, and the operator in charge of the speeder after the full bobbin has been taken off and the empty one put on passes along, looking into each can that is reduced in quantity, so that none may be exhausted before a full one is substituted in its place and the proper splicing or joining is effected. When any of the cans is exhausted to the extent of three-fourths or four-fifths of its contents, the roving remaining in the can is parted, leaving a sufficient quantity to run into the speeder while the splicing is being done, and the end of the roving in the full can is attached to the end that is in the nearly-empty can. The can is then raised upon the shoulder or arm of the operator, allowing the remaining roving to run down on top of the full can. The bottom end of the roving thus emptied upon the contents of the full can is then attached to the end of the portion which is passing through the speeder and is allowed to join in between the rolls.

There is considerable waste in the manner in which the roving in the nearly-empty can is transferred to the full can, and it is very fatiguing work for the attendant (usually a woman) to raise and lower the cans, which are quite heavy. Moreover, the cans are often dropped upon the floor with such force as to greatly injure the can-bottom, so that in a large mill it is quite expensive to keep the roving-cans in repair.

My invention is designed to entirely obviate the necessity of lifting the nearly-empty can for the purpose of emptying its contents upon the full can in the replenishing or substituting operation referred to, so that the labor incident to the operation is very much lessened, the waste of roving practically eliminated, and the cans themselves are spared much of the hard usage to which they have been heretofore subjected.

In the accompanying drawings, Figure 1 represents in vertical section a roving-can provided with one form or modification of my invention. Fig. 2 represents a sectional plan view thereof on a plane indicated by the line 2 2 of Fig. 1. Fig. 3 represents in vertical section another form or modification of the invention.

Similar letters of reference indicate similar parts throughout the several views.

Referring to the drawings, A indicates a roving-can of the usual construction provided at its bottom with the customary reinforcing-section *a*, of heavier metal, beaded, as shown, upon its lower edge to permit the can to be rolled on said edge without injury. The particular form of can illustrated in the drawings is not of my invention, but is merely shown as a type to which my improvements may be applied.

The main characteristic feature of my invention consists in means for lifting from the roving-can the portion that is to be spliced in the replenishing operation without lifting the can itself. To this end I provide the can with what may be called a "false" bottom, preferably of smaller diameter than the interior diameter of the can, so that it will not come into frictional contact with the interior wall of the can while being raised and withdrawn therefrom. The false bottom *b* is shown as of conical shape and provided with a periph-

eral recess. Upon this conical surface the roving is laid symmetrically by the coiler about a central handle, which in the form shown in Figs. 1 and 2 consists of a hollow tube *d*, open at its ends and preferably provided with a series of peripheral perforations *e*, as shown. The top of the hollow tube may be provided with the lifting-ring *f* for its convenient manipulation. By this construction of the hollow tube *d* the space beneath the false bottom *b* is put into communication with the space above said bottom, so that when the false bottom is raised by means of its handle a free supply of air will pass downwardly through the hollow tube into the space below the false bottom. In this manner the atmospheric pressure on both sides of the false bottom is equalized. The partial vacuum that would otherwise form beneath the false bottom is thereby destroyed as soon as it exhibits a tendency to form, the air rushing downwardly through the hollow tube with a velocity proportionate to the speed with which the false bottom is raised by the operator. The operator can therefore raise the false bottom, together with its superposed burden of roving *n*, without encountering the resistance due to the formation of a vacuum or partial vacuum beneath it, the only resistance encountered being the friction exerted by the roving itself against the inner wall.

The supply of air to prevent the formation of a vacuum or partial vacuum beneath the false bottom as the latter is being raised may be obtained in other ways than through the hollow handle. Thus, as shown in Fig. 3, a series of perforations *m* may be provided near the bottom of the can, so that as the false bottom is raised the air will enter through said perforations, as will be readily understood. In this instance the false bottom *b* may, if desired, be provided with a solid han-

dle *d'*, or, if preferred, both of the described expedients for admitting air beneath the false bottom may be embodied in the same structure. In fact, in so far as this feature of my invention is concerned any equivalent means for furnishing a free supply of air to the space beneath the false bottom as the latter is raised may be employed without departing from the spirit of the invention.

Having thus described my invention, what I claim is—

1. A roving-can having an open upper end, a false bottom fitted to slide within said can and having a peripheral recess to engage and support the roving, means for lifting or raising the false bottom, and provisions for admitting a free supply of air into the space beneath the false bottom.
2. A roving-can open at its upper end, and provided with a false bottom, having a peripheral recess, a hollow lifting-handle, opening into the space above and below the false bottom.
3. A roving-can, provided with a conical false bottom, provided with a hollow lifting-handle open at both ends and having perforations in its side walls, substantially as and for the purposes set forth.
4. A roving-can open at its upper end and provided with a conical false bottom having a peripheral recess, and a hollow lifting-handle for said bottom, said handle being open at both ends and having perforations in its walls, substantially as and for the purpose described.

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

ROBERT RALSTON SMITH.

Witnesses:

EDW. E. CHAFFEE,
FREDERICK O. CLARK.