

S. S. NEWTON.
Slate-Washer.

No. 224,033.

Patented Feb. 3, 1880.

Fig. 1.

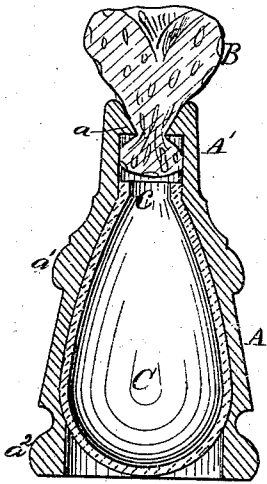


Fig. 2.

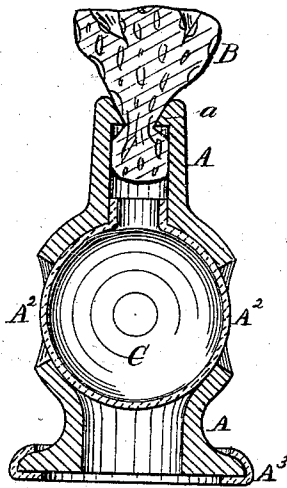


Fig. 3.

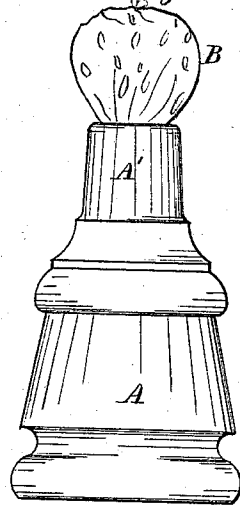


Fig. 4.

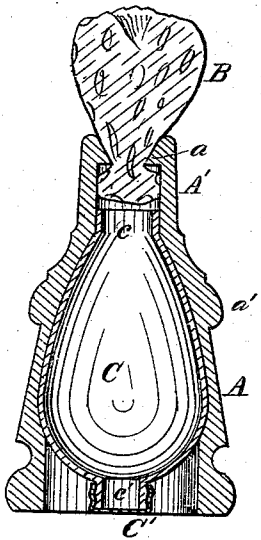


Fig. 5.

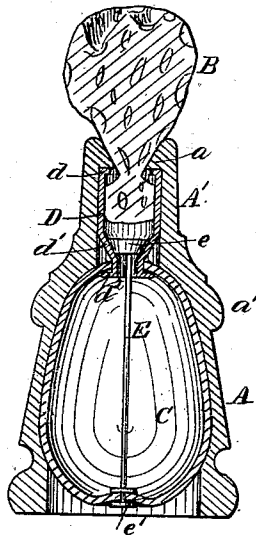
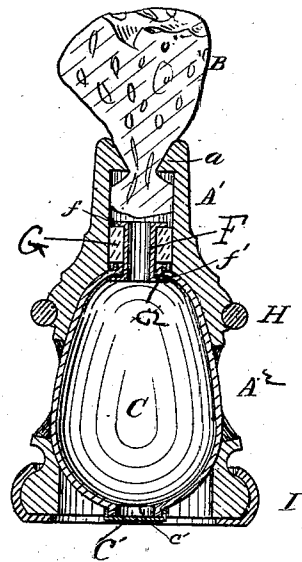


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

STEPHEN S. NEWTON, OF BINGHAMTON, NEW YORK.

SLATE-WASHER.

SPECIFICATION forming part of Letters Patent No. 224,033, dated February 3, 1880.

Application filed August 1, 1879.

To all whom it may concern:

Be it known that I, STEPHEN S. NEWTON, of Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Slate-Cleaners; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical section of my invention in its simplest form. Fig. 2 is a vertical section of a modification thereof. Fig. 3 is an elevation of the washer shown in Fig. 1. Figs. 4, 5, and 6 are vertical sections of washers having additional improvements applied thereto.

Referring to Fig. 1, A A' is the outer shell, substantially circular in cross-section, tapering from bottom to top, and terminating in a neck, A', which is provided with an internal flange or rib, *a*. This body may be ornamented with beads *a' a''*, or otherwise, and may be made of wood, hard rubber, sheet metal, paper pulp, or other suitable material.

B is a sponge arranged in the neck A', and secured therein by being compressed to such an extent that the lower portion of the sponge fills tightly the neck below the rib or flange *a*.

C is a rubber bulb or water-receptacle, of such external size as to fit closely within the shell or body A, the open neck *c* of the bulb being secured within the neck A' by means of cement or otherwise, so as to make a water-tight joint at that point.

The shell or body is open at its lower end, and it will be readily understood that a person can operate this device by inserting his finger in the lower end of the shell and thus thrusting the lower end of the bulb inward, so as to expel the air therefrom. If, now, the neck A' and sponge be inserted in water, the elasticity of the bulb will cause it to resume its original shape and thus fill itself with water, which will be drawn in through the sponge, after which the water may be applied to a slate, as required, by simply pressing upon the lower end of the bulb.

In Fig. 2 the shell is constructed substan-

tially like the shell of Fig. 1, except that it has openings A² upon each side in addition to the opening in the bottom, the object of the openings A² being to permit the operator to squeeze the ball by inserting his fingers in these openings.

It will be seen that when the shell shown in Fig. 2 is laid upon its side, with one of the openings A² downward, the side walls of the opening will form a seat, and will prevent the cleaner from rolling should it be laid upon an inclined desk. Thus these holes serve a double purpose—of affording access to the bulb and preventing the cleaner from rolling when laid upon its side. In this figure (2) I have shown also a muffler, consisting of a rubber band, A³, applied to a flange or bead formed upon the lower end of the body.

In Fig. 4 the shell, sponge, and bulb C are substantially the same as in Fig. 1, except that I provide the bulb with a neck, *c'*, at its lower end, and apply thereto an internally screw-threaded cap, C', which may be removed for the purpose of filling the bulb with water, the water to be ejected from the sponge by pressure, the same as in the other figures. By the employment of this screw-threaded cap C' for filling the bulb I am enabled to use a bulb with much thinner walls than I could otherwise do, whereby the capacity of the reservoir is greatly increased, it only being necessary that the bulb shall have sufficient elasticity to return to its normal position after it has been emptied without filling itself with water.

I prefer to form a screw-thread upon the outside of the neck *c'*; but this may not be essential, because the elasticity of the rubber is such as to permit the thread of the cap C' to take hold sufficiently under ordinary circumstances.

In Fig. 5, which is a modification of the construction shown in Fig. 6, the shell or body is constructed substantially as shown in Figs. 1 and 4. D is a metallic cylinder, of such diameter as to fit closely within the neck of the shell; and provided at its upper end with an internal flange, *d*. The lower part of the cylinder is contracted, as at *d'*, to form a valve-seat, and is provided at its extreme lower end with an outwardly-projecting flange, *d''*. E is a valve-stem, carrying at its upper end a valve,

e, which fits the valve-seat *d'*, the lower end of the valve-stem being connected with the lower end of the rubber bulb C by means of a collar, *e'*, attached to the valve-stem. In constructing this form of washer, I prefer to attach the bulb to the lower end of the cylinder D by expanding the opening in the upper end of the bulb and slipping it over the flange *d'*.

The bulb may be constructed with a short neck, which will give it a firm gripe upon the cylinder. I then press the lower end of the bulb inward and thrust the valve-stem down through the cylinder from the upper end and through the lower end of the bulb, where it is secured by screwing or riveting the collar *e'* upon the end of the stem. The bulb and cylinder are then thrust within the shell, where they may be secured by some adhesive material; or the cylinder may be made to fit so closely within the neck A' that it will be held in place by friction only; or the cylinder, being of thin sheet metal, may be secured within the neck by small indentations made in the cylinder from the inside by means of a punch or other sharp-pointed instrument.

It will be readily understood that when pressure is applied to the lower end of the bulb the valve E will yield to permit the escape of water, while the tension of the bulb will retain the valve in close contact with its seat, and thus prevent the escape of water except when pressure is applied to the lower end of the bulb, as above described.

In Fig. 6 the shell, sponge, and rubber bulb C are constructed substantially as shown in Fig. 5. F is a metal cylinder, provided at top and bottom with outwardly-projecting flanges *f f'*. G is an annulus, of cork, rubber, or other suitable material, adapted to pack tightly the space between the cylinder F and the inside of the neck A'. The bulb C is secured to the cylinder F by means of the flange *f'*, the annulus G being of such size as to leave sufficient room between its lower edge and the said flange *f'* for this purpose.

When preferred, the bulb may be still further secured to the cylinder F, or to the cylinder D, (shown in Fig. 5,) by winding with cord or wire, as indicated at *e'*, Fig. 6.

When metal is used for the outer casing I prefer to use, in addition to the band or muffler I at the lower end of said casing, a supplemental muffler, consisting of a ring, H, fitted in a groove formed for its reception in the casing, or applied to a bead formed upon the casing, indicated at *a'* in the various drawings.

When preferred, a valve-seat for the valve *e*, Fig. 5, may be formed in the rubber neck at the upper end of the receptacle instead of being formed in the separate metal cylinder D; but in practice I prefer the construction shown.

I am aware that a sponge has been combined with a flexible bulb or water-receptacle, for which reason I do not claim such combination, broadly; but in such device as heretofore used the bulb was constructed without a neck corresponding to the part marked *c* on my drawings, for which reason the bulb could not be attached to the neck A' in my construction, except by the use of a metallic coupler; nor were the earlier devices constructed with a neck corresponding to the neck A' in my washer, for which reason the bulb could not be thrust into a hollow shell, which it fits closely, and be attached directly thereto; nor was the earlier device so constructed that the bulb could be readily pressed by the application of the finger of the operator.

What I claim is—

1. In a slate-cleaner, the cylindrical body A, having the tubular neck A', formed in one piece therewith or rigidly attached thereto, in combination with the elastic bulb C, provided with a neck secured within the neck of the shell, and arranged in close proximity to an opening in the shell adapted to receive the finger of the operator, substantially as set forth.

2. In a slate-cleaner, the combination of the cylindrical shell A, provided with a tubular neck and an opening, A², in the side of the elastic bulb C, secured within the neck A', substantially as set forth.

3. In a slate-cleaner, an outer shell or casing adapted to receive and support the sponge, in combination with an inner elastic bulb, C, attached at its upper part to the casing, and provided at its lower end with a cap, O', substantially as set forth.

4. In a slate-cleaner, a shell or casing, A, provided with a tubular sponge-support, A', in combination with an inner elastic bulb, C, and a cylinder having a flange, *f'*, by which the bulb is attached to the inside of the neck A', substantially as set forth.

5. In a slate-cleaner, an outer shell or casing, A, provided with a tubular neck, A', in combination with a flexible bulb, C, a metallic cylinder attached to the bulb, and an annulus interposed between the cylinder and the neck to retain the bulb in position and pack the space between the neck and the cylinder, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

STEPHEN S. NEWTON.

Witnesses:

G. T. PECK,

G. B. NEWTON.