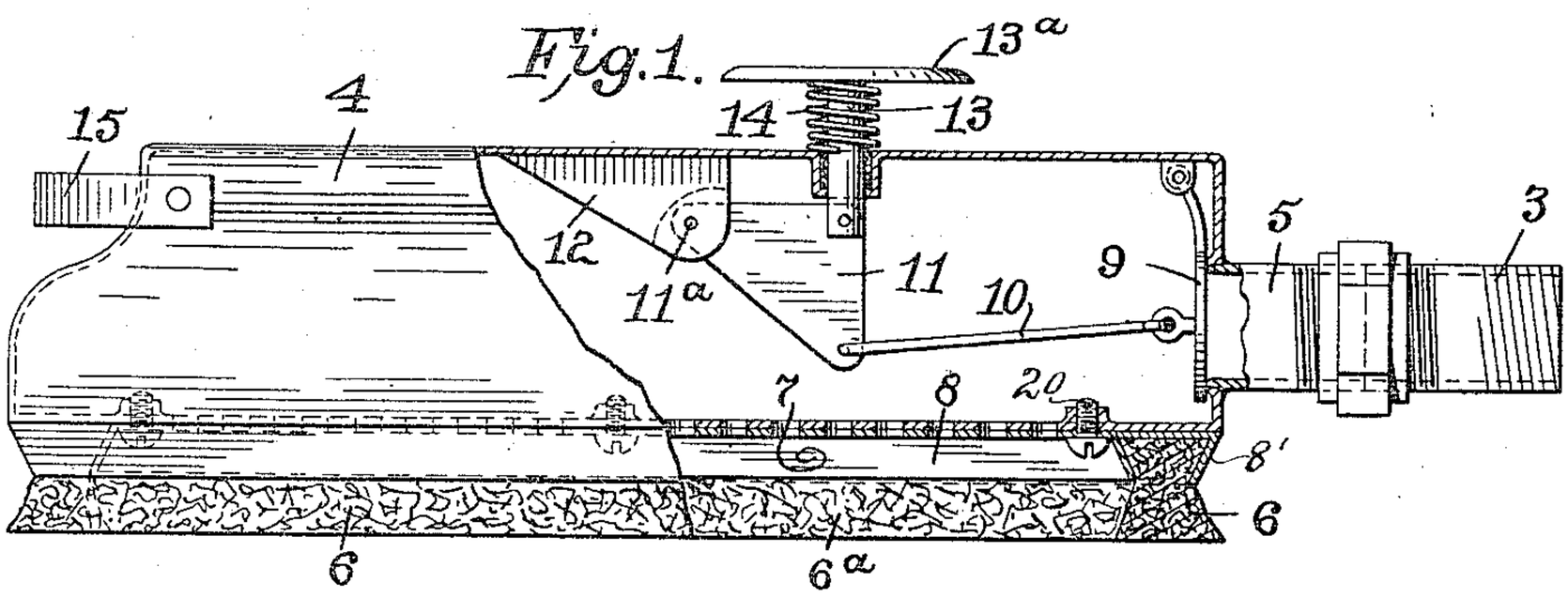
G. P. LULL.

BLACKBOARD ERASER.

APPLICATION FILED MAR. 3, 1911.

995,409. Patented June 13, 1911.

Fig. 1.



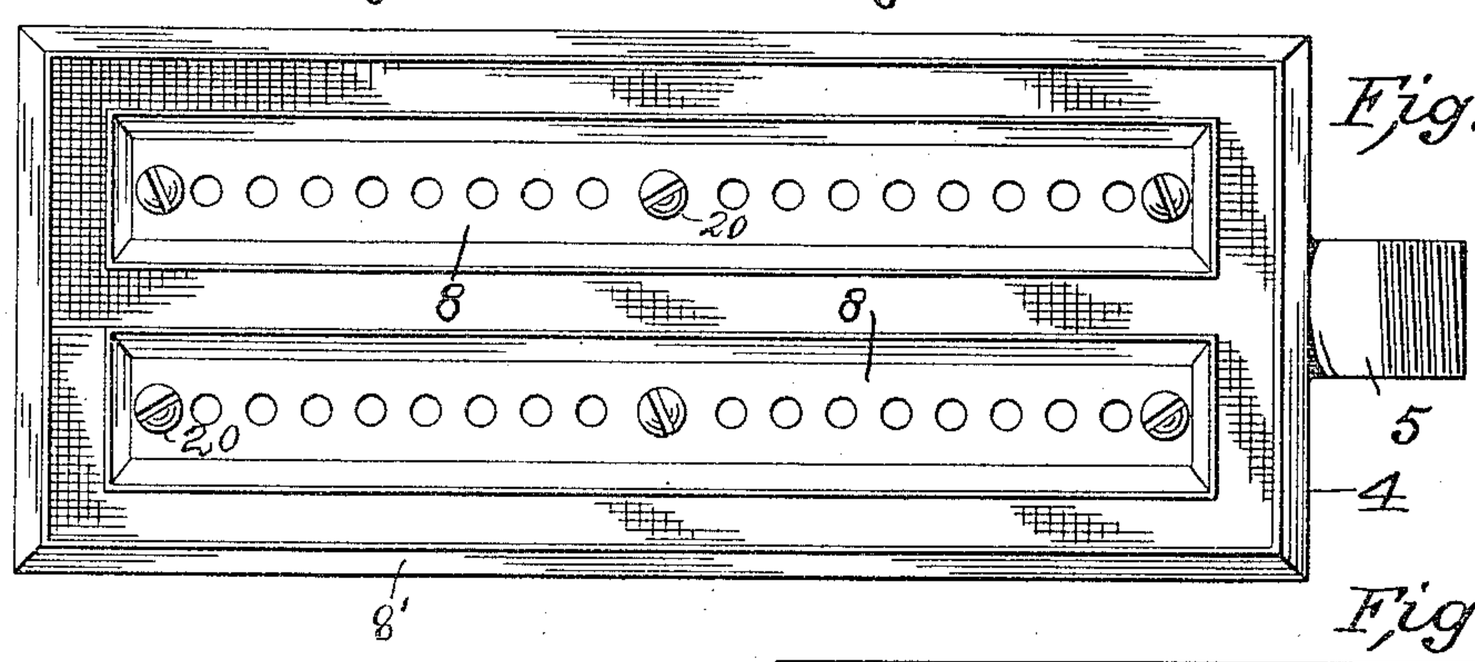
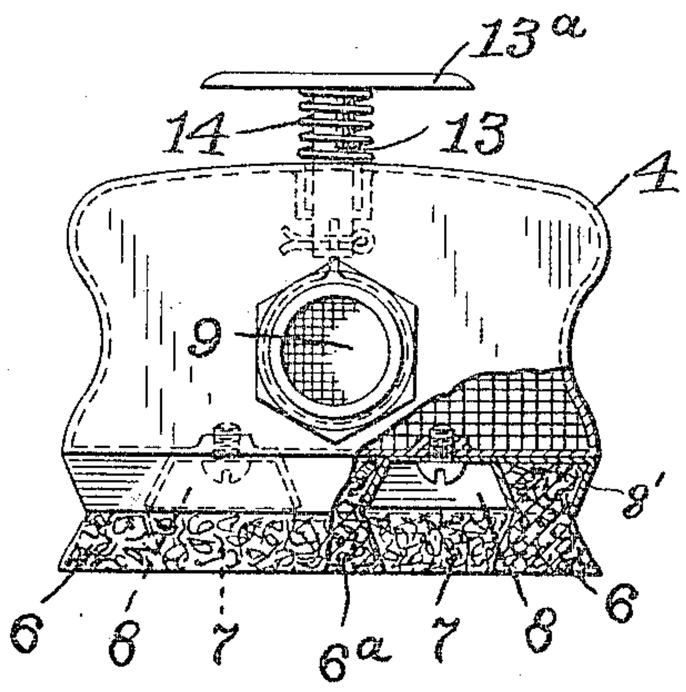
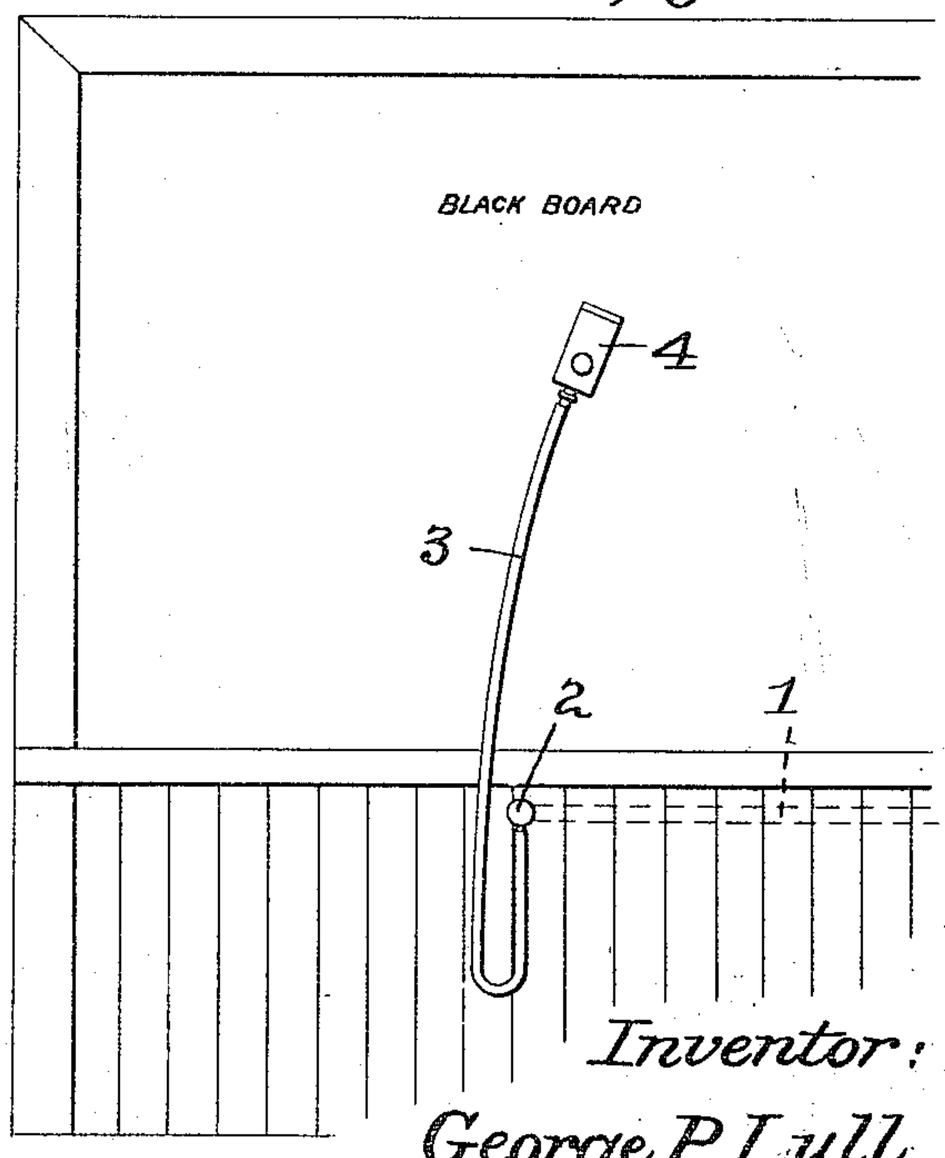


Fig. 4.

Fig. 3.

Fig. 2.





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UNITED STATES PATENT OFFICE.

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BLACKBOARD-ERASER.

995,409. Specification of Letters Patent. **Patented June 13, 1911.**

Application filed March 3, 1911. Serial No. 612,157.

To all whom it may concern:

Be it known that I, GEORGE P. LULL, citizen of the United States, residing at Bradford, Pennsylvania, have invented certain new and useful Improvements in Blackboard-Erasers, of which the following is a specification.

My present invention relates to improvements in blackboard cleaners or erasers and has for its object to produce a device which may be easily and effectively used to clean off blackboards without causing dust to be disseminated throughout the room to the discomfort and injury of the occupants thereof.

An eraser constructed in accordance with my invention is illustrated in the accompanying drawing in which—

Figure 1 is a side elevation, partly in section. Fig. 2 is an end view, also partly in section, and Fig. 3 is a front view of a portion of a blackboard illustrating the use of the cleaner. Fig. 4 is a bottom plan view of the cleaner with the felts removed.

My black board cleaner is adapted to be used in a building equipped with piping for vacuum cleaning purposes. I have shown in the drawing a portion of such piping, as indicated in dotted lines in Fig. 3, and connected with a flexible tube 3 to my eraser 4, shown diagrammatically in connection with the blackboard. The connection of the flexible pipe or hose with the fixed piping is shown at 2 and at that place may be located any suitable shut off valve.

The eraser is specially designed to be used by children, and especially adapted to be grasped by their hands operating at the same time the valve by which the exhaust is put in action. The eraser comprises a hollow main vacuum chamber 4 made in narrow elongated form, adapted to be grasped by the hand of a child, the form of the sides being clearly shown in Fig. 2. Below this main chamber is a felt carrier, the walls of which, when the eraser is applied to the blackboard form a secondary air chamber which is in connection with the main chamber by a series of holes throughout its entire length. The felt or equivalent fibrous material shown at 6 is inclosed and held by walls, as illustrated in Figs. 1 and 2, and a central longitudinal felt strip 6ª similarly held occupies the center, as shown in Fig. 2. The main part of the rubbing surface of felt marked 6, is on the sides and ends, as shown in Fig. 4, the interior strip 6ª being shown also in this figure, which is a bottom view. The inclosing walls which hold the felt are fixed to a plate formed with perforations which register with like perforations in the bottom of the main chamber to which said plate is removably held by screws 20, whereby the rubbing surfaces may be renewed when worn.

As shown the felt holder comprises the spaced downwardly flaring open bottomed hollow members 8, parallel with each other and with the sides of the cleaner, and the outer member 8′ having depending convergent walls extending along the lower edges of the sides and ends of the body of the cleaner, and spaced from the members 8. The outer member, as shown, is held to the body by the flaring walls of the inner members.

It will be observed that the narrow rubbing strips 6 form the walls of the lower exhaust chamber so that the force of the exhaust is across this narrow strip and the dust displaced by the rubbing surfaces, is acted upon directly and strongly by the exhaust, and completely drawn across this narrow margin into the lower chamber, and it is also drawn equally all around the edge of the working face of the eraser. In erasers of this class it is necessary that the exhaust should be shut off automatically when the eraser is not in use. Further, it is desirable that the exhaust should be established easily when the eraser is in use. In order that it may be easily and effectually established by the user, even though a child, I have provided a plunger 13 passing through a suitable packed opening in the top wall of the body or case and this is provided with a head 13ª, adapted to be pressed upon by the palm of the hand, so that in grasping the cleaner and pressing it against the blackboard the plunger is pushed in by the palm of the hand coming in contact with the plunger head and by the force exerted in pressing the eraser against the board. This plunger operates upon an arm 11, pivoted at 11ª to a projection 12 inside of the case. It is connected by a link 10 to the hinged valve 9 located at the orifice and covering the mouth of the exhaust pipe. A light spring 14 holds the plunger up when not in use.

While the apparatus is especially adapted to blackboards and for use for children, it may of course be used for other purposes.

With a construction such as described the mere pressure of the cleaner against the blackboard opens the valve and as it is moved over the blackboard and the felts remove the dust the latter is drawn into the body of the cleaner and thence to the piping and into the collection receptacle (not shown).

I have found that a cleaner such as hereinbefore described is also specially adapted for and efficient in the cleaning of furs.

At 15 is shown a handle by which the cleaner may be suspended when not in use.

Having thus described my invention what I claim is:—

1. A pneumatic cleaner comprising a main elongated vacuum chamber adapted to be grasped by the hand of the user, a corresponding elongated chamber below said vacuum chamber, and in communication therewith throughout its entire length, said lower chamber being surrounded by a wall surfaced with rubbing material, a valve for shutting off the exhaust operated by the hand of the user, and a flexible exhaust tube connected with said main chamber, substantially as described.

2. A pneumatic cleaner comprising a main elongated vacuum chamber adapted to be grasped by the hand of the user, a corresponding elongated chamber below said vacuum chamber and in connection therewith throughout its length, said lower chamber being surrounded by a wall surfaced with rubbing material, a valve for shutting off the exhaust, said valve being operated by means of a spring knob located on the top of the main chamber, and a flexible exhaust tube connected with said main chamber, substantially as described.

3. An eraser or cleaner consisting of a hollow elongated body, having means for connection with an exhaust hose, and a felt holder comprising the spaced downwardly flaring open bottomed hollow members 8, parallel with each other and with the sides of the cleaner, and the outer member 8′ having depending convergent walls extending along the lower edges of the sides and ends of the body of the cleaner, and spaced from the members 8, substantially as described.

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

GEORGE P. LULL.

Witnesses:
EDMUND J. BURNS,
RUFUS B. STONE.