

L. A. PECK.
BLACKBOARD CLEANER.

Patented Apr. 12, 1898.

Fig. 1.

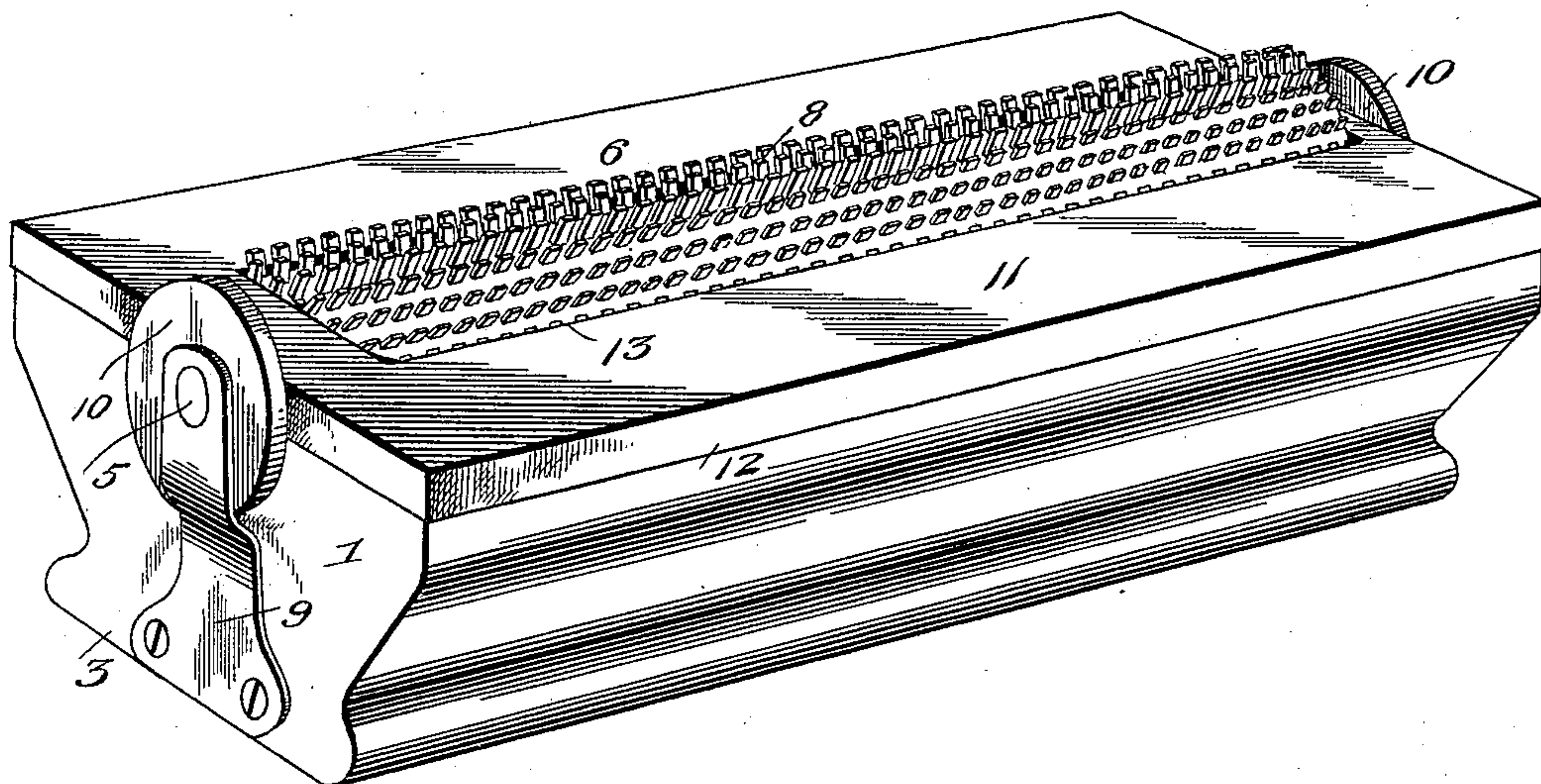
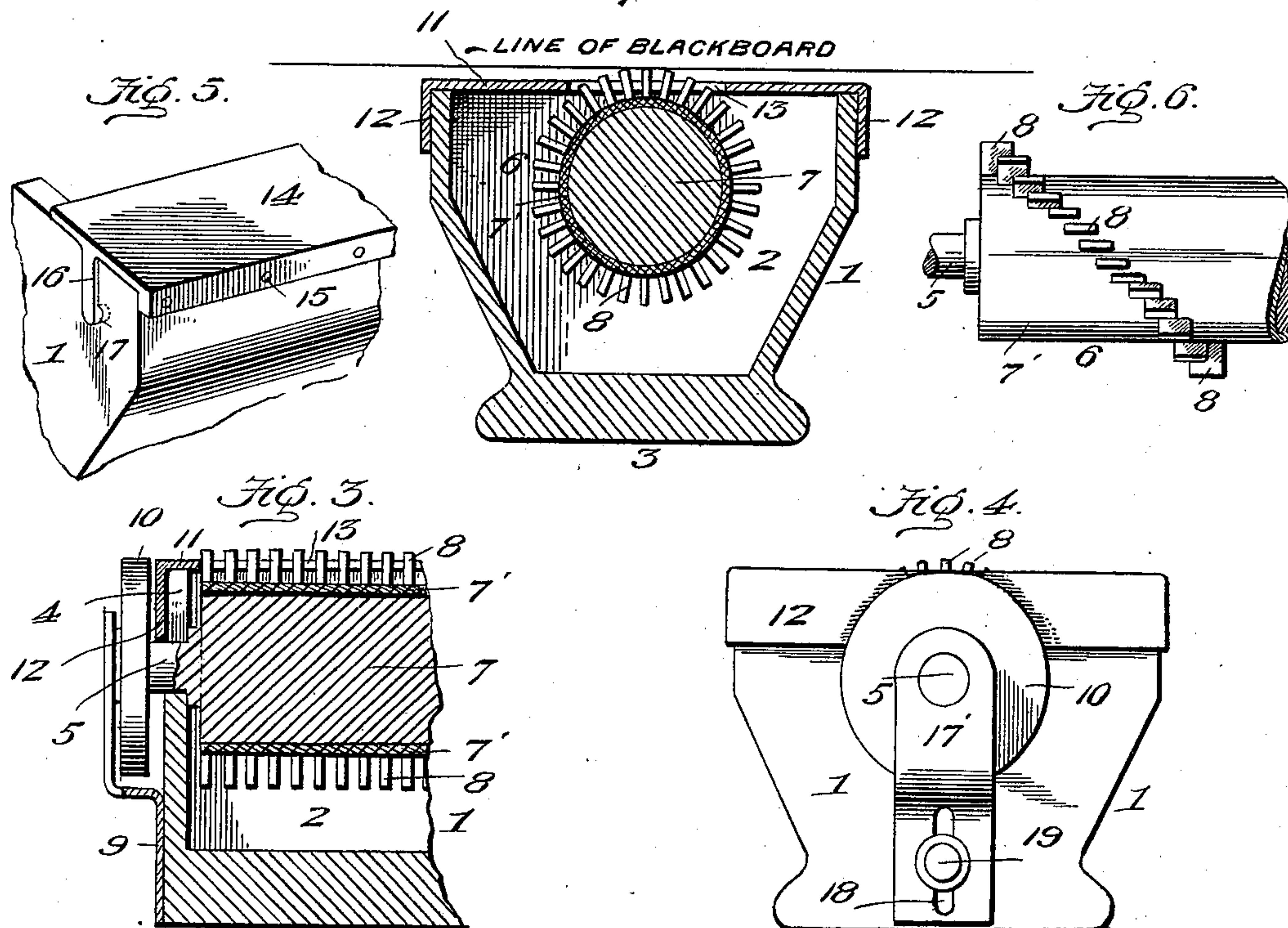


Fig. 2.



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UNITED STATES PATENT OFFICE.

LAURA A. PECK, OF GENEVA, NEW YORK.

BLACKBOARD-CLEANER.

SPECIFICATION forming part of Letters Patent No. 602,266, dated April 12, 1898.

Application filed June 10, 1897. Serial No. 640,199. (No model.)

To all whom it may concern:

Be it known that I, LAURA A. PECK, a citizen of the United States, residing at Geneva, in the county of Ontario and State of New York, have invented certain new and useful Improvements in Blackboard-Cleaners; 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 relates to improvements in cleaners or erasers for use on blackboards or slates to efface chalk or crayon marks therefrom; and the object that I have in view is to provide a simple and inexpensive eraser in which the chalk-dust is thrown into a chamber by the action of a positively-driven roll.

The ordinary felt or wool faced blackboard-rubber is open to the objection that the felt or wool becomes impregnated with the pulverized chalk-powder, and when the rubber is used or is struck against an object the chalk-powder flies out into the air, which is very objectionable, as it lodges on the clothing of the user and adjacent objects. Another objection to the ordinary eraser resides in the fact that the accumulated chalk-dust cannot be removed without destroying the integrity of the wool or felt erasive surface. The eraser soon becomes worn out or rendered unfit for use by excessive impregnation of the chalk-powder. It is my aim to overcome these objections by the provision of a blackboard-rubber in which the soft wool or felt erasive surface is dispensed with, and in lieu thereof I employ a roll of flexible soft-rubber tongues, which roll is driven at positively a rapid rate as the cleaner is moved over the board, so as to forcibly impel the flexible tongues into contact with the surface of the blackboard and to cause the tongues by abrasion with the chalk or crayon marks to efface and erase the same from the blackboard-surface. The chalk-powder is impelled or thrown into a chamber of the casing, the latter serving the purposes of a hand-grasp and as a means for supporting the operative elements of the improved cleaner.

The invention further consists in the novel combination and construction of parts, which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is an enlarged perspective view of a blackboard-cleaner constructed in accordance with my invention. Fig. 2 is a vertical transverse sectional view thereof. Fig. 3 is a detail sectional view taken longitudinally through the axis of the roll and illustrating the construction at one end of the cleaner. Fig. 4 is an end elevation of the cleaner, showing a means for adjusting the roll to compensate for wear of the flexible tongues thereof. Fig. 5 is a detail fragmentary view illustrating a modified construction of one of the closures or face-strips for the open side of the cleaner-casing that is presented to the blackboard. Fig. 6 is a detail fragmentary view of the roll, showing the preferred arrangement in spiral order of the flexible abrasive tongues.

Like numerals of reference denote corresponding parts in all the figures of the drawings, referring to which—

1 designates the casing of my improved blackboard-cleaner, which is constructed in any suitable way to provide a dust collecting or storage chamber 2. I prefer to give to the casing the form shown in the drawings, in which the rear side is closed, as at 3, and the side walls diverge from the closed rear side toward the front, because this form of the casing provides a secure handhold in grasping and using the cleaner; but it is evident that the shape and proportion of the cleaner-casing may be changed within wide limits without departing from the spirit of the invention. The front side of the casing is open, preferably, throughout its length and width, and in the end walls of the casing are provided slots or openings 4 to accommodate the trunnions 5 on the rotary roll 6. This roll extends longitudinally through the casing, and it is arranged therein so as to have some of the tongues project beyond the casing. I prefer to construct this roll with a solid core 7, of wood or other appropriate material, and to make the trunnions 5 integral with the core and in axial alinement therewith. The cylindrical face of the core is covered by a rubber jacket 7', having the flexible rubber

tongues 8 made integral with the same; but I do not restrict myself to this particular way of making the roll, because I am aware that the core and the tongues may be molded in a single piece. The flexible rubber tongues are of rectangular form, and they are arranged in spiral order on the roll, said rectangular form of the tongues giving to their outer free ends broad working faces that operate efficiently to efface the chalk or crayon marks. The flexible rubber tongues are arranged or grouped in spiral order closely together throughout the entire surface of the roll, and thus there are provided on the roll a very large number of the tongues.

The journals or trunnions 5 pass through the openings or slots 4 in the end walls of the casing, and the extremities of said trunnions find bearings in suitable supporting plates or brackets 9, which are attached to the ends of the casing. These projecting journals or trunnions 5 of the roll have the frictional drive-wheels or disks 10 secured thereto in any suitable way, said wheels or disks being made of rubber or any suitable material to secure good frictional contact with the surface of a blackboard when the cleaner is used. The drive-wheels are of a diameter and are arranged to have the peripheries thereof flush with or concentric to the substantially cylindrical working face of the roll formed by the ends of the flexible independent tongues, and said wheels or disks bear upon the surface of the blackboard, so that they are rotated by frictional contact therewith when the cleaner is moved over the surface of the blackboard, whereby the roll is driven positively and the broad working ends of the multiple tongues are caused to strike the blackboard with sufficient force to efface the chalk or crayon marks thereon.

The open side or front of the casing is designed to be closed except where the tongued roll projects, and in an eraser of the character herein disclosed it is necessary that the closure for the open front of the casing shall not scratch and deface the surface of the blackboard. I attain this object by employing a closure or facing of rubber or rubber fabric or equivalent material. The closure or facing is shown in Figs. 1, 2, and 3 as consisting of a sheet of rubber 11, having a boundary rim or flange 12, that is sprung over the edges of the side and end walls of the casing 1, whereby the sheet closure 11 may be made in a single piece and be secured to the casing in a simple way to provide for access to the chamber 2 by simply displacing the closure or by removing one side thereof. This continuous-sheet closure is provided with a longitudinal central slot 13 of such size that the tongues on the roll may project through the slot and the roll and tongues may work therein without the tongues striking the edges of the slot, sufficient space being left

between the slotted closure or facing and the roll for the clearance of the tongues. I may, however, make the closure in the form of side strips, (indicated at 14 in Fig. 5.) These strips are of rubber or rubber fabric and extend longitudinally along the casing on opposite sides of the roll, and said closure-strips preferably have one edge fastened to the side of the casing, as at 15, while each end of said strip is fastened by an arm 16, which may be integral with the strip or be made a part of an elastic metallic plate fastened to the end of the closure-strip, said arm 16 having a lug 17, adapted to fit in an aperture in the end of the casing.

As the tongues are exposed to friction when the cleaner is in use they are liable to wear down and become shortened. To compensate for this wear on the tongues, I make use of adjustable supporting-plates 17', (indicated in Fig. 4,) which plates support the journals of the roll and have slots 18, through which pass the clamping-screws 19, that fasten the plates rigidly to the casing and enable the plates to be adjusted to project the roll more or less, as may be required.

The mode of using the cleaner is obvious. The device is moved by hand over the blackboard and the friction-wheels ride thereon, so as to impel the roll and cause its flexible tongues to strike and efface the chalk or crayon marks on the blackboard. The chalk dust is thrown into the chamber 2 of the casing, in which it is collected instead of being thrown off into the air.

One of the important features of my invention is the facility with which the roll can be cleaned. The roll can be withdrawn from the brackets or plates and the casing, then thoroughly washed with water from all accumulations of chalk-powder, after which the roll can be dried and then replaced in the casing.

I am aware that changes in the form and proportion of parts and in the details of construction herein shown and described as the preferred embodiment of my invention may be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such alterations and modifications as fairly fall within the scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A blackboard-eraser comprising a casing, a closure for an open side of said casing and provided with a longitudinal central slot, a rotatable roller journaled in the casing, the individual flexible tongues arranged in spiral series on the roller and protruding through the slot in said closure to present abrasive surfaces, and drive-wheels rigid with said roller and protruding beyond the closure to

have frictional contact with a blackboard and to positively turn the roller, whereby the roller is rotated and the individual tongues thereof are caused to forcibly impinge against a blackboard-surface to efface chalk or crayon marks therefrom, as set forth.

2. In a blackboard-cleaner, the combination with a casing and rotatable roll journaled therein, of a flexible closure detachably secured to the open side of said casing and having a longitudinal slot through which said roll protrudes, substantially as and for the purposes described.

3. In a blackboard-cleaner, a casing, and a closure made in a continuous sheet of rubber, provided with a central longitudinal slot and arranged to be fastened detachably to the casing by springing the same over the edges thereof, combined with a roll arranged to

have its working surface project through the slot in said casing, as and for the purposes described.

4. A blackboard-cleaner comprising a chambered casing having an open side, a flexible closure detachably applied to said open side of the casing and arranged to form a longitudinal slot or opening, and a roll journaled in said casing and provided with the plurality of individual flexible tongues and with the frictional driving wheels or disks, the protruding ends of said tongues forming broad erasive surfaces, substantially as described.

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

LAURA A. PECK.

Witnesses:

HENRY E. COOPER,
WM. C. DASHIELL.