

July 25, 1939.

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2,167,296

AUTOMATIC BLACKBOARD ERASER

Filed Dec. 22, 1936

4 Sheets-Sheet 1

Fig. 1.

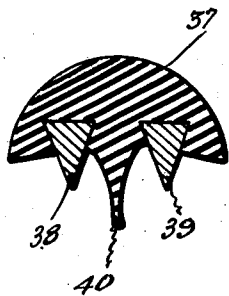
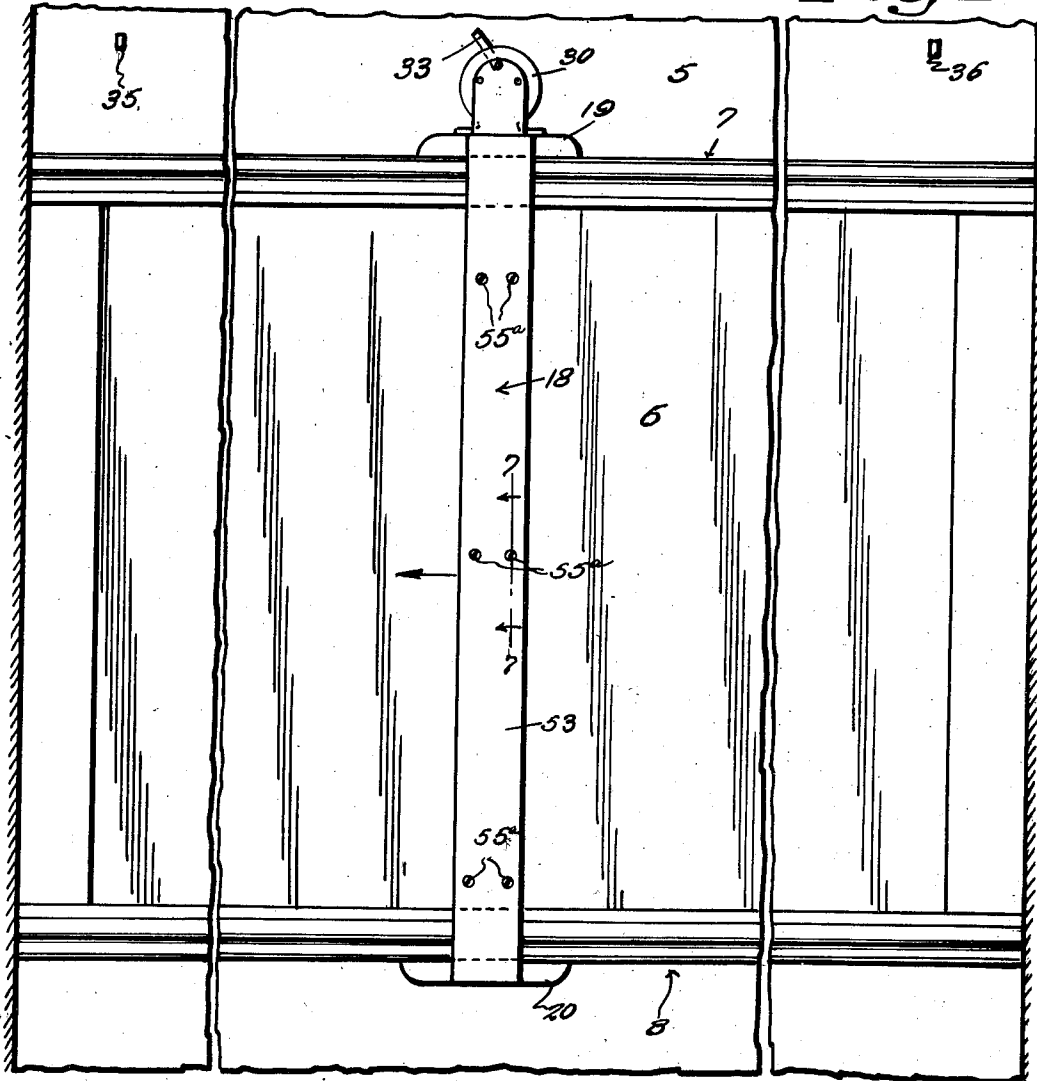


Fig. 6.

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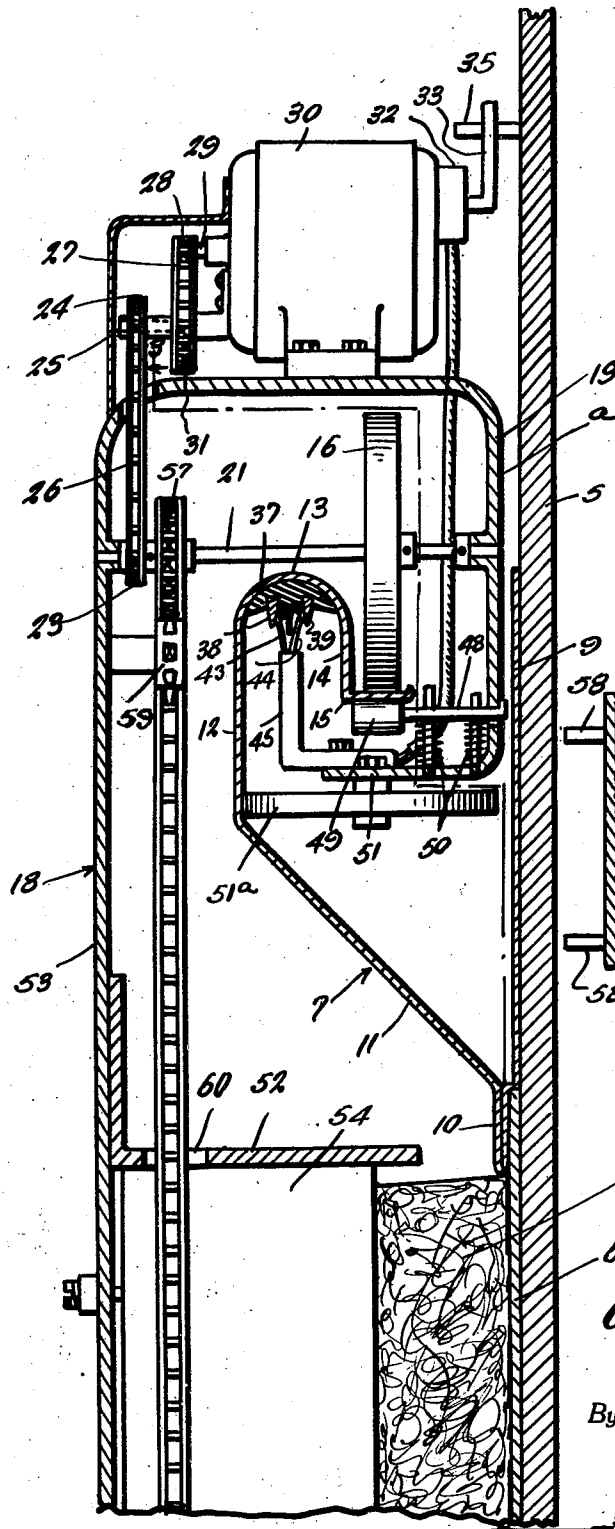
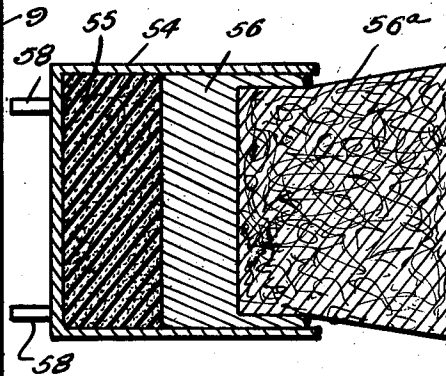


Fig. 2.

Fig. 5.



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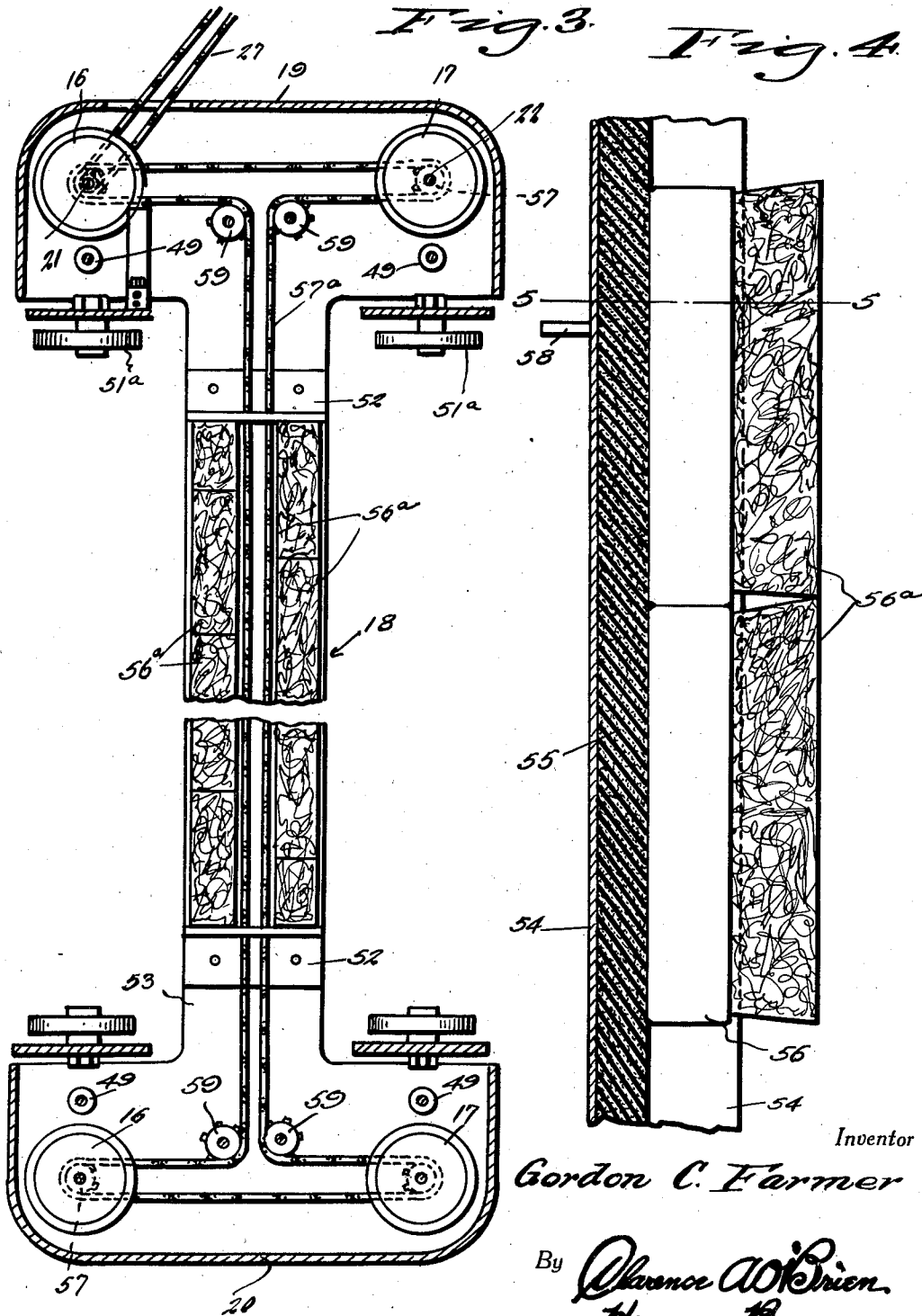
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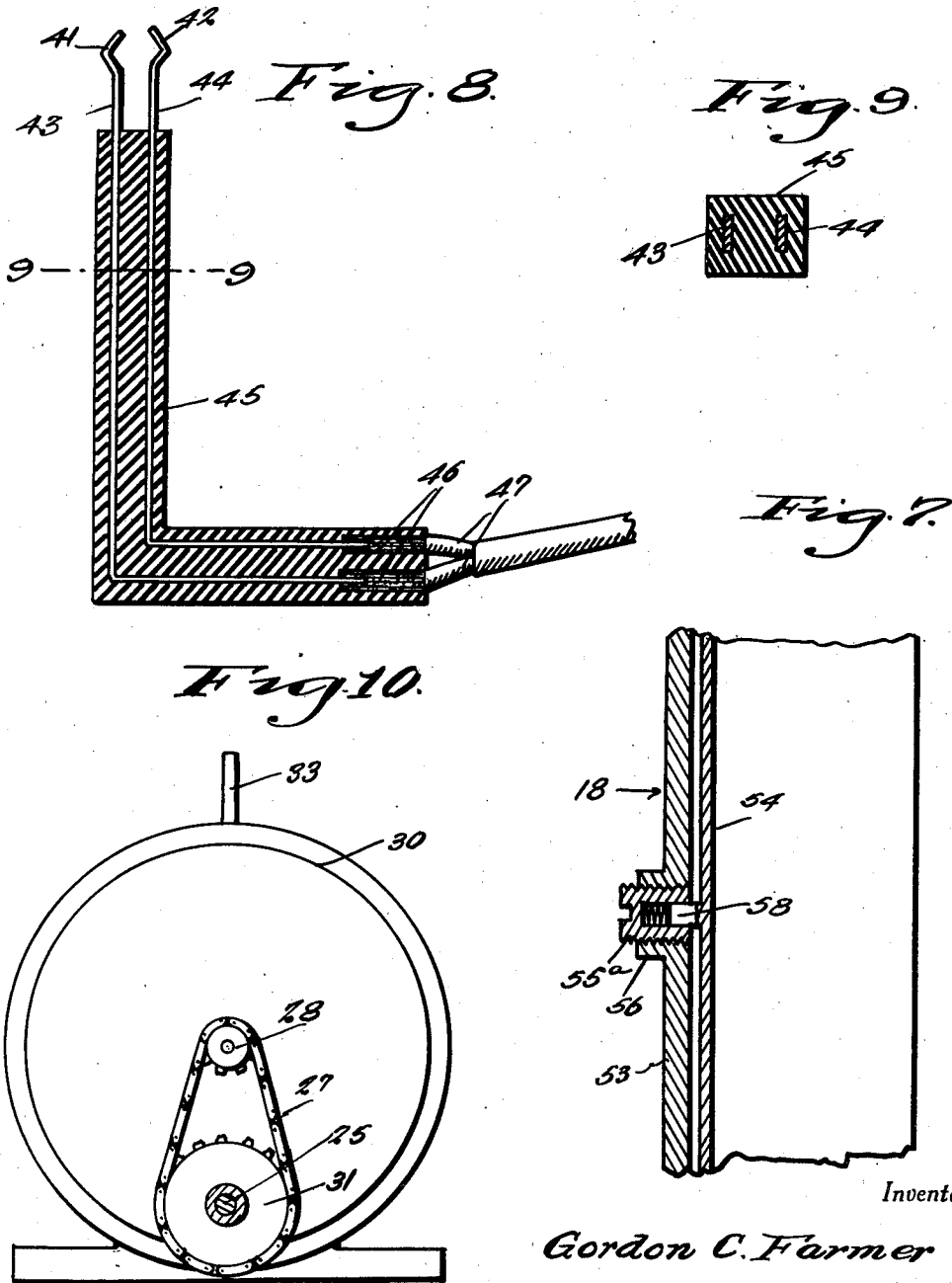
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UNITED STATES PATENT OFFICE

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AUTOMATIC BLACKBOARD ERASER

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Application December 22, 1936, Serial No. 117,199

1 Claim. (Cl. 15—97)

This invention appertains to new and useful improvements in the general art of brushing and scrubbing, and more particularly to an apparatus whereby blackboards can be cleaned in an easy and convenient manner.

The principal object of the present invention is to provide an attachment for blackboards in the form of a power driven erasing apparatus which can be set in operation by the throw of a switch, thus eliminating the drudgery of manually cleaning blackboards.

Another important object of the invention is to provide an automatic apparatus of the character described, which is positive-acting in operation, and wherein the erasing elements can be conveniently replaced and the other details of the mechanism easily repaired in the event of the development of defects.

Other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:

Figure 1 represents a front elevational view of a blackboard equipped with the invention.

Fig. 2 is a fragmentary vertical sectional view through the apparatus.

Fig. 3 is a vertical sectional view taken substantially on the line 3—3 of Fig. 2.

Fig. 4 is an enlarged fragmentary vertical sectional view through the eraser carrier.

Fig. 5 is a cross sectional view on line 5—5 of Fig. 4.

Fig. 6 is a cross sectional view of the trolley line.

Fig. 7 is a fragmentary enlarged vertical sectional view on line 7—7 of Fig. 1.

Fig. 8 is a vertical sectional view through the contactor.

Fig. 9 is a cross section on line 9—9 of Fig. 8.

Fig. 10 is a vertical sectional view through the counter shaft of the motor, looking toward the motor.

Referring to the drawings wherein like numerals designate like parts, it can be seen in Figs. 1 and 2, that numeral 5 represents the wall while numeral 6 represents the blackboard thereon.

The upper and lower edges of the blackboard are provided with longitudinally extending molding effects 7—8 the molding effect 7 consisting of the back plate 9 offset at its lower edge so as to overlap the upper edge of the blackboard as at 10. From this point, a molding effect 7 inclines outwardly as at 11, and then vertically as at 12, curving backwardly as at 13 toward

the wall 5. The portion 13 is provided with an apron 14 terminating in the trackway 15 on which the upper traction wheels 16—17 are engaged. The mobile part of the apparatus is generally referred to by numeral 18 and consists of the upper and lower shells 19—20 respectively. On the upper shell 19 are the traction wheels 16—17 located on shafts 21—22 respectively, the shaft 21 having a sprocket 23 thereon corresponding to the sprocket 24 on the counter shaft 25. Sprocket chain 26 is trained over these sprockets 23—24 and the counter shaft 25 is in turn driven by the sprocket chain 27 which is trained over a sprocket wheel 28 on the armature shaft 29 of the motor 30 and over the sprocket wheel 31 on the counter shaft 25.

The back side of the motor 30 is provided with a reversing switch 32 having the upstanding arm 33 which is engaged with stops 35—36 at opposite limits of the blackboard so that when the mobile assembly reaches one extent of its travel, the motor is reversed so that it will travel in the opposite direction.

At the underside of the curved portion 13 of the molding effect 7 is located the elongated body 37 of insulation in which the conductor strips 38—39 are embedded. This strip of insulation is provided with the depending flange 40 between the contact strips 38—39 so that the angularly bent end portions 41—42 of the contact strips 43—44 cannot come together, but must engage the contact rails 38—39, respectively. The strips 43—44, are embedded in the L-shaped trolley pole 45 which is of insulation and which has suitable connectors 46 at its lower end with the conductors 47, which of course extend to the motor 30.

Pin members 48 extend from the back wall *a* of the shell 19 under the traction wheels 16 and 17, and each of these is provided with the roller 49 which is urged upwardly against the trackway 15. Furthermore, the traction wheels 16—17 are held tensionally against the trackway 15 by the springs 50.

Vertically spaced brackets 52 are provided on the inside of the front wall 53 of the mobile assembly 18 and the ends of the eraser carrier 54 are supported by these brackets. The eraser carrier 54 is of channeled construction, the same having a strip of sponge or similar rubber or cushioning material 55 therein against which the backs 56 of the erasers 56*a* can bear.

Pintles 58 extend from the carrier 54 and into the sockets of adjusting screws 55*a* which are

feedable through bosses 56 in the front wall 53 of the assembly 18.

It can also be seen, that the bottom side of the intumed portion 51 of the shell 19 has wheels 51a thereon riding against the vertical portion 12 of the molding effect 7, so as to steady the apparatus while in motion.

It can also be seen, especially in Figure 3, that each of the shafts 21—22 is provided with a small sprocket 57, over which the drive chain 57a is trained. This chain is also trained over upper and lower pairs of sprockets 59—59 so that a pair of closely spaced flights of the chain can pass downwardly through opening 60 in the brackets 52 and between the eraser carriers.

It can now be seen, that when the erasers have been placed properly in the carrier 54, their tension against the blackboard 6 can be regulated by the screws 55a.

By throwing a main switch, the motor 30 will be started and the assembly 53 will be driven in one direction or the other, and when it has reached one end of the blackboard, the switch 32 will be tripped by the engagement of its arm 33 against an obstruction 35 or 36.

While the foregoing specification sets forth the invention in specific terms, it is to be under-

stood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having thus described the invention, what is claimed is:

Apparatus for cleaning blackboards and for use with hand erasers comprising an eraser carriage including a vertically disposed channel bar closed adjacent the ends thereof and forming a chamber of a width and length providing for the stacking therein of vertical rows of erasers stacked on end in each row, means to mount said carriage for traveling movement along said blackboard comprising a pair of track members extending along the upper and lower edges of said board, upper and lower pairs of traction wheels mounted on said carriage for engagement with said track members, the wheels in each pair being spaced upon opposite sides of the carriage to stabilize the latter, a motor drive common to all of said wheels and including a single sprocket chain operatively connected to the wheels, and resilient means in said carriage for urging said erasers into yielding engagement with said board including a rubber cushion strip.

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