July 26, 1966 B. P. AVILA 3,262,144

ERASER CLEANER

Filed Jan. 27, 1964 2 Sheets-Sheet 1

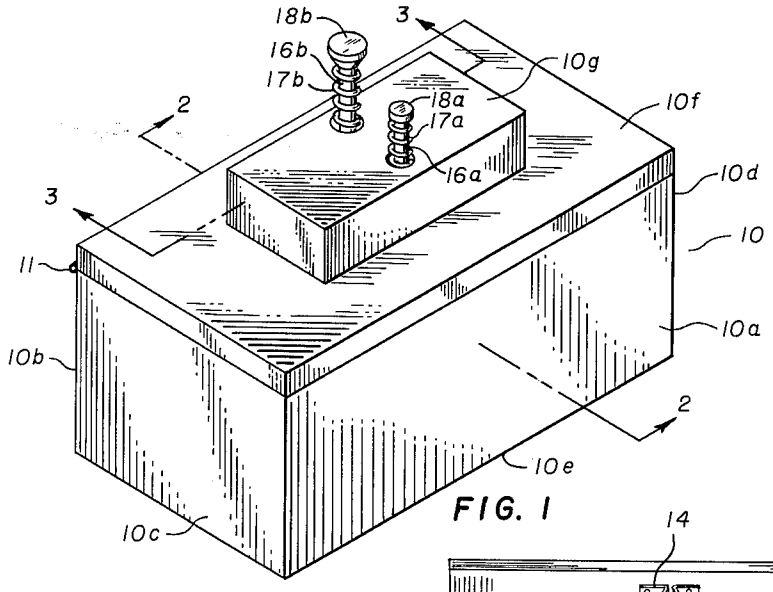


FIG. 1

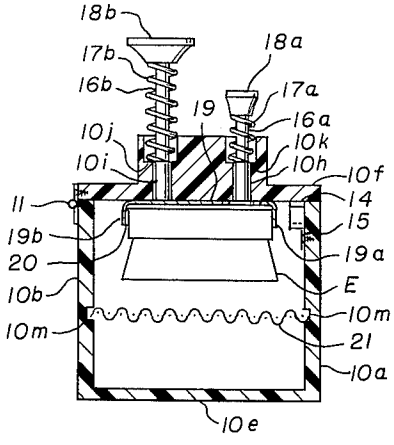


FIG. 2

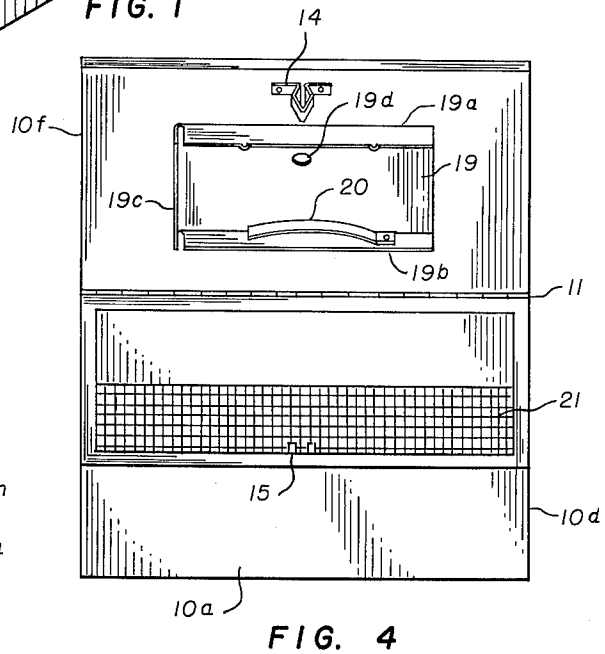


FIG. 4

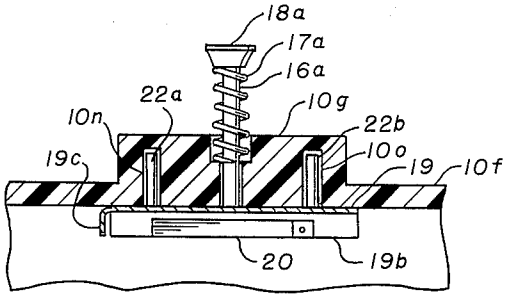


FIG. 3

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ERASER CLEANER

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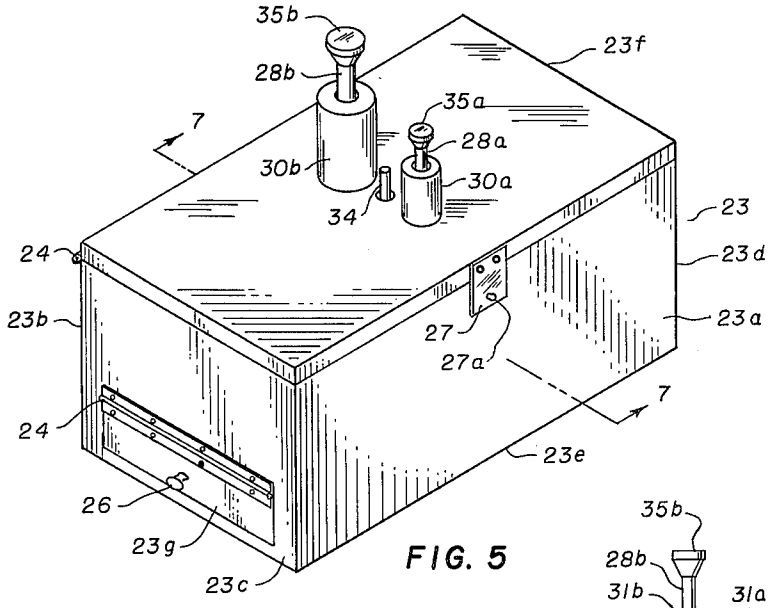


FIG. 5

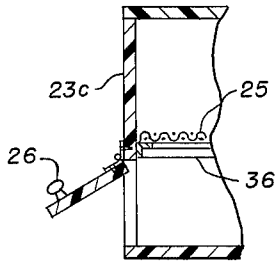


FIG. 6

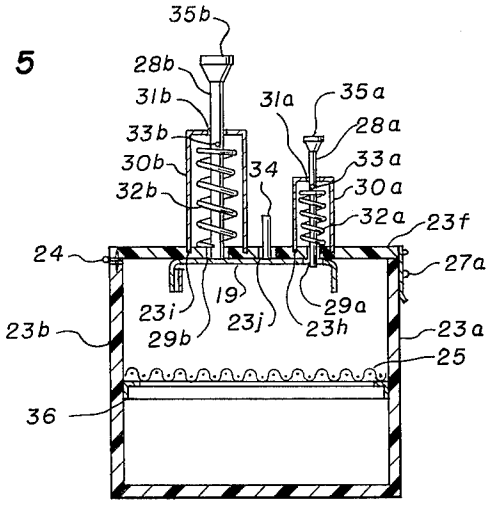


FIG. 7

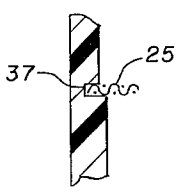


FIG. 8

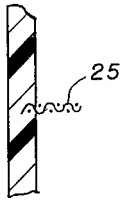


FIG. 9

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3,262,144

Patented July 26, 1966

3,262,144

ERASER CLEANER

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Filed Jan. 27, 1964, Ser. No. 340,307

8 Claims. (Cl. 15—142)

The present invention relates to eraser cleaners and more particularly to mechanical devices for use in dusting blackboard erasers.

Heretofore, in the dusting or cleaning of a blackboard eraser it has been the general practice to strike the felt portion of the eraser against a rough surface or the like. Such rough surfaces advantageously entrap the dust particles which otherwise would be airborne. However, a rough surface damages or mars the felt surface, causes undue wear and frequently results in breaking of the backing material of the eraser.

The subject invention relates to apparatus wherein an eraser may conveniently be cleaned without damage to the eraser or the deposition of the eraser dust into the classroom or surrounding air.

An object of the present invention is the provision of an eraser cleaner in which the eraser is enclosed in a closed container during the cleaning thereof.

Another object is to provide such a device whereby the eraser dust is confined to the closed container.

A further object of the invention is the provision of such a device which does not cause undue wear or damage to the eraser.

Still another object is to provide a portable device which may be operated by the youngest and smallest schoolchild with complete safety.

A final object of the present invention is the provision of such a device which is simple in construction, inexpensive to manufacture, easy to use, convenient and universal in its adaptability.

Other objects and features of the invention will become apparent to those skilled in the art as the disclosure is made in the following detailed description of preferred embodiments of the invention as illustrated in the accompanying sheets of drawing in which:

FIG. 1 illustrates a perspective view of a preferred embodiment of the invention.

FIG. 2 shows a section of the device taken on the line 2—2 of FIG. 1 looking in the direction of the arrows with an eraser secured in the eraser holder.

FIG. 3 shows an enlarged, fragmentary, sectional view of the device taken on the line 3—3 of FIG. 1 looking in the direction of the arrows.

FIG. 4 is a perspective view of the device with the cover in open condition.

FIG. 5 illustrates a perspective view of a modification of the invention.

FIG. 6 shows a section of the device taken on the line 6—6 of FIG. 5 looking in the direction of the arrows.

FIG. 7 shows a section of the device taken on the line 7—7 of FIG. 5 looking in the direction of the arrows.

FIG. 8 shows an enlarged, fragmentary sectional view through the walls in a modification of the invention; and

FIG. 9 shows an enlarged, fragmentary sectional view through the walls in still another modification of the invention.

Referring now to the drawings, wherein like reference characters designate like or corresponding parts throughout the several views, there is shown in FIG. 1, which illustrates a preferred embodiment, an essentially rectangular casing **10** consisting of sides **10***a*–**10***b*, ends **10***c*–**10***d*, and bottom **10***e*. In the preferred embodiment of the invention the casing is approximately eight inches in length, six inches in width and six inches in height and may be formed of plastic, composition material, light weight metal, wood or tin. An essentially rectangular

cover **10***f* of desired configuration hingedly connects as by means of a piano-type hinge **11** or the like to the outer, upper portion of side **10***b*. The cover **10***f* preferably is constructed of the same material as the casing; cover **10***f* and the uppermost side and end portions (**10***a*–**10***d*) coact to form a closed box when the cover is latched by means of the coacting latch parts **14** and **15**, secured in a conventional manner to the inner, outermost portion of cover **10***f* and the uppermost, inner portion of side **10***a*, respectively.

As essentially rectangular projection **10***g* is integrally formed in the approximate central portion of cover **10***f*. As best seen in FIG. 2 of the drawings, first and second transversely aligned bores **10***h*–**10***i* pass through the projection and cover, respectively, and accommodate first and second rods **16***a*–**16***b*, as will hereinafter be described in detail. The upper portions of the bores **10***h*, **10***i* are reamed out to provide seats **10***j*–**10***k* for the coil springs **17***a*–**17***b*, which are carried by the respective rods; said springs bear against the lower portions of keys **18***a*–**18***b* secured in a conventional manner to the upper ends of said rods.

Referring again to FIG. 2 of the drawings, the lower portion of rod **16***b* is secured in a conventional manner to the upper surface of an essentially rectangular shaped eraser holder **19**, said holder includes downwardly depending side and end portions **19***a*–**19***b*. A curved, flexible spring **20** is secured at one end to side **19***b* as by welding or the like; said spring extends inwardly in a gradual arc; said curved portions bear against the backing member of a blackboard eraser E wedging said eraser against the opposite side **19***a* whereby said eraser is secured in position preparatory to dusting. A tapping motion on key **18***b* forces the eraser E to strike a wire mesh screen **21** or the like, secured in a recess **10***m* in the lower side and end wall portions of the casing. There is shown in FIG. 3 of the drawings two longitudinally aligned and upwardly extending bores **10***n*–**10***o* in the cover **10***f* and projection **10***g*, respectively. Said bores accommodate rods **22***a*–**22***b* which are secured to the upper surface of holder **19** whereby the longitudinal axis of said holder is securely maintained in a plane parallel to the longitudinal axis of the casing.

The holder **19** also includes a bore **19***d* (see FIG. 4) through which the rod **16***a* inserts; after the eraser E has been thoroughly cleaned, the depression of key **18***a* causes the rod **16***a* to project through bore **19***d*, bearing against the backing member of said eraser causing the ejection of the eraser from the holder.

It is to be understood that a door **23***g* may be provided in either one or both ends **10***c*, **10***d* of the casing as will hereinafter be discussed in detail in connection with FIGS. 5 and 6 of the drawings.

Referring now to the modification of FIG. 5, there is shown a casing **23** consisting of sides **23***a*–**23***b*, ends **23***c*–**23***d* and bottom **23***e*. A cover **23***f* hingedly connects as by means of a piano-type hinge **24** to the upper portions of side **23***b*. As best seen in FIGS. 5 and 6 the end **23***c* preferably includes a door **23***g* or the like hingedly connecting as by means of piano-type hinge **24**, positioned slightly below the wire mesh **25**, as best shown in FIG. 6. A conventional handle **26** may be provided on said door whereby the door may conveniently be opened for the removal of eraser dust from the casing.

The cover **23***f* may include a conventional strap fastener **27**, including a male fastening member **27***a*, said fastener is secured at one end to cover **23***f*. The male member attaches to the coacting female member (not shown) positioned on the outer, upper surface of side **23***a* thereby securing cover **23***f* in a closed condition.

As best seen in FIG. 7 of the drawings, rods **28***a*–**28***b* pass through bores **29***a*–**29***b* in cover **23***f*; rod **28***b* con-

nects to the eraser holder **19**, heretofore described in detail. Cylindrical shields **30***a*–**30***b*, containing bores **31***a*–**31***b* in the upper end surfaces, are secured in circular recessed portions **23***h*–**23***i*. The first and second rods **28**A, **28***b* carry helical springs **32***a*–**32***b*, respectively; one end of each of said springs bears against cover **23***f* while the upper end thereof bears against a pin **33***a*–**33***b* passing through an opening in each of said rods **28***a*, **28***b*. An aperture **23***j* is provided in the approximate central portion of cover **23***f*; said bore accommodates an upstanding pin **34** secured to the upper surface of holder **19** whereby the longitudinal axis of holder **19** is maintained in a plane parallel to the longitudinal axis of casing **23**. The rods **28***a*, **28***b* include keys **35***a*–**35***b*, respectively, operate in the manner heretofore described.

In the embodiment of FIGS. 6 and 7 an angled brace **36** is secured to the approximate mid-side and end walls **23***a*–**23***d* in a conventional manner. A rectangular shaped piece of wire mesh **25**, the approximate size of the inner dimensions of the casing, is positioned on and supported by said brace.

In the modification of FIG. 8, a recess **37** is provided in the inner, side and end wall portions of the casing. The said side and end wall portions may additionally be slightly thicker below the mesh **25** for additional support.

In the embodiment of FIG. 9, mesh **25** is shown molded into the side and end portions of the casing. This construction has proven especially practical when the casing is molded of plastic.

It should be understood, of course, that the foregoing disclosure relates to only preferred embodiments of the invention and that it is intended to cover all changes and modifications of the examples of the invention herein chosen for the purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

What is claimed is:

1. An eraser cleaner comprising a casing consisting of front and back sides, ends, and top and bottom, said top connected to said back side, first and second spring biased means passing through said top, an eraser holder including a bore, said first means connected to said eraser holder, said second means when depressed passing through said bore in said eraser holder, and a horizontally positioned screen secured to the front and back sides and ends of said casing above the bottom thereof.

2. An eraser cleaner comprising a casing consisting of sides, ends, and top and bottom, said top hingedly connected to one of said sides, means to secure said top in a closed condition, first and second aligned means passing through said top, an eraser holder including a bore, said first means connected to said holder, said second means when depressed passing through the bore in the eraser holder, and a horizontally extending wire mesh screen fixedly secured to the sides and ends of said casing above the bottom thereof.

3. The invention of claim **2** wherein the top includes at least two vertically extending bores and a corresponding number of rods connected to said eraser holder, said rods aligned with respect to and inserted into said vertically extending bores.

4. The invention of claim **2** wherein said screen is inserted into a recess in the sides and ends of said casing.

5. An eraser cleaner comprising a casing consisting of sides, ends, top and bottom, said top connected to one side of said casing, first and second aligned means passing through said top, an eraser holder including a bore, said first means connected to said holder, said second means when depressed passing through said bore in said holder, an angled member secured to the inner sides and ends of said casing, a screen inserted into said casing and supported by said angled member.

6. The invention of claim **5** wherein an opening is provided in at least one end of said casing.

7. An eraser cleaner comprising a casing consisting of front and back sides, ends, top and bottom, said top hingedly connected to said back side, first and second aligned cylindrical means secured to the top of said casing, first and second spring biased means in said respective cylindrical means, an eraser holder including a bore, said first spring biased means connected to said eraser holder, said second spring biased means when depressed passing through said bore in said holder, an aperture in the top of said casing intermediate said first and second cylindrical means, an upstanding pin secured to said eraser holder, said pin passing through said aperture, and a horizontally extending screen secured to said front and back sides and ends of said casing above the bottom thereof.

8. The invention of claim **7** further including an opening in the lower portion of at least one end of said casing below said screen.

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