

[54] **HAND MOUNTED ERASER**

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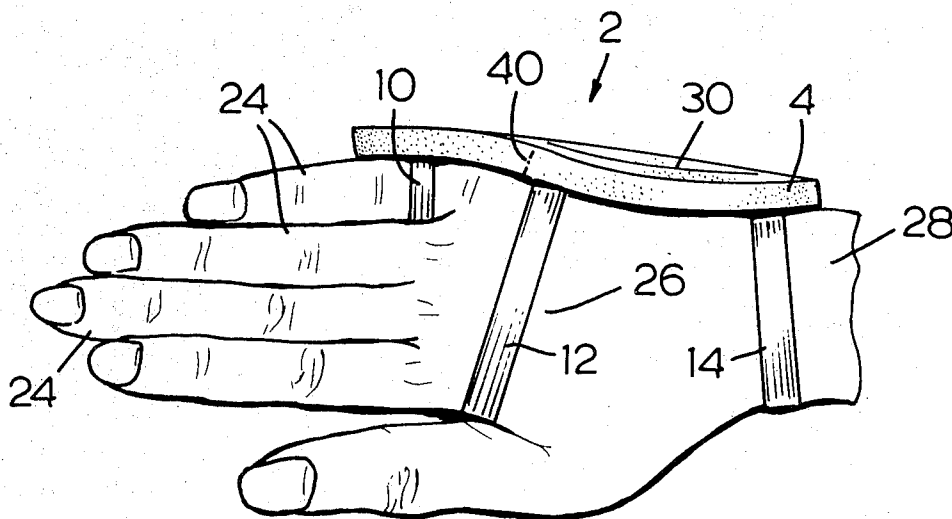
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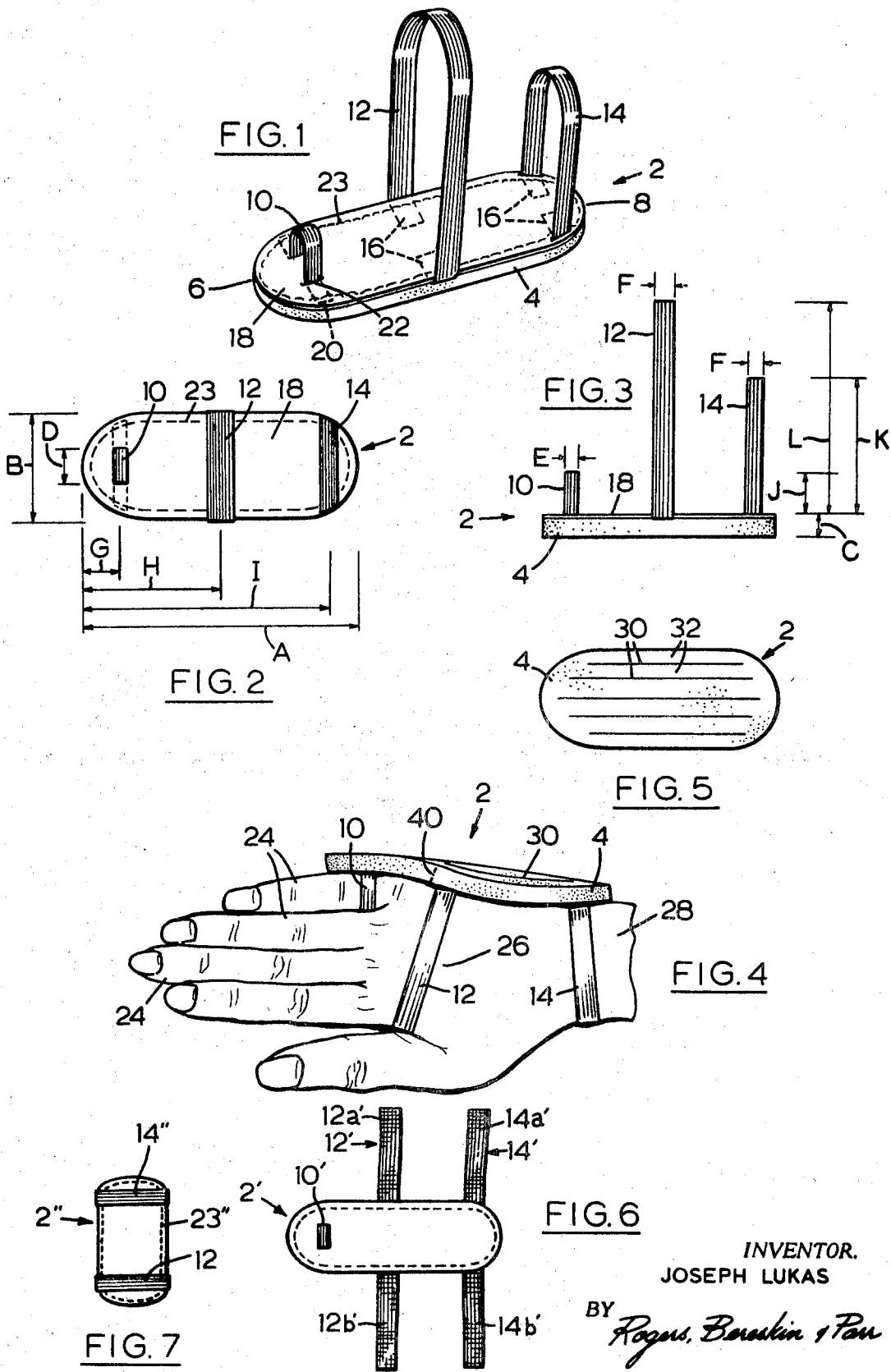
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[57] **ABSTRACT**

A hand mounted chalk eraser has an elongated flexible felt pad and three fastening loops secured to the pad, one loop near each end and one in the middle. One end loop extends about the user's little finger; the other end loop extends about the user's wrist, and the middle loop extends about the palm and back of the user's hand, to hold the eraser securely on the edge of the user's hand remote from his thumb. In another embodiment, the pad is shortened and only the wrist loop and the middle loop and used.

7 Claims, 7 Drawing Figures





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HAND MOUNTED ERASER

This invention relates to an eraser of the type which can be mounted on a user's hand and yet which leaves the user's hand relatively free to perform other functions. The invention is concerned primarily with a chalk eraser, but the eraser of the invention may also be used for other purposes.

In my co-pending patent application Ser. No. 110,049 filed on Jan. 27, 1971, now abandoned, there is shown a teaching aid comprising a clip board having the usual clip on its front side to hold papers, and having its rear surface coated with flexible chalkboard paint, so that the clip board can be written on with chalk and so that the chalk markings can be erased. This clip board is particularly useful in organized sports, for use by coaches in teaching the fundamentals of play to youngsters and athletes, and it can also be used as a teaching aid by persons other than coaches. When these readily portable clip boards are used, e.g. in practices, time-outs, etc., it is found that it is inconvenient for the coach or instructor to carry a conventional chalk eraser which can easily be dropped or misplaced.

Accordingly, the invention provides in a preferred embodiment an eraser comprising a relatively thin flexible erasing pad which is secured to the user's hand by three loops, one loop extending about one of the user's fingers, a second loop extending about the middle of the user's hand, and the third loop extending about the user's wrist. The loops hold the eraser in position at the edge of the user's hand, or on the front or back of the user's hand, as desired. This arrangement leaves the user free to employ his hand (particularly when the eraser is secured to the edge of his hand) for writing, throwing, handling a hockey stick, etc. At the same time, the eraser is readily available for use and there is little likelihood that it will be misplaced. If desired, the eraser can also be made with two fasteners.

Further objects and advantages of the invention will appear from the following description, taken together with the accompanying drawings, in which:

FIG. 1 is a rear perspective view of an eraser according to the invention;

FIG. 2 is a rear view of the eraser of FIG. 1;

FIG. 3 is a side view of the eraser of FIG. 1;

FIG. 4 is a view of the back of a user's hand with the eraser mounted on the edge of the hand;

FIG. 5 is a front view of the eraser of FIGS. 1 to 3;

FIG. 6 is a rear view showing a modification of the eraser of FIG. 1; and

FIG. 7 is a rear view showing a further modification of the FIG. 1 eraser.

Reference is first made to FIGS. 1 to 3, which show a typical eraser 2 according to the invention. The eraser 2 includes a flexible pad 4 of erasing material, such as the felt used in conventional blackboard erasers. The pad 4 is elongated and relatively narrow and includes a front end 6 and a back end 8.

Three fasteners are provided to secure the eraser to the user's hand. The fasteners comprise a front loop 10, a center loop 12, and a rear loop 14, all formed from elastic material (typically elasticized fabric). The front loop 10 is located at or near the front of the eraser and is intended to extend about one of the user's fingers, typically his little finger. The middle loop 12 is located approximately at the center of the eraser and is in-

tended to extend about the user's palm and the back of his hand. The rear loop 14 is located at or near the back 8 of the eraser and is intended to extend about the user's wrist. The loops 12 and 14 have inturned ends 16 which extend under a rear layer of covering fabric 18 which covers the rear surface of the pad 4. The loop 10 has out-turned ends 20 which extend through slits 22 in the layer of covering fabric and then extend outwardly to the edges of the eraser. The layer of covering fabric 18, the ends 16, 20 of the loops, and the pad 4 are all held together by stitching 23 which extends completely around the eraser near its edge.

The eraser is typically worn in the manner shown in FIG. 4. As there shown, the eraser is worn on the edge of the user's hand remote from his thumb, with the loop 10 extending about his little finger 24, the loop 12 extending about the back 26 of his hand and his palm (but not his thumb), and the loop 14 extending about his wrist 28. When the eraser is worn as shown in FIG. 4, it creates a minimum of interference with the normal functions of the hand, and, for example, permits the hand wearing the eraser to be used for writing with chalk, carrying a clip board, throwing a ball, handling a hockey stick, etc. Since the eraser is quite narrow, it projects little past the edge of the user's hand and since it is highly flexible, it curves to conform to the curve at the edge of the user's hand.

In order to increase its ability to curve sharply to conform to the edge of a user's hand, and at the same time to improve its erasing capability, the front erasing surface of the pad 4 may contain a series of longitudinal parallel slits 30, as shown in FIG. 5. The slits 30 have a depth of between one-third and one-half the thickness of the pad 4, and when the pad 4 is curved over the edge of a user's hand, the slits open to relieve the stress. The exposed corners of the ridges 32 of material between the slits, and the sidewalls of such ridges, then assist in wiping chalk off the surface being rubbed. There are typically between three and six such slits 30 (five are shown in FIG. 5) and each slit extends for most of the length of the pad 4 at its particular location.

Slits can also be formed across the width of the pad 4, but since the curvature of the user's hand is slight in this direction, and since wiping motions with the eraser are usually from side to side, such crosswise slits provide little advantage.

It is found that the use of three fasteners, rather than one or two fasteners, leaves the hand largely unrestricted, and at the same time prevents the eraser from moving appreciably from the position in which it is fastened during normal use. For example, the eraser cannot move forwardly from the position shown in FIG. 4 because of the loop 14 and the enlargement of the hand forwardly of the loop 14. It cannot move rearwardly because of the loops 10 and 12 which are positioned at the bases of the little finger and thumb respectively. It cannot rotate because of the friction of the loops 12, 14 on the flat surfaces of the hand and wrist.

Even if the eraser were secured to the user's hand somewhat forwardly of the position shown in FIG. 4 (with the loops 10, 12 positioned forwardly of the bases of the little finger and thumb), it still would be relatively secure against forward and rearward motion caused by wiping. The loop 14 would still resist forward motion. During rearward motion of the eraser, friction of portion of the loop 12 against the edge of the user's second finger would prevent this part of the loop 12

from moving, causing the other side of the loop 12 to tend to swing and to be stopped by the edge of the user's hand. However, normally the eraser will be worn in the position shown in FIG. 4 since this position leaves the hand quite unrestricted.

Although FIG. 4 shows the eraser as worn on the edge of a user's hand, it can also be worn on the front or back of his hand. In that case, the only difference will be that the loop 10 will encircle the user's middle finger 24, instead of his little finger 26, and the eraser will overlie either the front or back of his hand, as desired.

It is found that the elastic loops 10, 12 and 14 need not be tight on the user's hand in order to hold the eraser satisfactorily. Because of the different positions in which the three loops lie on the user's hand, and because loops 12, 14 do not normally lie parallel to each other, they will resist movement and rotation of the eraser on the user's hand when the eraser is being used, even if there is a reasonable amount of slack in the loops. Thus, there is no need to have the erasers precisely tailored to the hand of an individual user; instead, a relatively few sizes will do for most hands, and since the loops are not tight, the circulation in a user's hand will not be cut off or interfered with, so that the erasers are comfortable to wear. Typical dimensions for an eraser that will fit several hand sizes are shown in Table A at the end of this description.

If desired, the loops 12 and 14 can be made adjustable, as shown in FIG. 6 where primed reference numerals indicate parts corresponding to those of FIG. 1. In FIG. 6, the loops 12', 14' are formed from the fastening material known under the trade mark "Velcro", so that loop portions 12a', 14a' can be laid over loop portions 12b', 14b' respectively to form closed loops of adjustable size. However, the closed elastic loop construction is preferred since it is less expensive and leaves no loose ends to become tangled.

Although the fastening loops have been shown as sewn on the eraser, they can be secured by stapling, riveting, gluing or the like. The erasing pad 4 can be formed of suitable composite materials or of an appropriate rubber, depending upon whether the matter to be erased is chalk, pencil, charcoal, etc.

Although the pad 4 is shown as being flexible, it can be made with a rigid base shaped to conform to the edge (for example) of a typical user's hand, with a layer of felt or other suitable material thereon. However, this would be far more expensive than the construction shown and is not preferred.

Although the preferred form of the invention employs three fasteners, the eraser can be made with only two fasteners, as shown in FIG. 7, where double primed reference numerals indicate parts corresponding to those of FIGS. 1 to 5. The eraser of FIG. 7 is exactly the same as that of FIGS. 1 to 5 except that the front portion of the FIGS. 1 to 5 eraser has been removed at chain dotted line 40 of FIG. 4. The front portion has been removed because, since the fastener 10 has been deleted, the unsupported front portion of the eraser would tend to wobble on the user's hand and would tend to move back and forth in an uncomfortable manner. Typically, approximately 1 1/4 inches of the front of the eraser are removed; the remaining dimensions are as shown in Table A except that the loop size of the fasteners is typically reduced slightly.

Although erasers of the type shown in FIG. 7 can be employed, the use of three fasteners is much preferred. This is because the use of three fasteners allows a longer eraser which is considerably more effective in wiping a surface quickly. In addition, it is found that the three fasteners hold the eraser to the user's hand more securely, with less play, than two fasteners. When only two fasteners are used, as indicated in FIG. 7 (and in FIG. 4), it is found that they should grip the user's hand more tightly than need be the case with three fasteners, and this may cause discomfort in some users after a long period of use. With three fasteners, it is found as mentioned that the fasteners can be relatively slack and they will still prevent undue eraser movement during use.

TABLE A

Dimension	Preferred size	Preferred Size Within The Range (inches)
	Range (inches)	
A (length of eraser)	3-1/2 to 4-1/2	4
B (width of eraser and of loops 12, 14 at their bases)	1 to 2-1/4	1-3/4
C (thickness of eraser)	1/8 to 3/4	1/2
D (width of front loop 10 at its base)	0 to 1	3/4
E (width of material of front loop 10)	1/8 to 1/2	1/4
F (width of material of loops 12 and 14)	1/8 to 3/4	1/2
G (spacing of center of loop 10 from eraser front)	1/4 to 3/4	1/2
H (spacing of center of loop 12 from eraser front)	1-3/4 to 2-1/4	2
I (spacing of center of loop 14 from eraser front)	3-1/4 to 3-3/4	3-3/8
J (height of loop 10)	5/8 to 7/8	3/4
K (height of loop 12)	3 to 3 1/2	3-1/4
L (height of loop 14)	2-1/8 to 2-5/8	2-3/8

What I claim is:

1. An eraser comprising: an elongated pad of flexible material and having a front erasing surface and a rear surface, and first, second third fasteners for securing said pad to a user's hand with said rear surface lying against said hand and said front surface exposed for erasing, said first fastener being located near one end of said pad and being adapted to extend about a finger of said user, said second fastener being located near the other end of said pad and being adapted to extend about the wrist of said user, said third fastener being located near the middle of said pad and being adapted to extend about the user's hand forwardly of the connection of the thumb to such hand and rearwardly of the connection of the remaining four fingers to said hand, said fasteners all being loops of elastic material.

2. An eraser according to claim 1 wherein said pad is between 3 1/2 and 4 1/2 inches long.

3. An eraser according to claim 1 wherein said pad is between 3 1/2 and 4 1/2 inches long and between 1 inch and 2 inches wide.

4. An eraser according to claim 1 wherein said pad is approximately 4 inches long and 1 1/4 inches wide.

5. An eraser comprising: an elongated pad of flexible material and having a front erasing surface and a rear surface, and first, second and third fasteners for securing said pad to a user's hand with said rear surface lying against said hand and said front surface exposed for erasing, said first fastener being located near one end of said pad and being adapted to extend about a finger of said user, said second fastener being located near the other end of said pad and being adapted to extend about the wrist of said user, said third fastener being located near the middle of said pad and being adapted to

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extend about the user's hand forwardly of the connection of the thumb to such hand and rearwardly of the connection of the remaining four fingers to said hand, said pad being approximately 4 inches long and 1 3/4 inches wide, said first fastener being located about 1/2 inch from the front of said pad and forming a closed elastic loop about 3/4 inches in height by 3/4 inches in width at its connection with said pad, said third fastener being located approximately in the middle of said pad and forming a closed elastic loop about 3 1/4 inches in height by 1 3/4 inches in width at its connection with said

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pad, said second fastener being located about 1/2 inch from the other end of said pad and forming a closed elastic loop about 2 3/4 inches in height by 1 3/4 inches in width at its connection with said pad.

5 6. An eraser according to claim 5 wherein said pad is between 1/4 and 1/2 inch in thickness.

10 7. An eraser according to claim 1 wherein said pad includes a plurality of longitudinally extending slits in its front surface and extending part way through said pad.

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