E. MILLER.

BRUSH.

APPLICATION FILED AUG. 2, 1915.

1,173,453.

Patented Feb. 29, 1916.

2 SHEETS—SHEET 1.

FIG. 1.

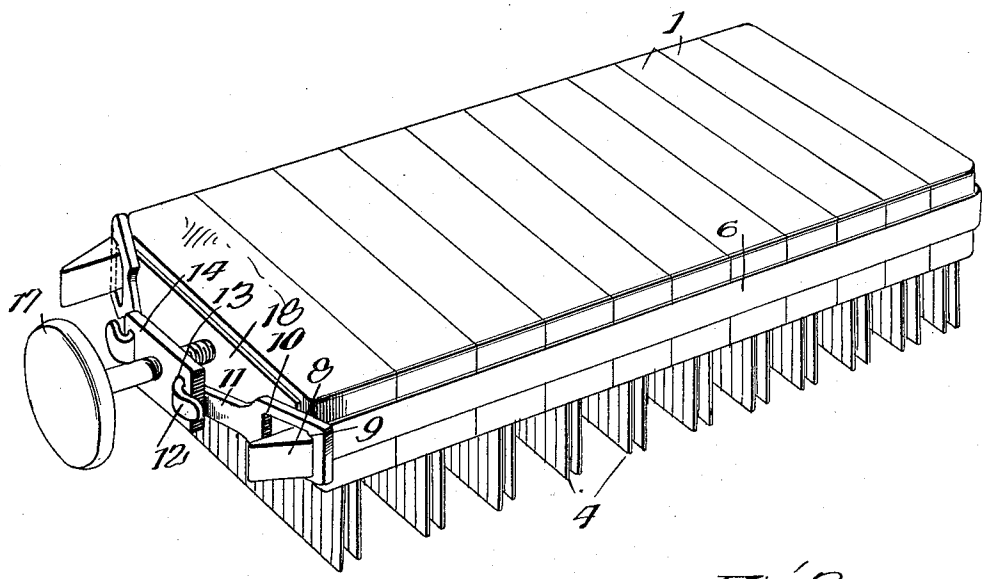
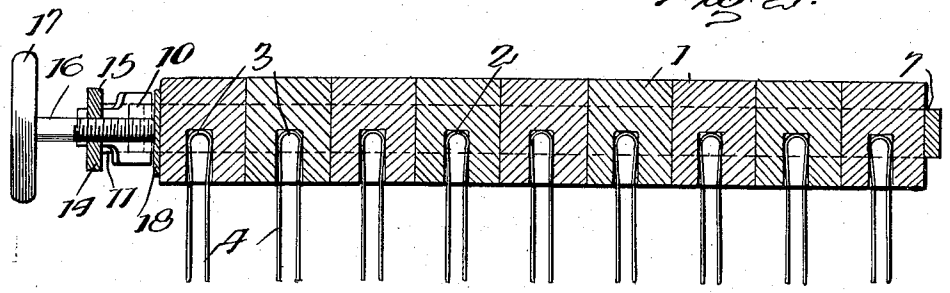


FIG. 2.



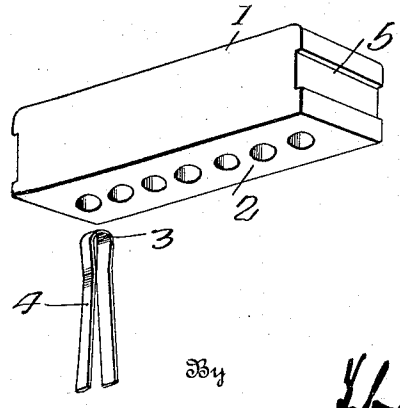


FIG. 3.

Inventor

E. Miller

By

Attorneys

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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FIG. 4.

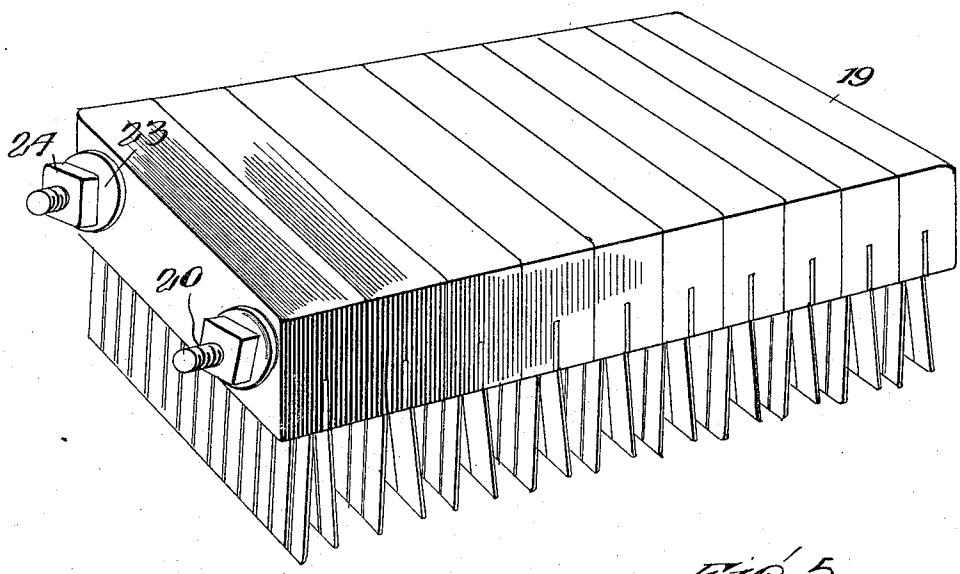
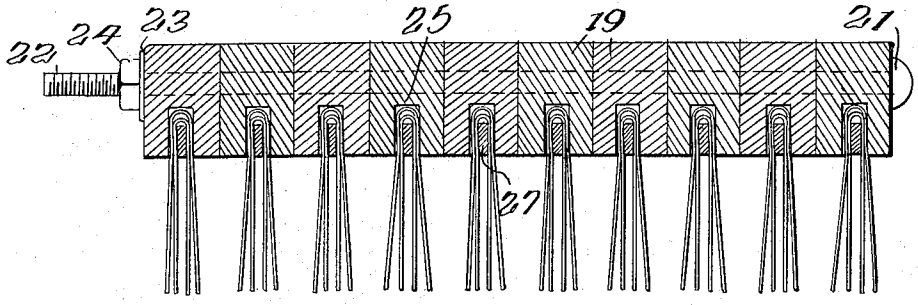


FIG. 5.



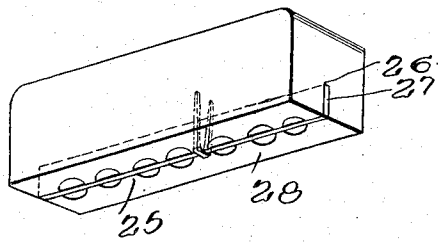


FIG. 6.

Inventor

E. Miller

By Attorneys

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ENOCH MILLER, OF EXPORT, PENNSYLVANIA.

BRUSH.

1,173,453. Specification of Letters Patent. Patented Feb. 29, 1916.

Application filed August 2, 1915. Serial No. 43,207.

To all whom it may concern:

Be it known that I, ENOCH MILLER, a citizen of the United States, residing at Export, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Brushes, of which the following is a specification.

This invention relates to brushes and more particularly to that class of brushes which are employed in surface scraping and while the invention is designed primarily for embodiment in a brush for use in cleaning meat blocks, the principles of the invention may find embodiment in various types of brushes as for example such as are employed in dressing stone or in scrubbing or scouring metal surfaces.

Brushes of the general class above referred to are ordinarily provided with wire bristles or abrading elements but after brushes so constructed have been used for a comparatively short time the tips or ends of the said bristles or abrading elements become worn smooth and round and the brush then becomes useless. Due to the peculiar character of the abrading elements it is impractical to conveniently repoint or sharpen their tips and the present invention therefore aims to provide in a brush of the general class referred to, abrading elements of such characters as to permit of said elements being sharpened whenever they become worn. Therefore a brush embodying the principles of the present invention may be used until its abrading elements have been so shortened by repeated sharpening as to be unfit for further use.

Another aim of the invention is to provide a brush of the class mentioned of such construction that the abrading elements may be readily removed and consequently renewed whenever they become worn too short for use or become broken.

The invention further contemplates forming the back of the brush in a plurality of sections and providing means for holding the sections assembled, which means may be readily manipulated to permit of the sections being disassembled so that the abrading elements carried by each section may be readily and conveniently sharpened.

In the accompanying drawings: Figure 1 is a perspective view of the brush embodying the present invention; Fig. 2 is a vertical longitudinal sectional view through the brush; Fig. 3 is a perspective view of one of the sections of the back and one of the abrading elements; Fig. 4 is a view similar to Fig. 1 illustrating a slight modification of the invention; Fig. 5 is a longitudinal sectional view through the structure shown in Fig. 4; Fig. 6 is a perspective view of one of the sections of the back of the form shown in Figs. 4 and 5.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

In both forms of the invention illustrated in the drawings the brush back is formed of a plurality of sections each of which carries a series of abrading elements and means is provided for holding the sections normally in assembled relation. Each section of the back of the brush shown in Figs. 1, 2 and 3 of the drawings comprises a body 1 which is preferably rectangular and of greater length than thickness, and while these sections may be formed from any suitable material it is preferred that they be made of wood. Each body 1 is formed in its under side with a longitudinal series of sockets 2 which sockets may have cylindrical walls or walls of some other contour if desired. The abrading elements are each formed from a strip of resilient sheet metal and these strips are bent upon themselves at a point midway between their ends as indicated at 3 so as to provide resilient abrading fingers 4 of equal length. The bend 3 is not an acute bend but, on the other hand, is so formed that this portion of each abrading element when inserted into one of the sockets 2 will require to be crowded into the socket and will be held frictionally therein, the fingers 4 having a tendency to spring apart and being, as stated, resilient. The manner in which the abrading elements are fitted into the sockets is clearly illustrated in Fig. 2 of the draw-

ings, and it will be observed that the said elements are so positioned that their fingers 4 will be in front to rear alinement when the sections of the back are assembled to form the complete brush.

The strips 4 are here illustrated as relatively narrow, but it will be understood that they may be of any desired width and that if desired the abrading elements at their bends 3 may be of greater or less width than the fingers 4. It will further be apparent that several of the abrading elements in nested relation may be inserted within each of the sockets 2 if desired.

As above explained the sections of the back are to be assembled to complete the brush back and when so assembled they are held together by means to be now described and to this end each of the sections 1 is formed at each end with a relatively shallow recess 5 extending transversely thereof. The means employed in this form of the brush for holding the sections assembled includes a frame having side portions 6 and a connecting portion 7, the frame being formed from bar metal bent to form the said portions and the sides of the frame extending at right angles to the connecting portion and parallel to each other. In assembling the sections the same are inserted into the frame with the sides 6 of the frame received within the recesses 5 and a number of the sections sufficient to fill the frame are placed therein. Each side 6 of the frame is provided at its free end with a head 8 having a shoulder 9 and engaged with the said ends of the side members 6 are rectangular loops 10 formed at the outer ends of links 11 the ends of the loops engaging against the shoulders 9 in the manner clearly shown in Fig. 1 of the drawings. The inner ends of the links 11 are hooked as indicated at 12 and engaged in openings 13 formed in a plate 14. The plate 14 is provided with a threaded aperture 15 through which is threaded a clamping screw 16 having a milled head 15 providing means whereby the screw may be readily adjusted. The end of the screw bears against a plate 18 which is disposed against the side face of the end one of the series of sections and it will be understood that by adjusting the clamping screw the sections may be firmly bound together, the connecting portion of the frame engaging of course against that one of the sections located at the other end of the series of sections. Of course when it is desired to disassemble the sections the clamping screw 16 is loosened and the loops 10 are disengaged from the heads 8 whereupon the sections may be slid from the frame. It will be apparent that the upper and lower walls of the recesses 5, contacting with the upper and lower edges of the sides 6 of the frame, serve to hold the sections against relative displacement and in proper alinement. When it is desired to sharpen the points or extremities of the abrading fingers 4, the individual sections are grasped and the points of the said fingers are held against a grindstone or are sharpened in any other suitable manner and inasmuch as each section of the back supports a single longitudinal series of abrading elements the elements may be readily and conveniently sharpened by presenting the ends of first one of the sets of fingers and then the ends of the other set of fingers to the grindstone or other sharpening device.

In that form of the invention shown in Figs. 4, 5 and 6 of the drawings the sections of the back are indicated by the numeral 19 and are held together in assembled relation by means of tie rods 20 each provided at one end with a head 21 and threaded at its other end as indicated at 22. These tie rods are fitted through registering openings in the sections and a washer 23 and nut 24 are applied to the last mentioned ends of the said tie rods, the nuts being tightened so as to securely bind the sections together. The sockets in the sections 19 are indicated by the numeral 25 and one or more of the abrading elements is fitted into each of the sockets in substantially the same manner as the previously described form of the invention. In the present form, however, the abrading elements are securely anchored within the sockets in a manner to be now described. Each section is formed in its under side with a longitudinally extending groove 26 which is relatively narrow and deep and this groove transects the sockets 25 of the series. After the abrading elements have been fitted into the sockets a locking strip 27 is fitted into the groove 26 and extends within the bights of the said abrading elements in the manner clearly shown in Fig. 5. This strip may be held solely by friction or if desired may be securely held in place by means of staples or other suitable fastening elements 28.

Having thus described the invention, what is claimed as new is:

1. A brush of the class described including a frame open at one end, a back comprising a plurality of sections assembled within the frame, abrading elements carried by the sections, a plate located at the open end of the frame, connection between the plate and the sides of the frame at the said open end thereof, and a binding screw threaded through the said plate and adjustable to bind the sections together within the frame.

2. A brush of the class described including a frame open at one end, a plurality of

back sections removably fitted within the frame and abutting against each other, the said sections being provided in their ends with recesses receiving the sides of the said frame, a plate arranged at the open end of the frame, connection between the plate and the sides of the frame at the open end thereof, a bearing plate arranged at the open end of the frame, and a binding screw threaded through the first mentioned plate and bearing against the said bearing plate and adjustable to bind the sections together within the frame.

In testimony whereof I affix my signature.

ENOCH MILLER. [L. S.]

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."