

Nov. 16, 1926.

1,606,884

C. F. MANN ET AL

SCOURING PAD

Filed Sept. 17, 1924

3 Sheets-Sheet 1

Fig. 1.

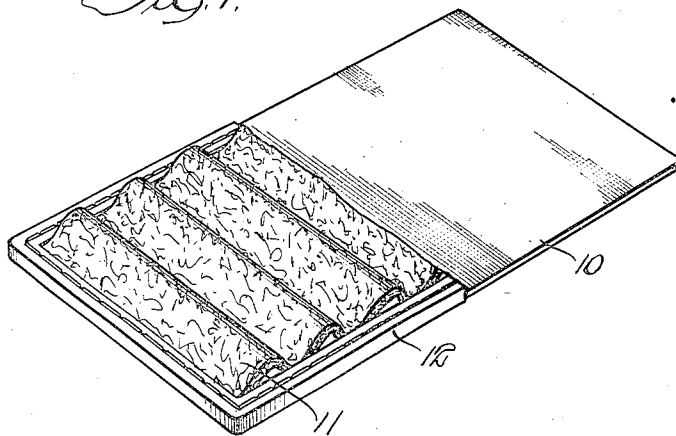


Fig. 2.

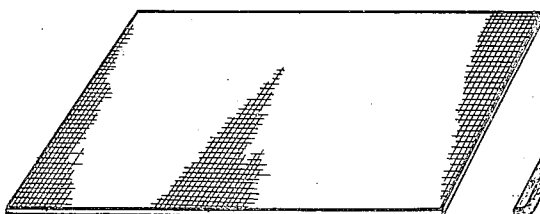


Fig. 3.

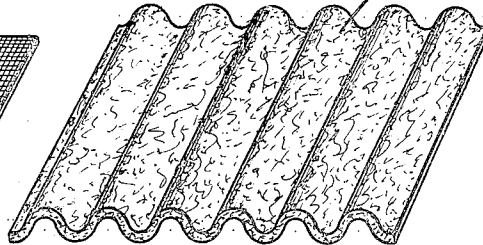


Fig. 4.

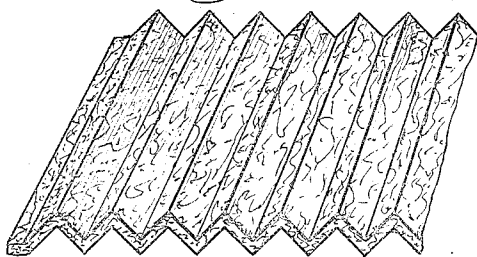


Fig. 6.



Fig. 5.

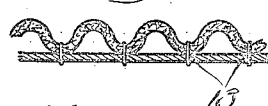


Fig. 7.

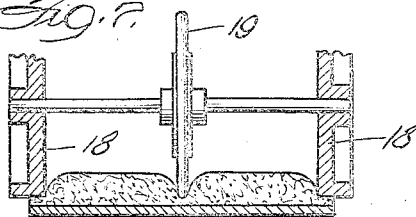
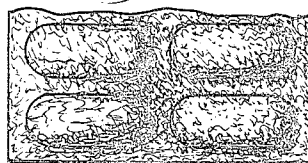


Fig. 8.



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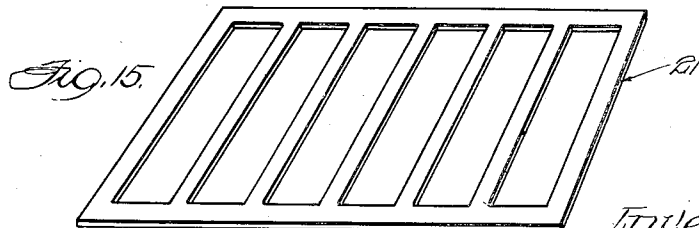
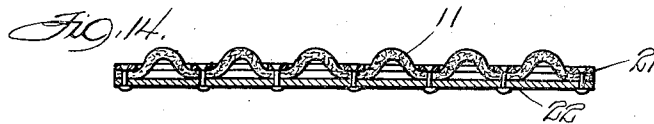
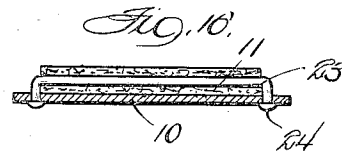
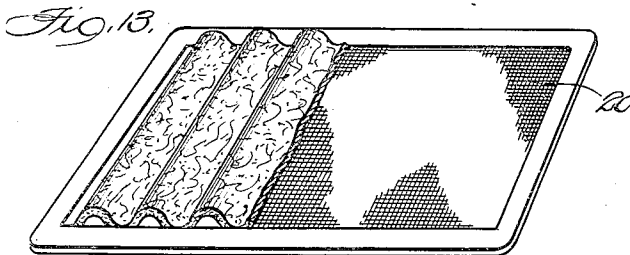
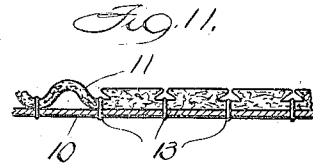
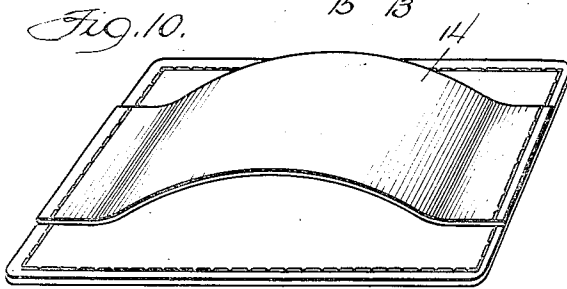
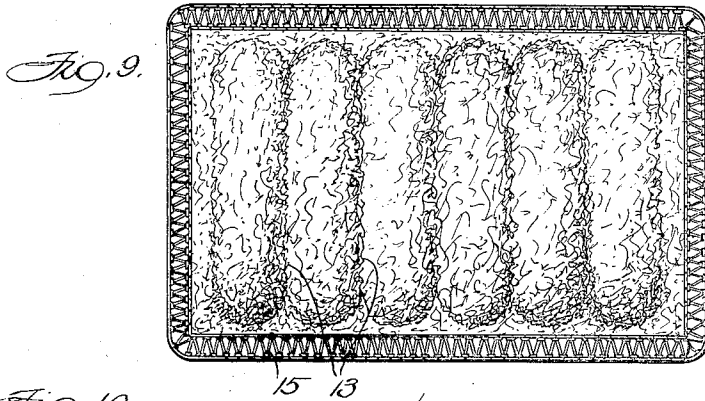
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3 Sheets-Sheet 2



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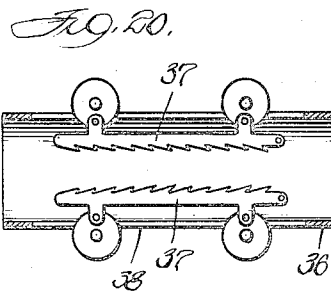
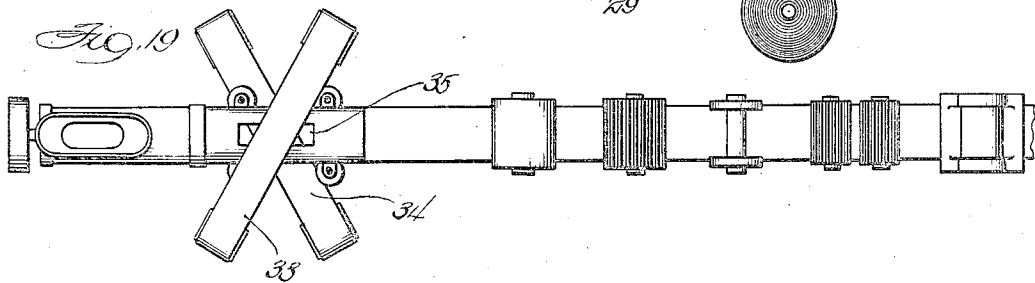
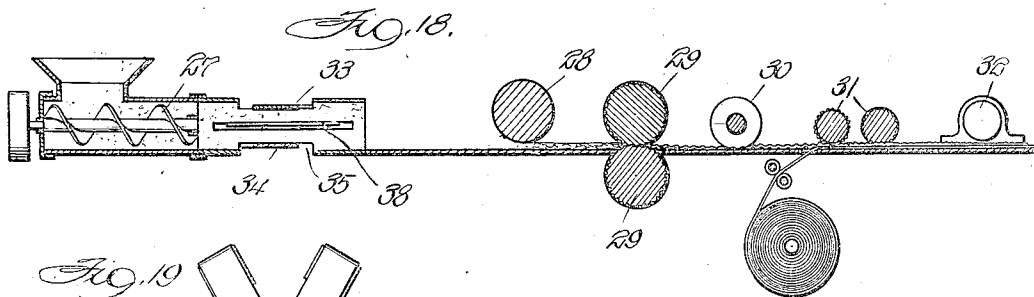
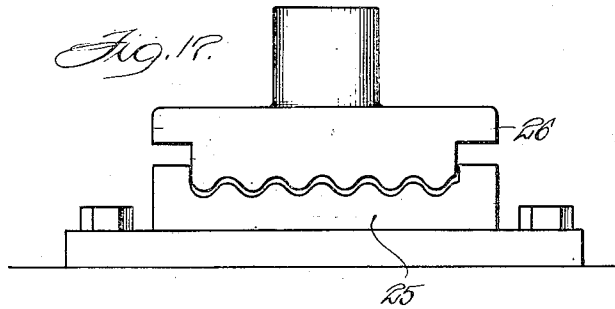
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C. F. MANN ET AL

SCOURING PAD

Filed Sept. 17, 1924

3 Sheets-Sheet 3



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Patented Nov. 16, 1926.

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UNITED STATES PATENT OFFICE.

CHARLES F. MANN AND JAMES B. ROGERS, OF CHICAGO, ILLINOIS.

SCOURING PAD.

Application filed September 17, 1924. Serial No. 738,164.

Our invention relates to scouring pads and more particularly to scouring pads especially for cleaning aluminum ware.

One of the objects of our invention is to provide an improved pad for cleaning aluminum and the like, in which wire wool is used and in which the wire wool is firmly secured to a backing sheet in such manner that the pad will wear evenly and will not easily be torn loose from the backing sheet.

A further object of our invention is to provide a scouring pad of the type indicated which can be made cheaply and which will be durable and easy to handle.

Further objects will appear from the description and claims.

In the drawings, in which several forms of our invention are shown,

Figure 1 is a perspective view of a scoring pad;

Fig. 2 is a perspective view of a sheet or web of wire wool before it is corrugated;

Fig. 3 shows one form which the corrugations may assume;

Fig. 4 shows another form of corrugations;

Fig. 5 shows one form of attaching the layer of wire wool to the backing sheet;

Fig. 6 shows one method of forming the corrugations in the layer of wire wool;

Fig. 7 shows the rolls for pressing the layer of wire wool against the backing sheet preparatory to sewing them together;

Fig. 8 shows a part of the pad after the layer of wire wool has been secured longitudinally and transversely to the backing sheet;

Fig. 9 is a plan view of the pad showing the edges of the layers held together by overcast stitching;

Fig. 10 is a perspective view of the back of the pad showing the handle or strap;

Fig. 11 is a sectional view showing how the corrugations of wire wool flatten out to cover the securing stitches;

Fig. 12 is a sectional view showing how the saw-tooth construction wears;

Fig. 13 is a perspective view of a pad in which a backing of wire screen is used;

Fig. 14 is a sectional view showing the layer secured together by a grid-like metal retaining plate;

Fig. 15 is a perspective view of the grid-like retaining plate;

Fig. 16 shows the layers held together by a wire staple;

Fig. 17 shows a tool and die which may be used to corrugate the wire wool;

Fig. 18 is a somewhat diagrammatic sectional view showing apparatus for continuously forming the web of wire wool, corrugating it, and uniting it to the backing web;

Fig. 19 is a plan view of the construction shown in Fig. 18;

Fig. 20 is a horizontal sectional view on an enlarged scale, showing part of the feeding mechanism for the wire wool.

Referring now to the drawings in detail, and first to the form of pad shown in Figs. 1, 2, 3, etc., this comprises a backing sheet (Figs. 1 and 11) which may be of any suitable material, as bolting cloth, a corrugated or "marcelled" layer or sheet 11 of wire wool secured to the backing sheet and a binder 12 for the edges of the juxtaposed sheets.

This wire wool is a material known in the trade formed sometimes as a by-product of certain manufacturing operations and sometimes as a special product for specific purposes. It is particularly suitable for cleaning aluminum ware but it has heretofore been difficult to use it for this purpose on account of the difficulty in handling it.

The corrugations in the wire wool sheet may have various forms, as the rounded form shown in Fig. 3, or the saw-tooth form shown in Figs. 4 and 5. The layer of wire wool may be secured to the backing sheet by transversely extending parallel rows of stitching 13, as shown in Figs. 5, 9 and 11. A handle or strap 14 is secured to the back of the backing sheet. The edges of the sheets may be secured together by overcast stitching 15, as shown in Fig. 9, instead of by a piping binder.

Fig. 6 shows a crimping device which may be used to form the corrugations comprising two sets of forming bars 16, 17 which are moved toward each other with the sheet of wire wool between them to cause the sheet to assume the saw-tooth or corrugated form shown. Fig. 7 shows a set of pressure rollers 18 which press the layer of wire wool firmly down on the backing sheet preparatory to stitching the two together. In this device a center pressure roller or wheel 19 may be provided, if desired, to enable the sheets to be stitched together down the middle as well as along the edges.

Fig. 11 shows the form which the corrugations of wire wool assume after the pad has been used a while. The corrugations

flatten out and the edges extend over the rows of stitching and thus protect the stitching against abrasion. Fig. 12 shows the form which the saw-tooth corrugations assume after the pad has been used awhile.

5 The form of pad shown in Fig. 13 is substantially as that just described, except that here a backing 20 of brass wire screen is substituted for the bolting cloth backing.

10 The form shown in Figs. 14 and 15 is substantially the same as that just described, except that here a grid-like flexible metal retaining member 21 is used to secure the sheets together. The retaining member, the corrugated wire wool layer, and the backing sheet are all secured together by means of rivets 22.

In Fig. 16 is shown still another means for securing the sheets together, comprising a wire staple-like member 23 extending between the raised portions of the corrugations and riveted to the backing sheet at 24.

25 Fig. 17 shows a device which may be used for forming the corrugations in the wire wool sheet comprising a die 25 and tool 26 between which the wire wool sheet is formed.

The mechanism for continuously forming the corrugated sheet and uniting it to the backing sheet shown in Figs. 18, 19 and 20 comprises a screw feed device 27 which forms a cylindrical rope-like mass of the wire wool, a roller 28 which flattens out this rope-like mass into a web, a pair of corrugated intermeshing rollers 29 between 35 which the web passes, which form transverse corrugations in the web as it travels along, edge rollers 30 for flattening down the edges of the corrugated web preparatory to sewing the webs together, feed mechanism 31 40 for feeding the corrugated wire wool web and the backing web together in juxtaposed relation, and overcast stitching mechanism

32 for securing the edges of the two webs together as they travel along.

In order to facilitate the feeding of the rope-like mass, I provide a pair of diagonally extending belts 33, 34 which travel in the openings 35 in the tube 36 through which the wire wool passes and which are inclined in a direction to exert a forward feeding action on the wire wool. In addition to these belts, I may also provide a pair of toothed reciprocating feed bars 37 which move in and out through the slots 38, in the sides of the feed tube and which have a forward motion when in the tube, tending to drag the material in the tube forward.

We claim:

1. A scouring pad comprising a backing sheet, and a corrugated layer of metal wool secured to said backing sheet, said layer having a plurality of parallel corrugations having their crests spaced a substantial distance from said backing sheet, and their hollows secured to said backing sheet by stitches, said corrugations being so deep that when the pad is used the folds are flattened out and cover the stitches to protect them against wear.

2. An abrasive device comprising a backing sheet and a corrugated layer of metal wool secured to said backing sheet, said layer having corrugations having their crests spaced a substantial distance from said backing sheet and their hollows secured to said backing sheet by stitches, said corrugations being so deep that when the device is used the folds are flattened out and cover the stitches to protect them against wear.

In witness whereof, we have hereunto subscribed our names.

CHARLES F. MANN.
JAMES B. ROGERS.