(No Model.)

L. LEVETT.

MANUFACTURE OF BUFFING AND POLISHING DEVICES.

No. 291,610. Patented Jan. 8, 1884.

Fig. 1.

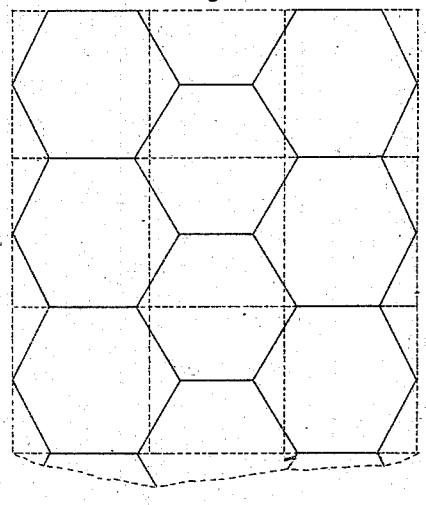


Fig. 3.

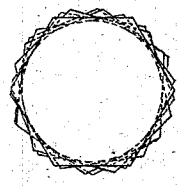


Fig. 2.

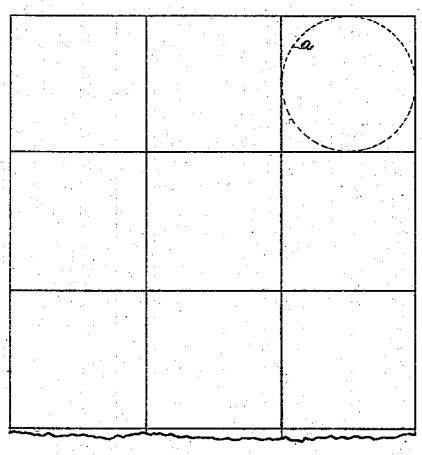
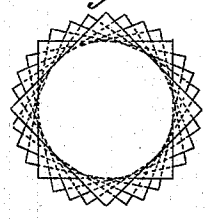


Fig. 4.



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UNITED STATES PATENT OFFICE.

LOUIS LEVETT, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO ALEXANDER LEVETT, OF SAME PLACE.

MANUFACTURE OF BUFFING AND POLISHING DEVICES.

SPECIFICATION forming part of Letters Patent No. 291,610, dated January 8, 1884.

Application filed March 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, LOUIS LEVETT, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in the Manufacture of Buffing or Polishing Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to those polishing devices which are composed of yielding or flexible materials—such as are usually employed for that purpose; and it consists of a novel method of cutting the materials and forming the same into circular devices or wheels. A very large proportion, if not the largest number, of buffing or polishing wheels or devices used in the arts, are now made of muslin or other similar cloth or texture, and the size of wheel that is most extensively used is one having a diameter of about twelve inches. The larger the wheel the less waste there is, as a large portion around the center cannot be used to advantage in operation. As these devices have been heretofore made, the material has been cut into disks, and these have been fastened together and provided with a hole in the center for a spindle. The objection to this method of construction is that it wastes a great deal of the material, for to make the twelve-inch wheels out of a sheet of muslin (that being generally thirty-six inches wide) the disks are cut from the sheet, as shown at *a*, Figure 2, so that to get nine disks requires a square of muslin thirty-six by thirty-six inches. It is apparent that all the material between the disks is therefore cut to waste, and this waste is about twenty-five per cent. of all the material. To obviate this, several plans of making wheels from sectors or fractions of disks have been tried; but none of these have been entirely satisfactory, requiring much time in the proper adjustment of the parts, in the first place, whereby what was saved in the material was expended in labor, and, in the second place, when wheels made in that manner came to be used it was found that in pressing the article to be polished against the wheel it often slipped in or caught between the sectors or parts and rendered working very irregular and unsatisfactory. To obviate these disadvantages is the object of my invention.

Fig. 1 shows a sheet of material laid out in hexagons. Fig. 2 shows a sheet of material laid out in squares. Fig. 3 shows the hexagons arranged to form the circular device or wheel. Fig. 4 shows the squares arranged in the same manner.

In preparing the material for my wheel, I cut it up into angular pieces, preferably hexagons, as shown in Fig. 1, and take a sufficient quantity of them to form a layer that will be substantially disk-shaped in outline. This is conveniently done by adjusting the pieces or turning them on their centers, as shown in Fig. 3, and then take as many of such layers as will make a wheel of the thickness desired, secure them together, and prepare them to receive the spindle.

The method heretofore used to fasten the layers or sheets of which the buffing or polishing devices have been made has been to sew them together. This method may be employed in my invention, also; but I have found that by riveting the layers together near the center they can be fastened much more quickly, and that the thicker devices are also much more securely held together than when sewed. For this purpose I have found the "double-pointed" tacks, so called, very useful.

The advantage of this mode of construction will be at once apparent. If the disks are cut out of the muslin in the usual manner, a disk of the diameter of only twelve inches can be cut out of a square of twelve inches, and all the material of the square without the diameter of the disk is cut to waste; but by cutting the material into hexagons and disposing these hexagons to form a wheel according to my invention, I obtain a wheel which is in outline of a diameter equal to the greatest dimension of the hexagon, which is the dimension taken diagonally across, and this gives a wheel with a diameter of about fifteen inches, and I may cut off a portion of the corners of the hexagons and still have a solid wheel of thirteen inches in diameter. A wheel so made is also uniform in strength, for, though the circum-

ference, consisting of corners, is of course much weaker than the inward portion, where the entire substance of the material comes into use, yet the corners wear off evenly in use, so that the circumference is always of equal strength, and when the wheel is worn or cut down to the diameter of about thirteen inches it is of course as good and as strong as though the material had been originally cut into disks, and much larger—being thirteen inches, instead of twelve—and a much larger proportion of the material is rendered useful.

In making my wheel I prefer to use the hexagon shape, or a multiple of such shape or similar shapes, as that will make the best wheel.

Figs. 2 and 4 show a wheel similarly constructed of square pieces; but I do not claim the same in this patent, such structure being reserved for a separate application.

The advantages of this my invention over the buffers heretofore made of disks are, that I am able to use a very much larger proportion of the material, and utilize what in the old structures is cut to waste, and thus make a larger wheel from sheets of the same size. This not only saves the material, but also saves considerable time in operation, as it is not necessary to stop work to renew the wheels as frequently on the mandrel; and the advantage over the buffers built up of scraps, fragments, or sectors of material is that these my wheels are more rapidly and easily made, whereby much time is saved in manufacture, and they are also stronger and firmer than when made of pieces or sectors, work more evenly, and produce better results when in operation.

I am aware that buffers have been heretofore constructed of disks of materials of the size of the wheel, as shown in Letters Patent No. 246,959, and also of sectors, scraps, or fragments of materials, as shown in Letters Patent Nos. 267,735 and 269,688, and I do not claim any such structures; but

What I claim as new, and desire to secure by Letters Patent, is—

1. The improvement in the art of making buffing and polishing devices, consisting of building up the wheel from sheets of material of hexagon shape, or of any multiple of such shape or similar shapes, by superposing such sheets on their centers, so that they will form a wheel, substantially as described.

2. A buffing or polishing device consisting of sheets of material of hexagon shape, or of any multiple of such shape or similar shapes, superposed on their centers, substantially as described.

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