Oct. 31, 1939. S. SCHWARTZ 2,178,407

BUFFER

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Fig. 1.

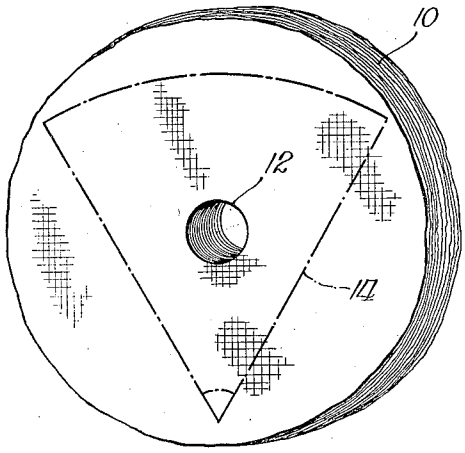


Fig. 2.

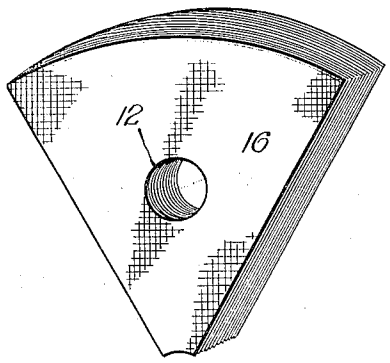
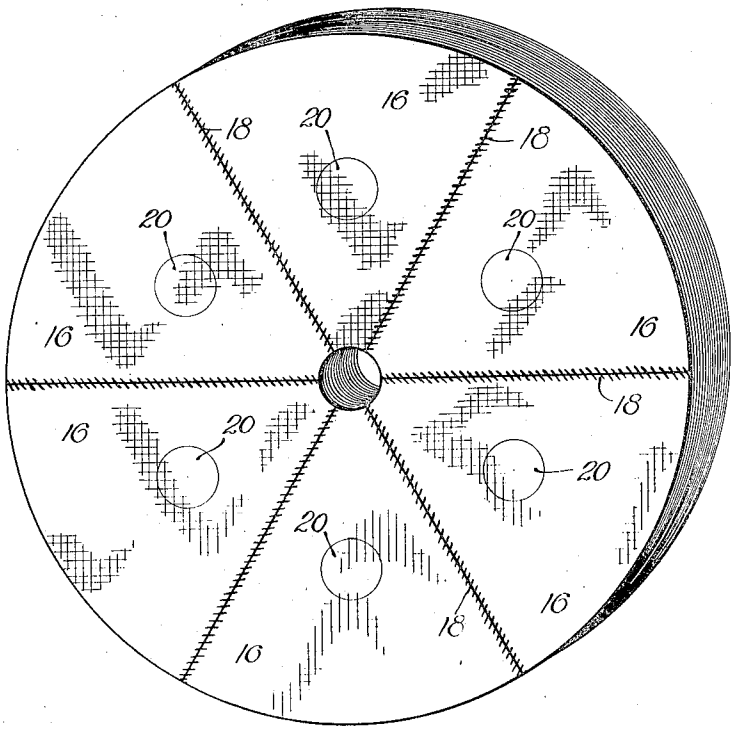


Fig. 3.



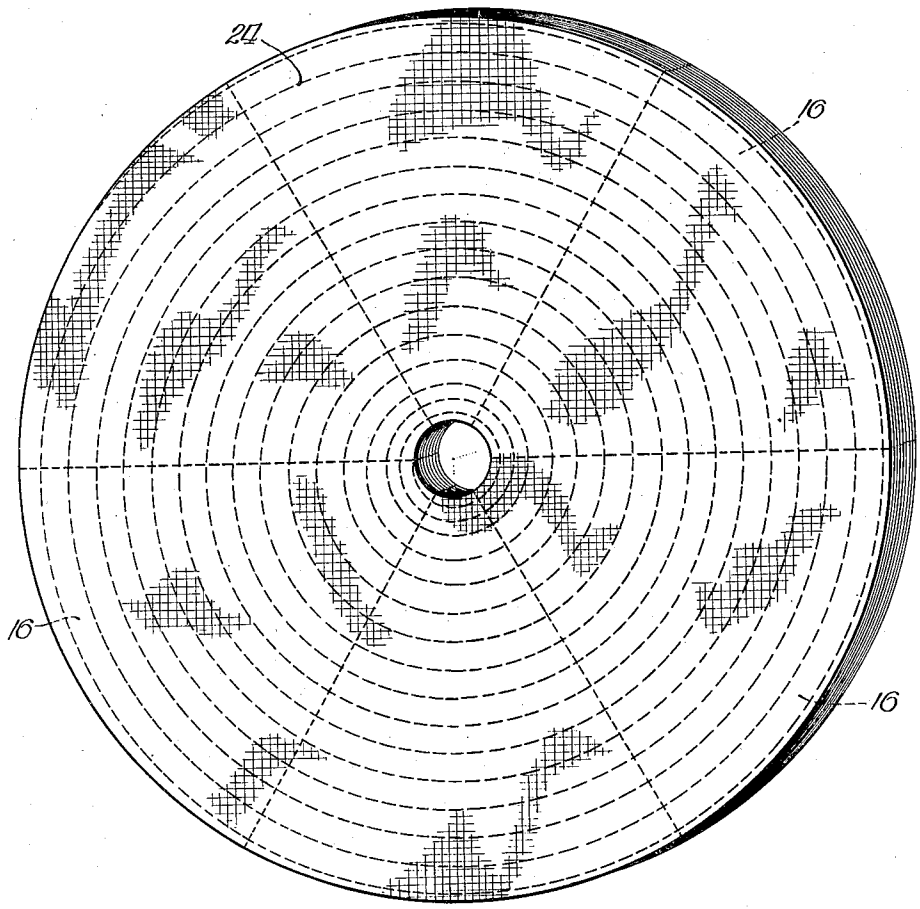
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Fig. 4.



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UNITED STATES PATENT OFFICE

2,178,407

BUFFER

Simon Schwartz, Manitowoc, Wis.

Application August 20, 1938, Serial No. 225,947

1 Claim. (Cl. 51—278)

This invention relates to rotary buffs or buffing wheels, and more particularly is concerned with an improved method of salvaging used or worn out buffs and reconditioning them in such a manner that they will perform and give service substantially as well as new ones.

It is well known that after buffs have been used for some time their edges become frayed and worn away with the result that the diameter of the buff decreases and continues to decrease until finally the buff is rendered useless and must be replaced. Heretofore it has been the general custom to discard the used buffs, and as already pointed out, the present invention is concerned with salvaging these units, assembling, and rebuilding them in such a manner that they perform efficiently and well in service.

In accordance with the practice of the present invention, a buff, the diameter of which has, through use, been worn too low to be consistent with requirements, is cut or stamped to form a sector of a circle. Additional sectors of the same circle are formed from other worn buffs and subsequently these sectors are all assembled to form a complete circle or disk, are covered on their upper and lower faces with single disks of new sheeting and are then stitched or sewn together to assemble them in proper relation.

Other objects and features of the invention will become apparent from a reading of the following specification in the light of the accompanying drawings, in which

Figure 1 shows a view of a worn buff having surmounted thereon in dotted lines the outline of a sector adapted to be cut or stamped therefrom;

Figure 2 is a view of the sector shown in Figure 1;

Figure 3 is a view of a buff wheel assembled from sectors of the type shown in Figure 2; and

Figure 4 is a view of a buff assembled from sectors of the type shown in Figure 2 and stitched in a manner different from that illustrated in Figure 3.

As shown in the drawings, there is illustrated in Figure 1 a worn or used buff 10 having a central opening 12 for the reception of the rotary shaft of the buffing machine. The diameter of this buff is too low to permit it to be any longer used for buffing operations, and instead of discarding it as heretofore has been the general practice, the present invention contemplates cutting from this worn buff a sector of a circle which in Figure 1 is indicated by the dotted lines 14. At this point it should be mentioned that a buff comprises a number of plies of material superimposed upon one another, or laminated, and maintained in assembled condition by means of stitching extending through the plies from one side of the buff to the other.

In accordance with the practice of the present invention, when a buff is worn from a diameter, let us say, of fourteen inches to a diameter of seven inches and is ordinarily no longer fit for service it has stamped or cut therefrom the sector 16 which is illustrated in Figure 2 and is indicated by the dotted lines 14 in Figure 1. Additional sectors are stamped or cut from other worn buffs and subsequently they are assembled in the manner illustrated in Figure 3 to form a complete circle having the diameter of a new buff. Stitching 18 serves to maintain the buffs in assembled relation and a single new sheeting may be used to cover the top and bottom of the buff in order to hold the sectors in assembled condition, to give it a new outward appearance, to reinforce it, and to cover the plugged openings 20 which will now be described. It will be understood that the worn buff 10 has the opening 12 in its center, which opening is adapted to receive the rotary shaft of the buffing machine, and when the sector 16 of Figure 2 is cut from the one buff the central opening 12 still remains. However, in assembling the sectors into the circular or rebuilt buff the opening 12 is plugged by some of the remaining material of the worn buff, that is, by some of the material lying between the stamped out segmental portion and the periphery. In this manner the rebuilt wheel will present a solid construction and willl perform as efficiently and well as a new one.

In Figure 4 is illustrated a buff that is composed of sectors of the type described but is stitched in a manner different from that illustrated in Figure 3. Thus, in Figure 4 the sectors are assembled in edge-to-edge relationship to form the circular disk, the top and the bottom of the assembled buff are covered with new sheeting, and the assembled buff is then sewn by means of the spiral stitching 24 therein illustrated. Thus, in this type of buff the sectors are not edge-stitched or sewn in edge-to-edge relationship but are held in assembled relationship by means of the spiral stitching which extends from the outer side of the buff on one side completely through the buff to the outer opposite side. In this connection, however, it will be appreciated that various forms of stitching may be used without departing from the scope of the present invention. Thus, instead of being spiral the sewing might be concentric, or the parts might be held

in assembled position by means of the so-called sun-ray stitching in which the lines of stitching extend approximately radially from the center of the buff. The type of stitching shown in Figure 3 may be frequently desirable for the reason that it avoids the formation of streaks during the buffing operation. Thus, the outer working edge of each sector of the buff is free to expand and to bulge laterally outwardly, and yet at the meeting edges of adjacent sectors the plies are held tightly against one another by means of the stitching, whereby the tendency to expand or bulge at these points is eliminated. This feature of affording alternately bulging and drawn-in areas about the periphery of the buff tends to eliminate streaking in the use thereof.

Although the invention as illustrated herein is carried out through the employment of six sectors to each rebuilt buffing wheel, it will be appreciated that the size of the sectors may vary and that a rebuilt wheel may be made of four or five sectors or even some other number instead of six. Likewise it will be appreciated that the size of the salvage determines the size of the finished buff, and by selecting worn buffs of proper size any desired diameter of rebuilt buff may be obtained.

Also it will be appreciated that the size of the sector may be varied as desired. Thus, the invention contemplates the use of a cutting die having a plurality of fixed straight sides and an adjustable open outer edge which may be employed to govern the radius of the sector and thereby produce buffs of various desired diameters.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States is:

An improved method of forming a buffer from a plurality of worn buffers having arbor holes in the centers thereof which comprises cutting a sector from each of said plurality of worn buffers with an arbor hole in each sector, the radius of the sector corresponding to the radius of the buffer it is desired to form, cutting out plugs from the waste material of the worn buffers of a size to fit the arbor holes in the sectors, plugging the holes with said plugs to preserve the dynamic balance of the finished buffer, assembling the sectors, covering the assembled sectors with sheeting, and stitching the sectors together to form a circular buffer.

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