L. G. FREEMAN.

ABRADING BELT.

APPLICATION FILED SEPT. 8, 1915.

1,194,494. Patented Aug. 15, 1916.

Fig. 1.

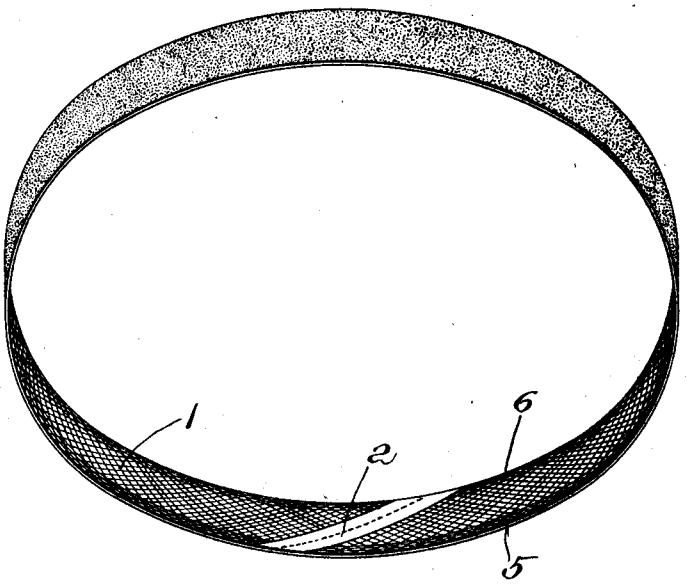
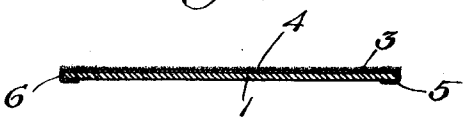


Fig. 2.



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UNITED STATES PATENT OFFICE.

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ABRADING-BELT.

1,194,494. Specification of Letters Patent. Patented Aug. 15, 1916.

Application filed September 8, 1915. Serial No. 49,493.

To all whom it may concern:

Be it known that I, LOUIS G. FREEMAN, a citizen of the United States, and resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented an Improvement in Abrading-Belts, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My present invention is an improved buffing or abrading belt and the objects of the invention are to provide such a belt for machines, particularly shoe machines, where the edge portion of the belt receives considerable wear. In belt buffing or abrading machines, such for example, as those shown in my pending applications No. 776,520, filed June 30, 1913, and No. 836,850, filed May 17, 1914, it is important and necessary to have the edge portions of the abrading belt at all times in proper condition. The greatest factor in the usefulness and "life" of the buffing belt depends upon the edge holding its abrasive and "standing up" to the work, and as soon as the edge is worn out the entire belt is useless. In the type of buffing machine referred to in my said prior applications, the buffing belt is so arranged as to operate upon the heel breasts of boots and shoes, one edge of the belt performing the buffing action at the angle or junction of the shoe shank and heel breast. This line of work is peculiarly severe upon the ordinary buffing or abrading belt, which is usually made of sand paper or emery cloth, and some abrasive material, glued thereon. Such cloth or paper being cut in strips from rolls of sand paper or emery cloth, leaves the edge rough and unprotected, and hence easily frayed out. Even in the best emery cloth belts, the exposed edge, as soon as applied to the work, rapidly loosens the textile fabric and separates the fibers, thus fraying out the edges. The same result is found in a paper belt, where sand paper is employed. I have discovered that the edge portions of such buffing belts, either of textile or paper backing, may be reinforced so as to "stand up" to the work and last as long as the body portion of the belt. I accomplish this desirable result by reinforcing the edge, and also a portion of the reverse side of the backing by a coating of glue or the like, and preferably by first cutting the strips forming such belts from rolls of abrasive material "on the bias" or angularly with relation to the lay of the fibers comprising same, and then coating the edges. Thus in the making of an emery cloth buffing belt, such belts being usually narrow in width, I cut them from sheets of emery cloth at any suitable angle,—either at 45°, or at a lesser or greater angle with the warp and woof of said cloth. By having a long or acute angle—different than a 45° cut,—I obtain a more easily running and smoother joint where the ends of the belt are joined, and thus prevent wear at this point without specially cutting off the ends or wasting any material. It will be understood that by cutting the strips at an angle, the opposite ends are already beveled or pointed from side to side in just the right position to abut and overlap, being held by a jointing strip or piece. I then coat the edge portion and a part of the back of the cloth on the reverse side from that carrying the abrasive material, with glue or the like, and complete the belt by uniting the ends in any desired manner. The buffing belt thus made prevents the edge portions from being quickly frayed out, fibers of the textile material being more firmly held at the edge, as each thread of both warp and woof extends at once inwardly from said edge, than formerly, where one thread is parallel with the edge.

Referring to the drawings illustrating a preferred embodiment of the invention, Figure 1 is a perspective view of the buffing belt; and Fig. 2 is a cross sectional view of this buffing belt.

It will be understood that these buffing belts are relatively narrow and are cut in strips from flat sheets of material coated with abrasive. The belt 1 being so cut, "on the bias" or angularly with relation to the interwoven fibers of the backing, whether textile or paper, is overlapped or otherwise joined by a piece 2. This buffing belt comprises the backing 1, layer of glue 3, and abrasive, such as sand paper, corundum, or the like, 4. Either before the strip 1 is formed into a belt, as illustrated in Fig. 1, or thereafter, the further coating of glue at each edge 5 and 6 is given, such additional coating being on the exposed edge and a portion of the backing, as illustrated in Fig. 2. If desired this additional coat-

ing of glue could be extended entirely across the backing, but I find it feasible, in practice, to simply coat the exposed edge and adjacent part of the backing. Such coating of glue holds the edge of the belt from fraying, enables the buffing belt to be used efficiently across its entire surface, including both edges, and greatly increases the life of the belt, as well as insuring uniformity of work, particularly along the edge portions during such use. While I prefer to cut such buffing belts angularly, as above explained, the edge coating feature is of equal importance where applied to such angularly cut belt strips, or those as now made, *i. e.* with the strip parallel with the fibers of the backing.

My invention is further described and defined in the form of claims as follows:

1. As an article of manufacture, an abrasive belt formed from a strip of textile material or paper, having on one side an adhesive and the abrasive material, together with an additional coating of adhesive on the edges of the belt strip applied thereon after the abrasive material.

2. As an article of manufacture, an abrasive belt formed from a strip of textile material or paper, having on one side an adhesive and the abrasive material, together with an additional coating of adhesive on both edges of the belt strip and upon the marginal portion of the back of said strip.

3. As an article of manufacture, an endless abrasive belt, formed from a sheet of textile material or paper and cut from said sheet angularly with relation to the fibers thereof, an adhesive coating on one side and abrasive material applied thereto.

4. An article of manufacture, an endless abrasive belt, formed from a sheet of textile material or paper and cut from said sheet angularly with relation to the fibers thereof, an adhesive coating on one side and abrasive material applied thereto, together with an additional coating of adhesive on the projecting fibers left by said angular cut at the edges of said strip.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

LOUIS G. FREEMAN.

Witnesses:
A. W. HAGEMANN,
J. P. KINGPER.