(No Model.) 2 Sheets—Sheet 1.

D. S. HALL.

Leather Washer.

No. 243,036. Patented June 14, 1881.

Fig. 1.

Fig. 2.

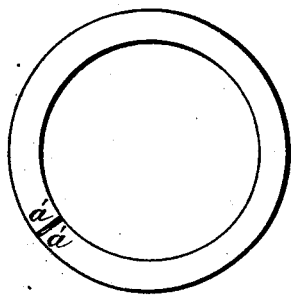


Fig. 3.

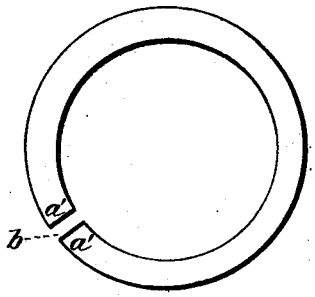
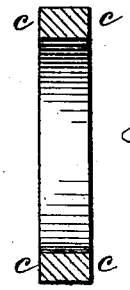


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

D. S. HALL.

Leather Washer.

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Fig. 5.

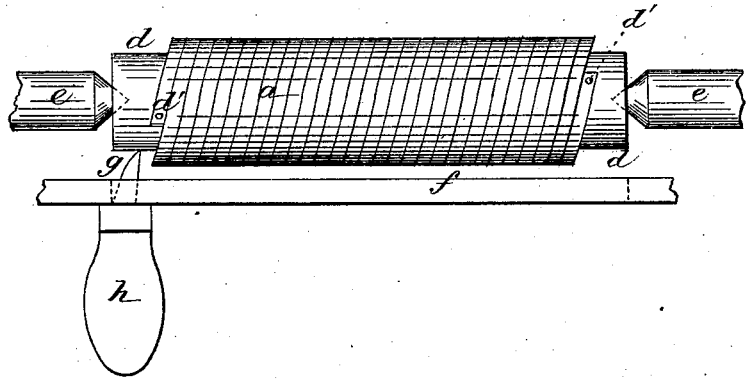
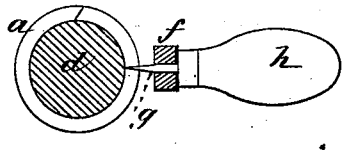


Fig. 6.



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UNITED STATES PATENT OFFICE.

DAVID S. HALL, OF STOUGHTON, MASSACHUSETTS.

LEATHER WASHER.

SPECIFICATION forming part of Letters Patent No. 243,036, dated June 14, 1881.

Application filed January 17, 1881. (No model.)

To all whom it may concern:

Be it known that I, DAVID SOULE HALL, a citizen of the United States, residing at Stoughton, in the county of Norfolk and State of Massachusetts, have invented new and useful Improvements in Leather Washers for Joints, of which the following is a specification.

My improvement consists of a special method of producing leather washers for wheel hubs and axles from a straight strip of leather wound spirally upon a wooden cylinder having a plain surface, said strip being secured at the ends, so as to be bound tightly upon said cylinder; then, by a single cutting, the coils are severed upon the cylinder in a line parallel with its axis, and in which the cutting-tool penetrates the surface of said cylinder sufficiently to completely sever the coils, producing thereby a number of such washers at one operation. The coils are severed crosswise in the same relative point and by moving the cutting-tool along a rest with pressure sufficient to cause the point of said cutter to enter the surface of the cylinder. The cheapness and rapidity with which such washers are produced in this way is a matter of much importance.

In the drawings I have shown, in Figure 1, a straight strip of leather, from which the washers are formed after it is wound spirally upon a wooden cylinder. Fig. 2 is a formed washer with its ends joining; Fig. 3, a washer having its ends separated, and Fig. 4 a cross-section of the washer, while Figs. 5 and 6 illustrate the method of forming such washers, Fig. 5 being a top view, and Fig. 6 a cross-section, of a wooden cylinder, showing the leather strip secured thereon and the cutter and its guide in the relation they occupy for severing the coiled strip.

I cut strips of leather, *a*, of the proper thickness and width, with parallel sides, and of such length as the stock will produce, and temper them in water to render them pliable. I provide a wooden cylinder of the desired diameter and with a smooth surface, and wind a strip thereon spirally and fasten its ends by tacks or otherwise, the cylinder being held in a lathe. The strip in drying will be bound tightly upon the cylinder. A cutter is then run longitudinally along the cylinder in a straight line, being supported by a rest, so that the point just enters the surface of the cylinder, and thus severs the coils crosswise at a relative point in each coil, and by a single movement of the cutter produce a number of ring-washers of the same size. The rings thus cut will separate at their ends sufficiently to leave a space, *b*, which serves as a reservoir for oil or other lubricant when the washer is in use and forms a self-adjusting washer. The strips are cut so that the washer, when formed, will present the cross-grain as the wearing sides *c c* to increase their durability.

I use different sizes of wooden cylinders to produce washers of different sizes, which have hitherto been formed by dies of different sizes.

Referring to Figs. 5 and 6, *a* is the leather strip, coiled upon the smooth-surfaced wooden cylinder *d*, and secured at its ends by pins *d'*, so as to be firmly and compactly bound thereon. *e* are the lathe-centers for the cylinder. *f* is the guide-rest for the cutting-tool *g*, and *h* is the handle, by which the cutter is operated by running it along the rest, which is shown as a slotted bar, so that the cutter is directed in a straight line and gaged with its point just entering the surface of the cylinder, so as to completely sever the coils along such line.

I am aware that washers have been formed from a strip of leather so as to produce a grain wearing-surface; but such leather washers have not been produced by the method which I have described, in which a wooden former is used, and upon which the leather strip is wound spirally and cut by drawing a cutter over the coils while they are bound upon said cylinder.

I claim—

The method herein described of forming leather washers, consisting in winding a leather strip spirally upon a wooden cylinder and severing said spirally-wound strip on a line parallel with the axis of said cylinder, and while bound thereon, by means of a cutter run along and against said cylinder to sever the coils crosswise in the same line, and thereby produce a number of such washers at one cutting, the said cutter penetrating the surface of said cylinder sufficient to completely sever the coils, substantially as specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DAVID SOULE HALL.

Witnesses:

ELLIS DRAKE,

OSCAR A. MARDEN.