April 6, 1943. L. F. PLUMMER 2,316,018

BELT

Filed April 25, 1941

Fig. 1

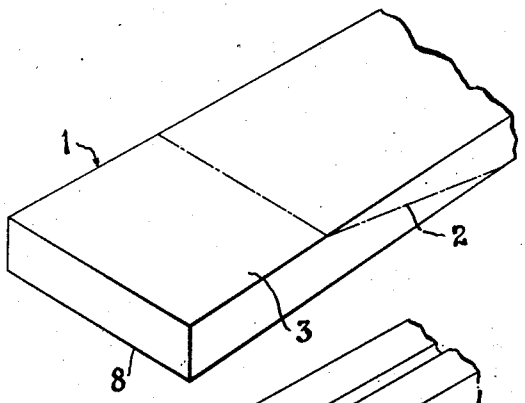


Fig. 2

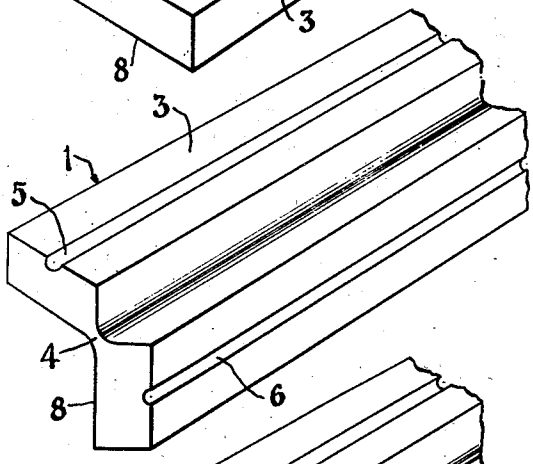


Fig. 3

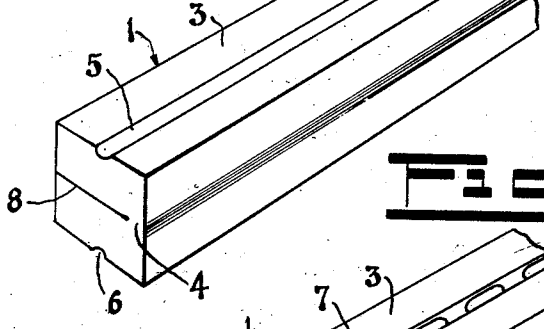


Fig. 4

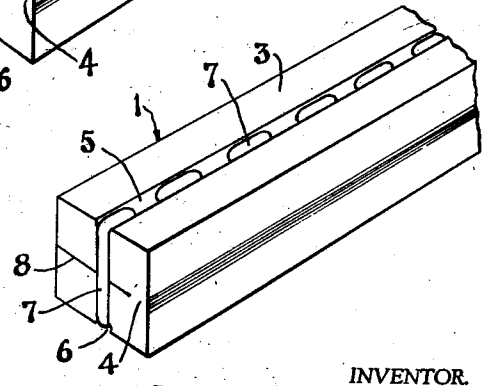
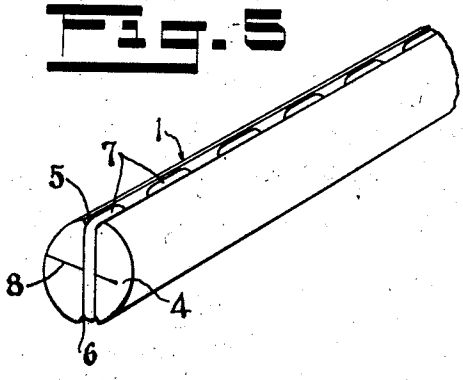


Fig. 5



INVENTOR.
Lloyd F. Plummer
BY
His ATTORNEY

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BELT

Lloyd F. Plummer, Dover, N. H., assignor to I. B. Williams and Sons, Inc., Dover, N. H., a corporation of New Hampshire

Application April 25, 1941, Serial No. 390,235

2 Claims. (Cl. 69—21)

This invention relates to a new and useful improvement in round leather belting, particularly that in which the diameter is greater than the thickness of leather ordinarily obtainable and in the method of making it.

It has been the custom to make such belts from solid leather of unusual thickness obtainable only from Swiss or Swiss Border hides. In order to obtain the requisite length, it has been the practice to cut each half or bend of the hide spirally into a strip and to then shape it to the desired contour. This practice is far from satisfactory because the leather along the backbone and belly edges is lighter or thinner than the intermediate side section. Consequently, to avoid waste two or more belts of different diameters are usually cut from a single bend, the smaller being obtained from the outer part of the spiral, and the larger from the inner part. If, as often happens, belting of only a single diameter is wanted, this results in a serious waste of leather and often requires the use of a number of hides in order to obtain the requisite length of the desired diameter.

Furthermore, the fibres of leather cut in this way differ in different parts. The fibres along the backbone are close and compact, whereas in the belly they are loose and open, so a great difference in stretch and tensile strength in different parts of the belt is unavoidable and these differences are still further increased by the fact that the direction of the fibres of a spirally-cut belt varies from longitudinal in the parts cut from the backbone and belly to transverse in those parts cut from the shoulder and butt.

In addition, it is difficult to straighten a spirally-cut belt, particularly with respect to that part near the inside of the spiral where the curvature at the ends is sharpest. Finally, because of the variations in the fibres and the stretch, it is extremely difficult to obtain a belt of full roundness in every part, and of uniform diameter.

Round leather belt has also been made by cementing and stitching together narrow strips of leather grain to grain. Presumably, the smooth grain sides have been placed together to make the contact as close as possible and with the idea that the flesh side, the strongest part of the leather, should form the working surfaces. This was a development of many years ago and actual use has demonstrated long ago that the cement will not hold the strips for any length of time, and once it has given way, the relative movement of the two grain surfaces, hardened by the cement, soon cuts the stitches and the belt disintegrates. Furthermore, the rounding process necessarily removes substantially all of the flesh side of the strips and consequently nearly all of the strength of the leather so that the resulting belt is extremely weak.

By this invention it is possible to make a round belt from ordinary flat belting leather. Since such leather is cut parallel to the backbone, its grain is uniform, and also it is put through a preliminary stretching process so that there is no difficulty in obtaining a round belt with a minimum of stretch and of substantially uniform diameter and tensile strength throughout. In addition, manufacturers and users of such belting are freed from dependence upon a particular, very limited, and at present unavailable, source of extra heavy leather.

The belt of this invention and a method of making it is described herein and disclosed in the accompanying drawing, of which:

Figure 1 illustrates a strip of ordinary belting leather of ordinary thickness;

Figure 2 illustrates the same piece of belting which has been slit and grooved in accordance with the method of this invention;

Figures 3, 4 and 5 illustrate further steps in the manufacture of the belt, and Figure 5 also illustrates the finished belt.

For the purposes of this description let it be assumed that the desired round belting is to be one-half an inch in diameter. The strip of leather **1**, should then be substantially one inch in width and one-quarter of an inch in thickness. As already stated, this piece of leather preferably represents ordinary belting leather cut parallel to the backbone of the hide and stretched. If the belt is to be longer than one of these strips, the ends of a requisite number of strips having similar characteristics are scarfed and cemented together in the usual way as indicated at **2**. In short, the leather strip from which the round belt is made is nothing more nor less than an ordinary flat belt of the usual construction.

One side, preferably the grain side **3**, of the strip of leather is first longitudinally slit along its median line to about three-quarters of the way through to form a hinge **4** upon which the two halves can be folded, as shown in Figure 2. It is also provided with two shallow longitudinal grooves **5** and **6** midway between the slit **4** and each edge. The strip is folded upon itself, as shown in Figure 3, which brings grooves **5** and **6** directly opposite each other, and the two halves are then stitched together, as shown at **7** in Fig-

ure 4, through the bottoms of grooves 5 and 6, these grooves being of sufficient depth so that the tops of the stitches 7 will be below the surface of the leather. Thereafter, the corners of the belt are trimmed and it is then passed through a series of dies or washers in the usual way until it acquires the round contour illustrated in Figure 5.

The round belt of this construction has many advantages. It is made from easily obtainable belting leather of ordinary thickness. Consequently, its stretch is reduced to a minimum and uniformly distributed. Also, its tensile strength is uniform throughout. No cementing is required. As previously stated, such cementing will not hold and will harden the surfaces of the leather, thereby encouraging relative movement between the parts of the belt and cutting of the stitching. The two halves of the belt are integrally joined at hinge 3, which, if the slitting is done from the grain side as suggested, is in the strongest part of the leather so that the adjacent edges of the two halves of the belt are positively held against relative motion. This, together with the stitching, substantially prevents any motion between all parts of the two halves, but, at the same time, permits of a very slight give (as distinguished from slip) at the stitching, which allows the two parts to adjust themselves to some extent when rounding a pulley so that the strain in the belt is reduced. In addition, the process of rounding the belt removes the weak grain sides only, and leaves intact the strong flesh sides so that a strong and durable belt results. Thus, this belt is not only a substitute for the solid belt made from very special, and, at present unobtainable, leather, but is superior thereto in many respects.

I claim:

1. Solid round leather belting consisting of a strip of leather equal in width and thickness to twice and half the desired diameter of the finished belt, respectively, a longitudinal slit along its median line extending partially through said strip from one face to form an integral hinge adjacent the other face, the unslit face being folded upon itself upon said hinge thus forming a strip of square cross-section twice the thickness and half the width of the original strip, longitudinal stitching through both halves of said folded strip midway between the edges, the corners of said folded and stitched strip being trimmed to obtain a round cross-section.

2. The method of making solid round leather belting, which consists of slitting longitudinally along its median line from one face of a strip of belting leather equal in width and thickness to twice and half the desired diameter of the finished belt, respectively, to form an integral hinge adjacent to the other face, folding the unslit face of said slit upon itself on said hinge to form a strip of square cross-section twice as thick and half as wide as the original strip, stitching together both halves of said folded strip midway between the edges and trimming the corners of said folded and stitched strip to obtain a round cross-section.

LLOYD F. PLUMMER.