C. MUNSON.

Leather Belting.

No. 152,402. Patented June 23, 1874.

Fig. 1.

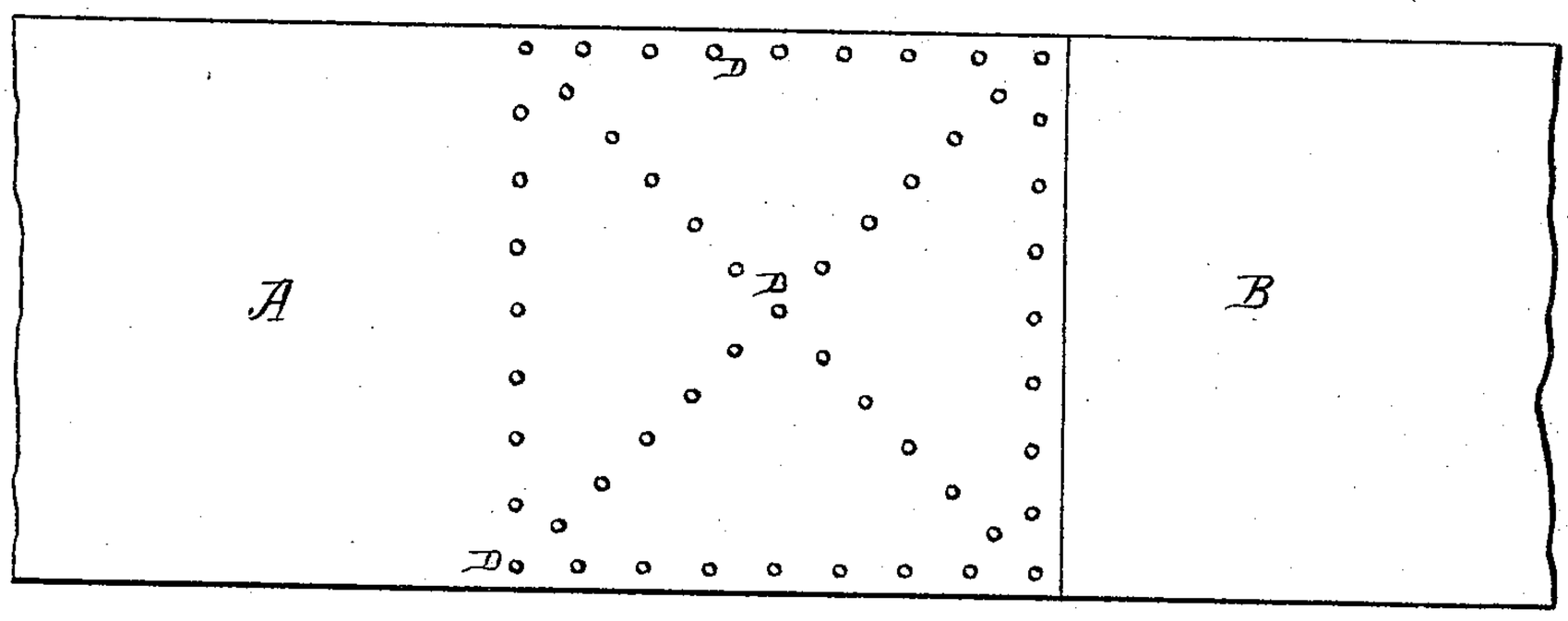
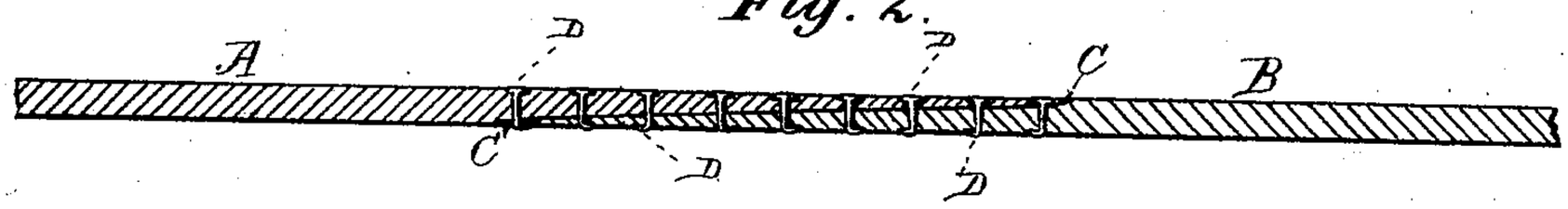


Fig. 2.



Witnesses
Philip F. Larner
A. B. Cauldwell

Inventor.
Charles Munson
By Munn & Co
Attorney.

UNITED STATES PATENT OFFICE.

CHARLES MUNSON, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN LEATHER BELTINGS.

Specification forming part of Letters Patent No. **152,402**, dated June 23, 1874; application filed May 23, 1873.

To all whom it may concern:

Be it known that I, CHARLES MUNSON, of Chicago, in the State of Illinois, have invented an Improved Method of Splicing Belting; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a view of the flat side of the belting, showing the arrangement of the splicing-tacks. Fig. 2 is a longitudinal section through the belt, showing the chamfer of the united ends and the method of fastening them together.

Leather belting has for many years been made in sections of various lengths, which have been united at their ends by means of cement and by rivets and burrs, with and without adhesive cement interposed between the coincident surfaces of the overlapping ends; and, for the purpose of maintaining uniform thickness at the joints, each section has been chamfered to a thin edge, so that the two ends will match, and be but little, if any, thicker than the solid portions of the belt. In order that the surface of the smooth side of the belt at the joints may be evenly maintained, the heads of the rivets employed have always necessarily been sunken flush with the surface; and in order to do this the leather was either removed after the manner of countersinking, or, more commonly, the metallic heads were so driven as to cause the leather to be sufficiently condensed thereunder to allow the surface of the heads to be flush with the general surface of the belt.

Both of these methods ultimately result in injury to the belt. If the leather be removed by countersinking, the belt is to that extent weakened; and if the leather beneath the heads be condensed, as stated, it will be harder and less pliable than at adjacent portions, resulting in both cases, after a little wear, in a disastrous crack in the belt on a line with the edges of the heads of those rivets which range across the belt. Moreover, the rivets employed have necessarily blunt ends; and, in order that they may be passed through the thicknesses of leather at the joint, it is necessary to remove more or less of the leather by punching, and the belt is thereby further weakened.

The object of my improvement is to unite the chamfered ends with metallic fasteners without removal of any of the leather, and at the same time to have a stronger and more reliable joint than has ever heretofore been known in connection with leather belting; and my invention consists in uniting the ends of the sections, which are chamfered and matched, by means of metal rivets, which are sufficiently pointed to be driven directly through the leather without removal of any material portion thereof, and are capable of being clinched on one side directly into or upon the leather.

In the drawings, A and B denote two sections of belting, and C C denote the chamfered ends, matched to form the joint or lap. The pointed rivets D are preferably provided with a small round head, and may be composed of soft steel or very fine soft iron. The heads need seldom be greater than three thirty-seconds of an inch in diameter, and the shanks sufficiently less than that to afford a good bearing beneath the head. In length, the pointed rivets need seldom be more than a sixteenth of an inch greater than the thickness of belting to be spliced.

In applying the pointed rivets, I prefer to drive them from the flesh side, with a smooth-surfaced metallic foundation, on which the belt is placed, smooth side down. When properly driven in this manner it is quite impossible to feel with the hand any of the points on the smooth side, for the reason that in most cases the points curl under and re-enter the leather in a return direction, and so, on receiving a slight additional blow, draw the leather upward or inward, and present slight concavities in the smooth surface. By this means little or no metallic surface is presented for contact with the surface of the pulley with which the belt engages, while on the contrary, with an ordinary four-inch belt, with three rivets in a line, as at present commonly employed, a metallic surface of more than one-quarter the whole width of the belt is presented for contact with the pulley.

Cement of the usual character is sometimes employed by me in connection with the pointed rivets; but when belts are used in damp or wet places the cement soon loses its adhesive

power, and no strength remains at the joint except that which is solely afforded by the metallic fasteners.

I have found from experience that for most uses the pointed rivets need be seldom nearer each other than one-half inch, and I prefer to drive them first in two lines, one across the joint at the end of each section, then in two lines along the edges of the belt, between the lines first mentioned, and finally in two angular lines from corner to corner within the square thus formed, so that, for instance, about fifty of the pointed rivets would be employed in a four-inch-belt splice, for which at least eight rivets and burrs would be necessary in the ordinary joint.

Long and faithful trial of my improved belts has demonstrated that they will perform service equal to or greater than those with the rivet and burr joints, and last for from twice to three times as long; and inasmuch as the weak points in all good belts are at the joints, their general value is gaged by the character of the joints, on which sole reliance is placed for their serviceable durability. My improved belting is very flexible at the joints, and is well adapted for use on small pulleys at a high rate of speed.

I am aware that it has been proposed to employ the so-called "cable-screw" or twisted wire for uniting the sections of leather belting at the joints. When such wire is used for this purpose it can only perform the function of pegs, and absolutely requires sufficient bulk of leather in each section for the wire to properly engage therewith. No reliance can be placed on the cable-screw pegs for holding the leather together beyond the hold which the convolutions thereof may have upon the leather which surrounds them. The thin chamfered ends of the section cannot, therefore, be held by the twisted-wire pegs, and all attempts to increase their holding capacity by clinching will be futile, for the reason that the wire being twisted will cripple and bend long before any upsetting of the metal can occur, and for that reason it has only been proposed to join the sections by placing together the two normal thicknesses of the belt without matching or chamfering.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A leather belt having joints or laps matched by chamfering, and secured by pointed rivets, as set forth, which pierce the leather and are clinched directly into or upon the same, substantially as described.

The above specification of my said invention signed and witnessed, at Washington, this 5th day of May, A. D. 1873.

CHARLES MUNSON.

Witnesses:
W. P. BELL,
CHAS. F. STANSBURY.