

(No Model.)

T. MIDGLEY.

MANUFACTURE OF WIRE BELTING.

No. 398,424.

Patented Feb. 26, 1889.

Fig. 1.

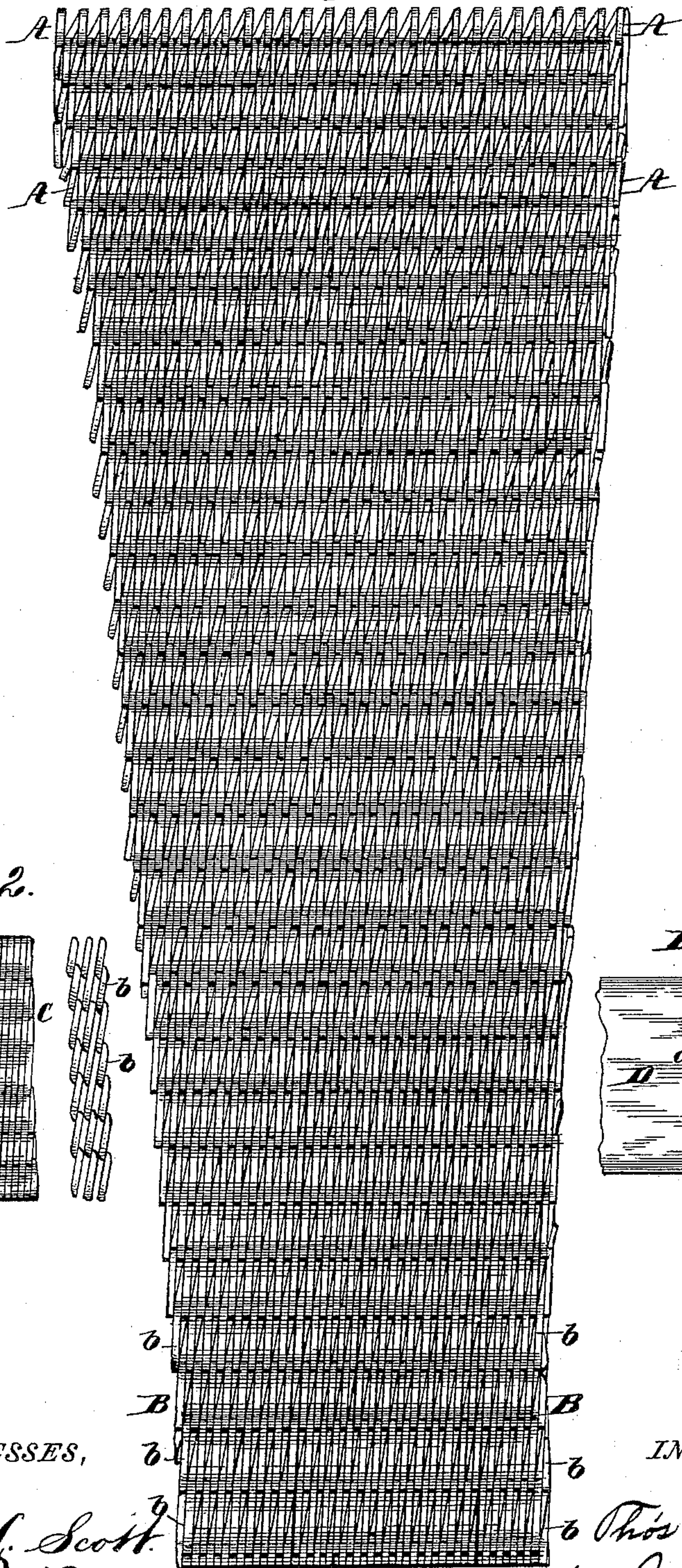


Fig. 2.

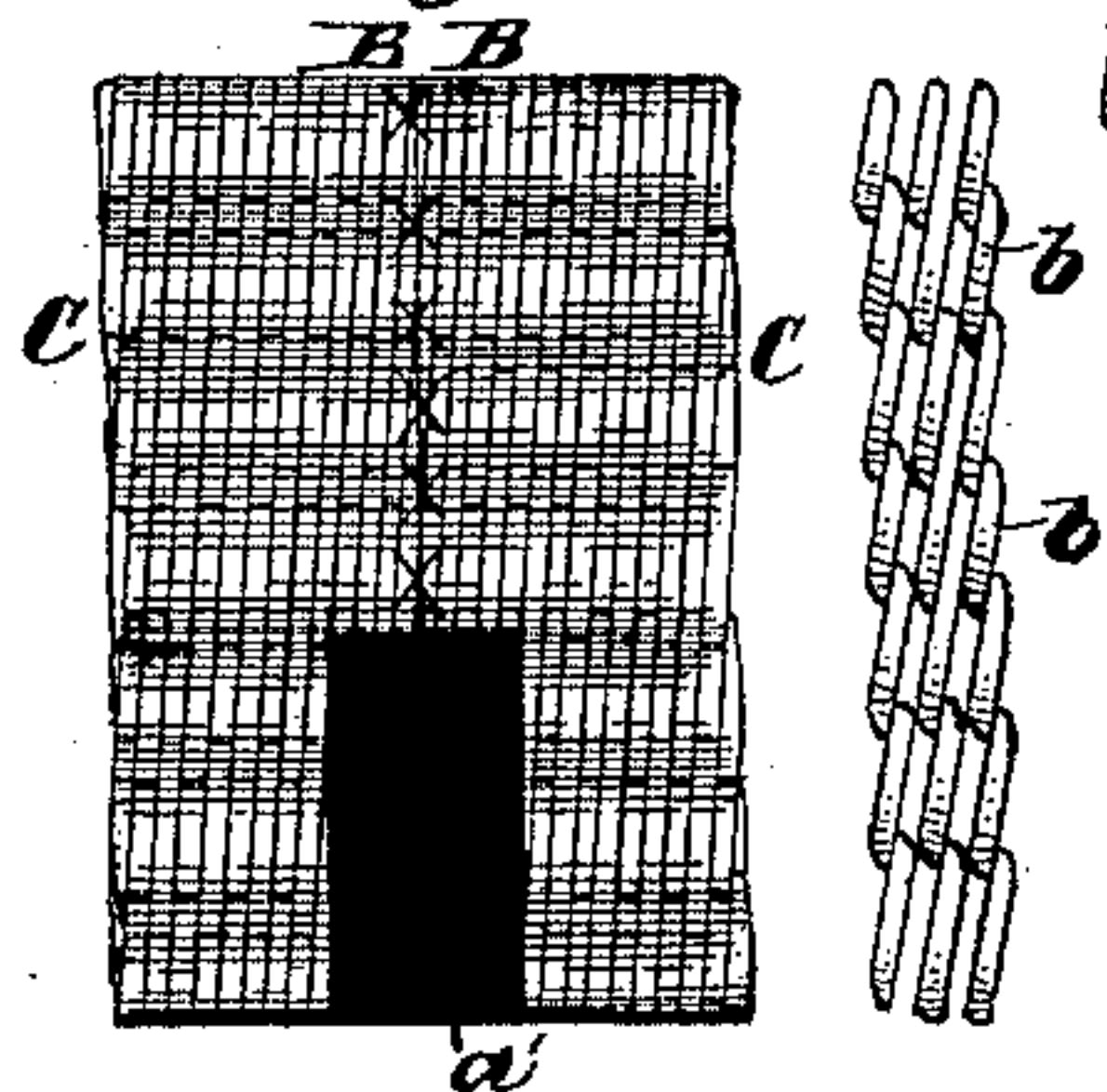
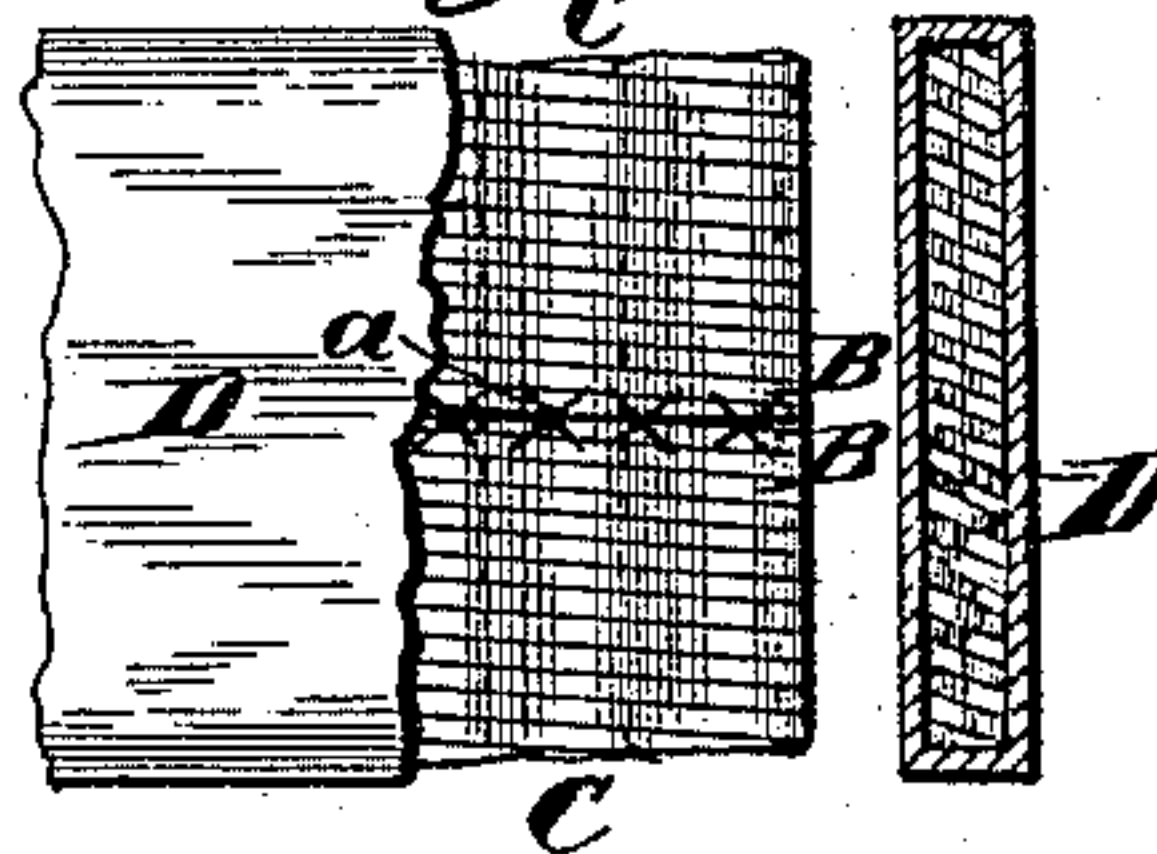


Fig. 3.



WITNESSES,

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THOMAS MIDGLEY, OF BEAVER FALLS, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JAMES E. EMERSON, OF SAME PLACE.

MANUFACTURE OF WIRE BELTING.

SPECIFICATION forming part of Letters Patent No. 398,424, dated February 26, 1889.

Application filed June 22, 1888. Serial No. 277,866. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MIDGLEY, a citizen of the United States, residing at Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in the Method of Manufacturing Wire Belting; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the manufacture of wire belting, and has for its object an improvement in the method set forth in the patent granted James E. Emerson and myself on the 10th of May, 1887, No. 362,577, and in my application for a patent filed March 1, 1888, Serial No. 265,836.

The invention will be hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which form part of this specification, Figure 1 is a plan view of a section of wire belting before it has been folded. Fig. 2 is a similar view of a section of wire belting after it has been flattened and folded and an edge view of the same on an enlarged scale, and Fig. 3 represents a plan view of a section of flattened and folded wire belting partly covered with rubber and a cross-section thereof.

Reference being had to the drawings and the letters marked thereon, A indicates helical coils of wire, which are twined together by one coil being screwed into another until a sheet or belt of any desired length and width is formed. The coils A are of a length equal to double the width of a finished belt, and the sheet is folded transversely throughout its length, bringing the edges B B together in or near the center of the folded sheet, as shown in Fig. 2.

The edges may be secured by a strand of wire, *a*, or a strip of rubber, *a'*, may be applied over them and rolled into the interstices, which in either case will prevent them separating. After the sheet has been formed of any desired length and width it is heated to about a cherry-red heat by passing it through a furnace of suitable construction—such as is used for heating or annealing purposes or other heating apparatus—and the helices

stretched and flattened into links *b*, as shown in Figs. 2 and 3.

In stretching and flattening the helices the sheet is drawn through the furnace under tension, which may be effected by passing it between rubber or other rolls, as in the patent referred to, or by any other suitable means, and winding the stretched sheet upon a suitable reel, the drawing force being applied to the reel by any suitable power. By this operation the links *b* are made to seat one in the adjacent end of the adjoining links throughout the entire length of the sheet to prevent stretching of the completed belt when in use.

In stretching and flattening the helices the width of the sheet is reduced about one-third, while the length is increased to about double its original length. After having been stretched and flattened the sheet is folded transversely throughout its length, bringing the ends of the sections of wire together at or near the center of one side of the folded sheet or belt, and the whole tempered in the usual manner. The ends of the sections are then secured by a strip, *a'*, of rubber, the sheet or belt is passed between rolls with a strip of rubber over the joint and rolled into the interstices of the sheet to cause it to adhere. If by a strand of wire, it is subsequently rolled to set the folds at the edges of the belt.

By folding the sheet transversely from both sides or ends of the coils or sections A working-edges C C are formed which will not cut a shipper or the belt when running crossed, and a belt of double thickness is produced, the weight of which is much less than a belt of single thickness possessing the same tensile strength. In narrow belting the wire may be of lighter grade than in single belting of the same width, and the weight of the wire should be increased in proportion to an increased width of the belt.

A belt thus constructed may be covered on one or both sides with rubber and canvas, or rubber or its equivalent alone, as shown at D in Fig. 3, and again passed between rolls heated to about 170° to 172° Fahrenheit, to cause the rubber to soften and embed itself in the interstices between the links and adhere thereto.

The product of this method is claimed in

my application filed May 31, 1888, Serial No. 275,579.

Having thus fully described my invention, what I claim is—

5 1. The method herein described for making wire belting, which consists in forming a metallic sheet or body by intertwining transverse sections of coiled wire, heating the sheet, stretching and flattening the helices into elongated links while heated, then folding the
10 sheet transversely and bringing the ends of the sections together on one side of the belt, then tempering the belt, then securing the ends of the sections, and finally rolling the
15 belt, substantially as described.

2. The method herein described for making wire belting, which consists in forming a me-

tallic sheet or body by intertwining transverse sections of coiled wire, heating the sheet, stretching and flattening the helices into elongated links while heated, then folding the
20 sheet transversely and bringing the ends of the sections together on one side of the belt, then tempering the belt, then securing the ends of the sections, and finally coating the belt with
25 rubber or its equivalent and rolling the rubber into the interstices, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS MIDGLEY.

Witnesses:

MILLARD E. CHENEY,
FERD HYLE.