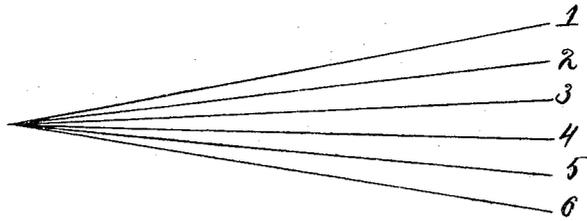
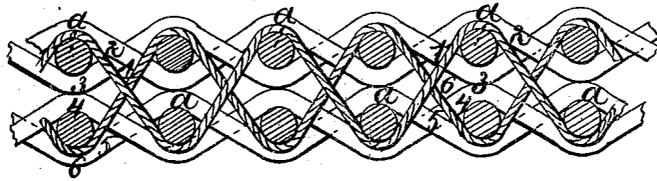


J. C. Cooke.
Woven Fabric.

N^o 22,528.

Patented Jan. 4, 1859.



UNITED STATES PATENT OFFICE.

JAS. C. COOKE, OF MIDDLETOWN, CONNECTICUT, ASSIGNOR TO RUSSELL MANUFACTURING COMPANY, OF SAME PLACE.

MANUFACTURING WEBBING.

Specification of Letters Patent No. 22,528, dated January 4, 1859.

To all whom it may concern:

Be it known that I, JAMES C. COOKE, of Middletown, in the county of Middlesex and State of Connecticut, have invented a new or Improved Manufacture of Webbing for Machine Belting, Cordage, Mule-Harness, or other Useful Purposes; and I do hereby declare that the same and the mode of making such is hereinafter fully set forth and described, the accompanying drawing or diagram serving more fully to illustrate the said mode.

The nature of my invention is a fabric made not only by means of two or more sets of body warps (there being two warps to each set) and a single filling thread passed through the decussions of the sets alternately or otherwise, but with one set of confining warps so arranged and crossed on the filling as to band together the cloths made by the body warps and form the fabric with no continuous or straight parallel ridges.

If in the accompanying drawing marked Figure 1, we suppose the several warps to be indicated by the lines marked 1, 2, 3, 4, 5, 6, and that lines 2 and 3 indicate one set of the body warps, (seen in edge view,) while lines 4 and 5 denote another set of body warps; also, that lines 1 and 6 are the binding warps, and that all these warps are set up in a loom and supported by a harness for each and mechanism for operating such harness in the order that may be required; also, that the loom is furnished with a shuttle containing a filling thread, we can proceed in the following manner in order to weave my new belting or fabric. First, cross the warps of the first set of body warps, viz. 2 and 3, and throw the filling through the decussion or in the angle made between the warps and by means of the lay beat up such filling thread. Next, cross the warps of the second set of the body warps, viz. 4 and 5, throw the filling through them. The arrangement of the threads of the binding warps with respect to those of the body warps should be such that when the binding warps are crossed in the filling, thus twice thrown through the body warps, the said threads of the binding warps, will pass respectively between those of the body warps. Under these circumstances the next operation is to cross the warps of the third set or binding warps, 1, and, 6, on the threads of filling before

thrown in. By repeating the operation in the order set forth we shall produce a fabric having no parallel ridges like suspender webbing, wherein the body warps and binding warps are woven with continuous channels between them and elastic cords placed in such channels so as to produce in the fabric parallel ridges.

For machine belting, it is not desirable to have parallel ridges, but to weave a fabric with a uniform, unridged surface or one that will not bend on the periphery of a pulley, only in straight parallel lines about the same, as when such is the case, a large portion of the band surface next the pulley is out of contact with the pulley and of course there is a consequent loss of friction such as is desirable to have in order to produce the most useful effect of the band in turning the pulley. With a plain unridged surface band the amount of useful friction will be greatly augmented.

In weaving the bandings more than two sets of body warps may be employed so as to impart to the fabric any degree of thickness which may be desirable. In the weaving of the fabric, were the binding warps dispensed with, it would be woven tubular but with the binding warps, the two halves of the tube are closely tied together.

Fig. 2, denotes a longitudinal sectional view of the fabric. In this figure *a, a, a,* is the filling thread, while the two sets of warps are shown at 2, 3, and 4, 5, the binding warps being represented at 1 and 6. Thus in carrying out my invention I unite a number of thicknesses of plain cloth in the process of weaving so as to make of them a single or solid and compact piece of cloth of greater thickness and strength than could be made by any of the now known methods of weaving plain cloth or webs—for it is known, that in the woven belting now in use consisting of two pieces of plain cloth woven in the form of a cylinder or pipe, or in the article patented March 16th, 1858, by D. B. Cooley and myself for hose which might be used for the same purpose the thicknesses of cloth farthest from the face of the pulley stretch in passing the pulley and consequently wrinkle when the belt is straight, and in this manner bring all or most of the labor of the belt upon the opposite thickness or that next the pulley and it is also known that in passing the pulley the several parts

or thicknesses of cloth rub or chafe each other, and in that manner the belt wears upon the inside much faster than upon the outside, all of which difficulties my invention is intended to obviate, as it will be apparent, that by binding the several thicknesses of cloth together and making them compact and firmer together there can be no wear upon the inside, neither can one portion stretch and become wrinkled more than another, but all must remain smooth and even; and it is also known that in the great variety of rubber and gutta percha belting that the strength of the belt is in the cloth of which they are made, and the chief value of gum is but to cause the different layers of cloth to adhere, thus forming a solid body which in my process is made with greater facility and less cost and although this improvement was sought mainly for a substitute for leather in machine belting, yet I find the invention admirably calculated as a substitute for cordage in many places as in bedsteads and in hoisting apparatus, also for harness for mule and other teams.

I do not claim what is termed suspender webbing made not only of elastic or inelastic cords and two sets of body warps, but with binding warps and a filling thread, as a fabric so made contains a series of continued channels arranged side by side each holding one of said cords so as to make a straight ridge along the outer surface of the fabric.

In making my fabric or belting I use no such elastic or inelastic cords in connection with the warps, and I weave the belting in a manner to give it a greater extent of bearing surface when on a pulley than it would have were it made with ridges as described. Consequently, the distinctive feature of difference between my belting and the suspender webbing is, that in the former there are no continuous channels and elastic or inelastic cords arranged in such channels, and so as to make such ridges on the surface of the cloth.

A material difference exists between my invention and the double tube or hose or new article of manufacture patented by my-

self and L. B. Cooley on the 16th day of March, 1858, for although the two tubes of the double hose are connected together, they are connected only at the two opposite edges or points of the fabric (and there only by the filling thread, in its passage from one tube to the other and back and it will be apparent to any one versed in the art of weaving that it is impossible to weave the double tube or hose in a loom carrying but a single shuttle for each double hose woven, without so uniting the two portions of the tube or hose in the manner described in the specification of the said double hose,) whereas in my present invention the confining warps which are crossed on the filling are arranged so as to cross the same in numerous places or intervals between the edges of the fabric and so as to destroy any tubular character, if any there might be or in other words make the whole into as firm and compact a body as possible without any bore or passage extending through it like that of the double hose or other fabric of a tubular character, for in my fabric its chief value consists in the considerable degree of compactness it possesses, which compactness is given by the interlacing of the confining warp through the entire fabric. I therefore do not herein claim the double hose, but my improvement or new fabric.

Therefore I claim as a new manufacture—

A fabric or belting made not only of two or more sets of body warps and a single filling thread passed through the decussations of the said warps alternately or otherwise, but with confining warps arranged and crossed on the filling, and between the body warps and at various or numerous intervals between the two edges of the fabrics so as to bind together the cloths made by the body warps, and form them with no straight or continuous parallel ridges.

In testimony whereof, I have hereunto set my signature.

JAS. C. COOKE.

Witnesses:

JAS. E. LATHROP,
JULIUS HOTCHKISS.