

UNITED STATES PATENT OFFICE.

JOSEPH H. CLIFTON, OF NEW CASTLE, PENNSYLVANIA.

IMPROVEMENT IN THE MANUFACTURE OF MACHINE-BELTING.

Specification forming part of Letters Patent No. 25,095, dated August 16, 1859.

To all whom it may concern:

Be it known that I, JOSEPH H. CLIFTON, of New Castle, in the county of Lawrence and State of Pennsylvania, have invented or discovered a new and useful Article of Machine-Belting, of which the following is a full, clear, and exact description.

A material for belting that would supersede leather, india-rubber, and gutta-percha has long been a desideratum among mechanics and manufacturers; but heretofore no such material has been found.

The object of my invention is to provide an article of belting that shall be at once cheap, strong, and durable; and my invention consists in a new article of manufacture made by so preparing a belt or band of fibrous material by successive coatings of size or starch, resinous substance, and plumbago, that it shall possess, when completed, the above-enumerated qualities in a high degree.

My improved belting is prepared in the following manner: The fabric is first thoroughly saturated with size and the surplus removed by means of scrapers. This lays the fiber, renders the belt stronger, and prevents too great an absorption of the resinous substance subsequently used. The fabric should be kept stretched during the whole process, as it tends to produce a better article. After being partially dried the belt is coated with finely-pulverized rosin, which is melted by passing a hot iron over it, leaving a thin coat spread evenly over the belt. The object of this coat is simply to prevent too great an absorption of the plumbago and the consequent tendency of the belt to harden or form into knots, and it is soon disintegrated when the belt is put in operation. While still warm this coating may be rendered still more smooth by passing it between rollers. The belt is then to be thoroughly coated with plumbago reduced to the consistency of a paint by an admixture of boiled linseed-oil, and when this has become sufficiently dry not to adhere to substances with which it comes in contact it may be passed through finishing-rolls. The manufacture is now completed and the article ready for use.

Other analogous substances might be substituted for plumbago; but I prefer that article, as it contains no gritty matter which would cut out the belt and render it less durable. Any color desired may be given to the band by mixing suitable pigments with the plumbago.

I have demonstrated by experiment that a belt which before being subjected to my process would only sustain a weight of one thousand pounds will afterward sustain one of two thousand two hundred pounds, being a gain of one hundred and twenty per cent. in strength over the unprepared fabric. Being unaffected by heat or cold, moisture or dryness, such a band may run much slacker than an ordinary one, and consequently with much less strain on the shafting. As it is both fire and water proof, it may be run with impunity under water or over a drum hot enough to scorch a leather band. It has so little tendency to slip that it will drive an iron drum covered with frost, which with an ordinary band is simply an impossibility. Another great advantage is that it can be made of any required length with but a single point of juncture.

I prefer to use wool, or a mixture of wool and cotton, as the fabric for my improved belting; but other fibrous material may be used for that purpose.

A detailed description of the machinery employed to produce this new article of manufacture is deemed unnecessary here, as it forms no part of the subject-matter of this patent; and, besides, the process is so simple that it can be performed by hand with the aid of little, if any, machinery.

I claim—

As a new article of manufacture, belting made of fibrous material by the process herein set forth.

In testimony whereof I have hereunto subscribed my name.

JOSEPH H. CLIFTON.

Witnesses:

WM. D. BALDWIN,
JOHN S. HOLLINGSHEAD.