

UNITED STATES PATENT OFFICE.

JOSEPH H. CLIFTON, OF NEW CASTLE, PENNSYLVANIA.

IMPROVEMENT IN BELTING FOR MACHINERY.

Specification forming part of Letters Patent No. 25,096, 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 Process for Manufacturing Machine-Belting, of which the following is a full, clear, and exact description.

The object of my invention is to provide an article of belting that shall be at once cheap, strong, and durable; and it consists in so preparing goods of almost any fibrous material by successive coatings of size, rosin, and plumbago that it shall possess, when completed, the above enumerated qualities in a high degree.

My improved process for attaining this object is as follows: The fabric is first saturated with size or starch, any surplus of which is removed by passing the band between scrapers. This lays the fiber, strengthens the fabric, and prevents too great an absorption of rosin. The fabric should be kept well stretched during the whole process, as it tends to produce a better article. The belt, after being partially dried, is coated with some finely-pulverized resinous substance, (common rosin will answer every purpose,) which is spread evenly over the belt by the passage of a hot iron over it, and it may be still further smoothed while yet warm by passing it between rollers. The object of this coat is simply to prevent any undue absorption of the plumbago and the consequent tendency of the belt to harden or form into knots, and that being accomplished it is soon destroyed by the motion of the band when in operation. The fabric is then to be thoroughly coated with plumbago ground fine, and reduced to the consistency of a paint by an admixture of boiled linseed-oil. When this has become so hard as not to adhere to substances with which it comes in contact it may be passed through finishing-rolls. The process is then complete and the article ready for use.

Other analogous substances might be sub-

stituted for the plumbago; but I prefer that article, as it contains no gritty matter which would cut out the belt and impair its durability. Any desired color may be given to the band by the use of suitable pigments; but this is no part of the process.

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. 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 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 shrivel an ordinary band. It has so little tendency to slip that it will drive an iron drum covered with frost, which an ordinary band cannot do. Besides all this, it is both cheap and durable.

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

The above process is so simple that it may be performed by hand with the aid of but little machinery. A detailed description of mechanism for accomplishing this object is therefore deemed unnecessary here.

What I claim as my invention, and desire to secure by Letters Patent, is—

The process of manufacturing belting for machinery from fibrous materials, substantially as herein described.

In testimony whereof I have hereunto subscribed my name.

JOSEPH H. CLIFTON.

Witnesses:

WM. D. BALDWIN,

JOHN S. HOLLINGSHEAD.