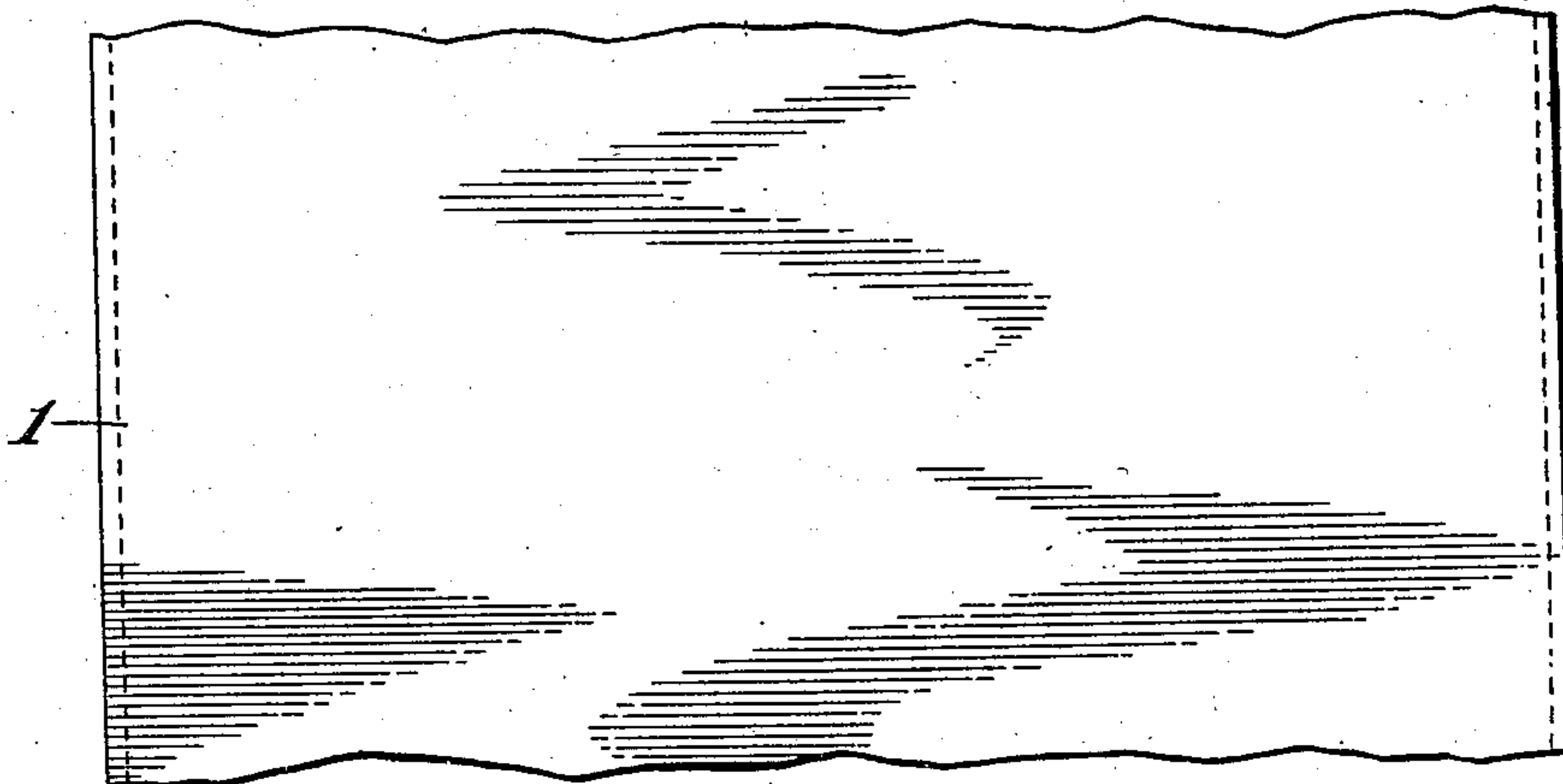


No. 814,416.

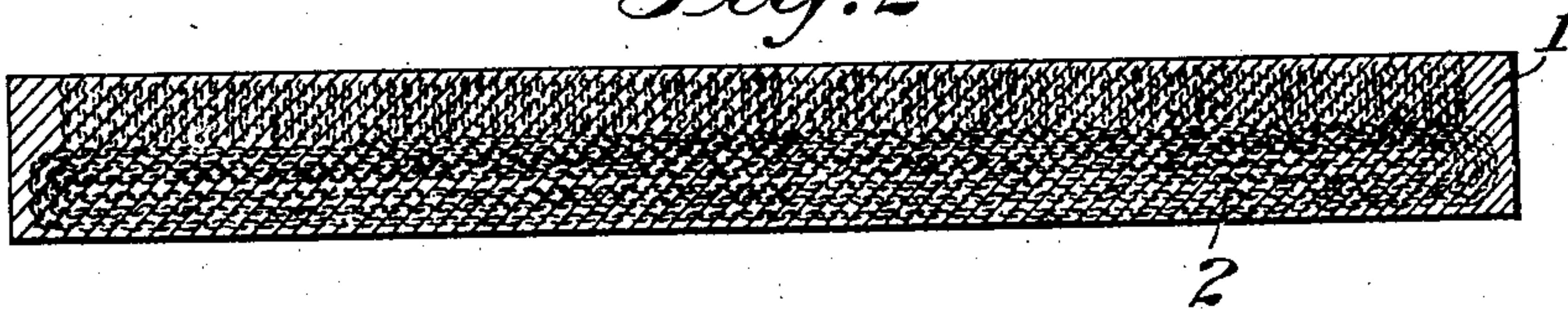
PATENTED MAR. 6, 1906.

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FABRIC BELT FOR CONVEYERS.  
APPLICATION FILED AUG. 25, 1905.

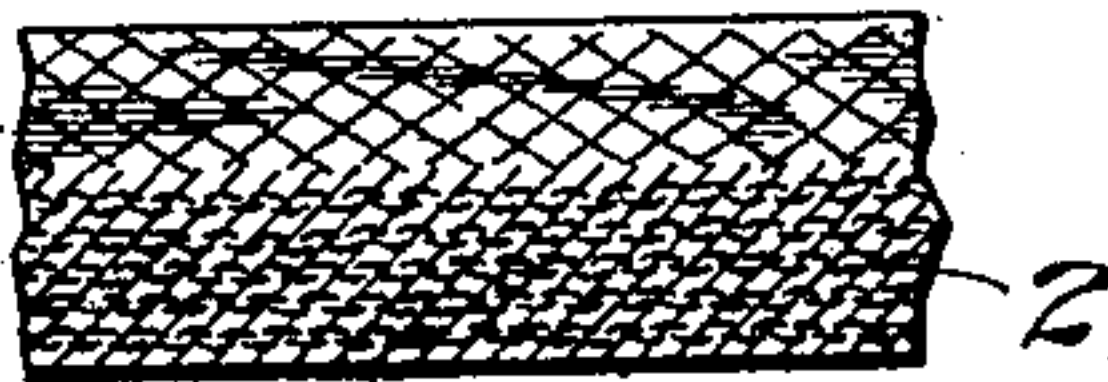
*Fig. 1*



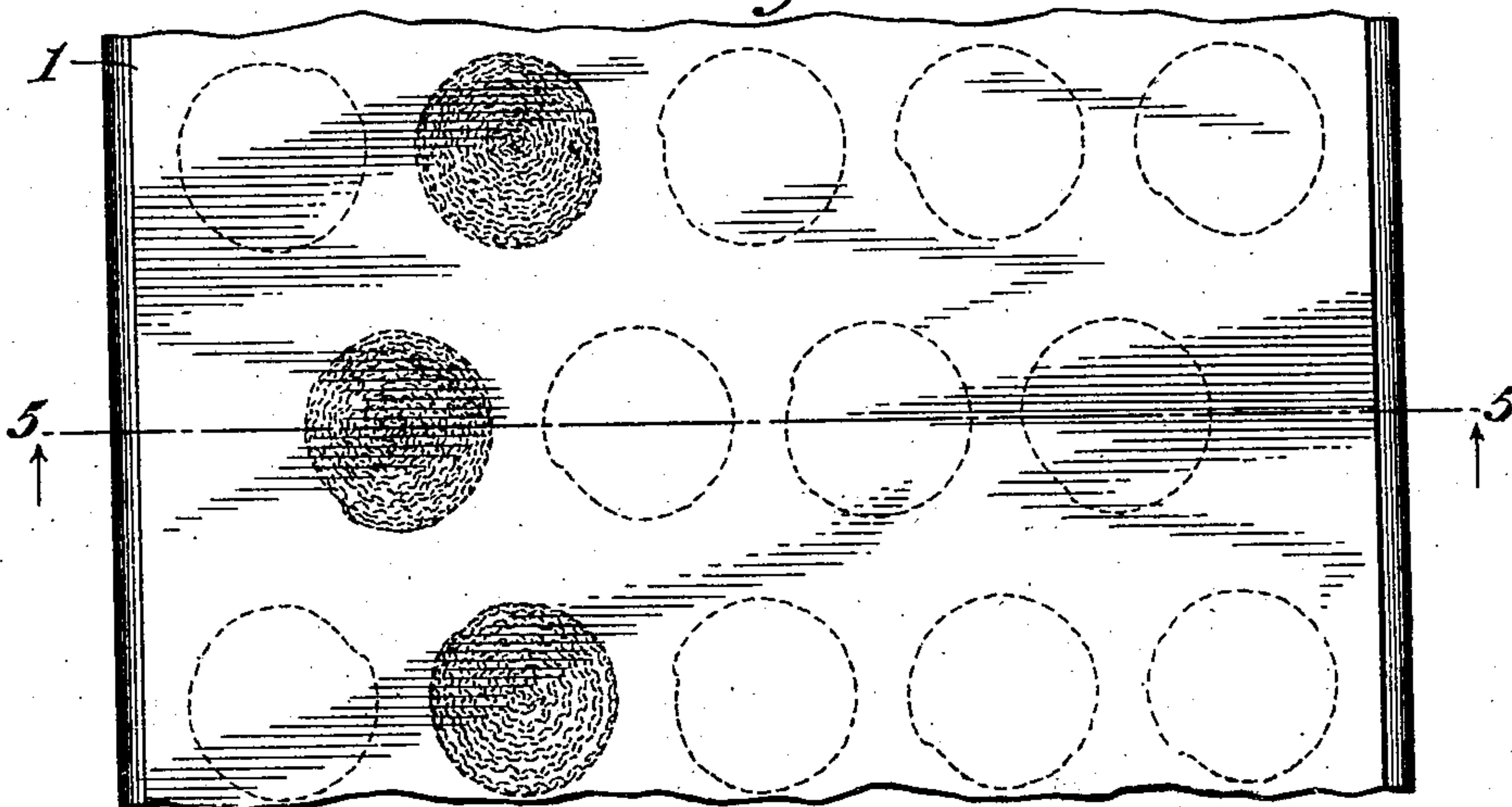
*Fig. 2*



*Fig. 3*



*Fig. 4*



*Fig. 5*



Witnesses  
Chas. Clagett  
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Inventor  
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# UNITED STATES PATENT OFFICE.

JOHN J. VOORHEES, OF JERSEY CITY, NEW JERSEY.

## FABRIC BELT FOR CONVEYERS.

No. 814,416.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed August 25, 1905. Serial No. 275,755.

*To all whom it may concern:*

Be it known that I, JOHN J. VOORHEES, a citizen of the United States, residing in Jersey City, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Fabric Belts for Conveyers, of which the following is a full, clear, and exact specification.

My invention relates to certain new and useful improvements in composition fabrics; and it consists of the novel features hereinafter described.

My composition fabric is adapted to use in many ways; but it is particularly valuable for use in belts for conveyers and the like wherein a strong flexible material is desired having a maximum resistance to surface wear. Conveyer-belts, as will be readily understood, must possess a maximum power of resistance against wear which takes place when heavy material—such as ore, coal, crushed rock, and the like—falls upon a moving belt from a place of rest. They must likewise possess sufficient flexibility to readily pass around the drums or pulleys upon which they travel and for this purpose must be made comparatively thin and of flexible material.

My invention will be found to possess the qualities of great resistance to friction and flexibility and strength, and in the drawings accompanying this specification I have illustrated several forms thereof.

Broadly speaking, it consists in providing a belt material, preferably one wherein one or more layers of woven fabric are employed to give longitudinal or cross-sectional strength, with a friction-surface which consists of the ends of cotton or other fibers, a cementing medium being employed to bind the parts together. It will be understood that the friction-resisting qualities of a fiber is many times greater upon the end thereof than in cross-section, and therefore a belt having the fiber so disposed as to afford an end contact thereon only will be proportionately more durable.

In the drawings, Figure 1 is a top view of a belt; and Fig. 2, a section thereof, showing the disposition of the woven fabric and fibers. Fig. 3 is a fragmentary section of a modified form of my invention. Fig. 4 is a top view of a further modification of my invention, and Fig. 5 is a sectional view taken on lines 5 of Fig. 4.

In Figs. 1 and 2, 1 represents the cementing

medium, which may be rubber or any other similar substance or composition. 2 represents one or more layers or plies of fabric serving to give longitudinal and cross-sectional strength to the belt. These plies are entirely embedded within the cementing material and are cemented together thereby and are preferably disposed near the under surface or pulley-surface of the belt. In the construction of Fig. 2 above the longitudinal layers of woven fabric are arranged vertical fibers of cotton or other suitable material entirely embedded within the cementing material and cemented in their position thereby, the vertical members being preferably separated from the woven fabric by the cementing material. When so disposed, as will be readily seen, the upper fibers project their ends only toward the wearing or upper surface of the belt, and the frictional wear and tear thereon takes place upon the ends only and to a much less extent than is the case were the fibers subjected to a cross-sectional abrasion.

In Fig. 3 I have shown a modified form of my invention. In this construction I employ one or more layers of woven fabric for longitudinal and cross-sectional strength, likewise the cementing medium, such as rubber. In the cementing medium above the fabric I employ strips of fabric cut on the bias and embedded within the material. The fibers are thus set diagonally, but practically take what wear occurs from the friction upon their ends as desired.

In the constructions shown in Figs. 4 and 5 instead of disposing the vertical fibers uniformly throughout the belt I show them arranged in clusters, which may be made of any desired size and disposed as closely as may be required. These clusters may be formed of individual vertical fibers or flat tapes of fibers wound around to the desired size; but a substantial part of the fibers must project vertically, so as to take the wear and tear of the surface friction upon the ends of the fibers.

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

1. As a new article of manufacture, a composition fabric comprising a cementing medium, a woven fabric embedded therein and extending longitudinally thereof, and a fibrous material also embedded therein, the fibers of the latter being arranged in planes



perpendicular to the said composition fabric, said cementing medium separating the woven fabric from the vertical fibers, substantially as described.

2. As a new article of manufacture, a composition fabric comprising a cementing medium having a plurality of layers of woven fabric embedded therein and extending longitudinally thereof, and a fibrous material also embedded therein, the fibers of the latter being arranged in vertical planes in the said composition fabric, said cementing medium separating the woven fabric from the vertical fibers, substantially as described.

3. As a new article of manufacture, a composition fabric comprising a cementing medium and a fibrous material the fibers of which are wholly embedded within the said cementing medium and are disposed longitudinally, and a fibrous material embedded in said cementing medium, the fibers of which are disposed perpendicularly to the fabric and form part of the wearing-surface, the two sets of fibers being separated by the cementing medium, substantially as described.

4. As a new article of manufacture, a composition fabric comprising a cementing medium having a woven fabric disposed longitudinally of the fabric, the fibers of which are wholly embedded within the cementing material, and a fibrous material also embedded therein, the fibers of the latter being arranged in planes perpendicular to the said composition fabric, and the said woven fabric and fibrous material being separated by the cementing medium substantially as described.

5. As a new article of manufacture, a composition fabric comprising a cementing medium, having a plurality of layers of woven fabric disposed longitudinally of the fabric, the fibers of which are wholly embedded therein and a fibrous material also embedded therein, the fibers of the latter being arranged in planes perpendicular to the said composition fabric, the said woven fabric and fibrous material being separated by said cementing medium, substantially as described.

6. As a new article of manufacture, a composition fabric comprising a cementing medium and a series of isolated clusters of fibrous material embedded therein, the fibers of the said material being arranged in planes perpendicular to the fabric, substantially as described.

7. As a new article of manufacture, a composition fabric comprising a cementing medium and a series of isolated clusters of a fibrous material embedded therein, the fibers of said material being so disposed that the ends thereof only form part of the wearing-

surface of the fabric, substantially as described.

8. As a new article of manufacture, a composition fabric comprising a cementing medium and a fibrous material embedded therein, a portion of said material being disposed in isolated clusters of fibers disposed perpendicularly to the fabric, substantially as described.

9. As a new article of manufacture, a composition fabric comprising a cementing medium having a woven fabric embedded therein and series of isolated clusters of a fibrous material also embedded therein, the fibers of the latter being arranged in planes perpendicular to the said composition fabric, substantially as described.

10. As a new article of manufacture, a composition fabric comprising a cementing medium having a plurality of layers of woven fabric embedded therein and a series of isolated clusters of a fibrous material also embedded therein, the fibers of the latter being arranged in planes perpendicular to the said composition fabric, substantially as described.

11. As a new article of manufacture, a belt-ing material consisting of woven fabric embedded in rubber and a fibrous material also embedded in said rubber, above the woven fabric and the fibers of which extend in planes perpendicular to the belt, so that the ends thereof constitute part of the wearing-surface of the belt, substantially as described.

12. As a new article of manufacture, a belt-ing material consisting of woven fabric embedded in rubber and a series of clusters of fiber also embedded in said rubber, above the woven fabric, and the fibers of which extend in planes perpendicular to the belt, so that the ends thereof constitute part of the wearing-surface of the belt, substantially as described.

13. A flexible conveyer-belt, composed of rubber and having embedded therein fibrous material, so disposed that the ends thereof shall form part of the wearing-surface of the belt, and material wholly embedded in said rubber longitudinally to strengthen the belt, the said strengthening material and fibrous material, separated by said rubber, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN J. VOORHEES.

Witnesses:

ADOLPH F. DINSE,  
A. C. FISCHER.