No. 724,483. PATENTED APR. 7, 1903.

R. H. MARTIN.

CONVEYER BELT.

APPLICATION FILED JULY 29, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

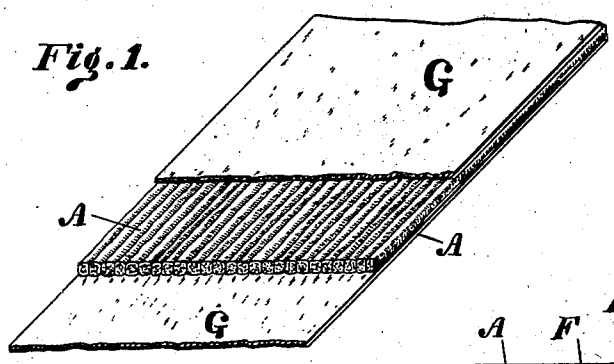


Fig. 3.

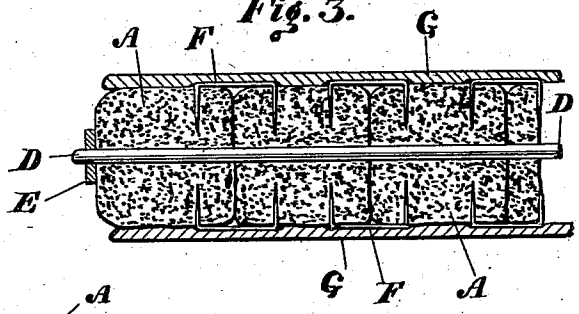


Fig. 2.

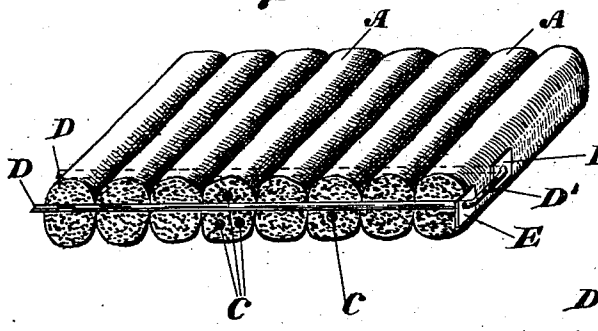


Fig. 4.

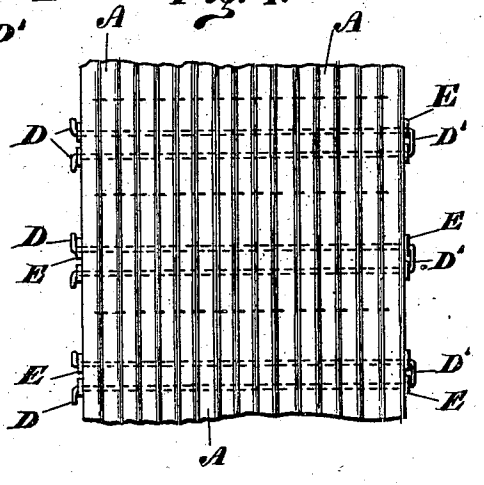
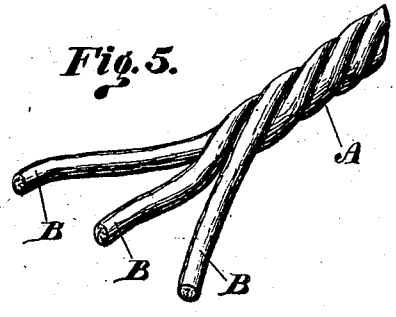


Fig. 5.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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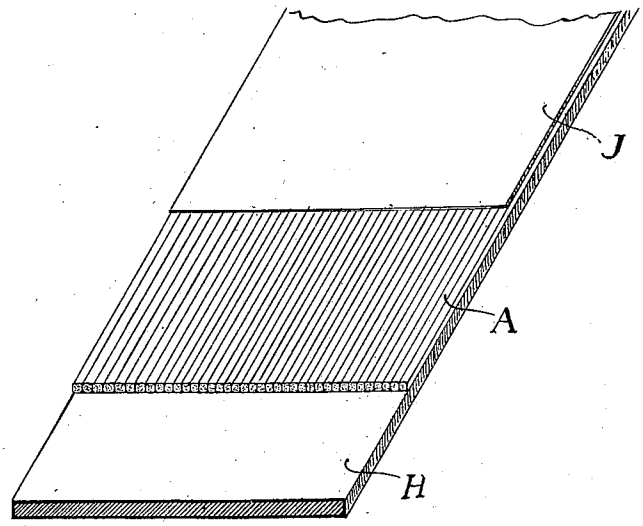
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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 6.



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UNITED STATES PATENT OFFICE.

ROBERT H. MARTIN, OF NEW YORK, N. Y.

CONVEYER-BELT.

SPECIFICATION forming part of Letters Patent No. 724,483, dated April 7, 1903.

Application filed July 29, 1902. Serial No. 117,443. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. MARTIN, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented a new and useful Improvement in Conveyer-Belts or Carriers for Transmission of Material, Power, and Similar Purposes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 illustrates a perspective of the conveyer-belt or carrier. Fig. 2 illustrates an enlarged perspective, shown partially in section, and also illustrating certain of the details of construction. Fig. 3 illustrates a vertical sectional view showing certain of the details of construction. Fig. 4 illustrates a plan view of the asbestos ropes, the exterior sheet being removed. Fig. 5 illustrates an unraveled end of the asbestos rope, showing a desirable method in which it may be made. Fig. 6 illustrates a perspective view of an ordinary leather, rubber, or other similar belt or conveyer protected by the superposition thereon of my improved belt or conveyer.

In the drying of ores and the manufacture of cements, oxid of zinc, glass, pottery, &c., and where it becomes necessary to convey highly-heated materials to some further operation it has been customary to employ belts or conveyers of various constructions. The belts or conveyers heretofore used to convey these hot materials have been composed principally of such materials as leather, canvas, rubber, metals, and the like, which when subjected to great heat or moisture very quickly disintegrated and became useless.

My invention therefore relates to the construction of conveyer-belts or carriers in such a manner and of such materials that they shall be strong, durable, and simple in construction and not affected by the heat referred to.

In carrying out my invention I proceed as follows: A A illustrate a series of ropes made of asbestos fiber. I prefer that the asbestos should be pure in order that it may be more completely fireproof; but it may have a greater or less admixture of other material, as occasion requires. I prefer also that the ropes be made of separate strands, as shown in Fig. 5 at B B B. They are twisted hard and are then laid up into the ropes A, which are preferably twisted into a dense hard strong rope. The size of the rope will depend upon the desired thickness of the belt—say from one-quarter of an inch to an inch in diameter, more or less—depending upon the work the carrier is to perform. These ropes may be additionally strengthened by laying up with them longitudinally-extending wires or equivalent material, (shown at C C in Fig. 2.) There may be a single wire at approximately the center of the rope, as shown at the right in Fig. 2, or such other number as preferred. I show three wires at the left in Fig. 2. After these ropes have been made they are laid side by side upon a suitable level surface and are then squeezed laterally until they are pressed firmly against one another, which to a greater or less extent, as the case may be, will change their shape from a substantially cylindrical form to a somewhat flattened form, as shown best in Figs. 1 and 3. They may also be compressed at top and bottom to compact and flatten them into a more even surface. As thus pressed together and confined they form a strong, dense, and compact structure or belt. In order to hold the ropes together, any suitable means of confining them side by side may be employed, for instance, cement of suitable character or an ordinary asbestos sewing-twine may be used to sew them together. I, however, illustrate two other desirable methods. In one of them a metallic wire or rod D D is thrust through the ropes transversely of the belt in a manner now well known during the time they are laid side by side to form the belt. I prefer that these wires or rods should have two members—that is to say, be in the general form of a staple, bent as at D′ and provided with washers or small plates of metal through holes in which the wires or rods pass. The ends of the wires after passing through the belt may be clenched over the plates E, as shown in Fig. 4 at the left, thus securely holding the washers in position and the ropes pressed firmly together. Instead of being doubled the wires or rods may be single and have a suitable head on one end and suitably confined at the other. These wires or rods are spaced along the belt at such distances apart as may be found most

expedient, depending upon the use to which the carrier is to be put. It will be noted that the belt being put together in this way its flexibility is not interfered with and it will pass around drums or rollers freely. Instead of employing these wires I sometimes fasten the several ropes together by double-pointed tack-like devices, such as shown in Fig. 3 at F, one leg of the tack being driven in one rope and the other in the adjoining rope. Sometimes I employ both of these methods in the same belt, as illustrated in Fig. 3.

In the transmission of valuable materials—as, for instance, certain ores—it is sometimes desirable to prevent the escape of any of the material by reason of its sifting through the belt and dropping where it would be lost. In order to prevent this and also to add to the strength of the conveyer, I sometimes apply a sheet, preferably of asbestos-cloth G, (see Fig. 1,) on one or both sides of the rope belt. This cloth should be thoroughly and strongly woven and may be sewed or fastened to the belt in any preferred manner. Also my invention may be used as a protector for ordinary belts or conveyers as now used, whether they be made of metal, rubber, leather, or any other similar materials. This arrangement is shown in Fig. 6, in which H illustrates an ordinary rubber or leather belt or conveyer upon which is superimposed another belt A, made under my invention, which serves as a protector to the underlying leather or rubber belt, and I is a sheet of preferably strong asbestos-cloth, which may be used as a surfacing-sheet for the protector A.

As illustrated in the drawings, the asbestos ropes which form the body of the carrier extend longitudinally thereof, and they take the bulk of the strain, and I prefer this construction; but obviously where such a degree of strength is not required the ropes may run crosswise of the belt. In this case it may not be expedient to use the wires or rods which attach the ropes together. In this construction stitching, tacks, cement, or any other suitable means may be employed.

The foregoing is a general description and illustration merely of desirable methods in which my improved carrier may be constructed. I wish it to be understood, however, that I do not limit myself to the same, because any one skilled in the art to which this invention belongs will at once observe that the details of construction may be departed from and yet the essence of the invention be employed.

Having described my invention, I claim—

1. A conveyer-belt composed of a series of ropes embodying asbestos attached together side by side and a surface or base sheet or layer embodying asbestos attached thereto.

2. A conveyer-belt composed of a series of ropes embodying asbestos attached together side by side by confining devices such as wires or rods which extend transversely of the belt and through the several ropes and a surface or base sheet or layer also embodying asbestos attached thereto.

3. A conveyer-belt composed of a series of ropes embodying asbestos attached together side by side superposed upon another belt or carrier as a protector therefor.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT H. MARTIN.

Witnesses:
PHILLIPS ABBOTT,
F. M. DONSBACH.