F. H. & J. E. UNDERWOOD.

Belting.

No. 219,606. Patented Sept. 16, 1879.

fig. 1.

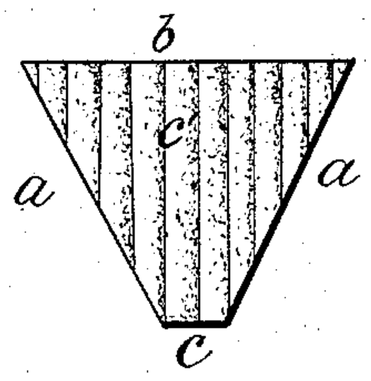


fig. 2.

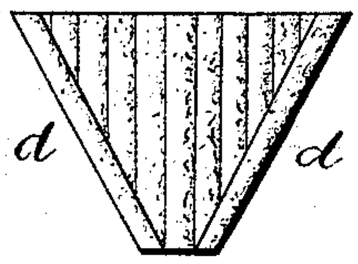
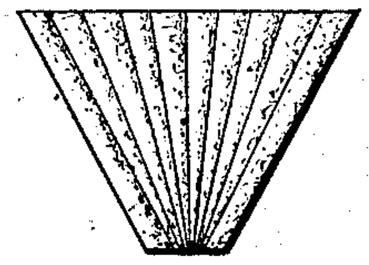


fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK H. UNDERWOOD AND JAMES E. UNDERWOOD, OF TOLLAND, CONN.

IMPROVEMENT IN BELTING.

Specification forming part of Letters Patent No. **219,606**, dated September 16, 1879; application filed July 11, 1879.

To all whom it may concern:

Be it known that we, FRANK H. UNDERWOOD and JAMES E. UNDERWOOD, of Tolland, in the county of Tolland and State of Connecticut, have invented a certain new and useful Improvement in Belting, of which the following is a description, reference being had to the accompanying drawings, where—

Figure 1 is a view of our improved construction of belt in cross-section. Fig. 2 is a similar cross-section view of a modification. Fig. 3 is a similar cross-section view of a second modification.

This invention is in the nature of an improvement upon, or in the construction of, the belt patented to Henry Underwood, now deceased, in and by Letters Patent dated April 10, 1860, and numbered 27,846.

When the belt shown and described in said patent—therein called "trapezoidal," more commonly called "angular"—has been made of leather, it has been built up from layers laid one upon the other and running from side to side of the structure, so that the edges of the belting have come in contact with the sides of the belt-groove in the pulley, and as strain has been put upon the belt in use the the tendency, and often the effect, has been to lift the layers apart at the edges, to the detriment of the belt and of its efficiency.

By the construction herein described we have obviated the difficulty mentioned and obtained an additional advantage of increased pliability in the belt. We also obtain another important advantage. Under the former construction it was not practicable to build or extend the belt downward to the apex of the angle of the sides, because of the unequal strain thereby put upon the inner and outer layers and the consequent breaking of the outer layers, necessitating the employment of blocks on the under side. With our improved construction we can, practically, build the belt down to the apex of the angle formed by the sides.

The essential feature in the form of this belting is that the sides *a*, which come in contact with the sides of the belt-groove in the pulley, shall converge. The other two surfaces of the belt, *b* and *c*, the former of which may well be called the "top" and the latter the "bottom," may be built upon, shaped, or extended as desired. For instance, the bottom may be extended down till the sides meet in an angle, and the top may be curved, or it may be built up to form two other converging sides.

The form of the belt, except as to the converging sides, is not a matter of moment.

As before remarked, in the construction of a belt from leather, patented, as aforesaid, to Henry Underwood, the layers ran from side to side of the structure, so that contact with the sides of the belt-groove in the pulley tended to separate the layers at the edges.

Our invention consists in so disposing the layers of leather or other suitable material that the contact of the sides of the belt-groove in the pulley with the sides of the belt will not tend to separate the layers at the edges, but, on the contrary, will press them together into, if possible, closer contact.

A perfect form of our belt is shown in Fig. 1, where the letters *c'* denote the layers which go to make up the belt, (suitably united by cement, sewing, pegging, or the like, one or all,) which lie parallel to each other, and—considering the top and bottom *b* and *c* to be horizontal—the layers are all disposed vertically in the belt.

In Fig. 2 we show a belt of substantially the same construction, but with the two converging sides overlaid and protected by layers *d*.

In Fig. 3 we show a belt with the two outside layers laid at the angle of the converging sides and the inner layers laid at angles approaching more nearly the vertical.

These illustrations do not exhaust the forms or dispositions into which the layers may be arranged to make the principle available, the range of variation changing somewhat with changes in the angle of the converging sides.

We claim as our invention—

An angular belt having converging sides, made up of longitudinal strips of suitable material, arranged edgewise side by side, their edges, in the completed belt, forming its top and bottom portions, all substantially as shown and described.

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