

No. 679,573.

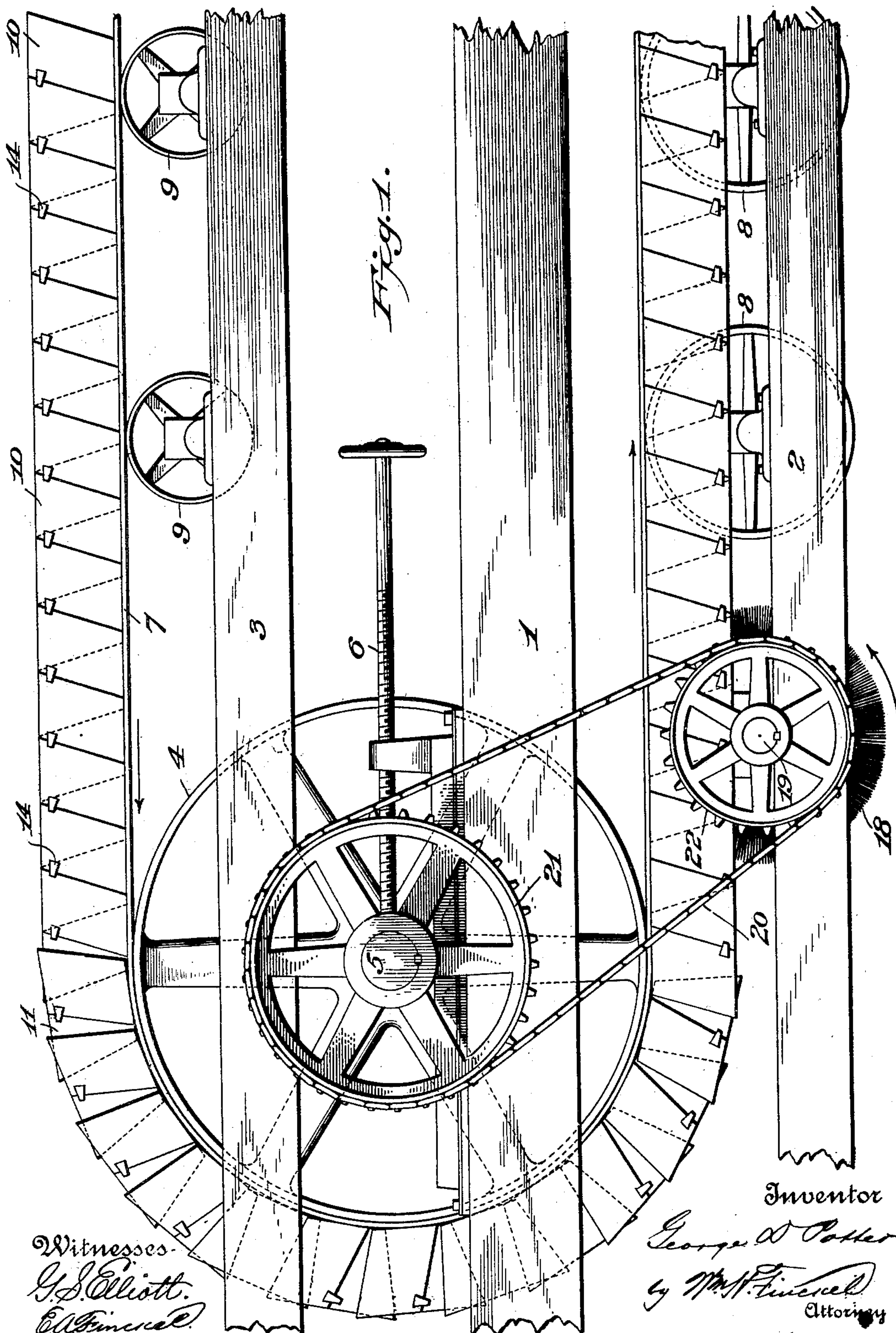
Patented July 30, 1901.

G. D. POTTER.
CONVEYER.

(Application filed Nov. 30, 1900.)

2 Sheets—Sheet 1.

(No Model.)



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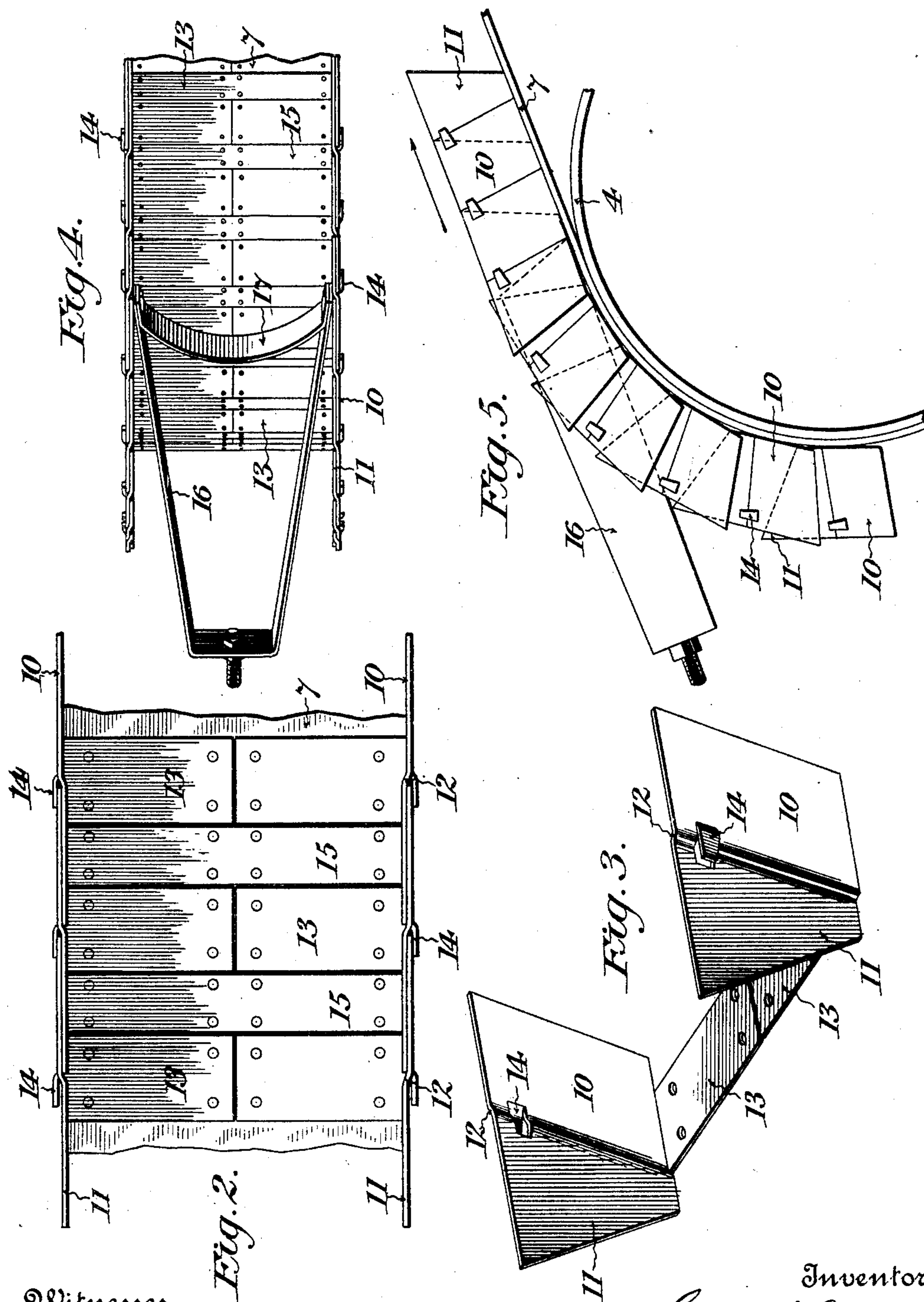
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UNITED STATES PATENT OFFICE.

GEORGE D. POTTER, OF WALLACE, IDAHO.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 679,573, dated July 30, 1901.

Application filed November 30, 1900. Serial No. 38,191. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. POTTER, a citizen of the United States, residing at Wallace, in the county of Shoshone and State of Idaho, have invented a certain new and useful Improvement in Conveyers, of which the following is a full, clear, and exact description.

This invention relates to that class of conveyers variously known as "endless belt trough conveyers" and "continuous trough and belt conveyers" and which are used especially for moving ore, coal, clay, grain, and other and similar material in bulk.

The invention comprises, first, a belt of ordinary material having sectional articulated sides and bottom forming buckets to prevent sidewise spilling of the load, serving as trusses to prevent the sagging of the belt between carriers, also serving to prevent sagging in the center, and also constituting a metallic sheathing for protecting the belt against abrasion and wear.

The invention also consists of a dam, comprising a yoke and an upright cross-piece stretched between the limbs of the yoke in contact with the bottom and the sides of the conveyer and arranged at the lower end of an inclined conveyer for preventing the material from running off the conveyer in loading it.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation. Fig. 2 is a plan view of one end of the conveyer. Fig. 3 is a perspective view of a pair of the buckets forming the sides and bottom of the conveyer. Fig. 4 is a plan view, and Fig. 5 is a side elevation illustrating my invention applied to an elevating-conveyer.

Figs. 1, 4, and 5 are on approximately the same scale, and Figs. 2 and 3 are also on approximately one and the same scale, but on a larger scale than the other figures.

Describing the invention first as applied to a simple horizontal endless conveyer, 1, 2, and 3 may represent usual timbers, the timbers 1 supporting the drums 4 and their shafts 5—one at each end, at least. To one or both of these drums may be applied any ordinary belt-tightener 6. These drums receive

the belt 7, of rubber, cotton, or other flexible material, and may be driven in any suitable manner to carry the belt around and around. The timbers 2 support the carrier-wheels 8, and the timbers 3 support the carrier-wheels 9 for sustaining the belt between the main driving-drums. So far the conveyer may be of ordinary construction.

In order to supply sides to the belt to prevent spilling of the load and to provide wear-plates to the load-supporting surface, I employ the metallic sections shown in detail in Fig. 3. Each of these sections has an upright trapezoidal portion and a base-flange arranged at right angles, the base-flange being in length half the width of the belt. The trapezoidal portion is divided into a parallelogrammic portion 10 and a trapezoidal portion 11, lying in different planes, by an offset 12, running from top to bottom substantially parallel with the rear, or, as in the drawings, the right-hand edge of the section, and the portion 10 has the base-flange 13. Adjacent to the offset 12 is an ear or lip 14, projecting from the surface of the portion 10 forwardly over the offset 12 toward the portion 11. These ears or lips may be cut and struck up from the uprights or separately made and attached thereto. The sections may be made of sheet or plate metal or castings. These sections are arranged upon the outer or carrying-surface of the belt, the uprights being at opposite edges of the belt and their flanges butt-jointed and riveted or otherwise secured to the belt, and the portions 10 of adjacent sections overlap the portions 11 under guidance of the ears or lips 14, substantially as shown in Figs. 1, 2, 4, and 5. Between the flanges strips 15 are riveted or otherwise secured to the belt, so as, in conjunction with the flanges 13, to cover the surface of the belt with a metallic sheathing capable of resisting the abrasion and wear to which it is exposed and providing for ready renewal. These metallic sections constitute in effect a series of endless buckets.

As the conveyer passes over the drums at either end the buckets open out like a fan, allowing the belt to conform to the curvature of the drums, but do not entirely separate. Hence they continue at all points to confine the material laterally upon the conveyer. As

the conveyer straightens out after passing over the drums the interlocking ears on each bucket engage the sides of the next bucket in advance and hold them in a position perpendicular to the belt, and the line of buckets acting together in this manner form a truss, which supports the belt and prevents the same from sagging between drums or carriers. The width of the flanges of the buckets and of the cross-strips being relatively small, the joints between the same form an articular connection which does not interfere with the flexing of the belt, and at the same time form a practically solid sheathing to protect the same.

When the conveyer is used to elevate material, I may use a spreader, such as shown in Figs. 4 and 5, and comprising a metallic yoke 16, suitably supported and fitted between the uprights of the buckets at the lower end of the conveyer, and having in its mouth an upright cross-piece 17, which extends across the conveyer. This piece 17 may be made of rubber belting or other suitable material, stretched between the limbs of the yoke across the conveyer, and thereby kept in contact with the sides and bottom of the conveyer, whereby leakage at these points is prevented. The yoke and its cross-piece 17 form a dam to prevent material from running down the incline until such material comes to rest upon the conveyer at the loading end.

A wire or other rotary brush 18 on a shaft 19 on timbers 2 is arranged under the discharge end of the conveyer within the buckets, so as to brush the same in a direction opposite to the travel of the conveyer, and thereby remove any material adhering to the conveyer, thus preventing scattering and loss from the load. This brush may be driven from shaft 5 by a chain 20, connecting sprocket-wheels 21 and 22 on the shafts 5 and 19, respectively.

As already sufficiently indicated, the conveyer may be used as a horizontal or as an

inclined conveyer, and so may be employed in both transporting and elevating material, such as above mentioned.

What I claim is—

1. A belt conveyer, having buckets with articulated sides and base-flanges, the base-flanges of opposite buckets extending halfway across the belt and secured to it, and meeting in the middle of the belt and serving also as sheathing therefor, substantially as described.

2. A belt conveyer, having sectional buckets secured to the belt, the sides of said buckets being of trapezoidal shape, with interlocking offset portions and retaining ears or lips, substantially as described.

3. A belt conveyer, having sectional buckets provided with base-flanges secured to the belt, the sides of said buckets being of trapezoidal shape, with interlocking offset portions and retaining ears or lips, said buckets serving also to form a truss to aid in supporting the load on the belt, substantially as described.

4. A belt conveyer, having buckets with articulated sides, base-flanges extending halfway across the belt and secured to it, and filling-strips secured to the belt between and parallel with the base-flanges, substantially as described.

5. The combination with an endless-belt conveyer, of a dam arranged transversely of the said conveyer at its lower end, and comprising a yoke and an upright cross-piece stretched between its limbs and in contact with the bottom and sides of the conveyer, substantially as described.

In testimony whereof I have hereunto set my hand this 24th day of November, A. D. 1900.

GEORGE D. POTTER.

Witnesses:

L. N. SWIFT,

F. F. JOHNSON.