

No. 840,502.

PATENTED JAN. 8, 1907.

C. W. LEVALLEY.
CONVEYER.

APPLICATION FILED MAY 3, 1906.

2 SHEETS—SHEET 1.

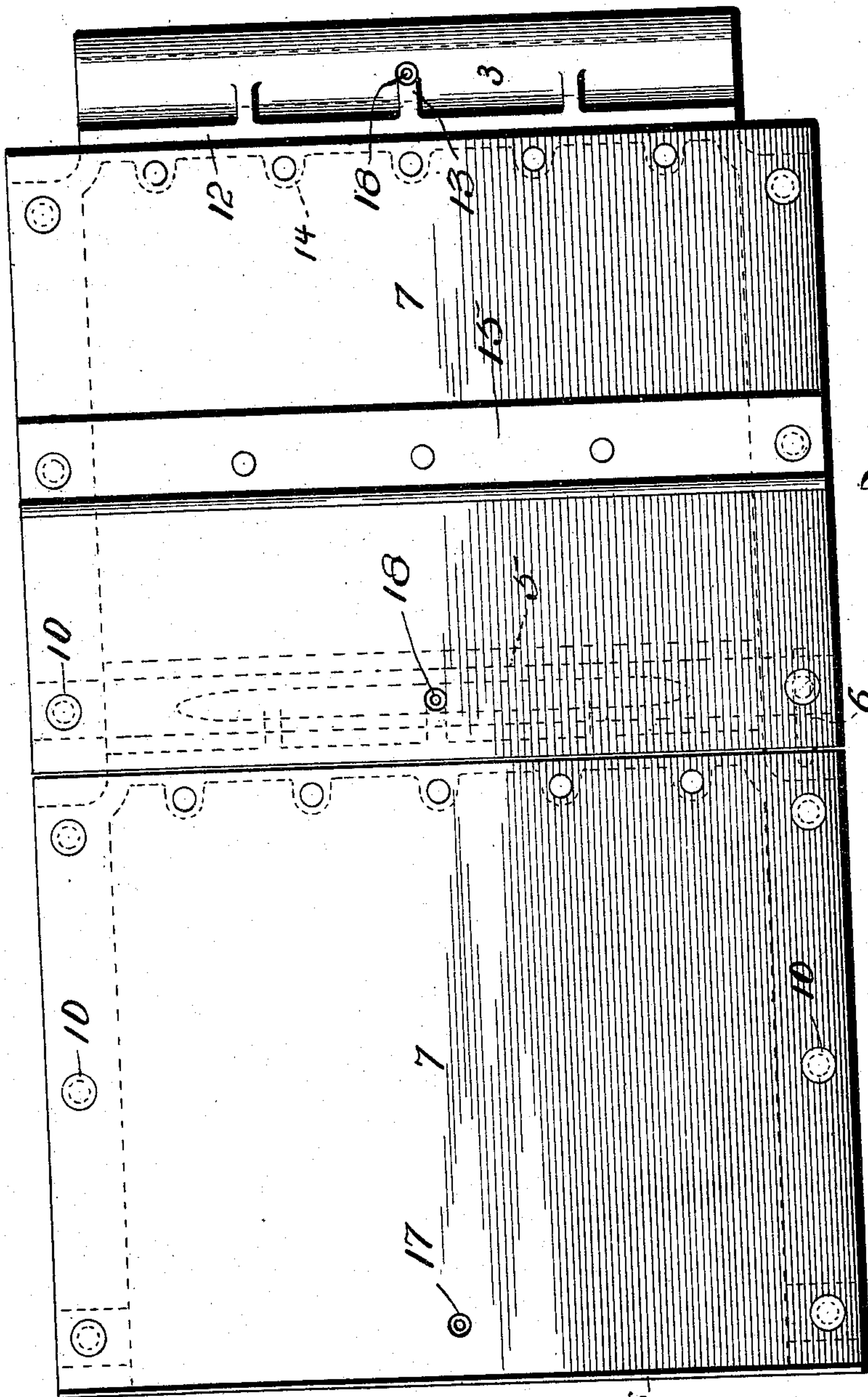


Fig. 1.

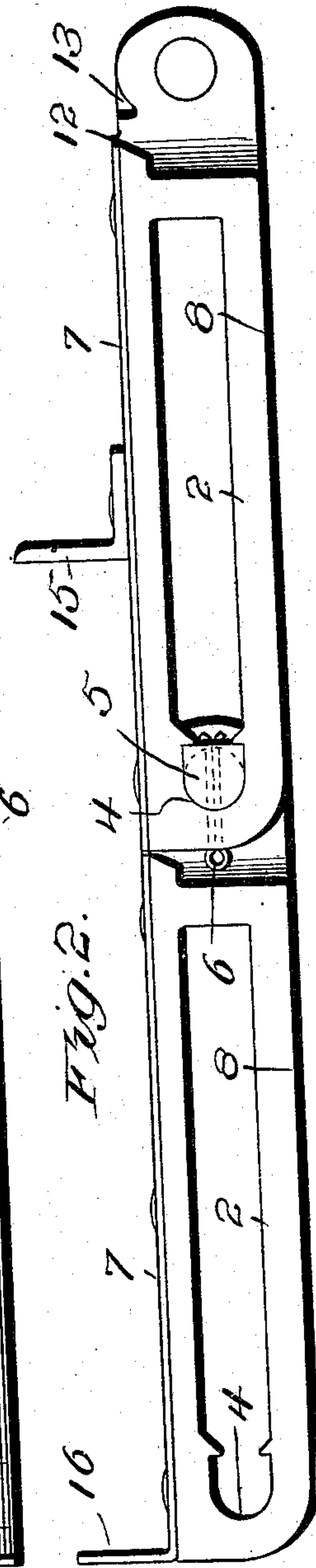


Fig. 2.

WITNESSES:

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2 SHEETS—SHEET 2.

Fig. 5.

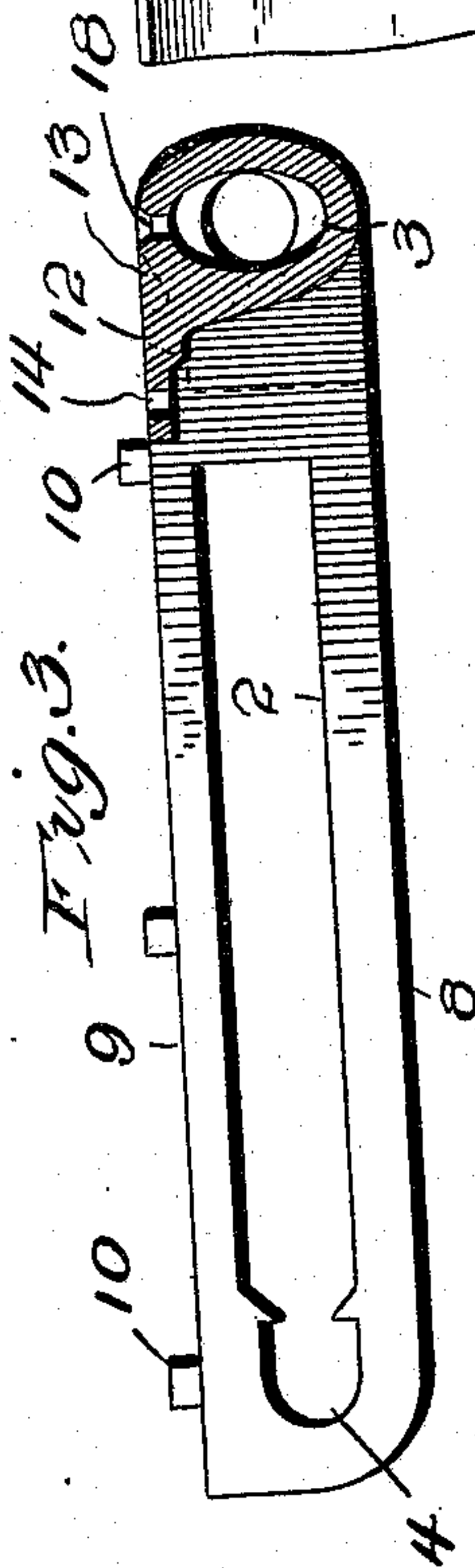
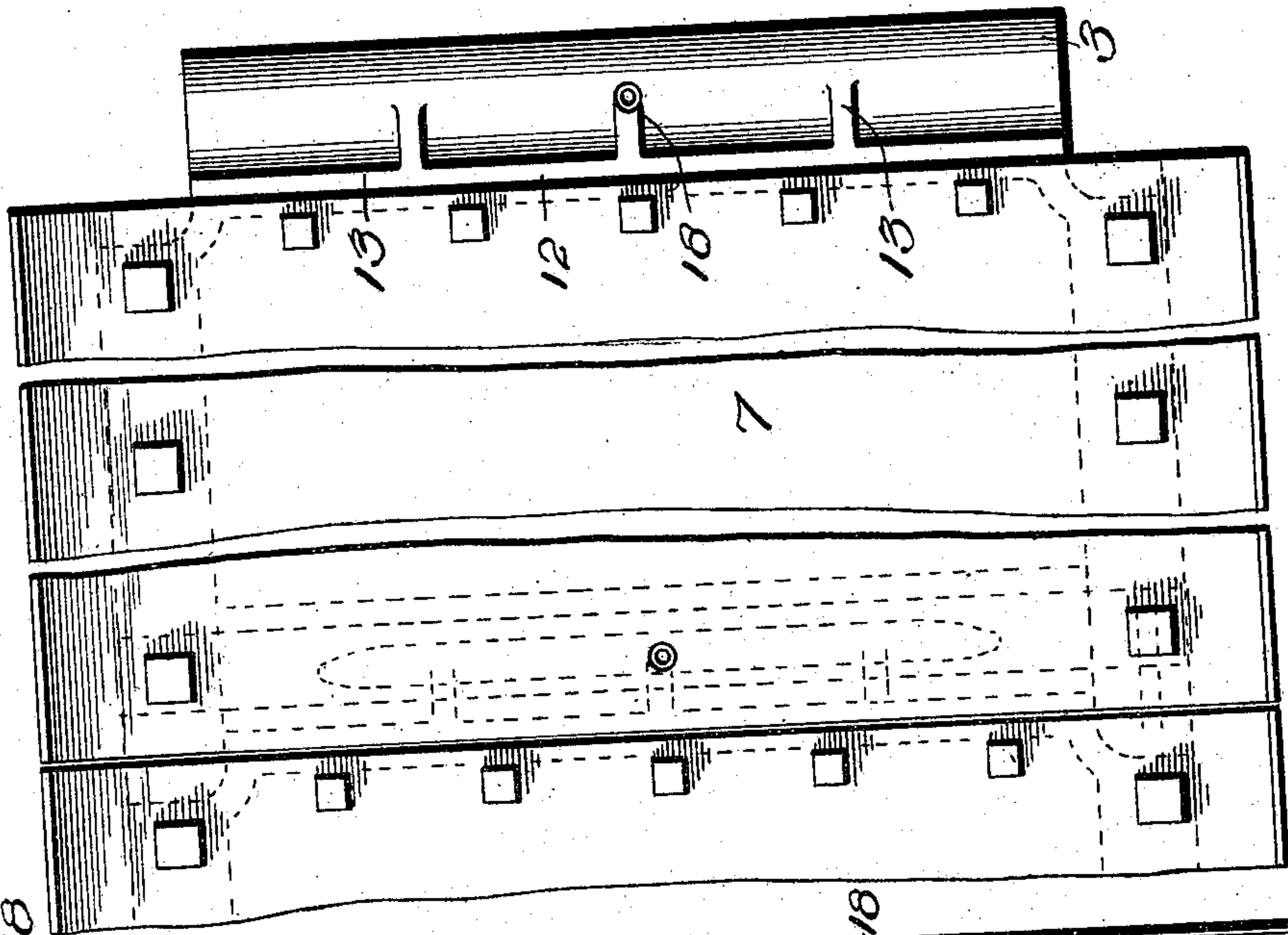


Fig. 3.

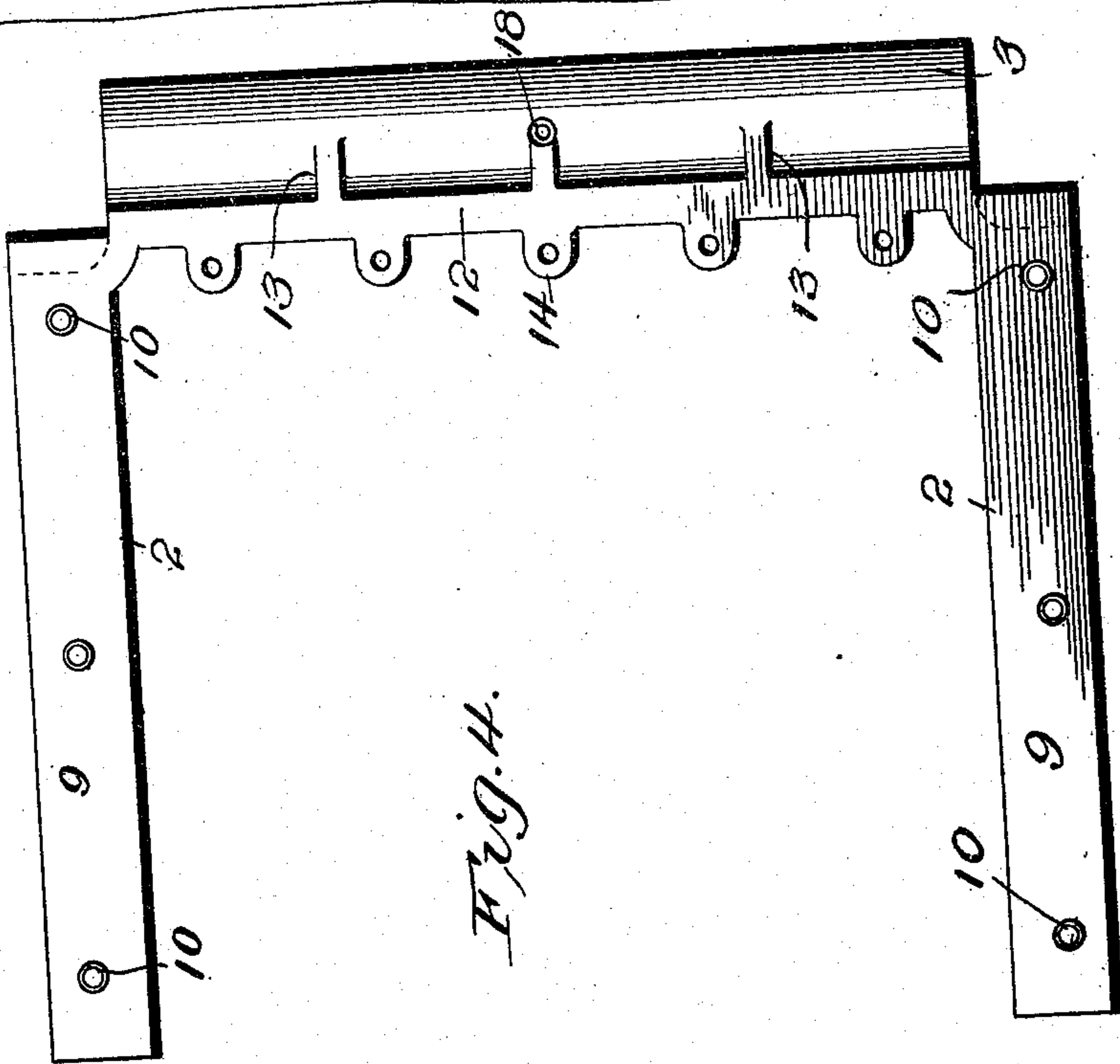


Fig. 4.

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CHRISTOPHER W. LEVALLEY, OF MILWAUKEE, WISCONSIN.

CONVEYER.

No. 840,502.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed May 3, 1906. Serial No. 314,991.

To all whom it may concern:

Be it known that I, CHRISTOPHER W. LEVALLEY, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in and Relating to Conveyers, of which the following is a specification.

This invention has for its object to improve conveyers of the endless-chain type, and is particularly applicable to those conveyers in which is employed a single line of chain, usually of large size, and to which are secured pan-like or plate-like receiving and carrying attachments. Conveyers of this type are frequently used to transport heavy articles—such as bricks, pigs of metal, castings, and the like—and difficulty has heretofore been experienced because the weight of the load springs or bends the plate-like or pan-like supports upon which the articles rest.

One of the objects of my invention is to so support these receptacles or supporting parts of the conveyer upon the chain-links as to prevent their becoming distorted in shape even when subjected to excessively heavy loads.

In the accompanying drawings, Figure 1 is a top plan view of a section of a conveyer embodying my improvements. Fig. 2 is an edge view of the same. Fig. 3 is a central longitudinal sectional view of one of the links. Fig. 4 is a top plan view of a link. Fig. 5 is a plan view of a section of a conveyer embodying some features different from those shown in the views already referred to.

The power-transmitting parts of the conveyer comprise a series of centrally-open links. These may be of any usual or preferred construction. The links I illustrate are in their general features of a well-known type, being of substantially U shape and having the side bars 2 2, united at one end by a hollow cross-bar 3. The free ends of the side bars are adapted to lie alongside of the ends of the cross-bar 3 when the links are in position for attachment and are provided with seats 4 4 for the connecting-pintles 5, which pass through the side bars and the hollow cross-bars. While these pintles may be secured in place in various ways, I prefer to employ for that purpose split keys 6. The form of chain and the manner of connecting

the links thereof I do not claim in this case, as the novel features thereof are claimed by me in another application filed August 13, 1902, Serial No. 119,551. The opposite edges—upper and lower—of the side bars of the links are flat and parallel with each other, one edge 8 serving as a shoe or bearing-surface for the conveyer and the other edge 9 having resting upon it the pan-like or plate-like support for the material to be conveyed.

7 7 designate plates formed, preferably, of thin steel and constituting the supports for the material to be transported. There is one of these plates for each link of the chain, and I provide supporting-bearings for each of the four edges of each plate, so that no matter how heavy the load upon any plate is it is practically impossible for such plate to sag or become distorted. The plate 7 may be of a width just equal to the distance between the outer faces of the side bars of the links, as represented in Fig. 1, or they may extend outward over such side bars a short distance, as represented in Fig. 5.

Each side bar of the link is provided with a series of studs or projections 10, rising from the edge 9 thereof and arranged to pass through a series of apertures formed in the plates 7, near the outer edges thereof. The ends of these studs or projections 10 are spread or riveted down upon the plate, and thus constitute connecting means along two sides of the plate. While I prefer these means of attaching the plates 7, I may employ nuts and bolts, as indicated in Fig. 5.

In order to constitute a bearing or support for the rear edge of the plate carried by a particular link, I form the cross or end bar thereof with a transversely-disposed bearing-rib 12, that is located slightly within the cross-bar proper and between it and the side bars and the upper bearing-surface of which is in the plane of the edges 9 of the side bars. In order to impart strength to the bearing-rib 12 and also to constitute a set of bearings, I connect the upper portion of the end bar of the link with the bearing-rib 12 by a set of short flanges or ribs 13. The inner edge of the bearing-rib may be provided with a series of perforated lugs 14, through which may pass bolts employed for securing the rear edge of the plate 7 to the cross-rib 12. While these lugs and the connecting-bolts that pass

through them are desirable, they are not essential, as the connecting pins or studs 10 prevent any shifting of the plate upon the link, and the mere fact of the bearing-strip 12 being under the rear edge of the plate constitutes a sufficient support for such edge to prevent its being distorted under ordinary conditions of use.

The front edge of each support or plate 7 is supported by the cross-bar of that link that is in advance of the one to which the plate is secured. I prefer that the front edge of the plate should be carried up close to the rear edge of the plate next in advance, so that it will rest not only upon the end bar of the link, but also upon the bearing-surfaces 13 and 12, this arrangement serving to sustain the front edge of the plate under any conditions of load to which it may be subjected. It will be observed that this edge is provided with a relatively large and broad bearing formed by the upper edge of the end bar 3, the short longitudinal ribs 13, and the transverse rib 12, which renders it quite unnecessary to rigidly unite it to the link to prevent sagging or distortion, as such attachment would be impracticable, owing to the links being articulated. In Figs. 1 and 2 the plates 7 are flat, of a width equal to the width of the chain, and have their edges brought close together over the transverse ribs 12. If desirable, each plate, or certain of the plates, may be provided with transversely-disposed flights 15. These may be of any usual or preferred construction. At 16, Figs. 1 and 2, one of the plates is represented as having one edge turned up to form a transverse flange that constitutes a flight. All of the plates may be thus constructed or only a certain portion of them, as found desirable. In Fig. 5, as has been stated, the plates are extended laterally beyond the outer edges of the side bars of the chain and are turned upward slightly, so that the plates constitute open pans. These different forms of the plates 7 are shown to illustrate the fact that the supports for the material may be variously constructed and still retain the essential features of my invention.

In order to provide for lubrication, the edge of the plate that overlies the end bar 3 of the link may be provided with an aperture 17, that is adapted to register with an oil-hole 18 in the end bar.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A conveyer comprising a series of articulated chain-links and plate-like supports for the material of a width substantially equal to the width of the chain and one carried by each link, each support having a bearing along three of its edges upon the link that carries it, and its fourth edge bearing upon

the cross member of the adjacent link, substantially as set forth.

2. A conveyer comprising a series of connected power-transmitting links and plate-like supports for the material, one for each link, the links having side bars and cross members, the side bars being formed to constitute supporting-bearings for the side edges of the plate-like supports, and the cross members being formed with bearings parallel thereto for the front and rear edges of the plate-like supports, substantially as set forth.

3. A conveyer comprising a series of connected power-transmitting chain-links, and plate-like supports for the material, such supports being of a width substantially equal to the width of the chain and one being carried by each link, each link having side bars and a cross member and a bearing for the support for the material parallel with the cross member and adjacent thereto, and each support for the material being supported adjacent to its side edges by the side bars of the link and having one of its end edges resting upon the cross-bearing of the link which carries it and its other end edge resting upon a cross-bearing of the adjacent link, substantially as set forth.

4. A conveyer comprising a series of connected power-transmitting chain-links, plate-like supports for the material, such supports being of a width substantially equal to the width of the chain and one being carried by each link, each link having side bars and a cross member and a bearing for the support for the material parallel with the cross member and adjacent thereto, and means for securing each plate-like support for the material to the side bars of the link that carries it and for securing one of its end edges to the cross-bearing, the other end edge resting upon a cross member of an adjacent link and being supported thereby, substantially as set forth.

5. In a conveyer the combination of a series of chain-links each having side bars, a perforated cross-bar and a bearing parallel with the cross-bar and connected thereto, pintles for uniting the links, and plate-like supports for the material of a width substantially equal to the width of the chain and one carried by each link, each plate-like support resting upon and being secured to the side bars of its link and having one end edge resting upon the cross-bearing of its link, its other end edge being arranged to extend over and rest upon the cross-bearing of the connecting-link, substantially as set forth.

6. A chain-link for conveyers consisting of side bars and a perforated cross-bar, the cross-bar being provided with a relatively broad transverse bearing situated in the plane of the top edges of the side bars and

adapted to serve as a support for the adjacent edges of plate-like supports for the material being transported by the conveyer, substantially as set forth.

5 7. A chain-link for a conveyer consisting of side bars provided with studs extending from their upper edges, a cross-bar serving for attachment to an adjacent link, and a trans-

versely-disposed bearing 12 situated in the plane of the top edges of the side bars and 10 connected with and parallel to the cross-bar, substantially as set forth.

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Witnesses:

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W. COLLINS.