

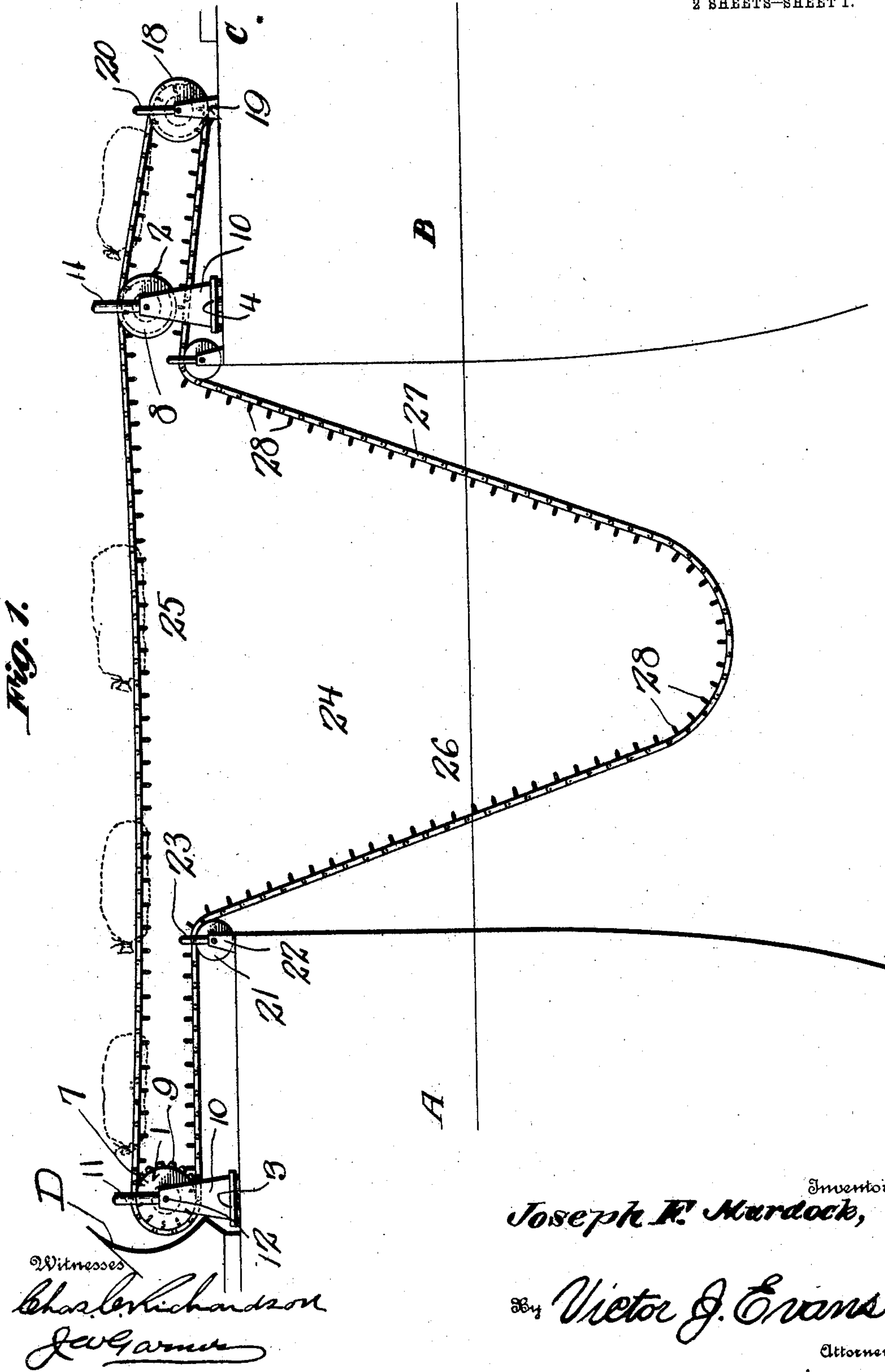
FREIGHT TRANSHIPPING APPARATUS.

APPLICATION FILED JUNE 23, 1909.

Patented Feb. 7, 1911.

2 SHEETS—SHEET 1.

983,301.



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2 SHEETS—SHEET 2.

Fig. 2.

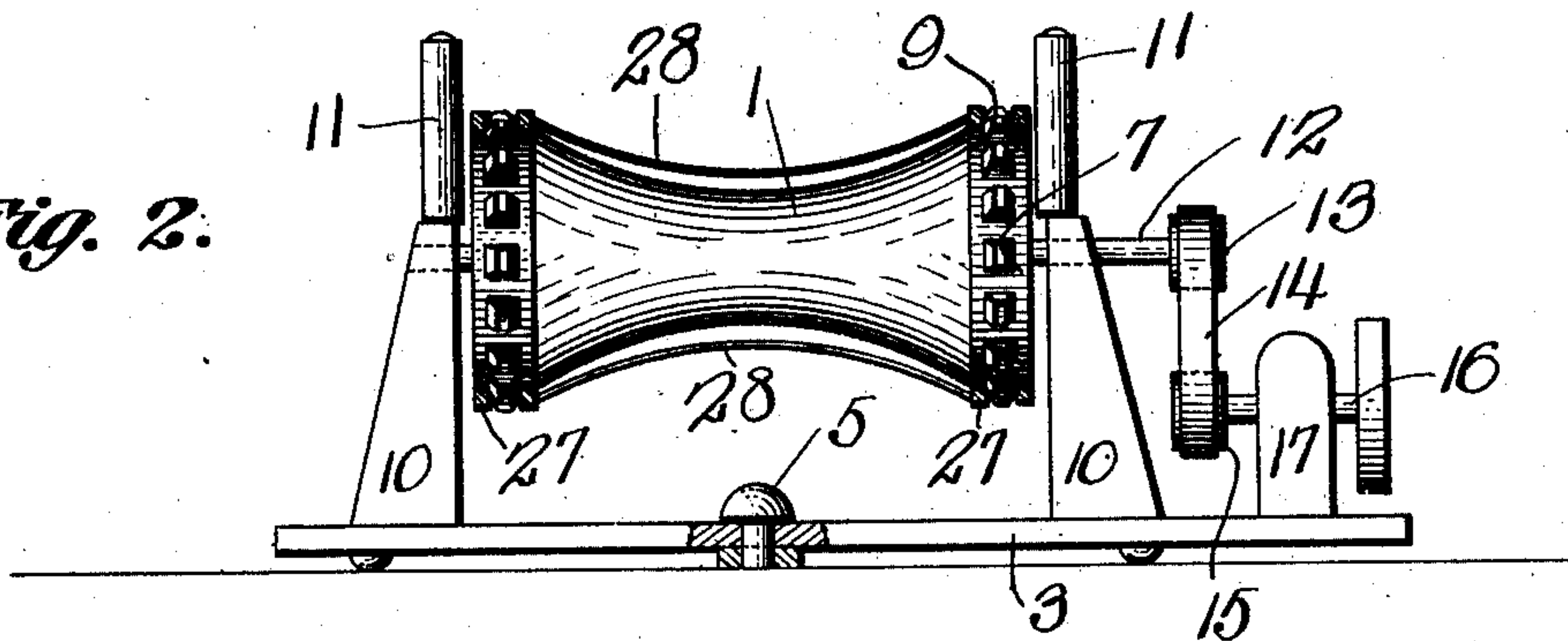


Fig. 3.

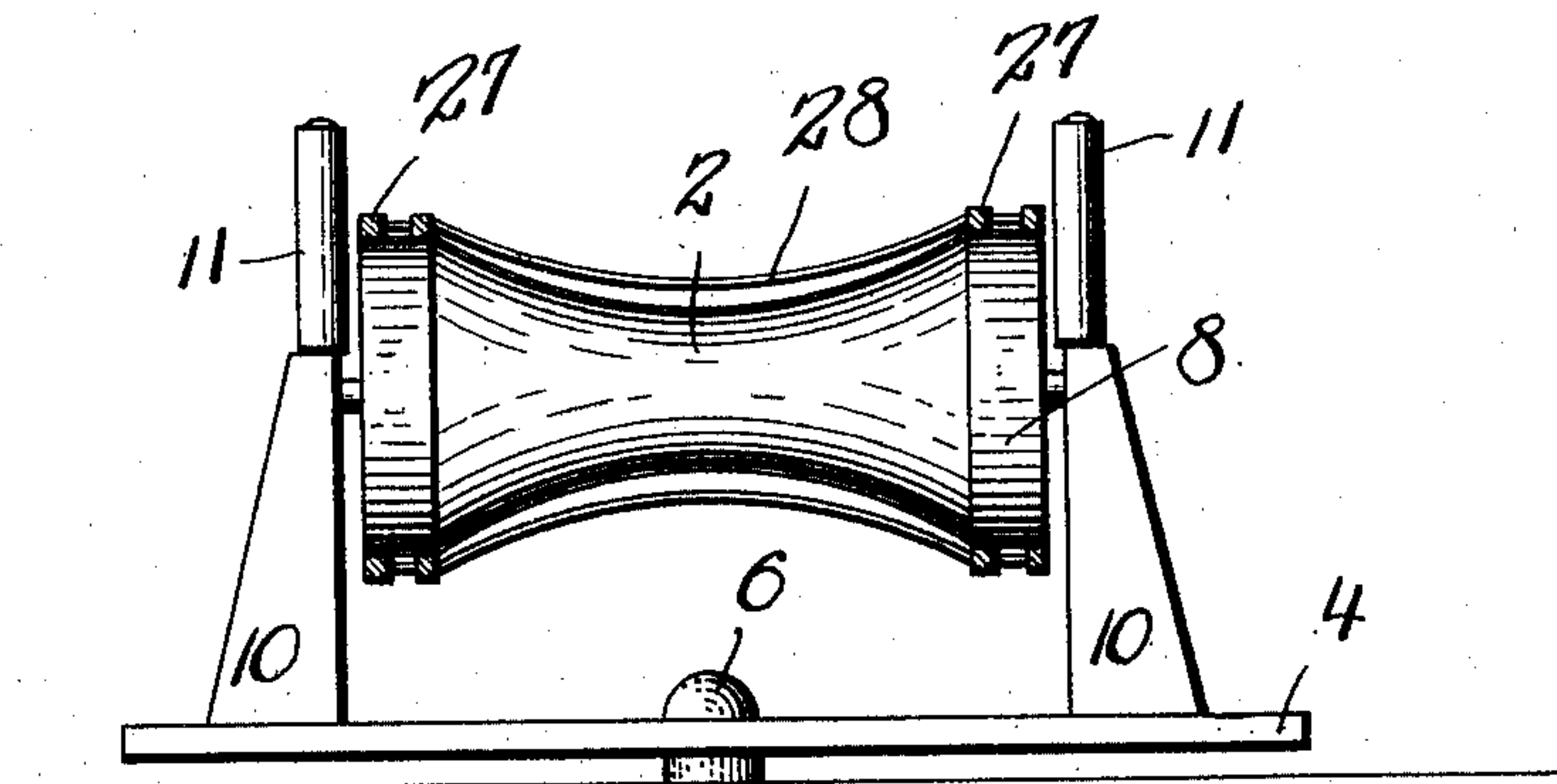


Fig. 4.

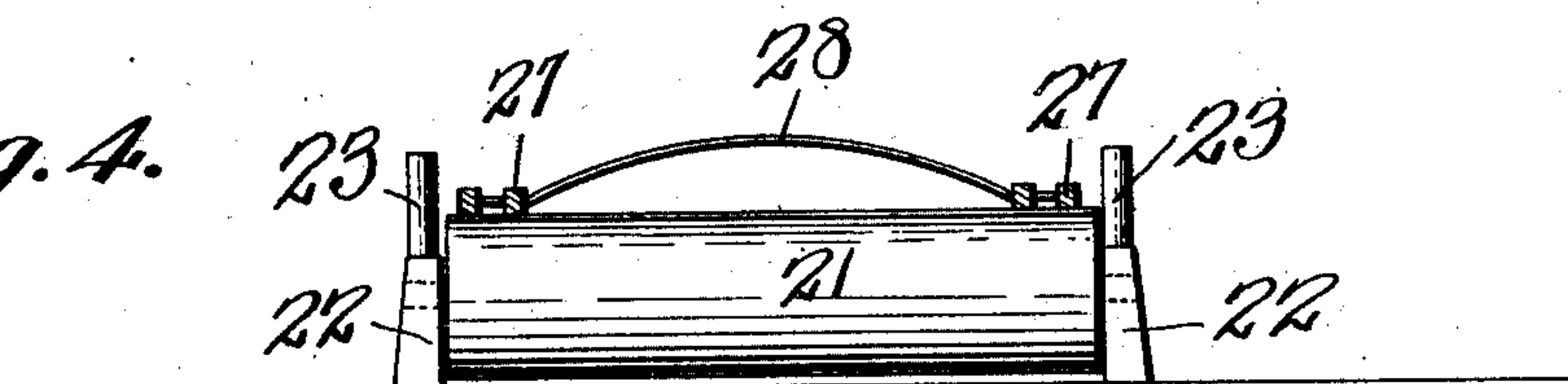
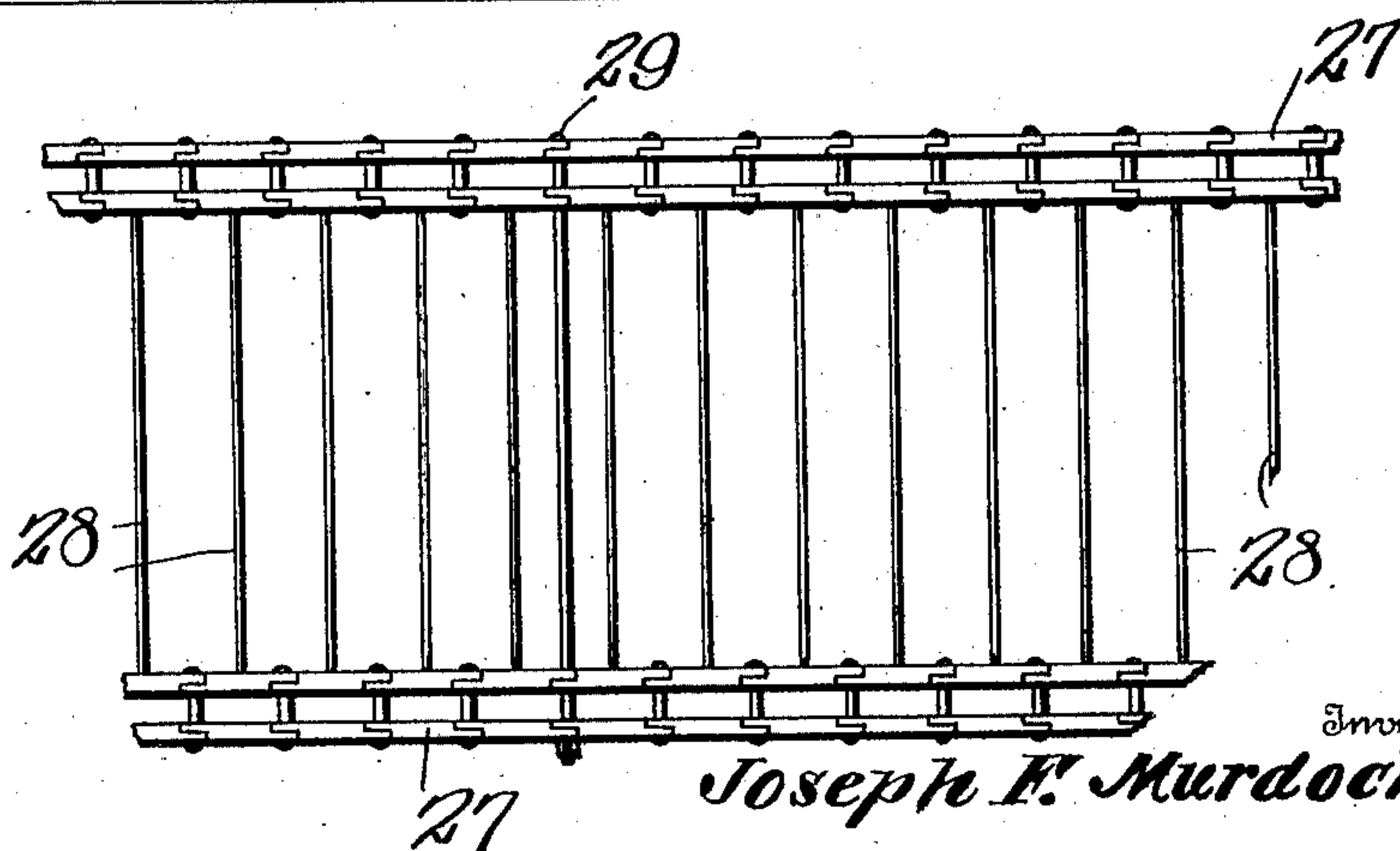


Fig. 5.



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UNITED STATES PATENT OFFICE.

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FREIGHT-TRANSHIPPING APPARATUS.

983,301.

Specification of Letters Patent.

Patented Feb. 7, 1911.

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To all whom it may concern:

Be it known that I, JOSEPH F. MURDOCK, a citizen of the United States, residing at Dunlap, in the county of King and State of Washington, have invented new and useful Improvements in Freight-Transshipping Apparatus, of which the following is a specification.

This invention is an improved transshipping apparatus especially adapted for use in supplying coal from one vessel to another at sea, but also adapted for use in transshipping freight of any kind and for transferring passengers from one vessel to another in cases of emergency and the said invention consists in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawings:—Figure 1 is an elevation of a transshipping apparatus constructed in accordance with this invention, showing the same in use for conveying freight, such as coal in sacks from one vessel to another. Fig. 2 is a detail elevation partly in section of the controlling pulley, the pivoted platform on which the same is mounted and a motor for operating and controlling said pulley to cause the latter to operate and control the flexible endless carrier. Fig. 3 is a similar view of the supporting pulley and the pivoted platform on which the same is mounted. Fig. 4 is a similar view of one of the anti-friction rollers. Fig. 5 is a detail plan of a portion of the flexible endless carrier.

In accordance with my invention, I provide essentially a controlling pulley and a supporting pulley which may be mounted respectively on either vessel, but for the purposes of this specification, the controlling pulley 1 is shown as mounted on the vessel A to which the freight, coal or the like is to be delivered and the supporting pulley 2 is shown as mounted on the vessel B from which coal or other freight is to be conveyed to the vessel A. Each of the said pulleys has a horizontal axle. The axles of the said pulleys are mounted in standards on platforms, which platforms are pivotally mounted on the decks of the vessels for movement angularly in a horizontal plane.

The pivoted supporting platform for the controlling pulley 1 is indicated at 3 and that for the supporting pulley 2 is indicated at 4, the pivots of the said platform being respectively indicated at 5 and 6. The pul-

leys are peripherally concaved as shown and have their end portions cylindrical in form as at 7, 8, respectively, the end portions 7 of the controlling pulley 1 being also provided with sprocket teeth 9. On the standards 10 of the said pivotally mounted pulley platforms are vertically disposed rollers 11 which are at the ends of the said pulleys and extend above the same, as shown. The axle shaft 12 of the controlling pulley 1 is here shown as provided with a pulley 13 which is engaged by a belt 14 which connects it to a pulley 15 on the power shaft 16 of a suitable motor indicated at 17 and which motor is mounted on the platform 3 and serves both to rotate the pulley 1 and to control the said pulley so that the said pulley 1 may be caused to rotate at any desired rate of speed or held against rotation as may be required when the apparatus is in operation. A pulley 18 is here shown as mounted in bearings 19 on the deck of the vessel B at a suitable distance from the supporting pulley 2 and near the hatch-way C of said vessel B. Vertically disposed rollers 20 extend from the upper ends of the bearings 19. On the opposing sides of the vessels A and B are anti-friction rollers 21 forming direction elements for the lower lead of the endless carrier 21 and which are here shown as mounted in bearings 22 that are provided with vertically disposed rollers 23 at their upper ends. The endless carrier 24 connects the pulleys 1, 2 and 18, and by reason of the horizontal position of the axes of said pulleys is disposed with an upper lead 25 and a lower lead 26, the said carrier extending from one vessel to the other as shown in Fig. 1. The upper lead of the endless carrier is taut and approximately horizontal. The lower lead 26 is slack and in practice the lower lead of the carrier should be slack to such an extent as to form a considerable bight in the carrier to hang between the two vessels and by its weight counter-balance the weight of the upper lead of the carrier plus that of the freight on the upper lead and passing from one vessel to the other so that the upper lead will be prevented from sagging under the weight of the freight to a considerable extent.

Within the scope of my invention, the flexible endless carrier may be of any suitable construction. For the purposes of this specification it is shown as composed of parallel side chains 27 and transversely dis-

posed carrier rods 28 which connect said side chains together. In practice, these carrier rods are curved so that those on the upper lead of the carrier are bowed downwardly and those on the lower lead thereof are bowed upwardly and hence the carrier rods of the upper lead of the carrier will keep freight or commodities such as filled sacks in place thereon while traveling from one vessel to the other. In practice, the endless carrier will be made of a number of sections of suitable length which may be connected together or detached at will to increase or decrease the length of the carrier as may be desired and according to the distance between the vessels, and for the purposes of this specification, portions of two sections of the carrier are shown in Fig. 5, a bolt rod 29 being indicated in said figure to detachably connect the said sections together, said bolt rod as will be understood passing through and forming the pivots of certain of the links of the side chains. The lower lead of the carrier runs on the anti-friction rollers 21. The vertically disposed rollers 11, 20, and 23 prevent the endless carrier from slipping from the pulleys and anti-friction rollers. Links of the side chains of the endless carrier are engaged by the sprocket teeth of the controlling pulley 1 and hence when the said pulley is set in motion the endless carrier is caused to move so that its upper lead travels from the vessel B to the vessel A and hence sacks or other articles which are placed on the endless carrier of the vessel B are delivered into the upper end of a receiving chute D on the vessel A. Owing to the provision of the slack bight in the lower lead of the carrier and the fact that the said carrier may be readily slipped on the pulleys

2, 18, the carrier will accommodate itself to the rolling of the vessels and the taut, upper lead thereof will be maintained under all conditions so that the apparatus may be operated while the vessels are in motion and in a sea-way. The pivotal mounting of the platforms which carry the pulleys also enables the endless carrier to accommodate itself to the motions of the vessels.

What is claimed is:—

The combination with two spaced vessels, a pivoted platform upon one of the vessels, a controlling pulley upon the platform, means for rotating the pulley, anti-frictional rollers arranged adjacent each side of the pulley and projecting thereabove, a directing pulley positioned adjacent the end of the vessel, anti-frictional directing rollers adjacent to and extending above each face of this pulley, the second vessel having a pivoted platform, a pulley upon said platform, anti-frictional rollers adjacent to and extending above said pulley, a second pulley positioned forward of the platform and at one end of the said second vessel, directing rollers for this pulley, a third pulley mounted to the rear of the platform of the second vessel, directing rollers for this pulley, an endless chain for all of the pulleys, the upper lead of the carrier being positioned upon the upper faces of the pulley, the lower lead adapted to lie loosely between the two bodies and being of a sufficient weight and slackness to retain the upper lead approximately taut.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH F. MURDOCK.

Witnesses:

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