No. 897,361. PATENTED SEPT. 1, 1908.

H. G. FERRIS.

AUTOMATIC BOTTOM DUMPING AND SELF CLOSING BUCKET.

APPLICATION FILED SEPT. 3, 1907.

2 SHEETS—SHEET 1.

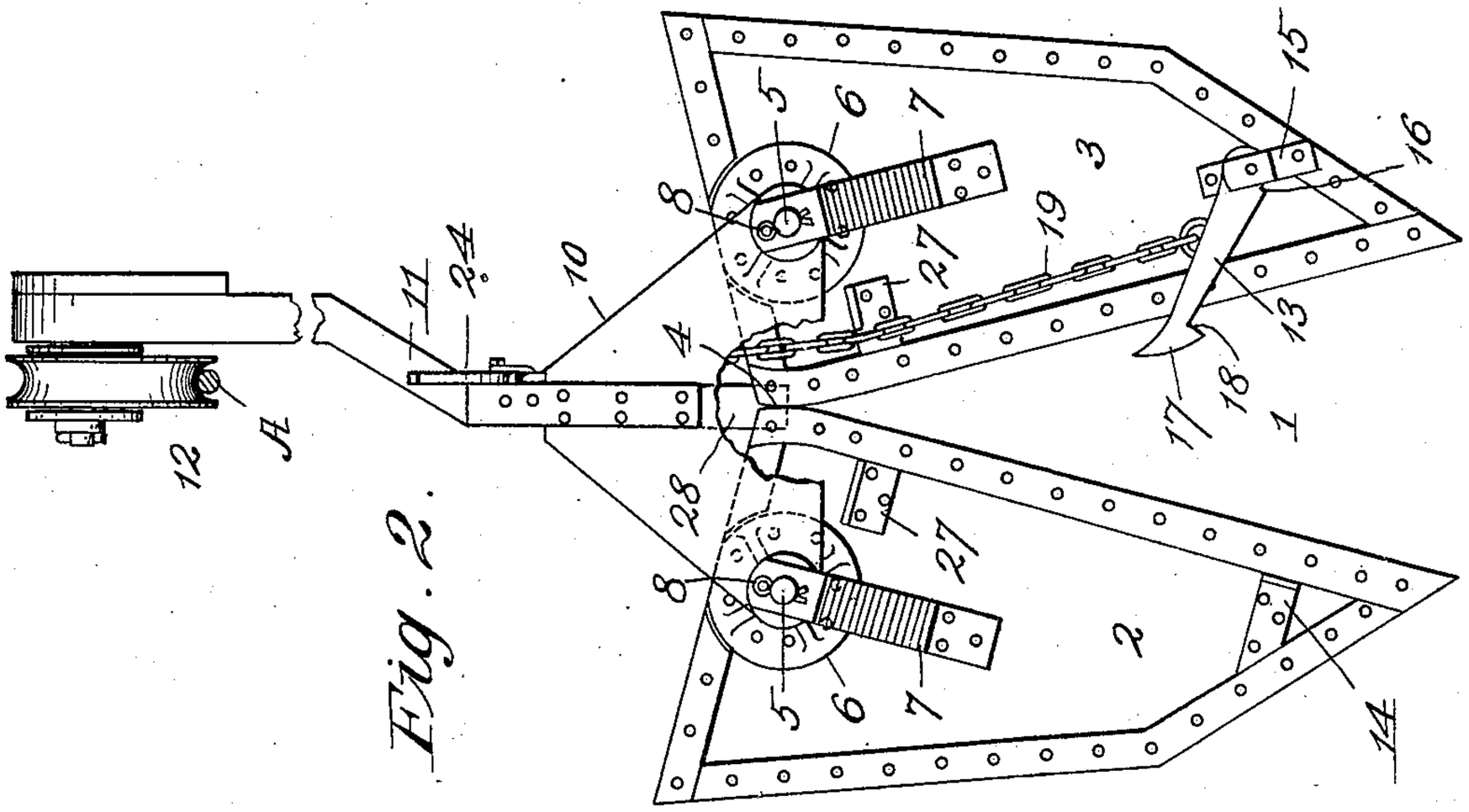

Fig. 2.

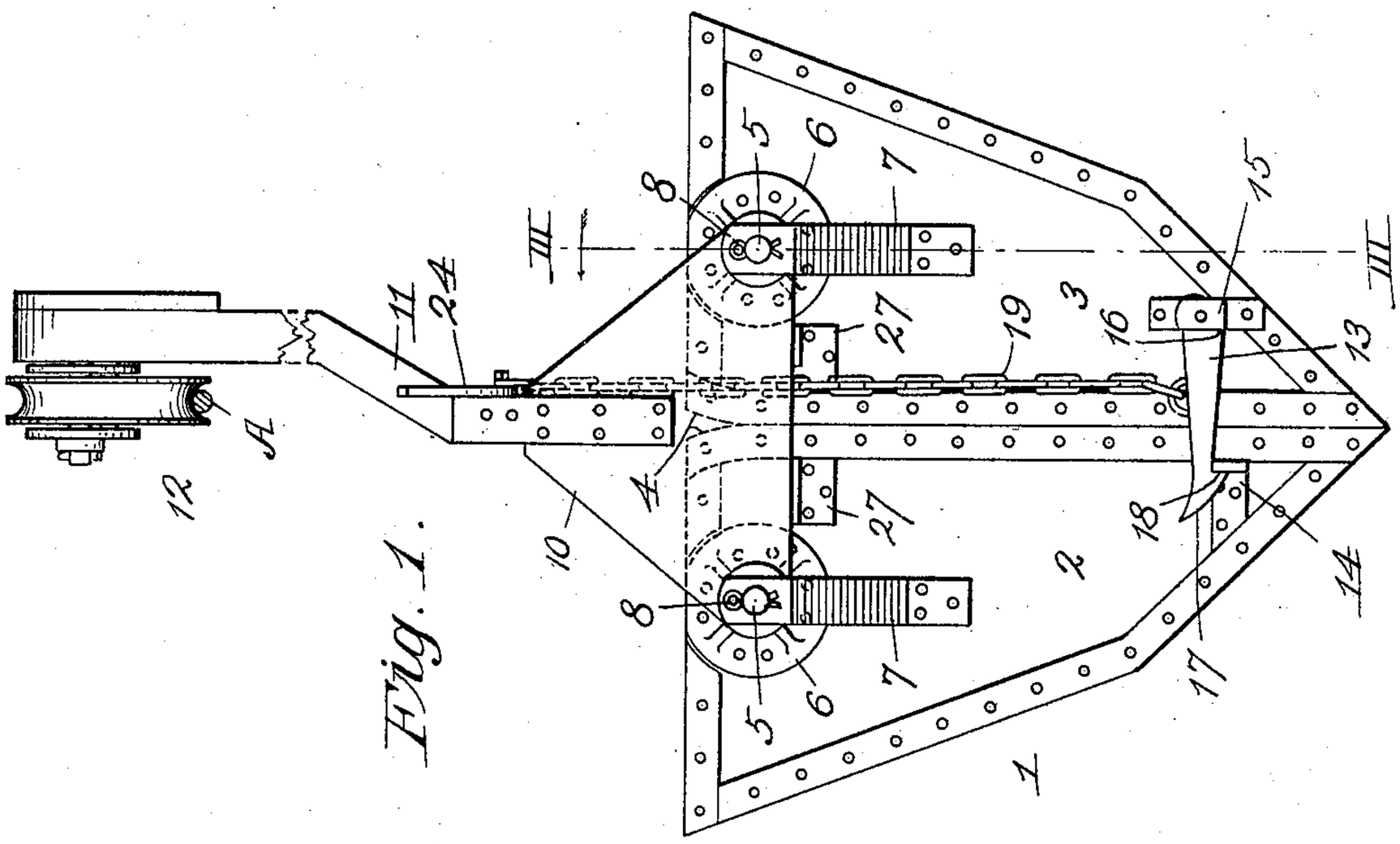

Fig. 1.

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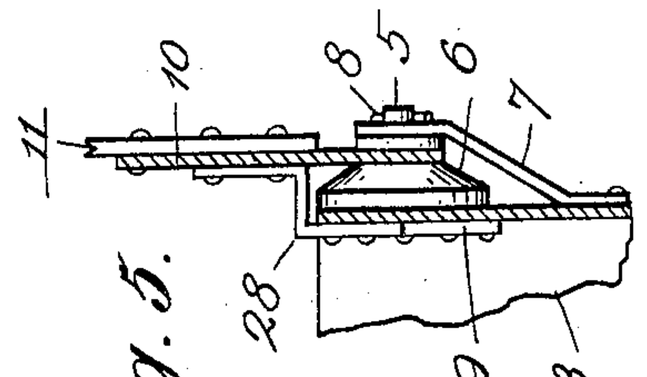

Fig. 5.

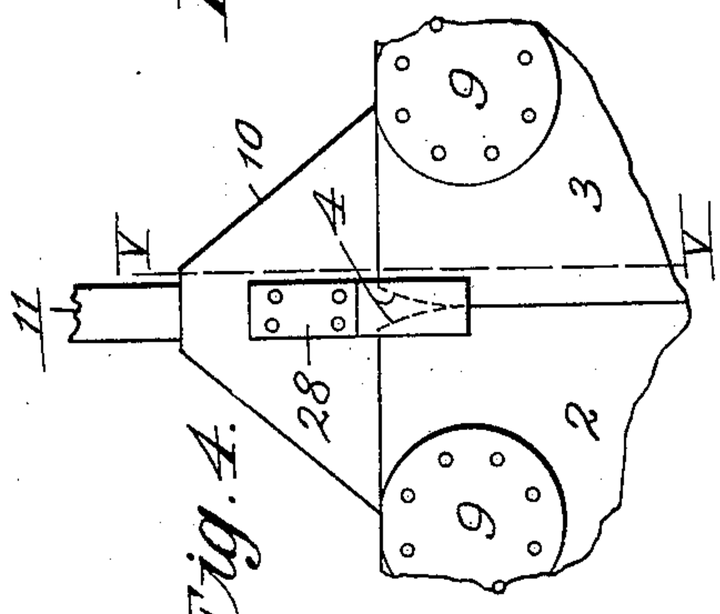

Fig. 4.

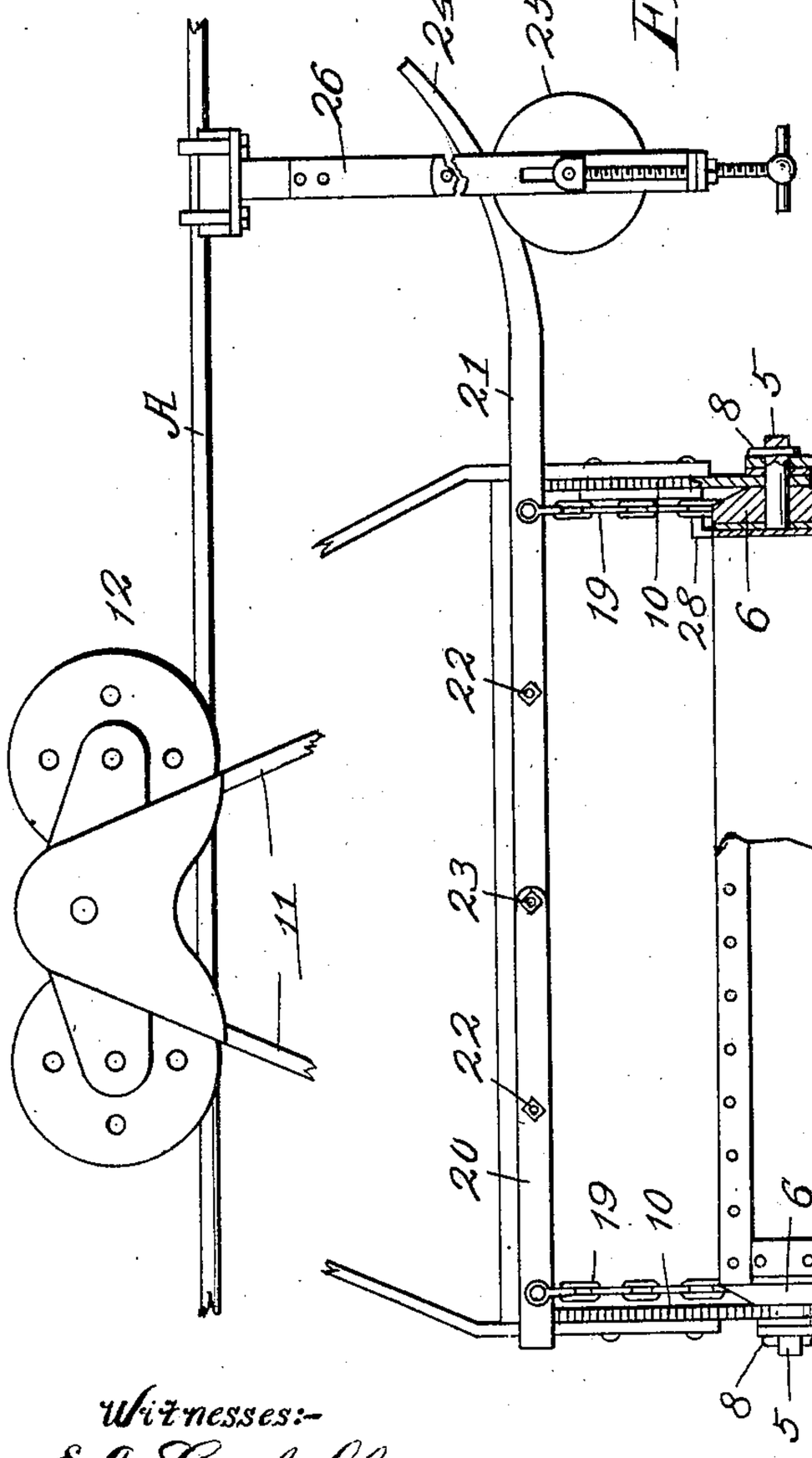

Fig. 3.

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UNITED STATES PATENT OFFICE.

HIRAM G. FERRIS, OF LEAVENWORTH, KANSAS.

AUTOMATIC BOTTOM-DUMPING AND SELF-CLOSING BUCKET.

No. 897,361. Specification of Letters Patent. Patented Sept. 1, 1908.

Application filed September 3, 1907. Serial No. 391,257.

To all whom it may concern:

Be it known that I, HIRAM G. FERRIS, a citizen of the United States, residing at Leavenworth, in the county of Leavenworth and State of Kansas, have invented certain new and useful Improvements in Automatic Bottom-Dumping and Self-Closing Buckets, of which the following is a specification.

My invention relates to improvements in automatic bottom-dumping and self-closing buckets, and one of my objects is to provide a bucket of this character which will automatically dump large and small loads with equal facility.

A further object is to provide a bucket which will close and lock itself without shock after a load has been dumped.

Other objects will hereinafter appear, and in order that the invention may be fully understood reference will now be made to the accompanying drawings, in which:—

Figure 1 represents a front elevation of the bucket in a closed condition. Fig. 2 represents a front elevation of the same in an open condition. Fig. 3 is a side elevation partly in section on line III—III of Fig. 1. Fig. 4 is a broken side elevation of the upper portion of the bucket, looking from the inside of same. Fig. 5 is a vertical section on line V—V of Fig. 4.

1 designates the bucket which is V-shaped in front elevation so that it will have a wide mouth through which it may be easily filled. This shape also permits the load to open the bucket more readily than if the sides thereof were vertical. The bucket is divided vertically and centrally into twin sections 2 and 3, the upper ends 4 of the abutting edges of which are curved in opposite directions so that the sections may rock thereon when the load is dumped. Each bucket section is provided with a pair of trunnions 5 located at the centers from which the curved ends 4 are struck. Said trunnions project from brackets 6 and their outer ends are supported by straps 7 which are prevented from springing outward by cotter-pins 8. Brackets 6 and straps 7 are riveted to the front and rear sides of the sections, which latter are reinforced upon their inner sides with circular plates 9 to prevent the bracket rivets from pulling therethrough.

Trunnions 5 are rockingly mounted in a pair of suspended bearings 10 which hold sections 2 and 3 together. Said bearings are rigidly secured to the lower ends of a bail 11, which in turn is suspended from a wheeled-truck 12 adapted to travel upon an aerial tramway A. Bail 11 is bent to bring the wheels of the truck in alinement with the abutting edges of the bucket so that when the latter dumps a load it will not sway from side to side and thus unduly scatter the load.

I locate the trunnions 5 slightly to one side of the center of gravity of each section, so that after the load has been dumped said sections will immediately close of their own accord. The sections, however, are so nearly balanced upon their trunnions that they will be spread apart when unlocked, by a light load and owing to the V-shaped bottom of the bucket it will be impossible for a portion of the load to lodge thereon and thus interfere with its closing operation.

The bucket is locked in a closed position by a pair of latches 13 and a pair of keepers 14, which latter are riveted to the front and rear ends of section 2, while the former are pivotally secured in bifurcated brackets 15 riveted to the front and rear ends of section 3. Latches 13 have notches 16 at their pivoted ends adapted to engage brackets 15 and prevent the latches from dropping below a horizontal position, hence when sections 2 and 3 swing to a closed position, the curved forward ends 17 of the latches will ride over the keepers 14 until the latter are engaged by shoulders 18 of the latches.

When it is desired to dump a load the latches are disengaged from the keepers by a pair of chains 19, attached at their upper ends to levers 20 21, fulcrumed upon bolts 22 and having their adjacent ends pivotally connected by a bolt 23. The forward end 24 of lever 21 is curved upwardly so that it may ride upon a tripping device consisting of a roller 25 and a hanger 26 in which the roller is journaled. Said tripping device may be located at any point upon the aerial tramway A, so that the bucket may be dumped at the desired point. When the bucket is in a closed position, the abutting lower edges of sections 2 and 3 are held in alinement by a pair of stops 27 which engage the under-sides of bearings 10 and thus prevent one section from rising above the other.

When loading the bucket the material is prevented from lodging between the curved ends 4 and interfering with the opening of the bucket, by a pair of hoods 28 secured to the inner sides of bearings 10 and bent inwardly as shown in Fig. 5.

Having thus described my invention, what I claim is:—

1. A bucket of the character described consisting of twin sections, a pair of trunnions on each section, bearings in which the trunnions are rockingly mounted, and means on the ends of the sections for engaging the bearings when the bucket is closed.

2. A bucket of the character described consisting of twin sections curved in opposite directions at the upper ends of their abutting edges, a pair of trunnions on each section located at the centers from which the curved ends are struck, bearings in which the trunnions are rockingly mounted, and hoods secured to the bearings for covering the curved ends of the abutting edges.

3. A bucket of the character described, comprising twin sections curved in opposite directions at the upper ends of their abutting edges, bearings in the form of two separate plates receiving correspondingly located pairs of trunnions, a suspended bail connected at its ends to said plates, and reinforcing means for said trunnions secured to said sections and disposed to overlie said plates.

4. A bucket of the character described comprising twin sections curved in opposite directions at the upper ends of their abutting edges, a pair of trunnions on each section, bearings in the form of plates receiving correspondingly located pairs of said trunnions, reinforcing straps, each having one end secured to said sections, the other ends of said straps surrounding said several trunnions and means carried by said trunnions to hold the ends of said straps against displacement.

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

HIRAM G. FERRIS.

Witnesses:
F. G. FISCHER,
M. COX.