R. E. SNOWDEN.

ELEVATOR.

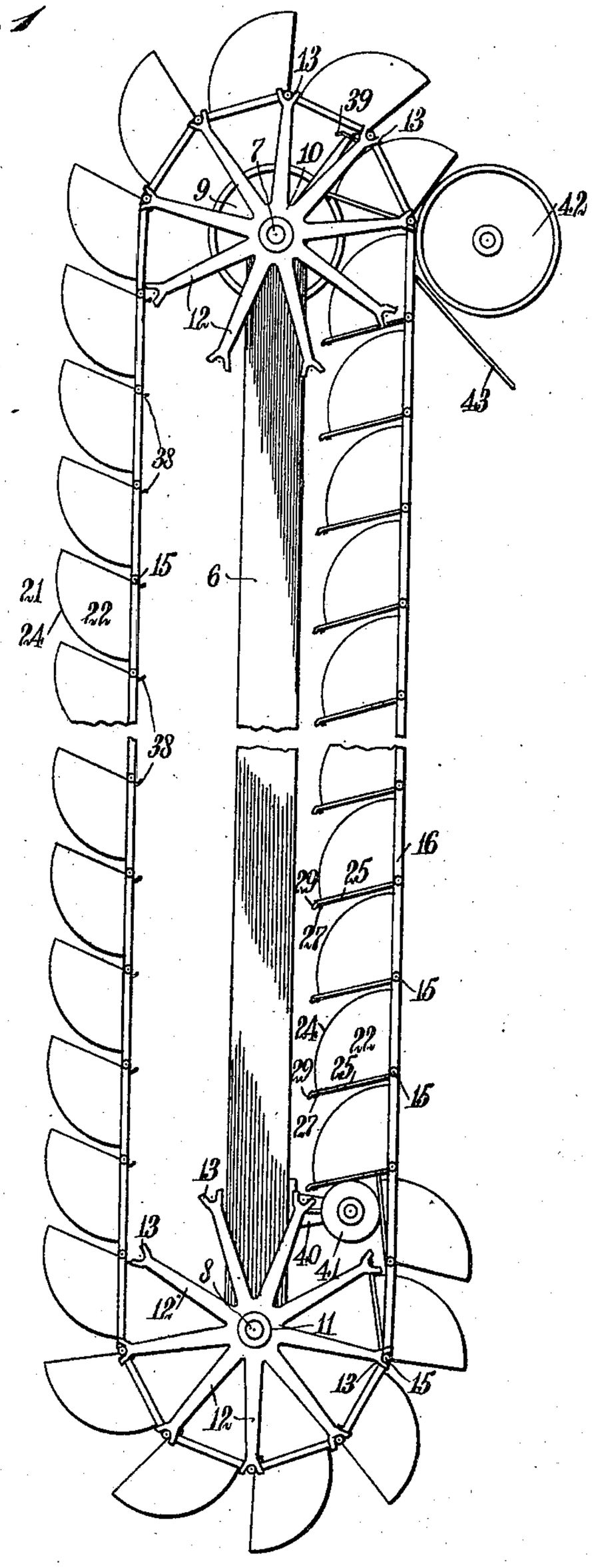
APPLICATION FILED JULY 20, 1910.

995,921.

Patented June 20, 1911.

3 SHEETS—SHEET 1.

Fig. 1

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3 SHEETS—SHEET 2.

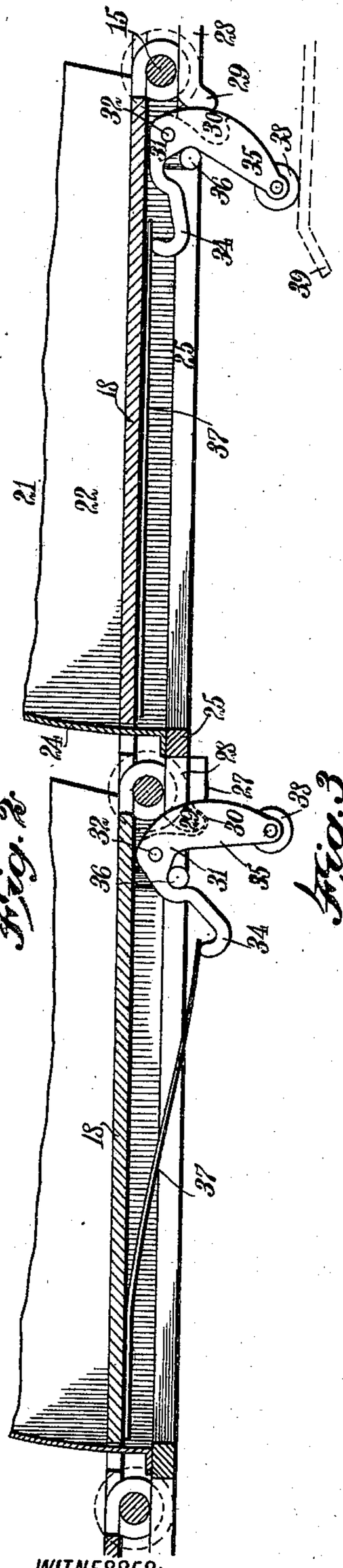

Fig. 2.

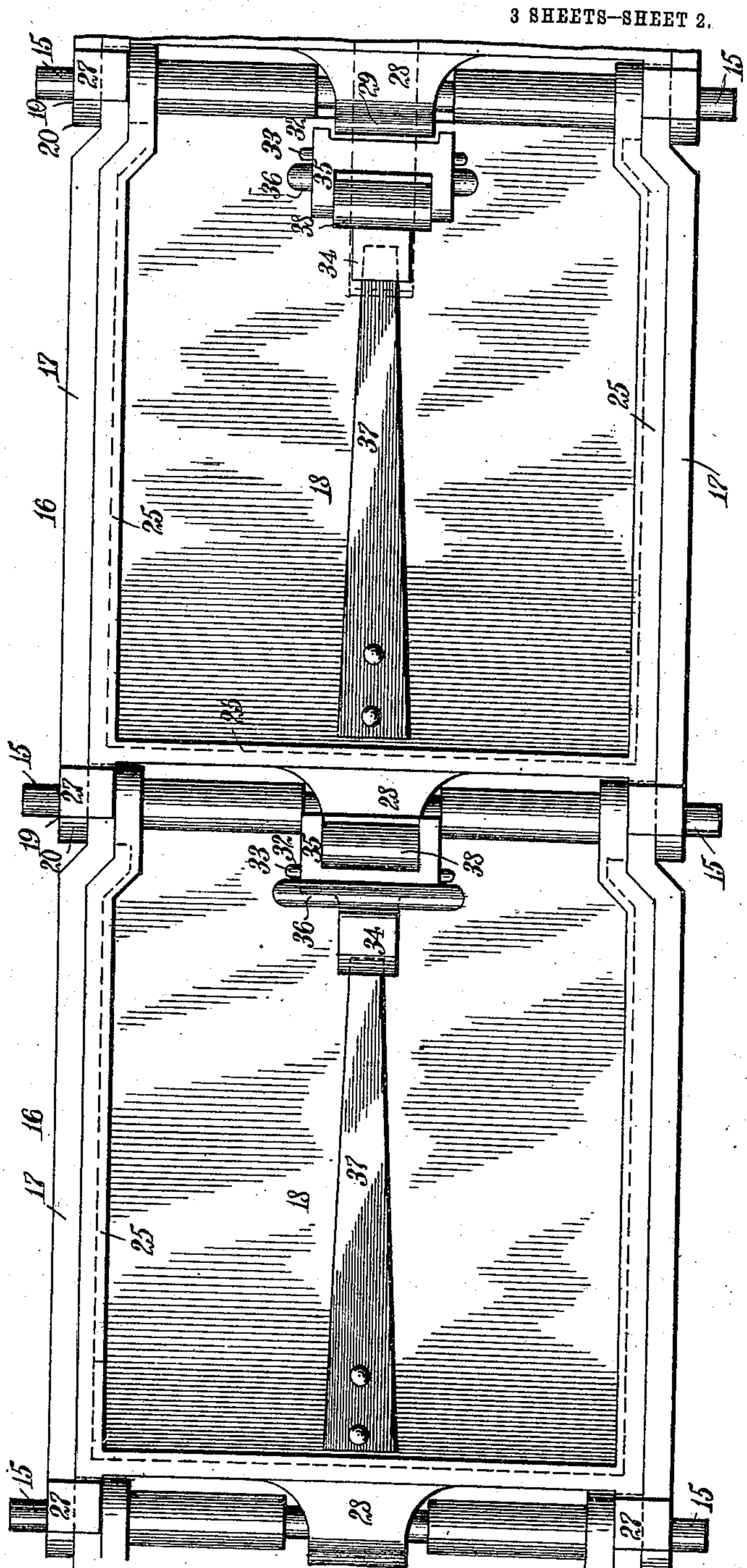

Fig. 3.

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3 SHEETS—SHEET 3.

Fig. 6

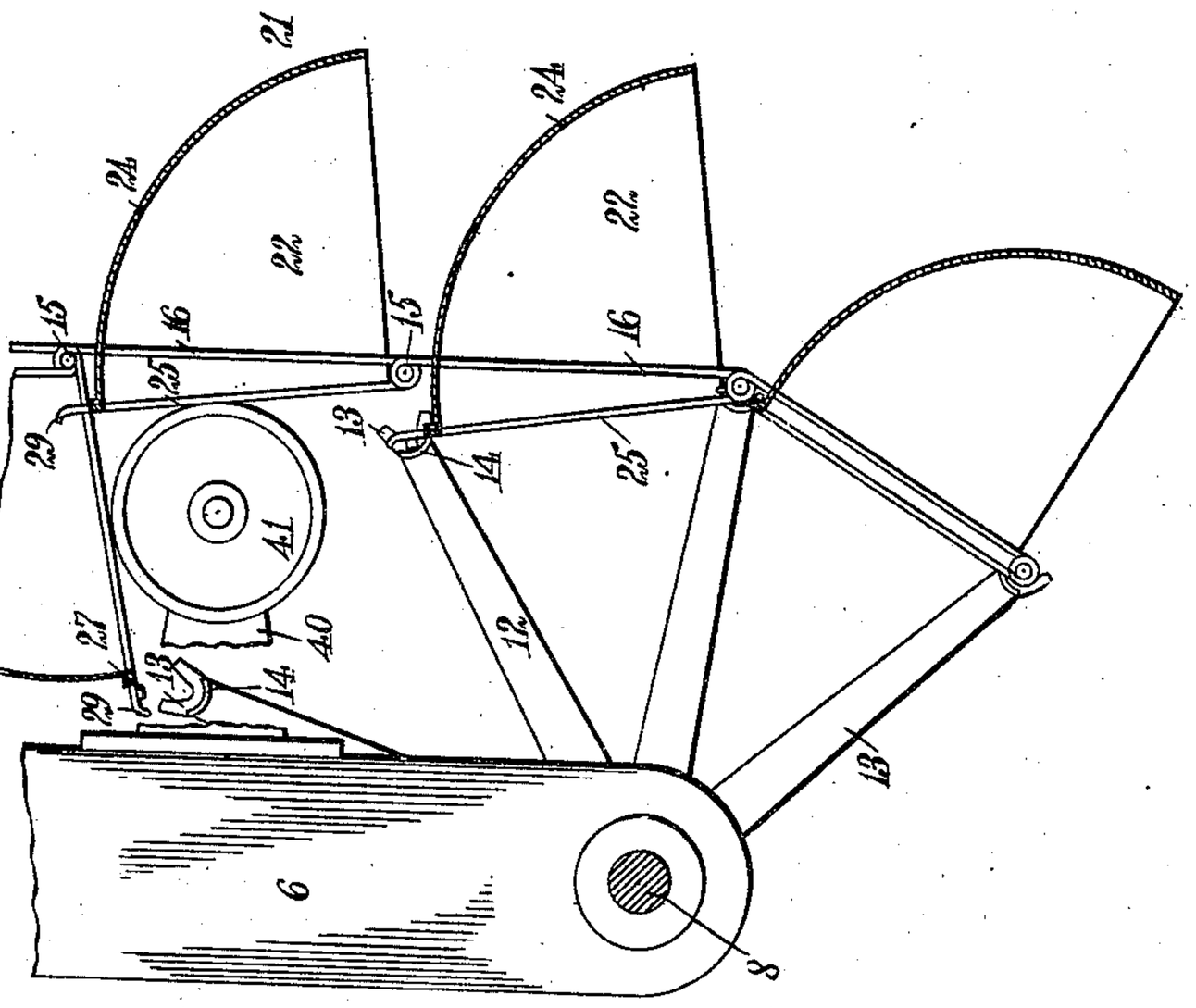



Fig. 8

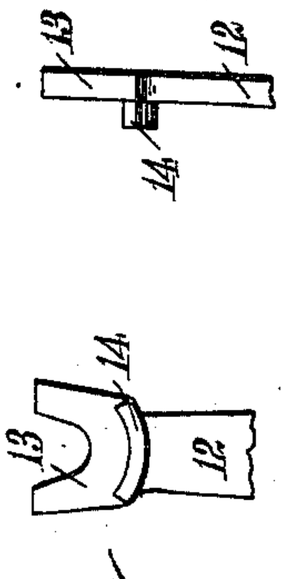



Fig. 4

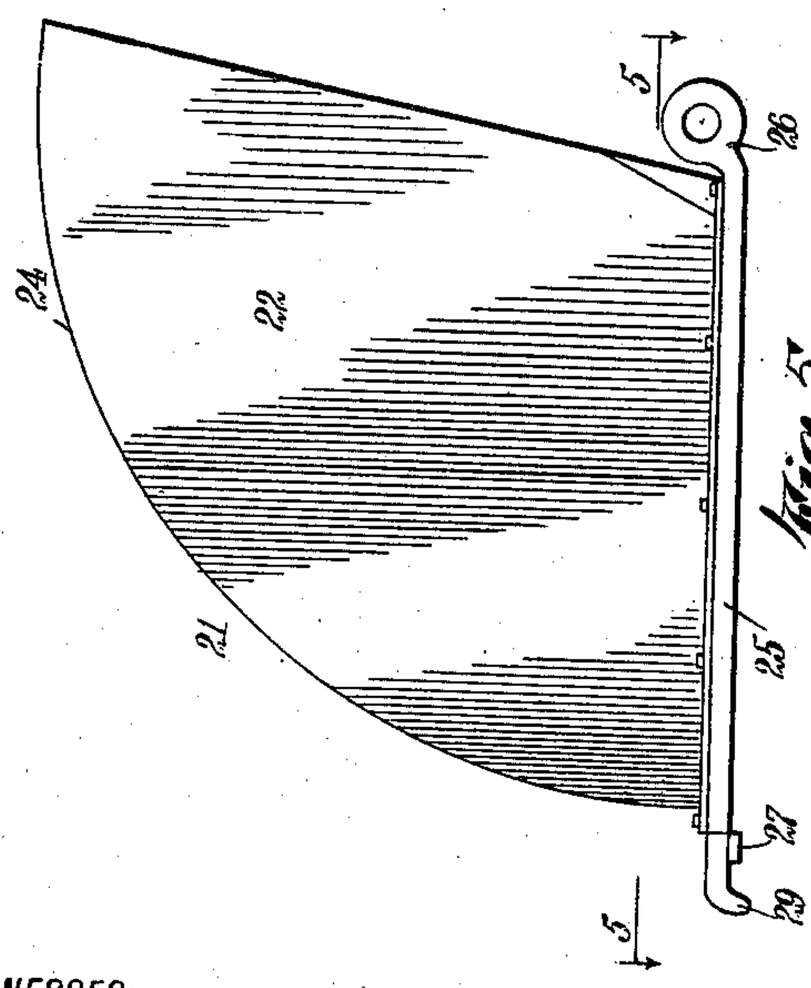



Fig. 5

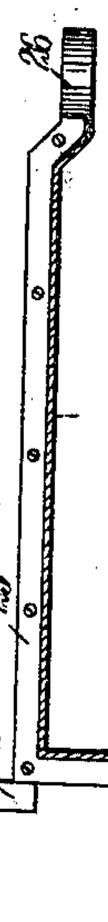
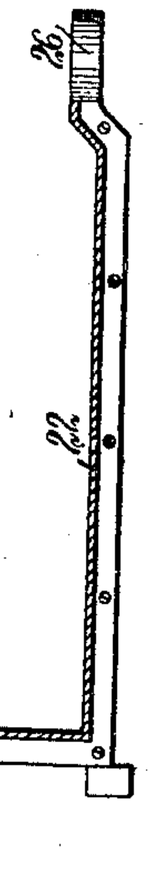



Fig. 7

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# UNITED STATES PATENT OFFICE.

RUSSELL ELSTNER SNOWDEN, OF SNOWDEN, NORTH CAROLINA.

## ELEVATOR.

995,921. Specification of Letters Patent. **Patented June 20, 1911.**

Application filed July 20, 1910. Serial No. 572,848.

*To all whom it may concern:*

Be it known that I, RUSSELL E. SNOWDEN, a citizen of the United States, and a resident of Snowden, in the county of Currituck and State of North Carolina, have invented a new and Improved Elevator, of which the following is a full, clear, and exact description.

My invention relates to elevators, and it has for its object to provide one with pivoted buckets, carried by belt members, the buckets being free to swing through the belt members and there being means to move the buckets relatively to the belt members.

Another object of the invention is to provide wheels, having spokes with seats for engaging and directing the belt members.

Another object of the invention is to provide the spokes with members for engaging the buckets and holding them in position relatively to the belt members.

Still another object of the invention is to provide tongues on the buckets with pivoted trips, having recesses for engaging tongues on adjoining buckets, there being springs on the belt members for holding the trip members yieldingly in a predetermined position and there being means in close proximity to the path of travel of the belt members for engaging the trip members to operate them.

Still other objects of the invention will appear in the following complete description.

In this specification I will describe the preferred form of my invention, it being understood that the scope of the invention is defined in the appended claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a side elevation of the invention; Fig. 2 is an enlarged sectional view showing two of the belt members and the manner of pivoting the buckets thereto; Fig. 3 is an inverted plan view; Fig. 4 is a side elevation of one of the buckets; Fig. 5 is a sectional view on the line 5—5 of Fig. 4; Fig. 6 is a fragmentary view showing how the pivots and the lugs on the buckets are engaged by the seats and by the lugs on the spokes respectively; Fig. 7 is a fragmentary view showing the terminal of one of the spokes; and Fig. 8 is a side elevation of the same.

By referring to the drawings, it will be seen that a beam 6 is provided, having shafts 7 and 8 journaled in bearings therein. A pulley 9 is secured to the shaft 7, by which it may be rotated. A wheel 10 is also secured to the shaft 7 and a wheel 11 is secured to the shaft 8. These wheels 10 and 11 have radially-disposed spokes 12, having seats 13 at their terminals. The spokes 12 of the wheel 11 also have laterally-disposed lugs 14 spaced from their seats 13. The seats 13 are provided for engaging the pivots 15, which connect the belt members 16 together. These belt members 16 have side frames 17, each of the belt members also having an apron 18, the side members and the aprons 18 being secured rigidly to the pivots 15, the pivots 15 being journaled in bearings 19 in lugs 20 on adjoining belt members. It will therefore be seen that the belt members form links in an endless belt disposed around the wheels 10 and 11. The side frame members 17 of the links 16 are offset where they are secured to their pivots 15, so that the lugs 20 are disposed in alinement with the bodies of the said side frame members.

Buckets 21 are provided, one of these buckets being pivoted to each of the belt members 16. The buckets 21 have side members 22 and curved rear walls 24, but the ends of the buckets are open, as best shown in Fig. 6 of the drawings. The sides 22 of the buckets 21 are disposed between the aprons 18 and the side frames 17 of the belt members 16 respectively, the frames 25 of the buckets 21 having offset bearings 26, the bearings 26 being disposed within the offset portions of the side frames 17 of the belt members 16 and being journaled to the pivots 15 respectively. The frames 25 of the buckets not only extend along their sides, but they extend transversely, connecting the sides of the buckets at their free ends. It will be understood that the sides 22 of the buckets 21 are free to swing between the aprons 18 and the side frames 17 of the belt members 16 but that the sides of the frames 25 of the buckets engage the aprons 18 re-

spectively, to limit the movement of the buckets in one direction. At the free ends of the buckets, at their corners, are secured laterally-projecting lugs 27, which are disposed in close proximity to the pivots 15 when the frames 25 of the buckets are disposed in close proximity to the side frames 17 of the belt members 16.

Projecting from the transverse portions of the frames 25 of the buckets 21, there are tongues 28, the tongues 28 having flanges 29 which are adapted to be disposed in recesses 30 in trips 31 respectively. The trips 31 are pivoted to pins 32 having side members 33 which are secured to the aprons 18 respectively. Each of the trips 31 has two arms 34 and 35 respectively. Checks 36 are secured to the aprons 18, being disposed between these arms 34 and 35 to limit the movement of the trips. To each of the aprons 18 is secured a leaf spring 37 which engages the arms 34 respectively, to hold the trip 31 yieldingly with the arms 35 upwardly-disposed, so that the flanges 29 on the tongues 28 are held securely in the recesses 30 of the trips. Wheels 38 are journaled to the terminals of the arms 35 of the trips, these wheels 38 being adapted to be engaged by members 39 which are provided to operate the trips to free the flanges 29 on the tongues 28 and permit the buckets to swing relatively to the belt members.

By referring to Fig. 1 of the drawings, it will be seen that as the shaft 7 is operated by the pulley 9, thereby rotating the wheel 10, the seats 13 on the spokes 12 will engage the ends of the pivots 15 to carry the belt members around the upper wheel 10. In the same way, the seats 13 on the spokes 12 of the lower wheel 11 engage the ends of the pivots 15 to carry the belt members around the lower wheel 11, but these spokes 12 on the lower wheel, in addition to having the seats 13, are provided with the lugs 14 which engage the lugs 27 on the buckets, to hold the buckets in position relatively to the belt members as they travel around the said lower wheel.

Secured to the beam 6, there is an arm 40 having a wheel 41 journaled thereto, the function of this wheel 41 being to engage one of the side portions of the frames 25 of the buckets to move the buckets into a position relatively to the belt members 16 where their lugs 27 may be engaged by the lugs 14 on the spokes 12, as the seats 13 on the said spokes engage the ends of the pivots 15. When the lugs 27 on the buckets 21 are engaged by the lugs 14 on the spokes 12 of the lower wheel 11, the flanges 29 on the tongues 28 are pushed against the arms 35 of the trips 31, thereby moving the trips and permitting the flanges 29 to slip into the recesses 30 where they are held by the trips because of the action of the springs 37. It will therefore be seen that when the buckets travel upwardly at the left of the construction shown in Fig. 1 of the drawings, they will be held relatively to the belt members by the engagement of the trips 31 with the flanges 29 on the tongues 28 until they reach the wheel 10, when they are moved to the right and relatively to each other. The member 39 is provided and may be disposed wherever desired, to operate the trips and permit the weight of the buckets to cause the tongues 28 and the flanges 29 to fall downwardly when the said flanges 29 are freed from the recesses 30 by the movement of the trips.

To assist in moving the buckets 21 after they have been freed by the operation of the trips 31, a wheel 42 is provided, which engages the sides of the frames 25 of the buckets to move them inwardly and relatively to the belt members 16. A chute 43 is also provided under the wheel 42 to receive the material as it is discharged from the said buckets 21.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In an elevator, belt members pivoted together, buckets pivoted to the belt members respectively, and trips mounted on the belt members adapted to engage members on buckets pivoted to neighboring belt members respectively.

2. In an elevator belt, members having slotted aprons, pivoted together, buckets pivoted to the belt members having side members adapted for moving in the slots respectively, and projections on the buckets adapted to engage the belt members to check the movement of the buckets relatively to the belt members.

3. In an elevator, belt members having bolts, slotted aprons and bearings, the bolts being journaled in the bearings of adjoining belt members respectively, and buckets, each having a frame at one end, pivoted to the belt members for moving in the slots of the aprons, the frames on the buckets being adapted to engage the belt members to check their movement relatively thereto.

4. In an elevator, belt members secured together, buckets pivoted to the belt members, trips pivoted to the belt members, and tongues on the buckets adapted to be engaged by the trips on the neighboring buckets respectively.

5. In an elevator, belt members having slotted aprons, pivoted together, buckets pivoted to the belt members for moving in the slots, trips pivoted to the aprons, and tongues on the buckets adapted to be engaged by the trips on the neighboring aprons.

6. In an elevator, belt members having slotted aprons, pivoted together, buckets pivoted to the belt members for moving in the

slots, trips pivoted to the aprons, tongues on the buckets adapted to be engaged by the trips on the aprons, and springs on the aprons for holding the trips yieldingly in predetermined positions respectively.

7. In an elevator, belt members, pivoted together, buckets pivoted to the belt members, trips, each having two arms pivoted to the belt members, tongues on the buckets adapted to be engaged by the trips, and springs on the belt members for engaging one set of arms of the trips respectively, the other set of arms of the trips being extended.

8. In an elevator, belt members, pivoted together, buckets pivoted to the belt members, trips, each having two arms pivoted to the belt members, tongues on the buckets adapted to be engaged by the trips, springs on the belt members for engaging one set of arms of the trips respectively, the other set of arms of the trips being extended, and stops on the belt members disposed between the arms of the trips for limiting the movement of the trips respectively.

9. In an elevator, belt members, pivoted together, buckets pivoted to the belt members, trips having recesses, pivoted to the belt members, tongues on the buckets, which are normally disposed in the recesses in the trips respectively, and means for operating the trips.

10. In an elevator, two wheels, a belt disposed over the wheels, consisting of members, pivoted together, buckets pivoted to the belt members, trips pivoted to the belt members, and tongues on the buckets adapted to be engaged by the trips.

11. In an elevator, belt members, pivoted together, buckets having lugs, pivoted to the belt members respectively, a wheel having spokes with seats for engaging the pivots connecting the belt members, and lugs on the spokes for engaging the lugs on the buckets for holding the buckets relatively to the belt members.

12. In an elevator, a belt, consisting of members, pivoted together, buckets having lugs, pivoted to the belt members respectively, two wheels, each having spokes with seats at their terminals for engaging the pivots connecting the belt members, lugs on the spokes of one of the wheels for engaging the lugs on the buckets for holding the buckets relatively to the belt members, and means for rotating one of the wheels.

13. In an elevator, belt members, pivoted together, buckets having projections at one set of ends respectively, pivoted to the belt members, the projections being adapted for engaging the belt members and limiting the movement of the buckets relatively thereto, lugs on the buckets, a wheel having spokes with seats at their terminals for engaging the pivots connecting the belt members, and lugs on the spokes for engaging the lugs on the buckets for supporting the buckets, with their projections, substantially in alinement with the belt members.

14. In an elevator, belt members having slotted aprons, pivoted together, buckets having lugs, pivoted to the belt members respectively, for moving in the slots in the aprons, a wheel having spokes with seats for engaging the pivots connecting the belt members, and lugs on the spokes for engaging the lugs on the buckets for holding the buckets relatively to the belt members.

15. In an elevator, belt members, pivoted together, buckets having lugs, pivoted to the belt members respectively, a wheel having spokes with seats for engaging the pivots connecting the belt members, lugs on the spokes for engaging the lugs on the buckets for holding the buckets relatively to the belt members, trips pivoted to the belt members, and tongues on the buckets adapted to be engaged by the trips respectively.

16. In an elevator, a belt, consisting of members, pivoted together, buckets having lugs, pivoted to the belt members respectively, trips pivoted to the belt members, tongues on the buckets adapted to be engaged by the trips on the neighboring buckets respectively, two wheels, over which the belt is disposed, one of the wheels having spokes with seats for engaging the pivots connecting the belt members, and lugs on the spokes for engaging the lugs on the buckets for holding the buckets relatively to the belt members.

17. In an elevator, a belt, consisting of members, pivoted together, buckets having lugs, pivoted to the belt members respectively, trips pivoted to the belt members, tongues on the buckets adapted to be engaged by the trips on the neighboring buckets respectively, two wheels, over which the belt is disposed, one of the wheels having spokes with seats for engaging the pivots connecting the belt members, lugs on the spokes for engaging the lugs on the buckets for holding the buckets relatively to the belt members, and means for holding the trips yieldingly relatively to the belt members.

18. In an elevator, a belt, consisting of members, pivoted together, buckets having lugs, pivoted to the belt members respectively, trips pivoted to the belt members, tongues on the buckets adapted to be engaged by the trips on the neighboring buckets respectively, two wheels, over which the belt is disposed, one of the wheels having spokes with seats for engaging the pivots connecting the belt members, lugs on the spokes for engaging the lugs on the buckets for holding the buckets relatively to the belt members, and a member disposed in the path of the trips for operating them.

19. In an elevator, belt members, pivoted together, buckets having lugs, pivoted to the

belt members respectively, a wheel having spokes with seats for engaging the pivots connecting the belt members, lugs on the spokes for engaging the lugs on the buckets for holding the buckets relatively to the belt members, and a member disposed in the path of the buckets for moving them to a position for the engagement of their lugs with the lugs on the spokes.

20. In an elevator, a belt, consisting of members, pivoted together, buckets having lugs, pivoted to the belt members respectively, two wheels, over which the belt is disposed, one of the wheels having spokes with seats for engaging the pivots connecting the belt members, lugs on the spokes for engaging the lugs on the buckets for holding them in position relatively to the belt members, and a member disposed in the path of the buckets for moving them relatively to the belt members.

21. In an elevator, a belt, consisting of members, pivoted together, buckets having lugs, pivoted to the belt members respectively, trips pivoted to the belt members, tongues on the buckets adapted to be engaged by the trips on the neighboring buckets respectively, two wheels over which the belt is disposed, one of the wheels having spokes with seats for engaging the pivots connecting the belt members, lugs on the spokes for engaging the lugs on the buckets for holding the buckets relatively to the belt members, and a member disposed in the path of the buckets for moving them relatively to the belt members.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RUSSELL ELSTNER SNOWDEN.

Witnesses:
EDWARD G. DONLEY,
FRANK H. CATHRAN.