(No Model.)

2 Sheets—Sheet 1.

W. GRIESSER.

CONVEYER.

No. 331,961. Patented Dec. 8, 1885.

Fig. 1.

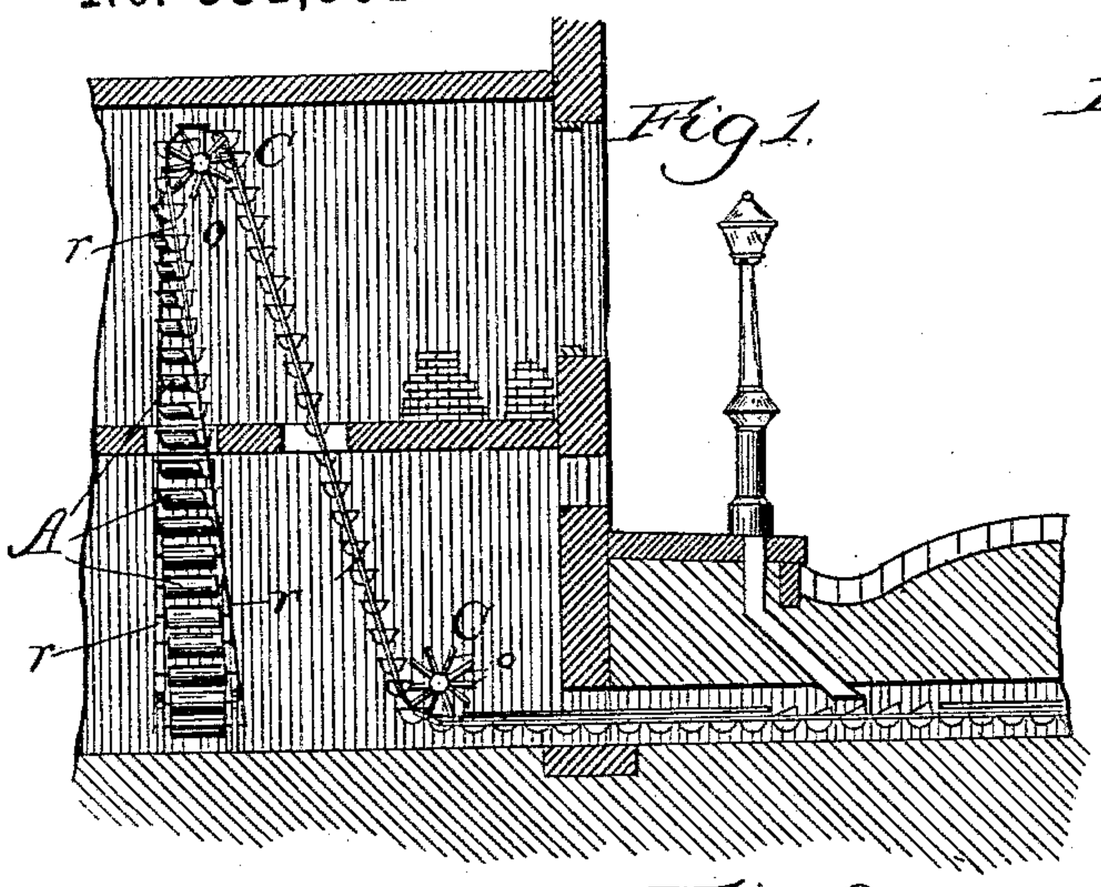


Fig. 2.

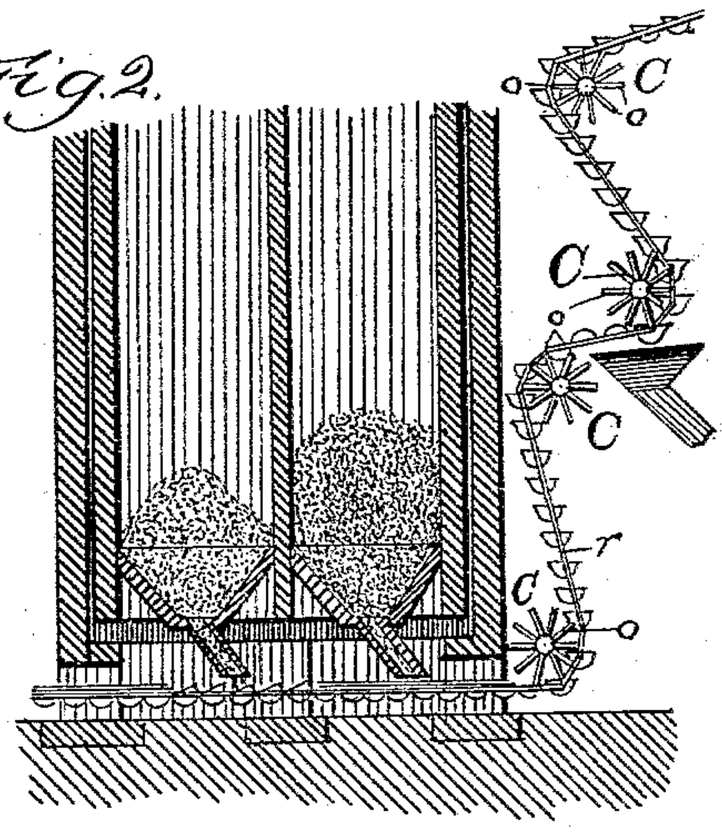


Fig. 3.

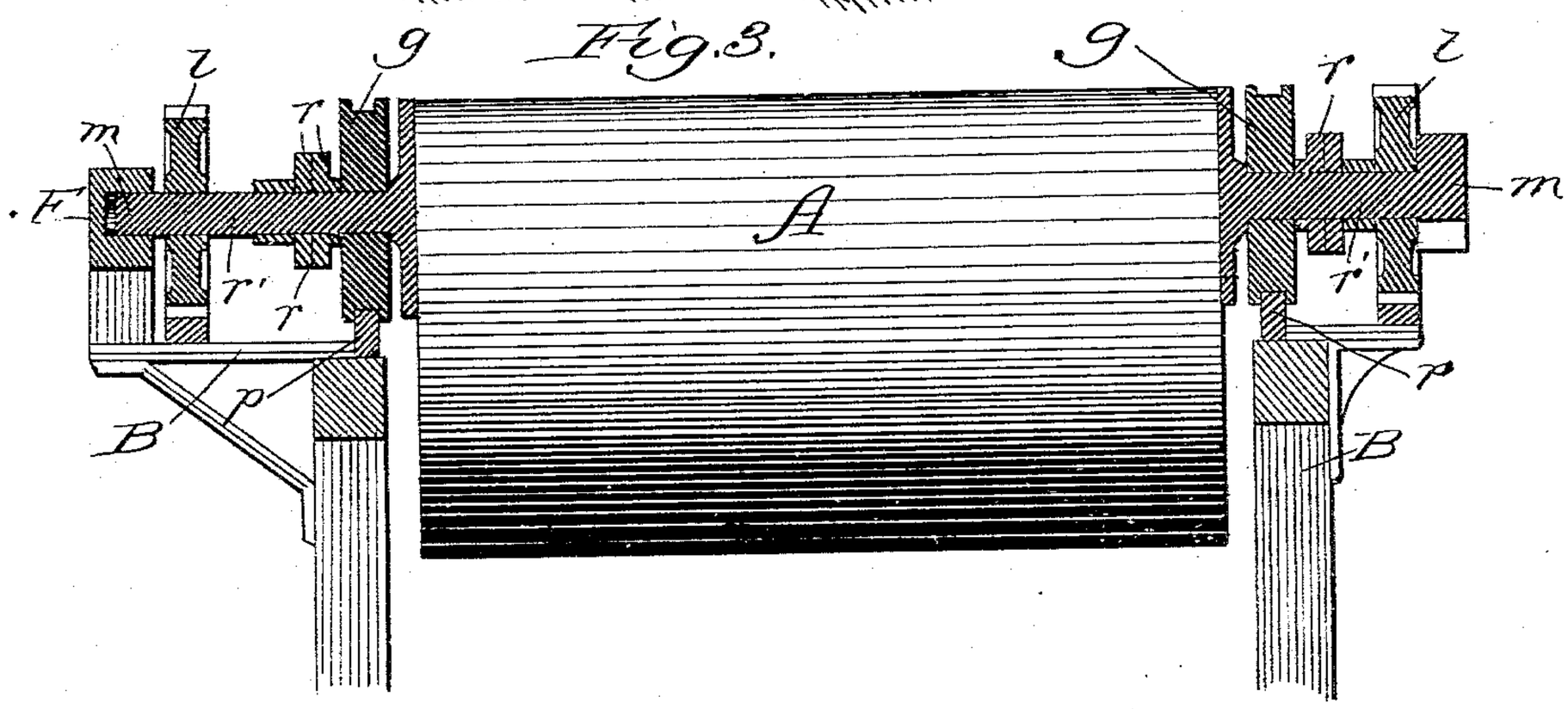
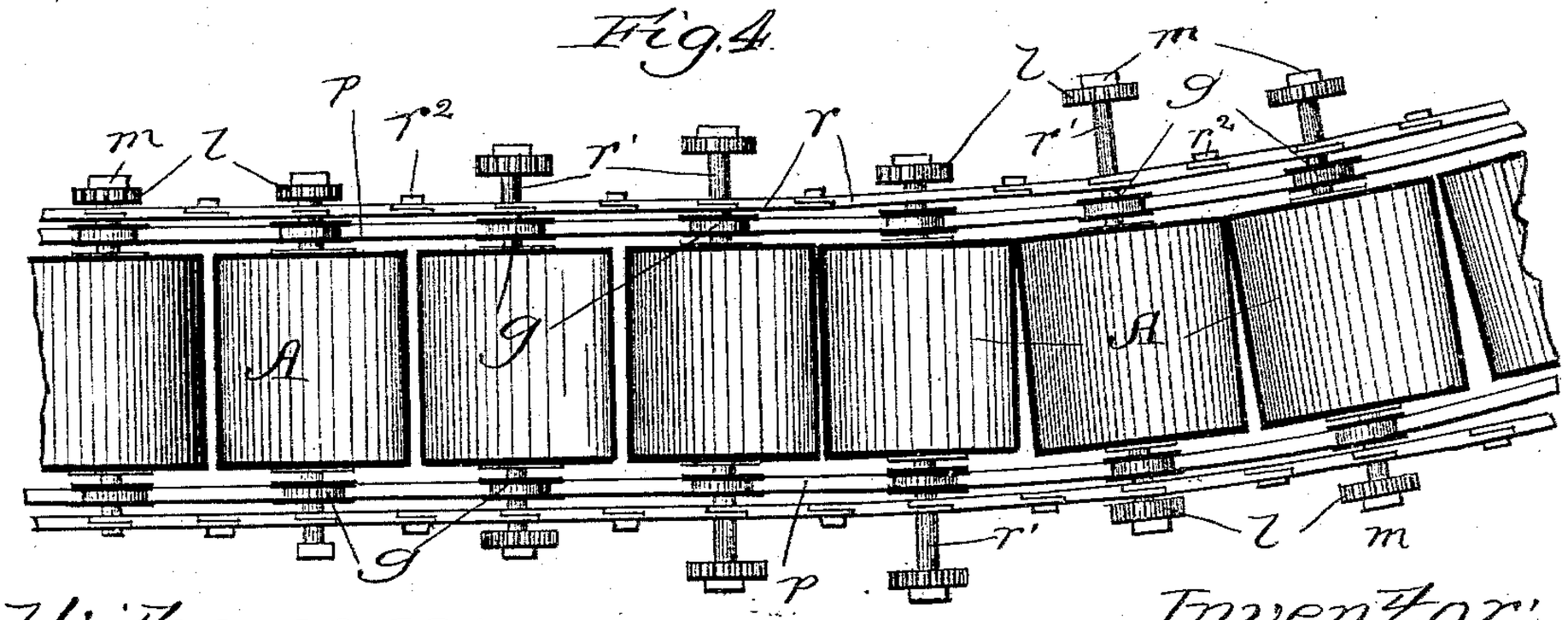


Fig. 4.



Witnesses:
Chas. E. Gaylord
A. S. Paré

Inventor:
William Griesser
By Dyrenforth & Dyrenforth
Attorneys

(No Model.) 2 Sheets—Sheet 2.

W. GRIESSER.

CONVEYER.

No. 331,961. Patented Dec. 8, 1885.

Fig. 5.

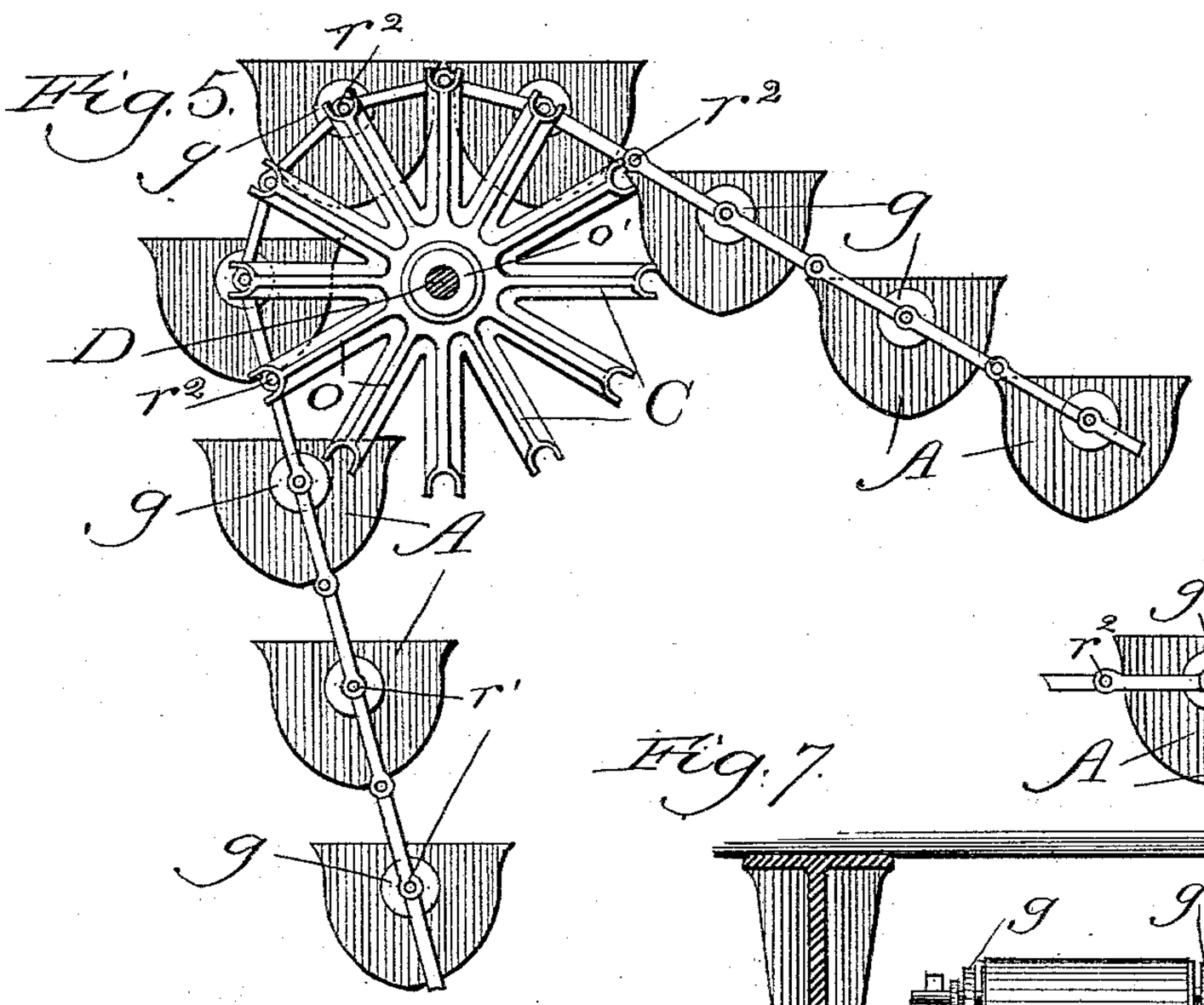


Fig. 6.

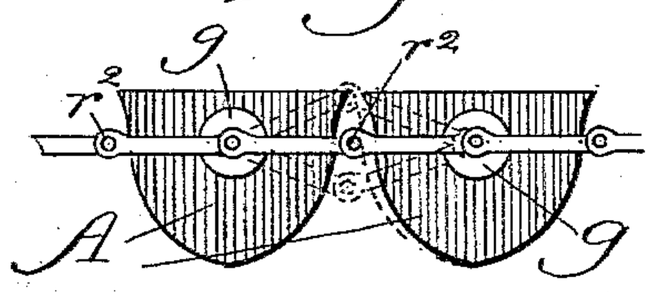


Fig. 7.

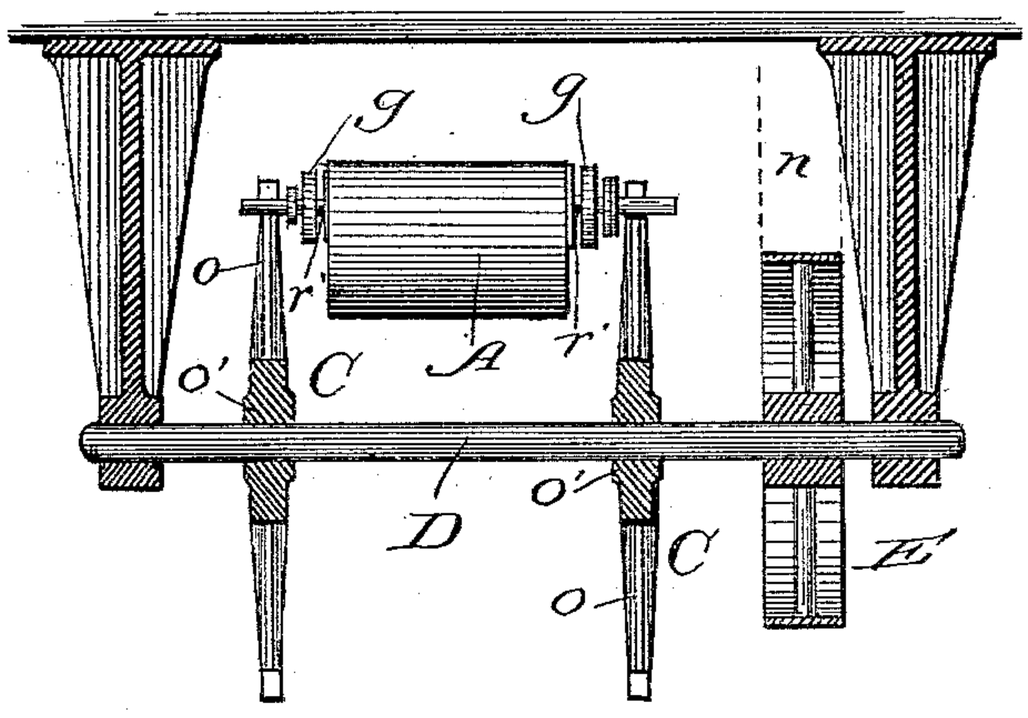
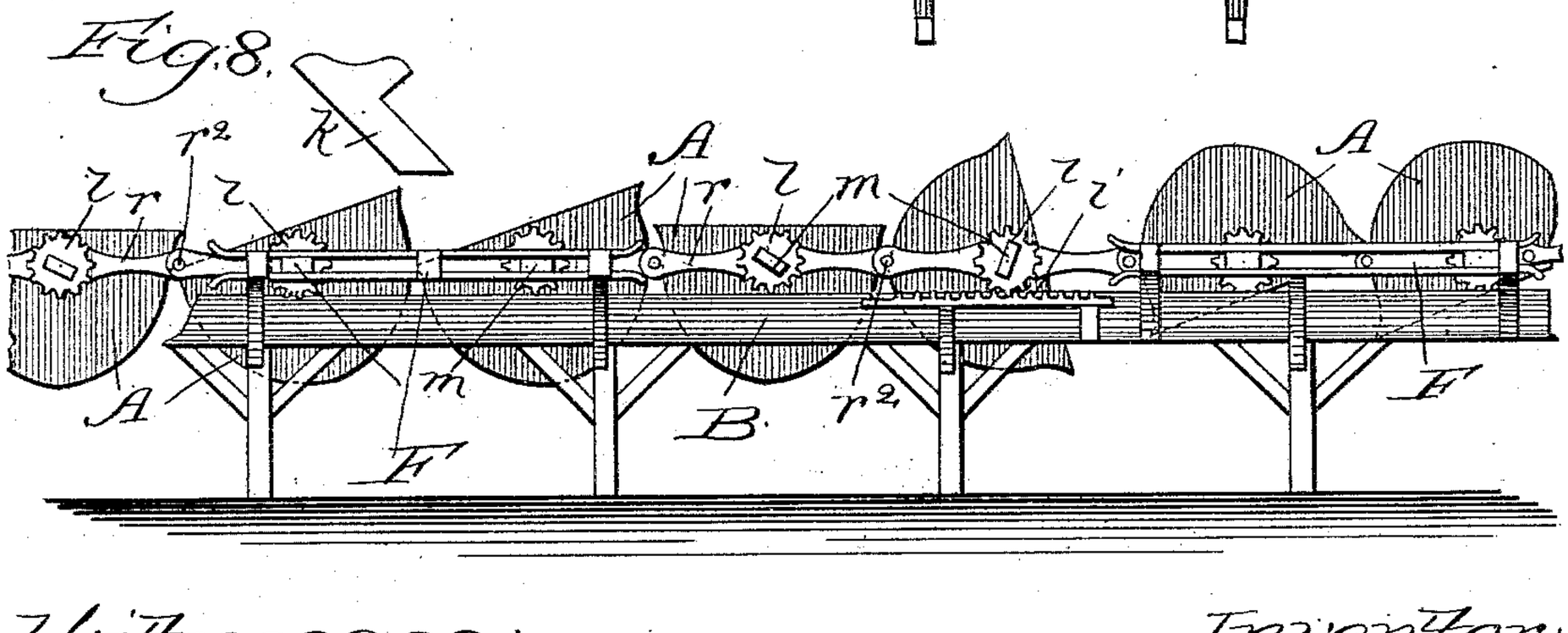


Fig. 8.



Witnesses:
Chas. E. Gaylord.
A. S. Pare

Inventor:
William Griesser
By Dyrenforth & Dyrenforth
Att'ys

UNITED STATES PATENT OFFICE.

WILLIAM GRIESSER, OF CHICAGO, ILLINOIS.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 331,961, dated December 8, 1885.

Application filed September 10, 1885. Serial No. 176,654. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GRIESSER, a subject of the Emperor of Germany, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Conveyer; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device of novel construction for use particularly in connection with elevators, breweries, and the like, for the purpose of transferring grain from one place to another, though, as will hereinafter more fully appear, its use is not confined to such connection, (the same only forming a practical adaptation for existing requirements,) as it is intended that the device shall permit the carrying out of a system of transportation to extreme points at great distances apart and to points between such extremes.

It is my object to provide an endless series of receptacles for the transportation of material of any description, whether solid or liquid, and which shall, whatever the direction of their movement, be maintained in normally-upright position. It is further my object to provide means for controlling the receptacles of the conveyer, whereby they shall be automatically emptied of their contents by capsizing at desired points and readjusted after being emptied.

To these ends my invention consists in the general construction of my device, and also in various details of construction and combinations of parts, all as hereinafter more fully set forth.

Referring to the drawings, Figure 1 represents my conveyer as passing from an underground conduit in a street into a warehouse, whence goods are loaded into the receptacles, to be carried to their respective destinations. Fig. 2 shows it in connection with an elevator, from which the grain in bins is directed through chutes into the moving receptacles. Fig. 3 is a view showing a receptacle in elevation, and details of the supporting mechanism for the same in section; Fig. 4, a plan view of a portion of the endless series of receptacles; Fig. 5, a sectional view of a portion of my device, representing, larger than shown in Figs. 1 and 2, the receptacles in series and the means for drawing them; Fig. 6, a view in elevation of two receptacles, showing the means for connecting them; Fig. 7, a section taken through the driving-wheels in engagement with a receptacle, and through the drive-pulley upon the shaft; and Fig. 8 a side elevation of a portion of the series of receptacles, illustrating various details and the operations effected by the same.

A denotes the receptacles, which may be of the form shown, or of any other form to render them suitable for their purpose.

Receptacles of the number required are connected together by links r, two of which are pivotally adjusted on opposite sides of each receptacle upon shafts r', extending laterally therefrom, and to the links on adjacent receptacles, by means of pivots r^2. This construction affords a flexible connection for the receptacles, which are joined in an endless series, and permits them, in turning upon curves while in motion, as hereinafter described, to maintain their normally upright or vertical positions without interfering with each other.

Upon each shaft r', and loosely mounted thereon, is a wheel, q, the wheels upon opposite sides of the receptacles serving to support the latter, when moving on a horizontal plane, upon the rails p of a track, B.

C is the driving mechanism, which consists of spokes o, extending radially from a hub, o', supported upon a shaft, D, to rotate with the latter, which is journaled in suitable bearings, as shown in Fig. 7, and actuated by means of the pulley E, connected by a drive-belt, n, with the engine (not shown) which furnishes the power. The extremity of each spoke o is forked, as shown, and the mechanism C is set in duplicate upon the shaft D, to cause in its rotation the forked ends of the spokes to engage with the shaft r' of the receptacles and drive them in the direction of rotation of the device C. Where a short endless series of receptacles moving in a straight line is employed, a pair of devices, C, at each extremity is all that is required, the power necessary to drive the series being under all circumstances applied only to one set of drive-wheels C; but where the course of travel is changed, as represented in Figs. 1 and 2, a set of the drive-wheels should be provided at each bend.

At the point or points where the contents of the receptacles are to be discharged means are provided for effecting their automatic overturning, and the following is a description of the same. Upon the extremity of each shaft r' an oblong guide-block, m, is provided, to extend transversely across the end of the shaft at an angle to the receptacle in its vertical or upright position, and inside of the block m, secured upon each shaft, is a pinion, l, to engage with a rack, l', located at the place of discharge, for the purpose of causing, by such engagement, the overturning of each receptacle, the pinions upon which engage with such racks. In their partially-capsized positions the blocks m enter between guides F, expanded, as shown, toward their extremities, to receive them and maintain the receptacles thus capsized to insure entire discharge of their contents, even with rapid movement of the conveyer. When the blocks m clear the guides F, the receptacles of their own accord swing back upon their pivotal bearings and resume their normally-upright positions. Besides the guides F, for the purpose above described, similar guides, F', (shown in Fig. 8,) may be provided at the place of loading the receptacles, particularly from a chute, k, placed obliquely to cause the blocks m to enter between the guides and tip the receptacles to the angle of the chute as they pass underneath the latter.

From the foregoing it will readily be seen that the receptacles, unless purposely overturned to effect the discharge of their contents, are always maintained in a perfectly upright or vertical position, whether they move in a horizontal or other plane, and thus afford a carrier for conveying liquid as well as solid material.

Though my invention, as hereinbefore stated, is intended to supply an immediate want in connection with elevators and the like, as indicated in Fig. 2 of the drawings, I design that it shall serve to carry out a system for the general delivery of material, including mail, from a central point, when the pinions upon each receptacle may be set by causing, for instance, to illustrate one way of effecting it, as shown in Fig. 4, the shaft r' to extend laterally to varying distances upon the different receptacles to engage with racks l' and bring the guides F into play, the rack and guides being properly located at the place of the discharge to effect their purpose of emptying the receptacles.

What I claim as new, and desire to secure by Letters Patent, is—

1. A conveyer having flexibly-connected receptacles pivotally hung in their connecting medium in endless series, whereby they are maintained in normally-upright position, and means, substantially as described, for driving the series of receptacles, substantially as set forth.

2. A conveyer having receptacles linked together in endless series, and pivotally hung in the links, to be maintained in normally-upright position, in combination with drive-wheels C at opposite extremities of the series, to rotate and propel the receptacles, substantially as described.

3. A conveyer having receptacles linked together in endless series, and pivotally hung in the links, to be maintained in normally-upright position, in combination with drive-wheels C at opposite extremities of the series, having radial spokes o, provided with forked extremities, to engage with the pivotal connections of the receptacles and links, and propel the conveyer by their rotation, substantially as described.

4. A conveyer having receptacles linked together in endless series, and pivotally hung in the links, to be maintained in normally-upright position, in combination with drive-wheels C at opposite extremities of the series, and between the said extremities, to rotate and propel the receptacles, substantially as described.

5. A conveyer having receptacles A, provided with lateral shafts r', links r, flexibly connecting the receptacles at their shafts in endless series, pinions l upon the shafts, drive wheels C at opposite extremities of the series, to rotate and propel the receptacles, and racks l', to be engaged by the pinions and overturn the receptacles, substantially as described.

6. A conveyer having receptacles A, provided with lateral shafts r', carrying guide-blocks m, links r, flexibly connecting the receptacles at their shafts in endless series, pinions l upon the shafts, drive-wheels C at opposite extremities of the series, to rotate and propel the receptacles, racks l', to be engaged by the pinions and overturn the receptacles, and guides F, to receive the guide-blocks m and maintain the receptacles in their overturned position until released, substantially as described.

7. A conveyer comprising, in combination, receptacles A, provided with lateral shafts r', carrying guide-blocks m, and wheels q, links r, flexibly connecting the receptacles at their shafts in endless series, pinions l upon the shafts, drive-wheels C, to rotate and propel the receptacles, track B, provided with rails for the wheels q, racks l', to be engaged by the pinions and overturn the receptacles, guides F, to receive the guide-blocks m and maintain the receptacles in their overturned position until released, and guides F', to receive the guide-blocks m and effect tipping of the receptacles, the whole being constructed and arranged to operate substantially as described.

WILLIAM GRIESSER.

In presence of—
MASON BROSS,
JAMES THORPE.