

No. 699,278.

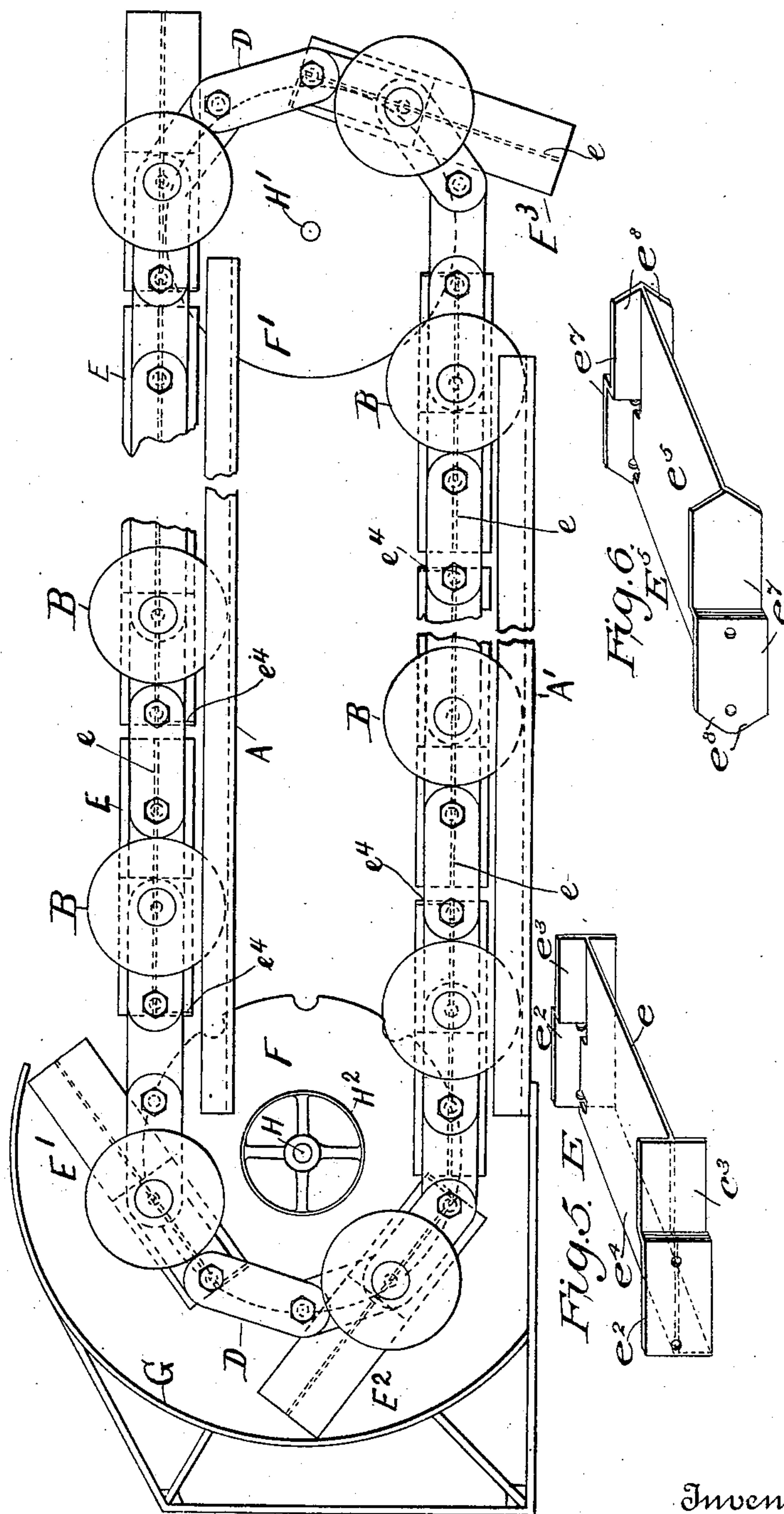
Patented May 6, 1902.

R. A. ZWOYER.
CONVEYER.

(Application filed Aug. 23, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
M. H. Berg.
William P. Frauch

Inventor
Kolland A. Zwoyer
By his Attorney
A. A. de Borneville

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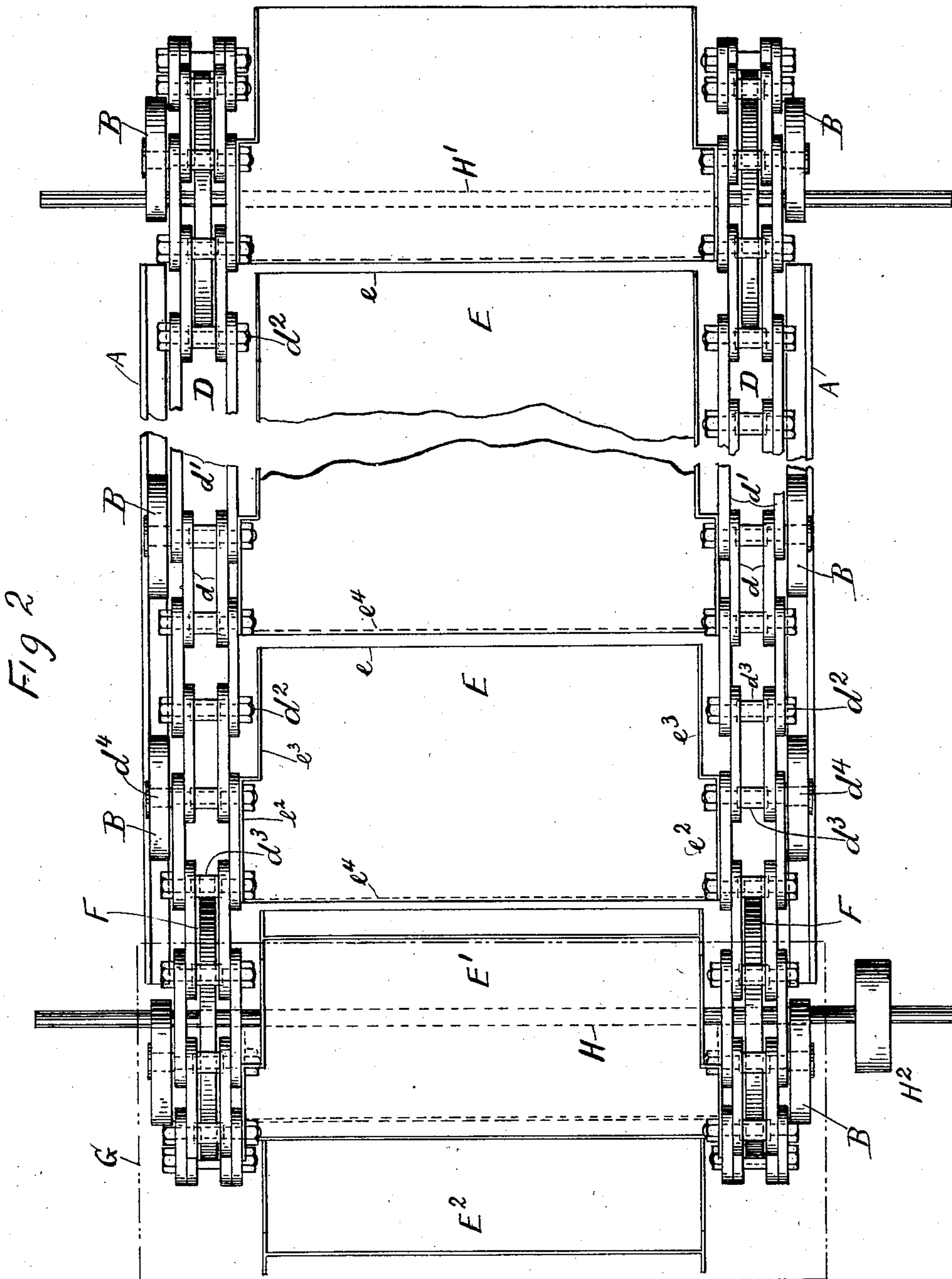
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Witnesses
M. H. Berg.
William P. French

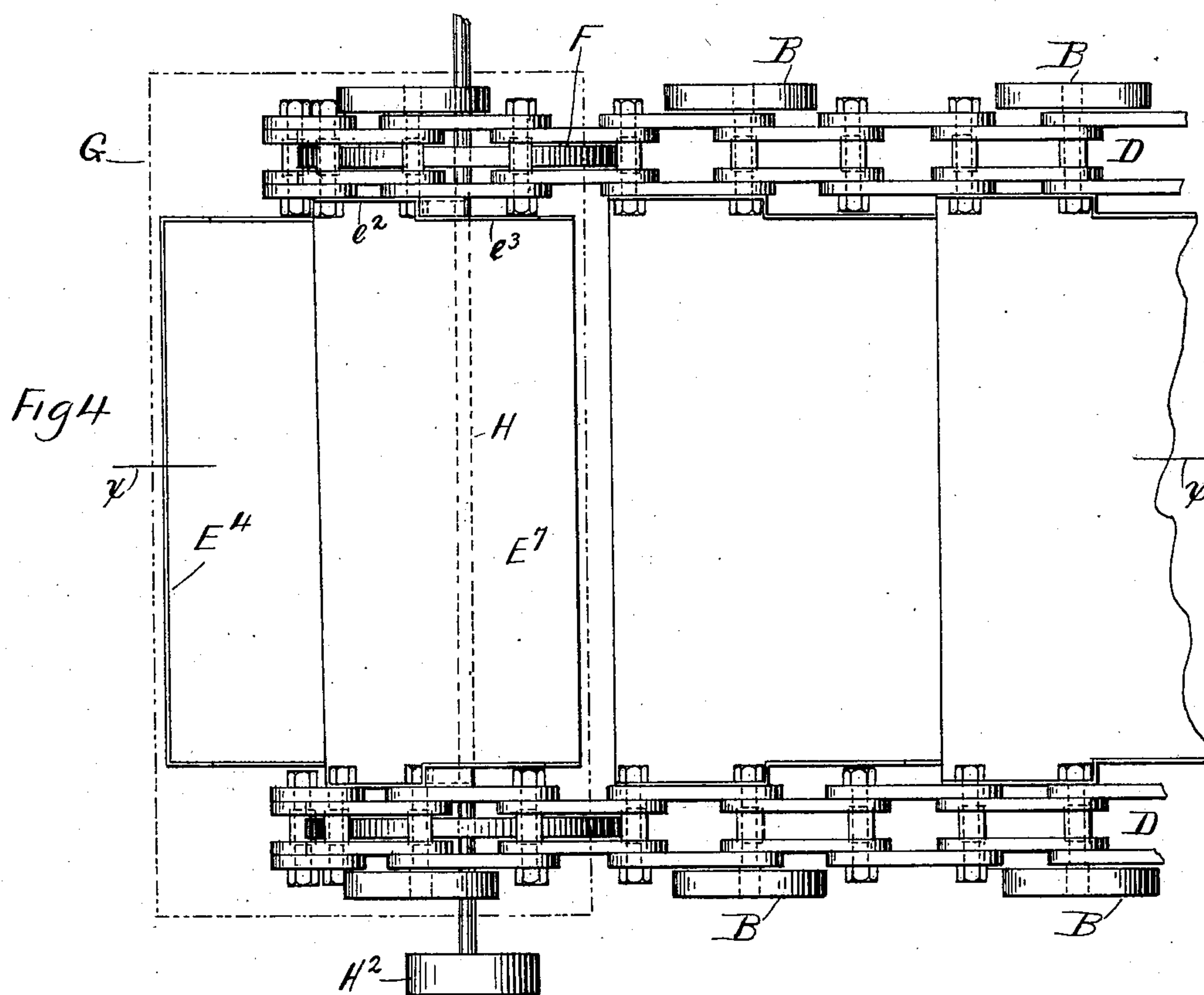
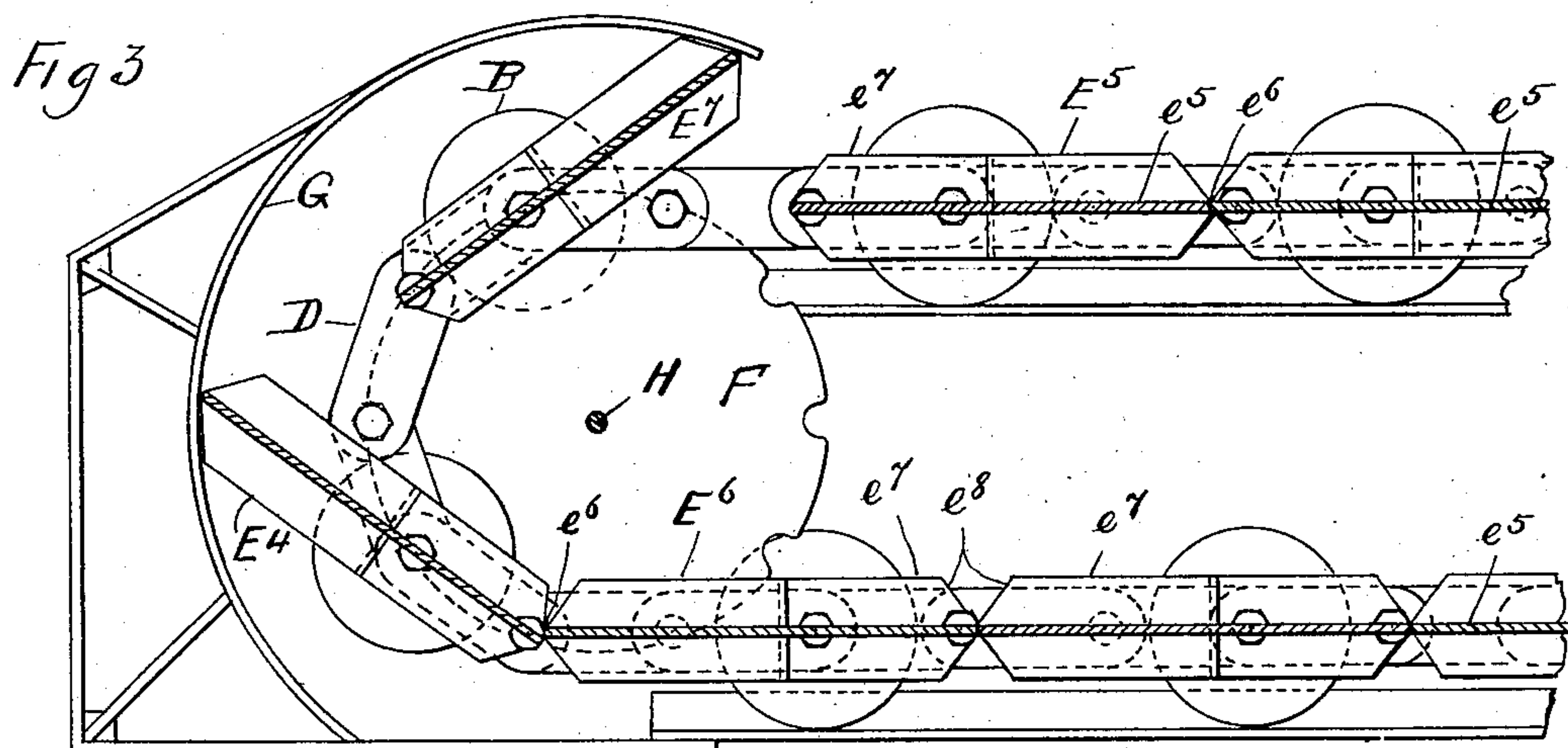
Inventor
Rolland A. Zwoyer
By his Attorney
J. de Borneville

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3 Sheets—Sheet 3.



Witnesses
M. H. Berg.
William P. French

Inventor
Roland, A. Zwoyer
By his Attorney
A. A. de Bonneville

UNITED STATES PATENT OFFICE.

ROLLAND A. ZWOYER, OF PORTSMOUTH, RHODE ISLAND.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 699,278, dated May 6, 1902.

Application filed August 23, 1901. Serial No. 72,993. (No model.)

To all whom it may concern:

Be it known that I, ROLLAND A. ZWOYER, a citizen of the United States, and a resident of Portsmouth, in the county of Newport and State of Rhode Island, have invented certain new and useful Improvements in Conveyers, of which the following is a specification.

This invention relates to conveyers; and its object is the production of conveyers with self-dumping buckets and with which the material conveyed can be transferred from one bucket to another without spilling, thereby enabling the buckets to carry the material in different horizontal planes and directions without resorting to suspension-rods for the buckets.

Figure 1 shows a fragmentary front elevation of my conveyer. Fig. 2 is a plan view of Fig. 1. Fig. 3 represents a partial vertical section of a modification of my conveyer on a line *xx* of Fig. 4. Fig. 4 shows a top view of Fig. 3. Fig. 5 represents a perspective view of one of the buckets. Fig. 6 is a perspective view of a modified form of bucket.

Referring to Figs. 1 and 2, tracks *A A'* are shown supporting the rollers *B*, to which are journaled the linked drive-chains *D*, the latter carrying the buckets *E*. Sprocket drive-wheels *F* on axles *H* are geared with the linked drive-chains, and the said chains also turn over guide-wheels *F'*, supported on axles *H'*. A curved cover *G* is secured over the wheels *F* and sufficiently distant therefrom to allow the ends of the buckets to just clear the inside face of the said cover. The buckets are of special construction and comprise a central platform *e*, with sides *e² e³*, extending from both sides of the platform, and ends *e⁴*, the latter extending only from one side of the said platform, between the sides of the buckets. The sides *e³* narrow the bodies of the buckets to clear the drive-chains.

The linked drive-chains *D* consist of the inside links *d* and outside links *d'*, connected with bolts *d²*, carrying the ferrules *d³*. Journal-pins *d⁴*, with ferrules *d³*, carry the rollers *B* and also constitute bolts for the linked drive-chains and secure the buckets to the said chains, one of the said journal-pins and an adjacent bolt of the linked drive-chain supporting each side of each bucket.

The ends of the axles *H H'* may be supported in journal-bearings in the usual way, and a

driving-pulley *H²* is shown secured on the axle *H*, although a sprocket-wheel, gear, or other means could be substituted.

In the operation of the conveyer its novel features will become apparent, and for the purpose of demonstrating its novelty the position of the buckets just after engaging with the wheels *F* is designated with the letter *E'*, and during its contact and travel with the said sprocket drive-wheel it is turned bottom side up and assumes a position, as *E²*, the effect of which turning will discharge the material from the bucket *E'* into the bucket *E²* without spilling, the material being carried on one side of the central platform in the upper row of buckets and on the opposite side in the lower row. The ends *e⁴* of the buckets prevent the material escaping when flowing from one bucket to the other, but do not interfere with its escape when dumping, as shown at *E³*, over the guide-wheels *F'*. It will be seen that the journal-pins *d⁴*, which lock the rollers, the links of the chain, and the buckets, are in about the central portion of the said buckets and that the bolts adjacent, which also secure the buckets, are near the ends thereof, by virtue of which disposition the buckets are tipped, as shown at *E'*, *E²*, and *E³*. The cover *G* is added as a further means to prevent the spilling of the material when it is being transferred from one bucket to another. To propel the conveyer, power is applied to the axle *H*, and the conveyer-buckets will automatically transfer their charges when over the guide-wheels *F* from one bucket to its adjacent bucket, and the contents of the buckets will be dumped or emptied when they turn over the guide-wheels *F'*.

Referring to Figs. 3, 4, and 6, the buckets *E⁵* are shown without any ends, as *e⁴*, Figs. 1, 2, and 5. The buckets consist of the central platforms *e⁵*, the ends of which, as *e⁶*, butt against each other when the said buckets are propelled in straight lines and are sufficiently close when turning with the sprocket drive-wheels *F* to prevent any of their contents to escape between their ends, as shown at *E⁴* and *E⁶*. Sides *e⁷*, with sloping ends *e⁸*, extend on both sides of the central platforms *e⁵*.

The remaining features of the conveyer are

similar to the appurtenances shown in Figs. 1 and 2.

Having described my invention, I desire to secure by United States Letters Patent and
5 claim—

1. A conveyer comprising, buckets provided with a central platform in each bucket, sides extending above and below the said platform, an end projecting from the platform of each
10 bucket and joining the side thereof, rollers journaled to the buckets; linked drive-chains pinned to the buckets, sprocket drive-wheels geared with the linked drive-chains, and guide-wheels for the latter.

15 2. A conveyer comprising, buckets provided with a central platform in each bucket, sides extending above and below the platform, an end extending from one side of the platform and joining the sides at one end of each bucket,
20 rollers journaled to the buckets, linked drive-chains, two of the connecting-pieces of the chain journaled to each side of each bucket, sprocket drive-wheels geared with the linked drive-chains, and guide-wheels for the buck-
25 ets.

3. A conveyer comprising, buckets provided with a central platform in each bucket, sides extending above and below the platform, jour-
30 nal-pins extending from the central portion of the buckets, drive-chains and rollers journaled with the said pins, a bolt extending from one end of each side of the buckets and journaled to the drive-chains, sprocket drive-
35 wheels geared with drive-chains, and guide-wheels for the said chains.

4. A conveyer comprising, buckets provided with a platform in the central portion of each bucket, sides extending above and below the said platform, an end joining the sides on one side of the platform, linked drive-chains, roll- 40
ers supporting the linked drive-chains, a pin connecting the rollers, chain and buckets in the middle portion of the buckets, a bolt connecting the linked chain with the end of a bucket, sprocket drive-wheels, and guide- 45
wheels operating with the linked chain, a curved cover extending over the drive-wheels, a sufficient distance therefrom to clear the buckets.

5. A conveyer comprising, buckets provided 50
with a central platform in each bucket, sides extending above and below the platform, jour-
nal-pins extending from the central portion of each bucket, drive-chains and rollers jour-
55 naled with the said pins, a bolt extending from one end of each side of the buckets and jour-
naled to the drive-chains, sprocket drive-
wheels geared with the drive-chains, a curved cover extending over the drive-wheels, and a
60 sufficient distance therefrom for the clearance of the buckets, guide-wheels for the buckets, and tracks for the rollers.

Signed at Portsmouth, in the county of New-
port and State of Rhode Island, this 10th day
of August, A. D. 1901.

ROLLAND A. ZWOYER. [L. S.]

Witnesses:

HENRY F. ANTHONY,
E. B. A. ZWOYER.