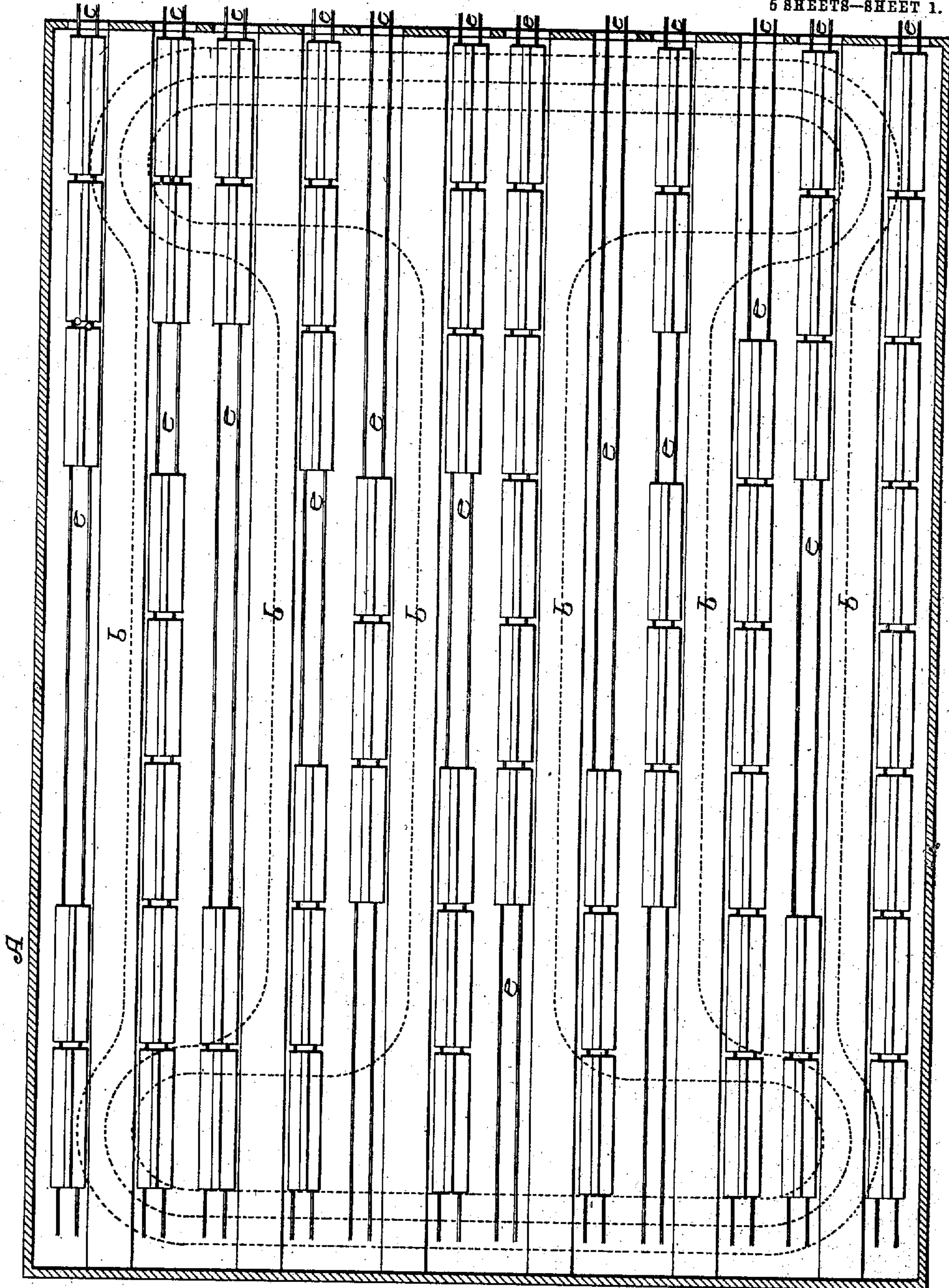


966,275.

M..B. WATERMAN.  
FREIGHT HANDLING PLANT.  
APPLICATION FILED MAY 10, 1910.

Patented Aug. 2, 1910.

5 SHEETS—SHEET 1.



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Fig. 1.

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APPLICATION FILED MAY 10, 1916.

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5 SHEETS—SHEET 2.



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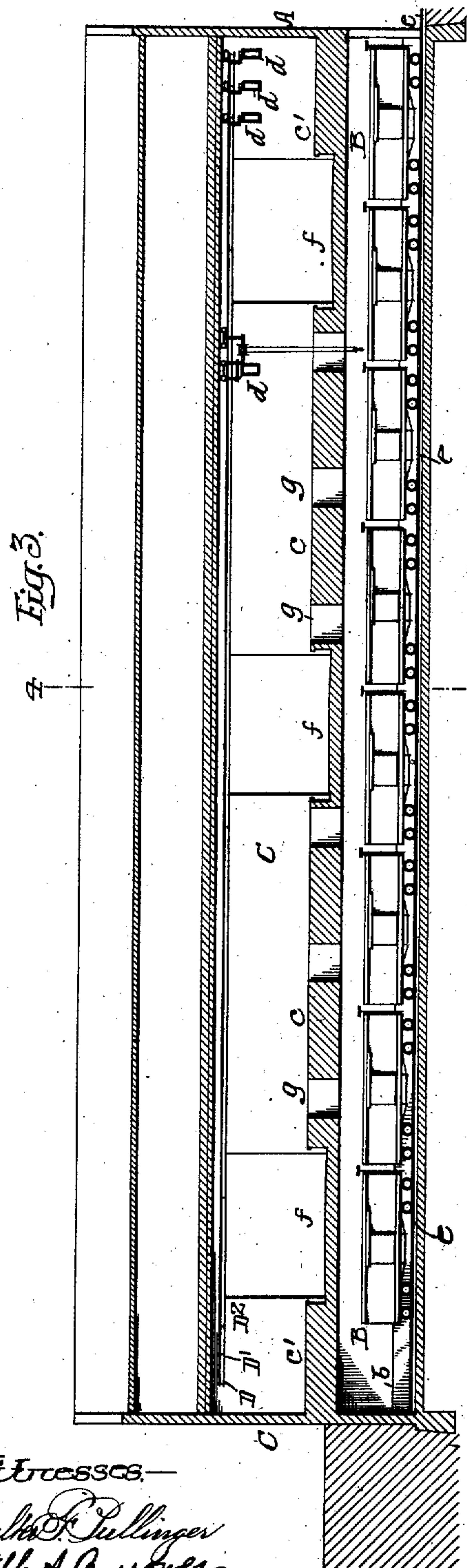
Harriet Wilson

**M. B. WATERMAN.**  
**FREIGHT HANDLING PLANT.**  
**APPLICATION FILED MAY 10, 1910.**

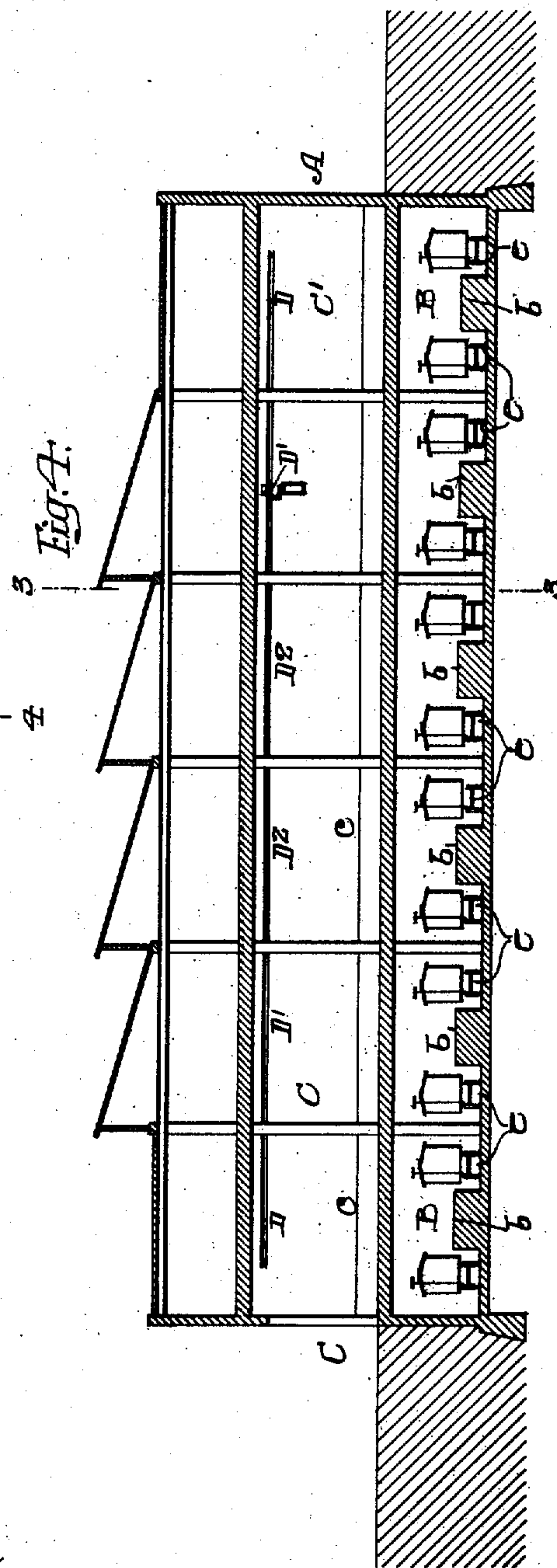
**Patented Aug. 2, 1910.**

5 SHEETS--SHEET 3.

966,275.



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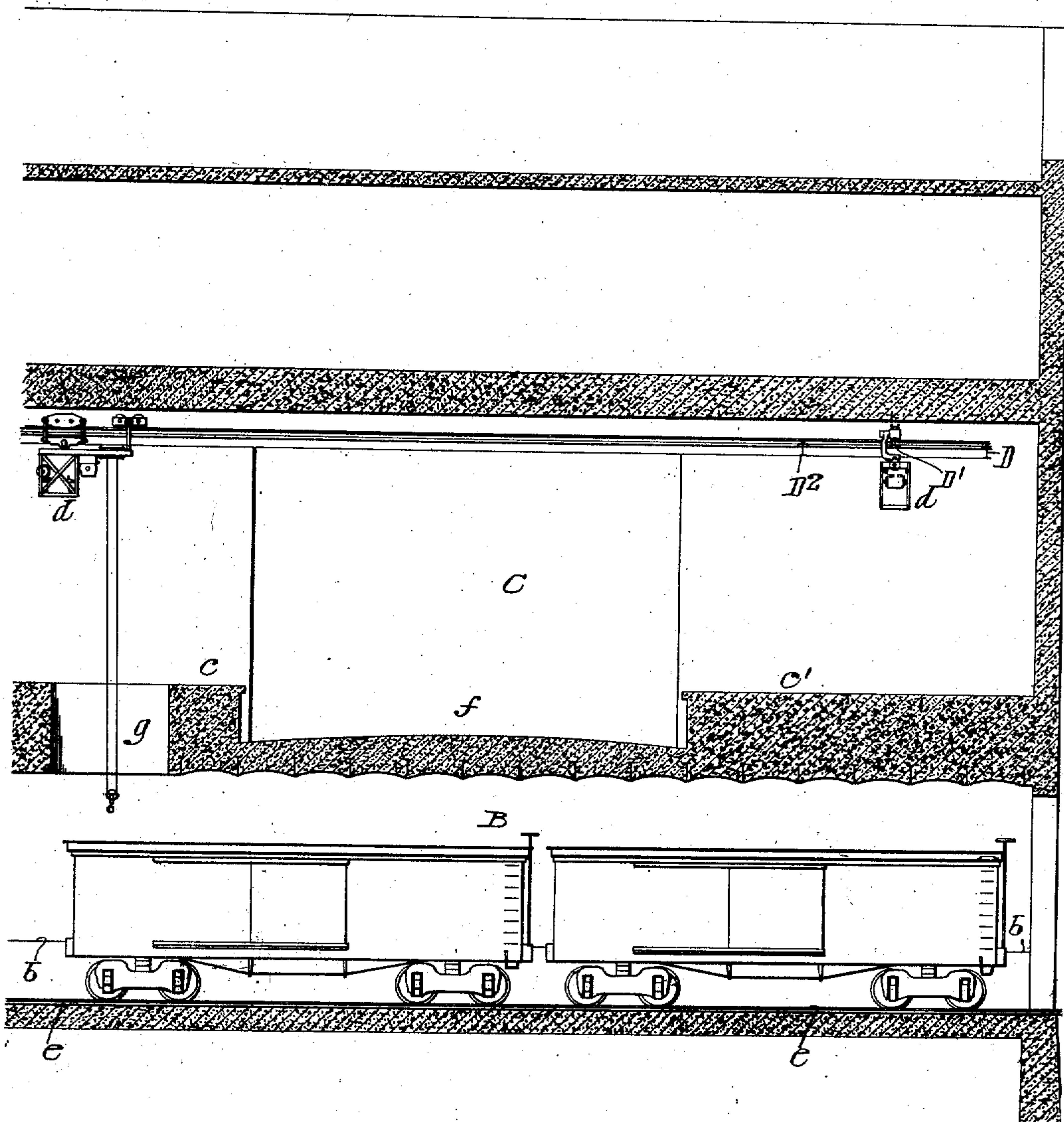


966,275.

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5 SHEETS—SHEET 4.

*Fig. 5.*

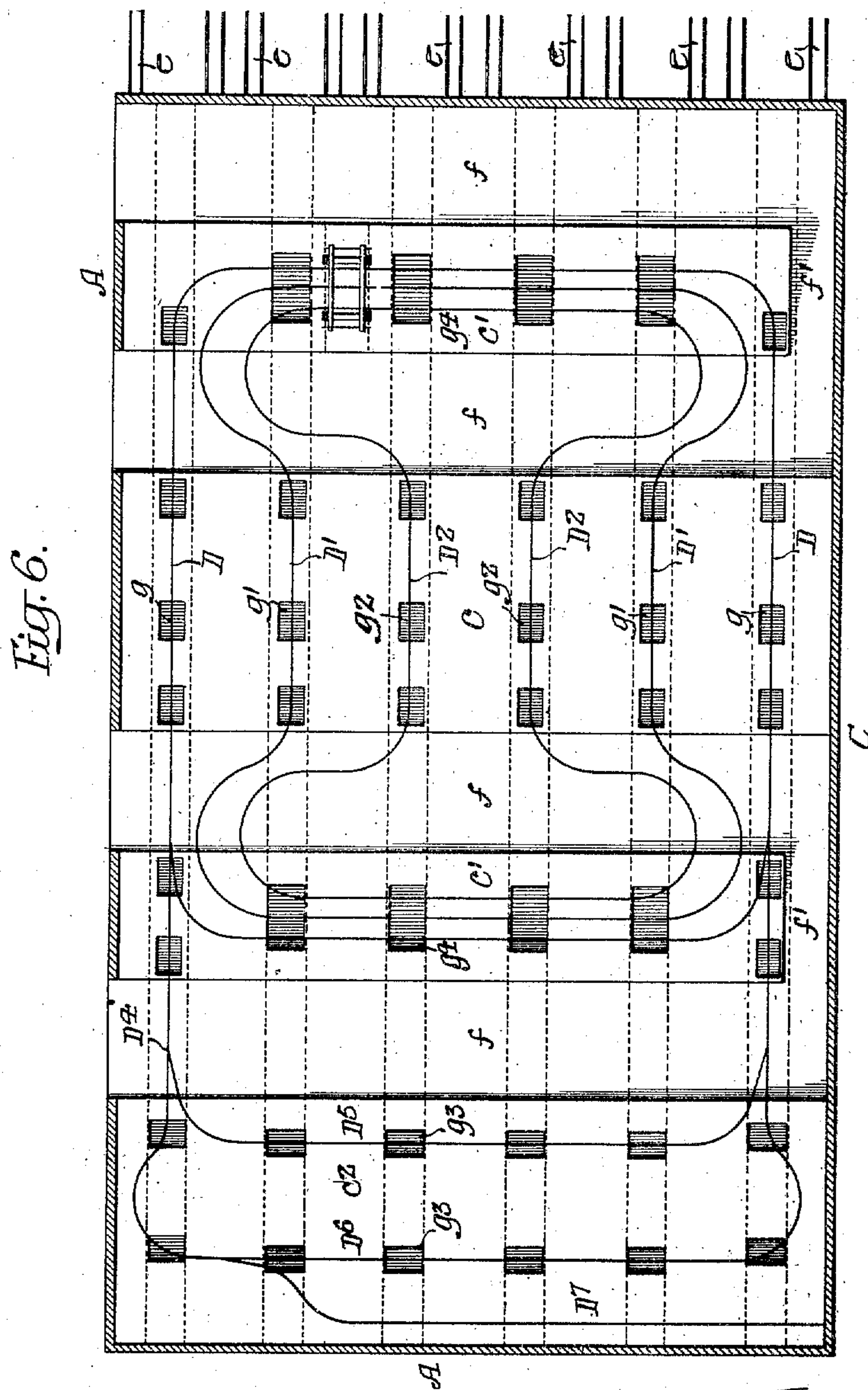


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# UNITED STATES PATENT OFFICE.

MARCUS B. WATERMAN, OF AMBLER, PENNSYLVANIA, ASSIGNOR TO THE J. M. DODGE COMPANY, OF NAUGATUCK, CONNECTICUT, A CORPORATION OF CONNECTICUT.

## FREIGHT-HANDLING PLANT.

966,275.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Application filed May 10, 1910. Serial No. 560,505.

*To all whom it may concern:*

Be it known that I, MARCUS B. WATERMAN, a citizen of the United States, residing in Ambler, Montgomery county, Pennsylvania, have invented certain Improvements in Freight-Handling Plants, of which the following is a specification.

My invention relates to certain improvements in freight handling plants in which the railway terminal platforms are separate from and independent of the platforms receiving or delivering freight from and to wagons.

The object of my invention is to construct a freight handling plant of two floors, one above the other, the lower floor having platforms spaced apart, with tracks between the platforms for the freight and cars, and the upper floor having platforms spaced apart by driveways and telpher tracks arranged above the second floor adapted to transfer freight from one floor to the other, through suitable hatchways, and to deliver the freight at any point desired at either floor.

A further object of the invention is to arrange the telpher rails so that the telfers will all travel in the same direction; and a still further object of the invention is to arrange two or more telpher rails close together above one platform, so that goods can be readily transferred from one telpher to another and distributed to any point on either floor, and to provide a transfer, whereby a telpher can be shifted from one track to another.

In the accompanying drawings,—Figure 1, is a sectional plan view illustrating the lower floor of a freight handling plant illustrating my invention; Fig. 2, is a sectional plan view of the upper floor; Fig. 3, is a longitudinal sectional elevation on the line 3—3 Fig. 4; Fig. 4, is a transverse sectional elevation on the line 4—4 Fig. 3; Fig. 5, is an enlarged view of a portion of Fig. 3; Fig. 6, is a view of a modified form of arrangement of the platforms and telpher tracks. Fig. 7, is a view showing several rails connected by switch rails.

In the present instance A is a building of two floors, having a lower floor B and an upper floor C. The lower floor is used for inbound and outbound freight cars, and the upper floor C is for the delivery and receipt of goods by wagon, and for the storage of goods.

The building can be covered with any suitable roof or may be left open, if desired, and supports provided for the telpher rails D which are graded sufficiently above the platforms of the floor C to allow sufficient head room.

Referring in the first instance to Figs. 3 and 4, the floor B has a series of longitudinal platforms *b* spaced apart a sufficient distance to allow two sets of tracks *e* between the platforms. These tracks may communicate with any track system outside of the building, and some of the tracks may be used wholly for inbound freight, while others may be used only for outbound freight, or all of them may be used for inbound and outbound freight, as desired, depending considerably upon the arrangement of the tracks of the railway using the plant. In the present instance the tracks and platforms of the lower floor B run longitudinally of the building. The platforms *c—c'* of the upper floor C in the present instance run transversely of the building and at right angles to the platforms of the lower floor.

The two platforms *c—c* are comparatively wide, while the end platforms *c'* are narrow in the present instance. Between the platforms are driveways *f—f* for wagons, and these driveways are connected at one side of the building by driveways *f'*, so that the wagons or drays can be driven into the building from one side and can discharge or receive goods from any one of the platforms.

*g—g'*, *g*<sup>2</sup> are hatchways extending through the platforms *c—c*, and directly above the platforms *b* of the lower floor.

D—D'—D<sup>2</sup> are three telpher tracks in the present instance suspended from the ceiling or rafters of the upper floor C, and these telpher tracks extend over the several platforms *c—c'*, and directly over the hatchways. Each track is continuous, having loops at each end, and all three tracks are arranged close together and extend transversely of the building and over the platforms *c'*, and extend longitudinally over the two platforms *c—c* and are so arranged as to extend over the several hatchways. In the present instance the outer track D extends over the hatchways *g*, and the track D<sup>2</sup> extends over the hatchways *g*<sup>2</sup>. Above every hatchway there is a telpher track; the tracks are arranged close together above the platforms *c'* so that when it is desired to shift



a load from one telpher to another the load is carried by one telpher to a platform  $c'$  and picked up by another telpher on one of the other tracks. By this means a load can be discharged through any of the hatchways.

The telpers  $d$  may be of any form desired, but I preferably use the form illustrated in Fig. 5, consisting of a pair of trolleys, from which is suspended the cage and the hoisting mechanism, and the operator travels with the telpher.

In the arrangement illustrated in Figs. 1 and 2, the telpers on the several tracks travel in the same direction and no switches are used, but I prefer to mount above one of the platforms  $c'$ , where the tracks are close together, a transverse carriage  $D^3$  having rails, so that when it is desired to transfer a telpher from one rail to another it can be readily done at this point.

In Fig. 6, I have illustrated a modification of the plant in which an additional platform  $C^2$  is used and the outer telpher rail  $D$  is connected to a rail  $D^4$ , which is in turn connected to rails  $D^5$ ,  $D^6$ , which extend over hatchways  $g^3$  in the platform  $C^2$ . There is an additional repair track rail  $D^7$  for the reception of any telpers that have to be repaired or are to be thrown out of use for the time being. In this modification there are also hatchways  $g^4$  in the platforms  $c'$ , as well as the hatchways in the central platform  $c$ . The rails  $D^4$  are connected to the rail  $D$  by switch mechanism, and the rail  $D^4$  in turn is connected by switch mechanism to the rails  $D^5$  and  $D^6$ . The construction and arrangement of the platforms and tracks may be modified materially without departing from the essential features of the invention.

In Fig. 7, I have illustrated the several tracks  $D$ ,  $D^1$ — $D^2$  connected by switch rails in the place of the transfer carriage, the switch being so arranged that any of the telpers may be transferred from one rail to another without reversing its direction of movement.

The operation is as follows: The incoming cars can be shifted on to any of the tracks of the lower floor, and the goods removed from these cars and placed upon one of the platforms  $b$ . A telpher is traversed over a hatchway nearest the goods and a hook is passed through the hatchway and the goods are attached thereto and are drawn up through the hatchway, and the telpher is then traversed in the direction of the arrow in the present instance, Fig. 2, so as to deliver the goods at any point desired on the upper platforms  $c$ — $c'$ . If the goods are to be transferred to another car, then the telpher stops above a particular hatchway and the goods are delivered on to the platform on the first floor near the car

for which they are intended. If the telpher does not pass over the particular platform, then the goods are transferred at one of the end platforms  $c'$  from one telpher to another, and this telpher carries the goods to the point desired. All the telpers preferably travel in the same direction, so that there is no confusion in handling the telpers and the material being conveyed.

If it is desired to transfer goods received on the upper floor which are delivered from wagons or drays on to the platforms  $c$ — $c'$ , the telpher picks up the goods and transfers them to a point above a particular hatchway, and then the goods are lowered through the hatchway on to the platform near the car for which they are intended. The goods can be transferred from one platform to another on either the first or second floor by the use of any one or more of the telpers. Scales may be provided at any number of points desired to weigh the goods as they are transferred from one point to another.

The plant can be extended as desired by simply connecting the main loops with additional loops, as illustrated in Fig. 6.

I claim:—

1. The combination in a freight handling plant, of platforms, railway rails between the platforms for the reception of freight cars, a platform for the delivery and removal of goods from the station, with endless telpher tracks arranged over both sets of platforms, so that goods can be transferred from one platform to another, the telpers on any one track moving in the same direction.

2. The combination in a freight handling plant, of platforms, tracks between the platforms for the accommodation of freight cars, other platforms for the delivery and removal of freight to and from the station, a series of endless telpher tracks arranged above both platforms, the telpher tracks being arranged close together above the last mentioned platform and spaced so that a telpher track will be over each of the first mentioned platforms.

3. The combination in a freight handling plant, of two floors, the first floor for freight cars and the second floor for storage and wagon delivery and receipt of goods, platforms on each floor, the second floor having hatchways above the platforms of the first floor, a series of two or more telpher rails above the second floor and looped at each end and arranged close together at one end and extending over the several hatchways, with telpers on the said tracks arranged to travel all in the same direction.

4. The combination in a freight handling plant of two floors, the first floor for freight cars and the second floor for storage and wagon delivery and receipt of goods, plat-



forms on each floor, the second floor having hatchways above the platforms of the first floor, three telpher rails located above the second floor, each rail being independent and endless, the three rails being arranged close together at one end of the plant and over one platform, telfers traversing the rails, so that the goods may be transferred from one telpher to another at the said platform.

5. The combination in a freight handling plant of two floors, the lower floor having longitudinal platforms spaced apart, tracks between the platforms, the second floor having platforms arranged at right angles to those of the first floor and spaced apart by roadways, the second floor platforms having hatchways directly above the platforms of the first floor, three sets of endless telpher rails spaced apart at the center and extending over the hatchways and arranged close together at one end and over one of the transverse platforms, the telfers adapted to travel on said rails.

6. The combination in a freight handling plant of two floors, the lower floor having longitudinal platforms spaced apart, tracks between the platforms, the second floor having platforms arranged at right angles to those of the first floor and spaced apart by roadways, a connecting roadway at one side of the plant communicating with the transverse roadways, the second floor having a series of hatchways above the platforms of the first floor, two or more endless telpher

tracks mounted above the second floor and arranged so as to extend over the several hatchways, the loops at each end of each telpher track extending over two of the transverse platforms of the upper floor and arranged close together, the telpher tracks extending longitudinally over the other platforms being spaced a greater distance apart.

7. The combination in a freight handling plant of a lower and an upper floor, longitudinal platforms spaced apart on the lower floor, tracks between the platforms for freight cars, four transverse platforms on the upper floor spaced apart by roadways, said roadways being connected at one side of the plant, the central platforms having hatchways arranged directly above the longitudinal platforms of the lower floor, endless telpher tracks above the second floor, the longitudinal runs of the telpher tracks extending over the central platforms of the second floor and over the hatchways, the transverse runs on the said tracks extending over the end platforms and arranged closer together than the longitudinal runs, with telfers adapted to the tracks.

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

MARCUS B. WATERMAN.

Witnesses:

WM. E. SHUPE,  
WM. A. BARR.