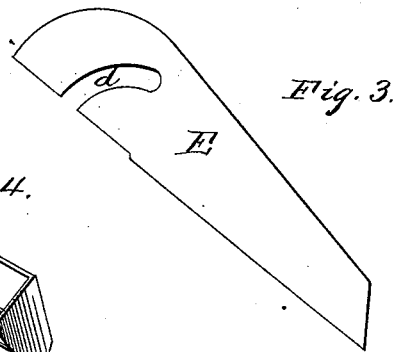
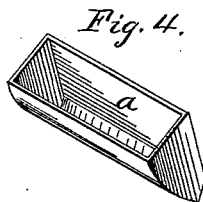
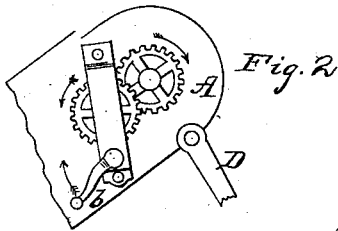
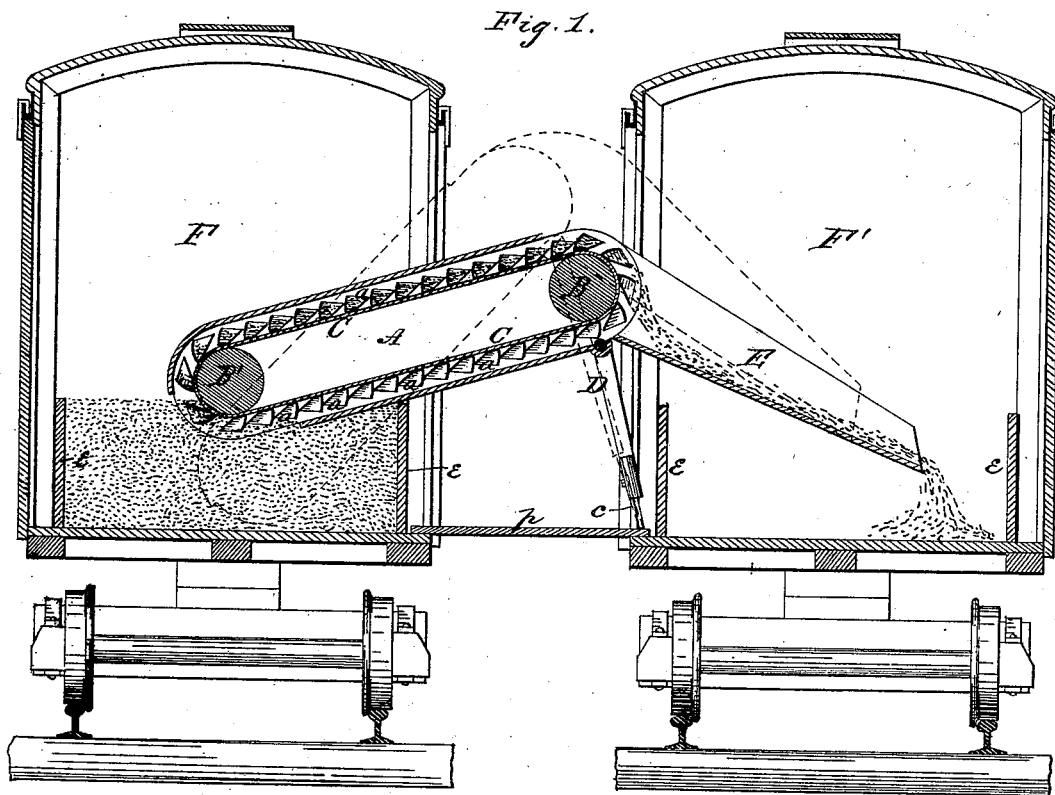


J. T. HOUGH.  
Grain Transfer Machine.

No. 215,818.

Patented May 27, 1879.



Witnesses.  
John W. Patterson  
Thos. Connolly

John T. Hough, Inventor  
by Connolly & Brewster  
Attorneys.

# UNITED STATES PATENT OFFICE

JOHN T. HOUGH, OF PITTSBURG, PA., ASSIGNOR TO ALONZO A. A. HOUGH  
AND SAMUEL J. BARCLAY, OF SAME PLACE, ONE-THIRD TO EACH.

## IMPROVEMENT IN GRAIN-TRANSFER MACHINES.

Specification forming part of Letters Patent No. **215,818**, dated May 27, 1879; application filed April 2, 1879.

*To all whom it may concern:*

Be it known that I, JOHN T. HOUGH, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Transfer-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, and in which—

Figure 1 represents two cars side by side, with my machine in operation, the latter being in section. Fig. 2 shows the manner of gearing the drum. Fig. 3 is a side view of the adjustable chute. Fig. 4 is a perspective of a bucket.

This invention has for its object the construction of a machine for facilitating the transfer of grain and other bulk-freight from car to car on the same level.

It consists, broadly, in an endless belt passing over two drums and carrying buckets, so arranged, in connection with a delivery-chute and an adjustable support, that it may be operated at different inclinations and in different portions of the car, whereby the changing level of the grain in one car may be followed and the load spread uniformly in the other.

In the drawings, A designates the casing, open at both ends. In this are set the two drums B B', one of which is adjustable by sliding housings or other well-known means, for the purpose of placing tension on the belt C, which passes over both drums, and carries on its face the buckets *a*. The drum B is rotated by suitable gearing and a crank or hand-wheel, *b*, thus effecting the required motion of the belt and buckets.

Hinged or otherwise coupled to the upper end of casing A, but preferably on its under edge, is an adjustable leg, D, or support, having extension *c* to make it long or short, as required by the varying condition of the load and the position to be operated in.

A swinging chute, E, is provided with circular slots *d*, which slip over the journals of the drum B, and by revolving thereon may be adjusted to any required inclination.

F F' are respectively the loaded and empty cars, and *e e'* their grain-doors.

In transferring grain from car to car the practice is to switch the full and empty cars side by side, and then by manual labor to shovel the entire load into a chute extending from the one to the other, whence it falls in a heap in the other car, necessitating more labor to spread it out properly. This labor is all the more strenuous for the lift required to clear the grain-doors, which are indispensable. All this consumes valuable time in the transfer-yard, and my invention is intended to avoid all such loss of time, and to render the work of transfer comparatively light and quick.

The operation is as follows: The adjoining outer doors of the cars being opened, a platform, *p*, is laid across from sill to sill for the men to stand upon while operating. The apparatus is placed as shown in Fig. 1, the open lower end or nose dipping into the grain and the chute arranged to deliver at the far or near side or middle of the empty car, as desired. While being thus adjustable the apparatus may also be swung around in any horizontal position permitted by the angle between the door-jambs, so as to deliver into either end of the car. On manipulating the crank the drums revolve with the belt, causing the buckets to dip into the grain, where they successively fill, and are carried up the incline and over the drum B. Here they discharge their contents into the chute, whence it gravitates into the empty car. No shoveling is required further than to merely scrape the loose grain to the nose of the machine when the car is nearly empty. As the operation proceeds the level of the grain falls, necessitating the lowering of the nose. This is done to some extent by its own weight, and, further, by means of the adjustable leg D *c*, which can be arranged to give the nose the required position, as shown by dotted lines.

Thus the obstacle presented by the grain-doors is overcome by the adjustability of the device, and while such is effected a greater inclination is given the chute, enabling it to deliver over a more extended surface in the other car.

By the old method several hours are con-

sumed in transferring a load of grain. I accomplish it with my invention in a few minutes, and while thus facilitating the transfer I avoid the labor of shoveling.

The machine is light, portable, and easily operated. Its cost is comparatively low, and it is independent of the form or construction of the car; hence no alterations in the rolling stock of railroads will be necessary to inaugurate its use.

I claim as my invention—

1. The grain-transfer machine consisting of two drums, one of which is operated by suitable means, an endless belt passing over them, carrying curved faced buckets, in combination with and surrounded by a casing, opening at one end into a chute and at the other to form a self-feeding nose, substantially

as described, whereby the buckets are adapted to pick up the grain from a level floor.

2. In combination with the drums, belt, buckets, and casing, a leg, D, having longitudinal adjustment and pivoted to the casing, substantially as shown, whereby the leg may be lengthened or shortened at will.

3. The combination of casing A, endless belt C, buckets *a*, and drums B B' with the chute E, having circular slot *d*, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 19th day of March, 1879.

JOHN T. HOUGH.

Witnesses:

T. J. McTIGHE,

THOS. CONNOLLY.