No. 812,009. PATENTED FEB. 6, 1906.

J. E. BRAZEAL.

CHUTE FOR UNLOADING RAILWAY CARS.

APPLICATION FILED SEPT. 2, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

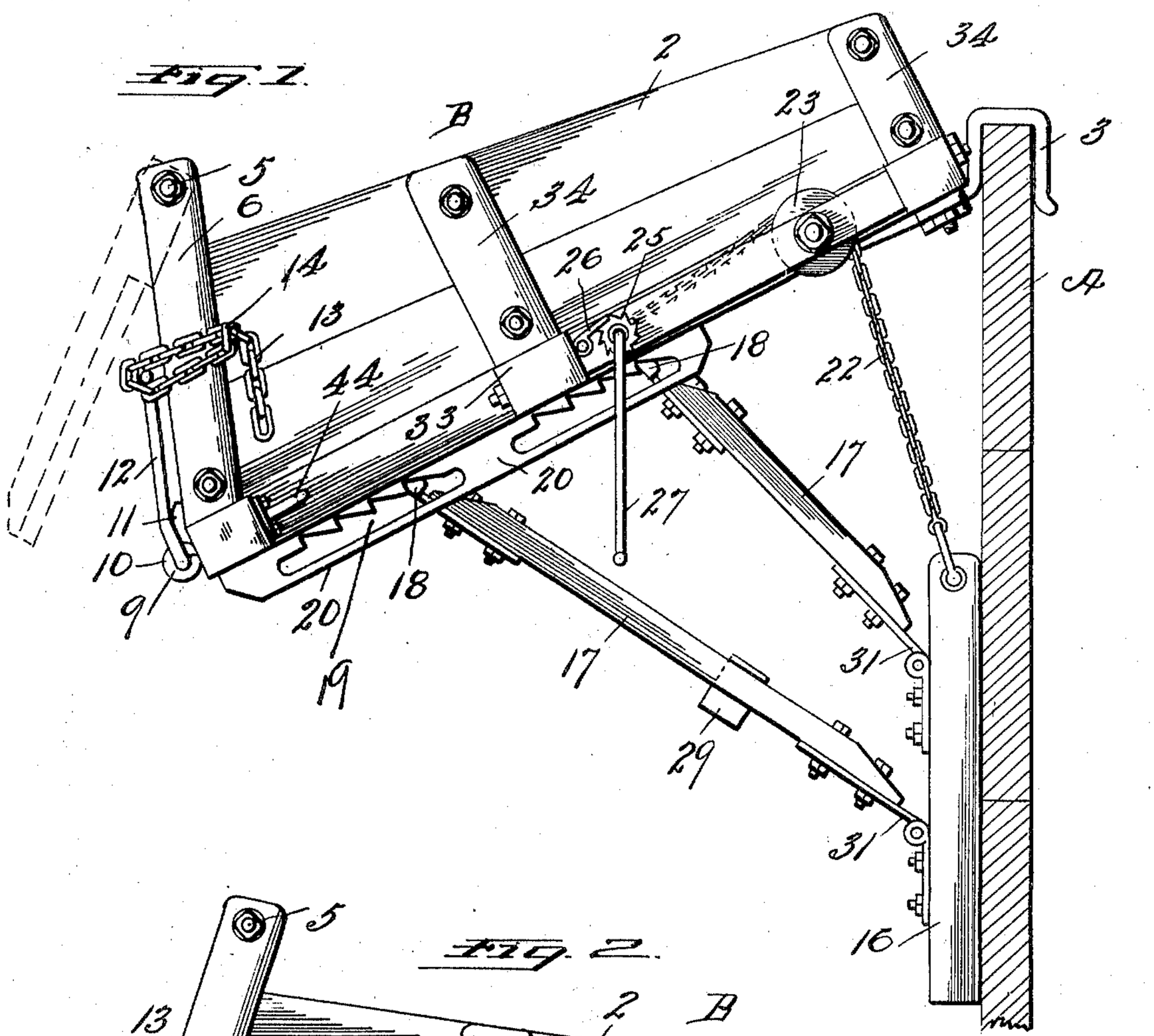


Fig. 2.

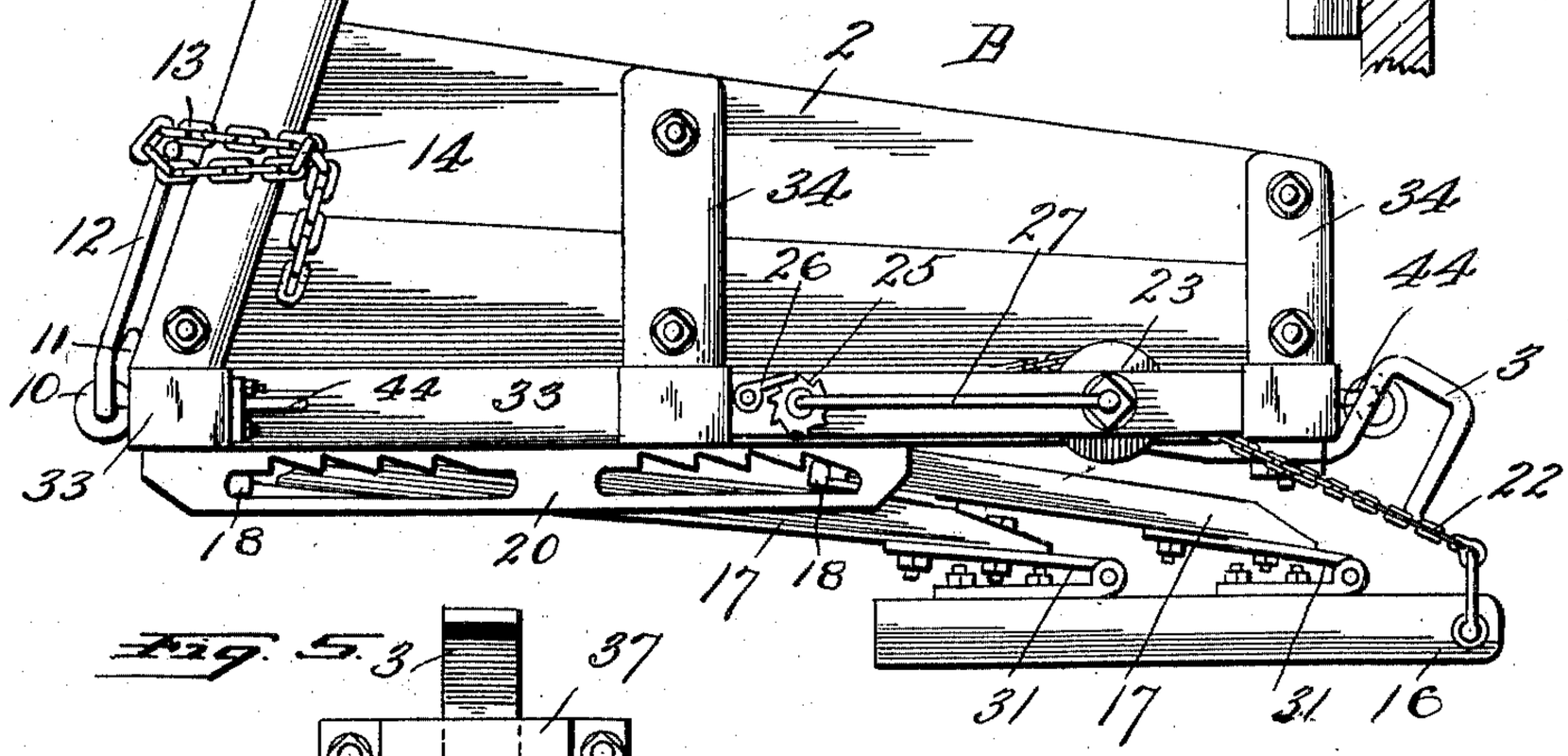
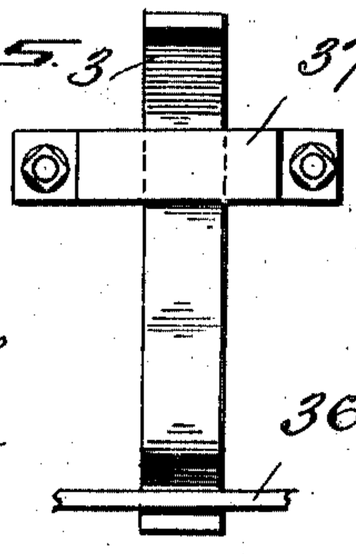


Fig. 5.



WITNESSES:
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Fig. 3.

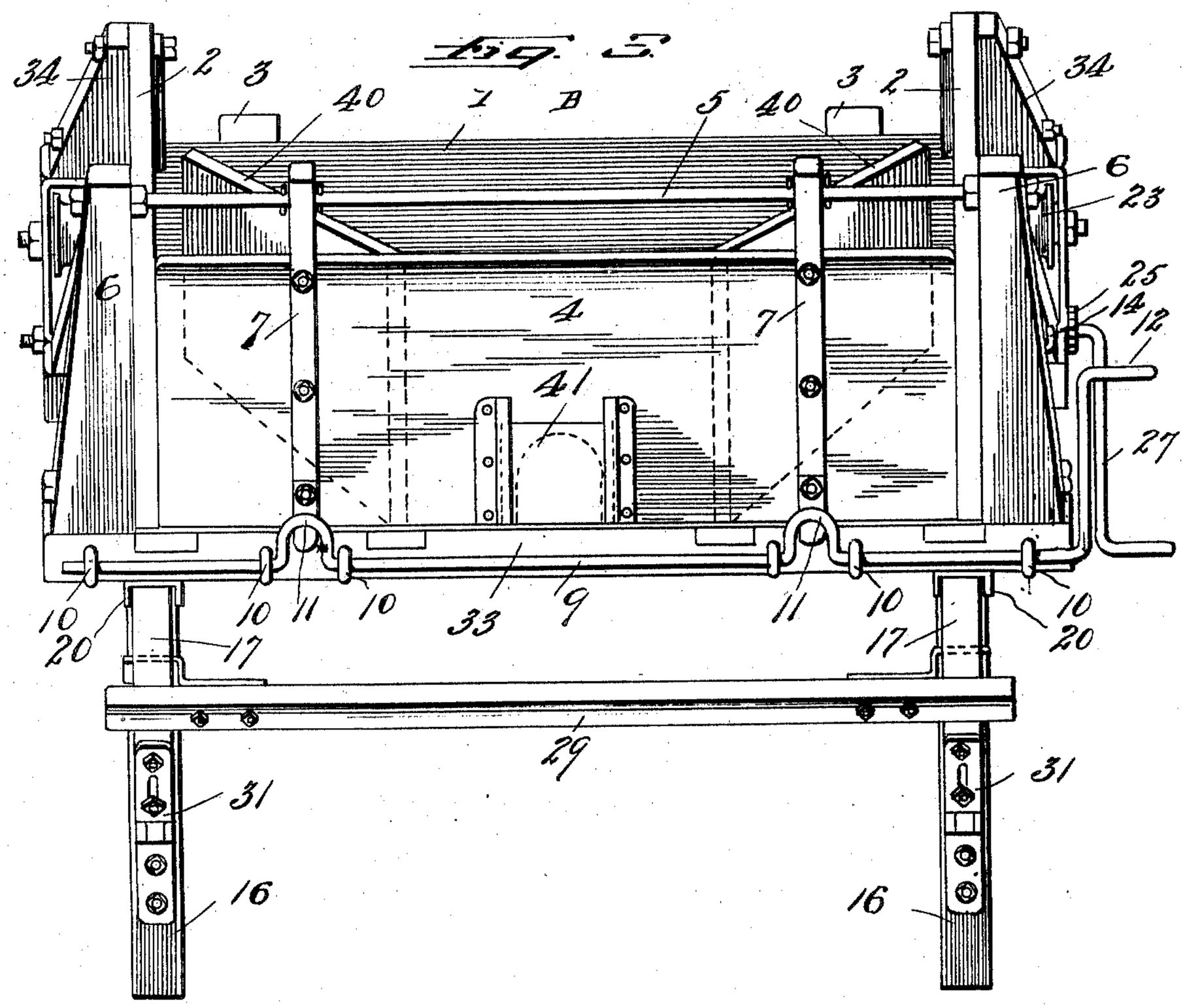
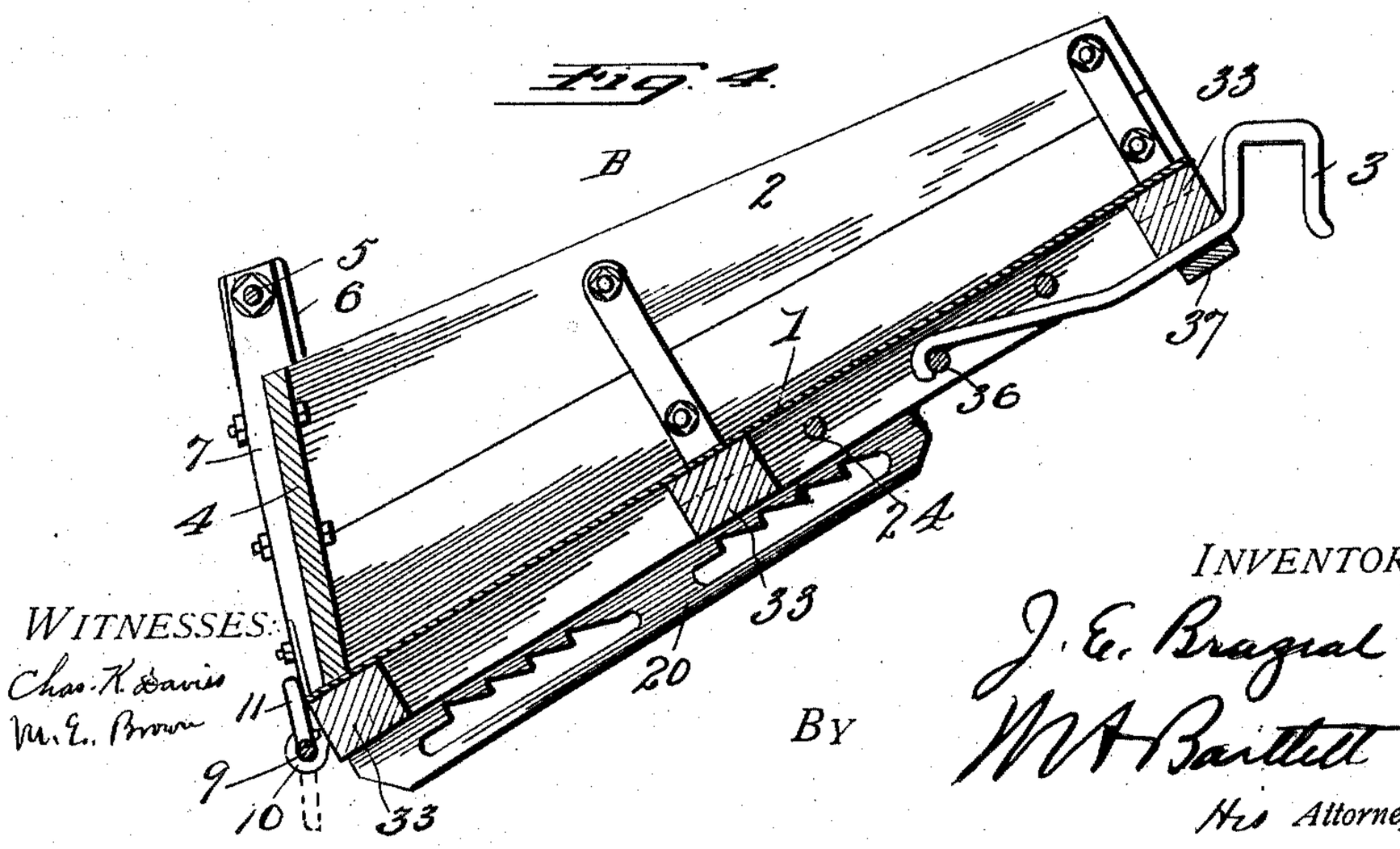


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH EDWARD BRAZEAL, OF BIRMINGHAM, ALABAMA.

CHUTE FOR UNLOADING RAILWAY-CARS.

No. 812,009. Specification of Letters Patent. Patented Feb. 6, 1906.

Application filed September 2, 1905. Serial No. 276,851.

To all whom it may concern:

Be it known that I, JOSEPH EDWARD BRAZEAL, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Chutes for Unloading Railway-Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to portable chutes especially applicable in unloading bulk goods from railway-cars.

The object of the invention is to produce a chute or trough which can be quickly applied to the side or end of a freight-car and which can be easily adjusted to different heights and inclinations and into which bulk goods—such as coal, lime, potatoes, and grain—may be shoveled preparatory to the passage of the goods into wagons or other receptacles.

It is well known that in unloading from a deep car a shoveler is unable to see over the top, and the goods shoveled out are usually thrown by guess toward a wagon, often much of the material falling on the ground. By the use of my device this trouble in unloading may be avoided.

Figure 1 is an end elevation of my chute as applied to the side of a car. Fig. 2 is a similar view of the chute folded for transportation or storage. Fig. 3 is a front elevation of the chute as applied, say, to the side of a car. Fig. 4 is a transverse section through the body of the chute. Fig. 5 is a plan of hook-adjusting mechanism.

Let A represent the side boards of a car, in this case shown in section, and B the body of my improved chute. This chute-body B is composed of wood or metal and is preferably a mere trough, having a bottom 1, ends 2 2, and suitable means for retaining these parts in place. The ends 2 2 are preferably wider (or the chute is deeper) at the side remote from the car.

That side of the chute which is for attachment to the car has two or more hooks 3, which may be hooked over the top board of a car-body. On box-cars a hole may be made near the door of the car or other suitable means for attachment may be provided.

The front side of the chute, or that side remote from the car, has a swinging gate 4, which is pivoted near the top of the chute, say, to a rod 5 which rod extends above the outer edge of the chute, the ends of said rod being supported by corner-posts 6. Strap-hinges 7 are a convenient means of hinging the gate 4 to the rod 5 above the outer edge of the chute. Thus the lower edge of the gate 4 may swing away from the lower edge of the chute.

A rod 9 extends from end to end of the chute at the lower edge thereof, and this rod is supported in bearings 10 and has cranks 11, which swing in front of the lower edge of gate 5 or of downward extensions thereof when it is desired to hold the gate closed. The rod or rock-shaft 9 may be turned by a rigid crank 12, and this rod 9 may be held by securing the crank 12, as by means of a chain 13, attached to the near end of the trough and engaging a hook 14 thereon, or by other suitable means.

There are brace-stays 16 connected to the chute below each end thereof. These stays 16 have each one or more braces 17 hinged thereto. The stays when in use rest against the car-body, as in Fig. 1. When the chute is not in use, they may be folded up close to the bottom thereof, as in Fig. 2.

The braces 17, hinged to the stays 16, as described, have hooks or T-heads 18 at their outer ends. These heads or hooks enter the ratchet-slots 19 in straps 20, attached to the bottom of the chute proper.

As the inclination of braces 17 is adjusted by means of the heads 18 entering the ratchets and engaging teeth a greater or lesser distance from the stays 16, so the inclination of the bottom of the chute may be regulated.

The stays 16 have chains 22 connected to their upper ends. These chains 22 pass over pulleys 23, which are journaled outside the ends of the chute, and the chains may be wound on shaft 24, which shaft passes under the floor of the chute and is kept from unwinding by a ratchet 25 and a pawl 26 engaging therewith. Ratchet 25, being rigid with shaft 24, serves to rotate the same.

As the hooks 3 hold the trough from moving down, it is evident that the shortening of chains 22 must serve to lift the stays 16 higher on the car-body, thus changing the inclination of braces 17 and lifting the outer end of the chute. The adaptability to adjust either or both ends of braces 17 gives a very quick adjustment and a wide range of adjustment to the inclination of the chute.

The stays 16 may be held apart by a spreader 29, which spreader is a light bar provided with hooks 30 at each end. The hooks 30 slip over the stays 16 or braces 17 when the spreader is applied.

The hinges 31, by which braces 17 are held to stays 16, are preferably slotted and held to the braces by bolts in the slots, so that the braces may be, in effect, lengthened or shortened by adjustment on the hinges. So the T-heads 18 are preferably slotted where they are attached to the braces by bolts for a like purpose.

The body of the chute is made strong and rigid, as by means of frame-pieces 33 and bolsters 34; but a wide latitude of construction must be allowed for different sizes of chutes and for the different purposes for which they are intended.

The hooks 3 are preferably attached in such manner that they can be adjusted toward or from each other. For example, the hooks may clasp a bar 36, which extends lengthwise under the floor of the chute, and may be held to the frame by a strap, as 37, attached to said frame.

In unloading grain, potatoes, and the like it may be advisable to convey the goods to bags or other receptacles. In such case inclined boards 40 may be applied to the floor of the chute, and the small door 41 in the gate 5 may be opened to permit the hopper-like chute thus formed to empty into the receptacle.

The chute should be provided with handles 44 near the corners by which it can be lifted and adjusted.

This chute is adapted to a large variety of uses. It may be applied to the side of a car, either gondola or box, and may be filled with material in the car and then the chute be emptied by opening the swinging gate, or the gate may be left open and the material delivered into a wagon or receptacle as it is shoveled into the chute. The hooks 3 show approximately the position of the chute even when its body cannot be seen from inside the car, so there is little danger that a shoveler will fail to deposit the material in the chute. Shovels can be at work filling the chute (which should preferably hold a wagon-load) while a wagon is driving away and another approaching, and wagon-drivers by manipulating crank 12 can fill their vehicles without interrupting the shovelers.

What I claim is—

1. A portable chute for the purpose described, having means for attachment to a car, and having brace-stays adjustably connected to the chute, and adjustable braces extending from the stays to the chute, all combined.

2. A portable chute provided with hooks for attachment to a car, brace-stays flexibly connected to the chute and in position to rest against the car, and adjustable braces extending from said stays to the chute, all combined.

3. The combination with a portable chute, of brace-stays connected by flexible means to said chute, and braces hinged to the stays and engaging racks at the lower side of the chute.

4. The combination with a portable chute, of a pair of brace-stays connected thereto by the chains, a windlass on the chute by which said chains may be wound, and adjustable braces extending from the stays to the lower part of the chute.

5. The combination with a chute, of brace-stays connected thereto by chains, a windlass by which said chains may be wound, and adjustable braces interposed between said stays and the chute, substantially as described.

6. The combination with a chute, of brace-stays connected by chains to the lower part thereof, means for adjusting the effective length of said chains, braces hinged to said stays, and means for securing the ends of said braces remote from the stays to the chute in adjusted position.

7. The combination with a chute and means for suspending the same at the side of a car, of a gate hinged above the mouth of the chute, a rock-shaft having cranks which turn to position to hold the gate closed, and means for holding said rock-shaft.

8. The combination with a chute-body having a hinged gate at one side and suspending means at the other side, of brace-stays and braces attached to the said body to fold against the same for storage or transportation.

9. The combination with a chute and braces for supporting the same from the side of a car, of suspending-hooks adjustable longitudinally of said chute.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH EDWARD BRAZEAL.

Witnesses:
J. T. GLOVER,
A. B. ELFORD.