

J. E. BRAZEAL.
CHUTE.

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2 SHEETS-SHEET 1.

974,351.

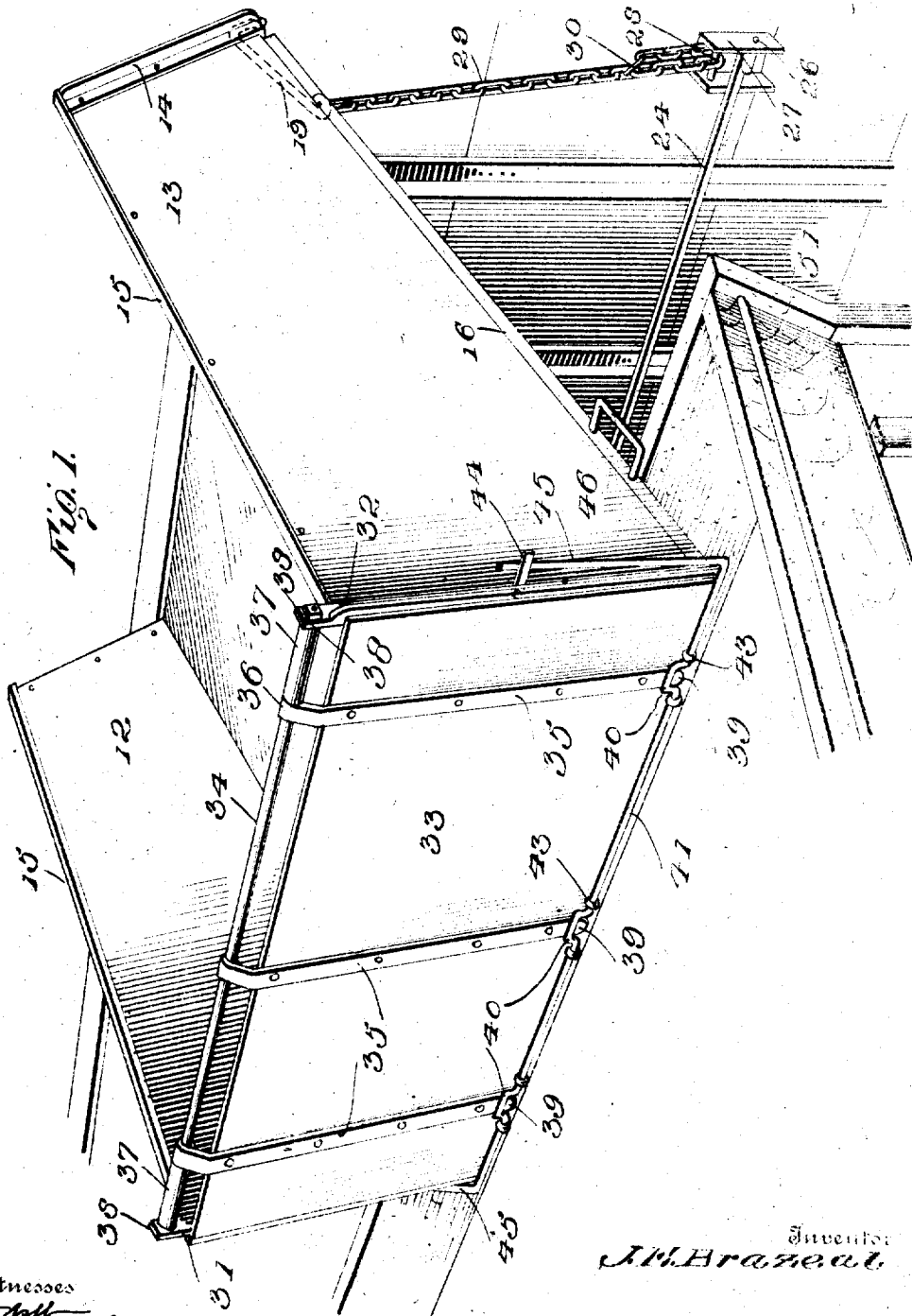


Fig. 1.

Witnesses

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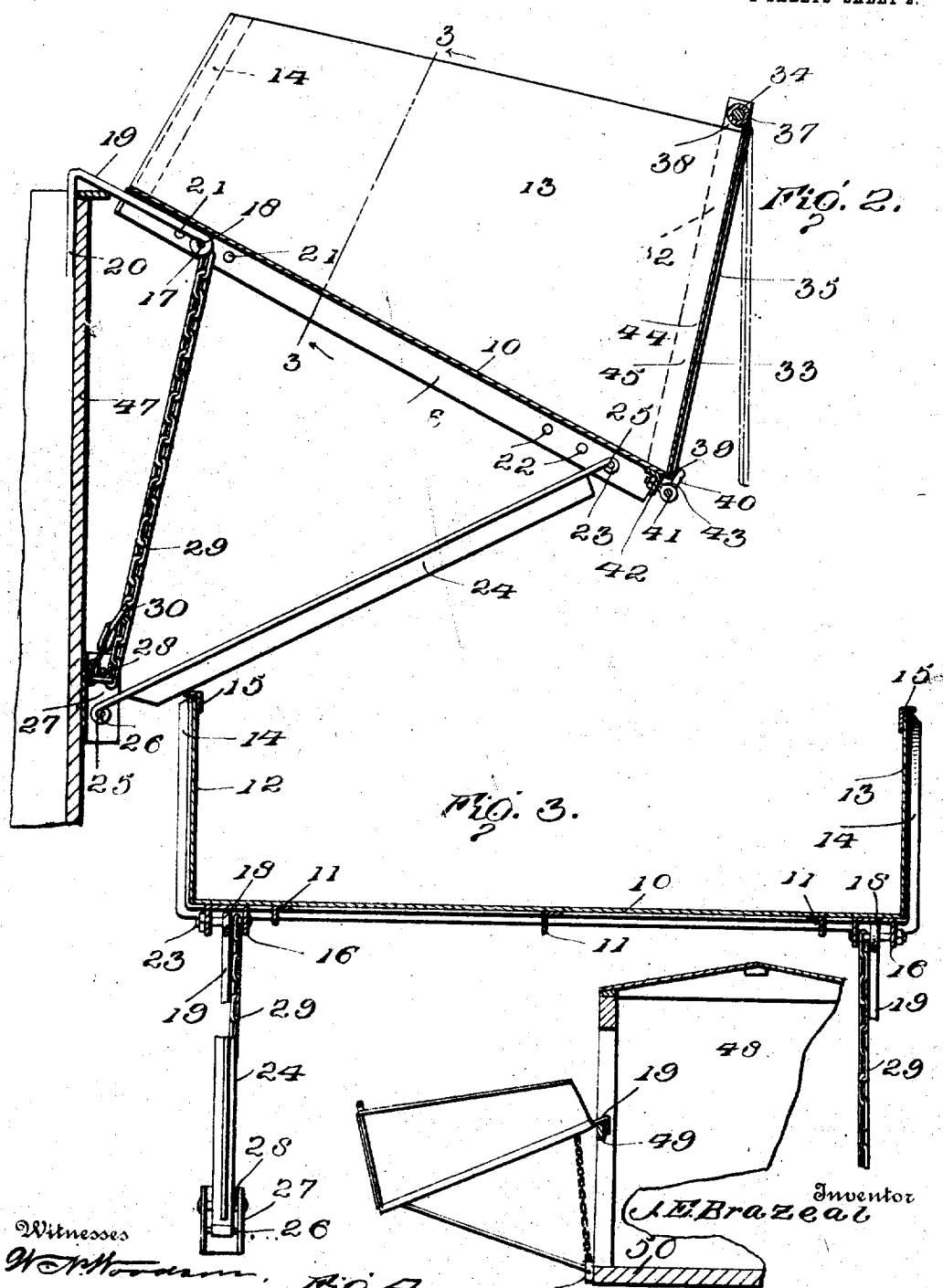
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CHUTE.

974,351.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH E. BRAZEAL, 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, of which the following is a specification.

This invention relates to chutes and refers particularly to an improved chute for conveying bulk goods from railway cars and the like.

An object of this invention is to provide a chute of this character with means whereby the same may be adjustably secured against the side of a railway car, and which is adapted to receive material from the car and to unload the material in bulk from the chute into dumping wagons or the like which are disposed beneath the outer end of the chute.

The invention has for another object the provision of a chute which is adapted to be filled while the conveyance for carrying the load from the car is making a trip and which is adapted to deposit the bulk material from the chute into the conveyance upon the return of the same to the car with the expenditure of but a few moments for the operation, thereby saving the time ordinarily consumed in loading the conveyance by shovel directly from the car.

The invention further provides a device of this character which may be positioned upon the car and which extends upwardly from the same in order to allow the workmen in the car to see the chute and to direct the material shoveled into the chute without the necessity of walking to the side of the car and locating the object into which the material is to be thrown. This feature of the device, it is believed, considerably decreases the time necessary for unloading a car in designating the location of the chute to the workmen during the unloading. In connection with this object it will be noted that the workmen within the car are kept busy during the entire unloading of the same, as they do not have to wait for the return of the wagon but may re-fill the chute during the absence of the wagon or conveyance employed.

The invention has for a still further object the provision of a chute possessing the above enumerated advantages and which at the same time is of simple construction and

is preferably formed of sheet steel and angle iron whereby it is enabled to withstand hard usage and the weights of the bulk goods which are thrown into the same.

From the construction of the chute, which will be hereinafter set forth, it will be particularly noted that it may be secured against the side of cars of various types, whether the car is of the gondola type, box cars, or cars having grain doors.

The device may also be secured against the wall of a bin or other retaining device wherein large quantities of material are kept, and from which it is desired to convey quantities of the same.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a perspective view of the complete chute as applied to the side of a railway car of the gondola type, and showing a fragmentary view of a wagon beneath the chute. Fig. 2 is a vertical section through one end of the chute, showing in dotted lines the gate in an open position. Fig. 3 is a section on the line 3—3 of Fig. 2; and, Fig. 4 discloses a side elevation of the chute as applied to a box car.

Referring to the drawings the numeral 10 designates the bottom of the chute which is formed of a sheet of steel and which is reinforced by means of a plurality of angle irons 11 arranged longitudinally and in spaced relation against the under side of the bottom 10. The bottom 10 is provided with integrally formed sides 12 and 13, the same comprising the up-turning of the lateral portion of the bottom 10 and supporting the same in such position by means of a reinforcing member 14 in the shape of a bar of angle iron which is bent longitudinally into U-formation and riveted or otherwise secured against the outer face of the sheet of metal forming the bottom 10 and sides 12 and 13 adjacent the inner edges of the same. The upper edge of the sides 12 and 13 are beveled inwardly to provide the deeper portion of the chute at the outer end thereof, and are reinforced by strips of angle iron 15 secured upon the upper edges of the sides 12 and 13 and extended slightly beyond the outer faces of the same.

For the purpose of supporting the body of the chute as above described, the bottom

10 is provided with a pair of channel bars 16 which are arranged in parallel relation adjacent the opposite edges of the bottom 10 and against the under face of the same, the flanges of the channel bars 16 being
 5 extended downwardly and being apertured in registered relation to receive bolts 17 which carry eyes 18 and hooks 19. The hooks 19 are formed from rounded bars of
 10 iron or the like which are over-turned at their inner ends to form the eyes 18 and which are bent downwardly to acute angles to form engaging portions 20. It will be noted, from Fig. 2 of the drawings espe-
 15 cially, that the hooks 19 are supported adjacent the rear ends of the channel bars 16 and provided with pluralities of apertures 21 through which the bolts 17 are engaged to retract the bolts 19 and to extend the same
 20 to meet the requirements.

The outer ends of the channel bars 16 are further provided with registered apertures 22 for the reception of a bolt 23 which hingedly receives the upper end of a brace
 25 24. The brace 24 is formed of angle iron and is extended at its opposite ends, from one of the flanges thereof, and is overturned at such extensions to form eyes 25 to receive the bolt 23 at one end and a pin 26 at its op-
 30 posite end. The pin 26 is supported upon a rest 27 which is in the formation of a section of channel bar and carries the pin 26 across its flanges at the lower end of the same. The upper end of the rest 27 is pro-
 35 vided with a second pin 28 about which is adjustably engaged a retaining chain 29. The chain 29 is provided with a hook link 30 which engages one of the links of the chain 29 when the chain is over-turned upon
 40 itself to form a loop for the reception of the pin 28 to thus enable the desired adjustment of the chain. The upper extremity of the chain 29 is engaged about the bolt 17 and serves to support the rest 27 adjustably
 45 from the inner end of the chute.

The forward ends of the sides 12 and 13 are reinforced by standards 31 and 32, the same comprising angle irons which are en-
 50 gaged against the outer faces of the sides 12 and 13 and having the flanges thereof extended outwardly for the reception of an end gate 33. The standards 31 and 32 are each projected upwardly to form supports
 55 38 for the reception of the opposite extremities of a rod 34 which is transversely positioned across the outer end of the chute. A plurality of straps 35 are hingedly disposed upon the rod in spaced relation and retained thereon by the overturning of the straps 35
 60 to form eyes 36. The gate 33, which is formed of a sheet of steel, is secured against the inner faces of the straps 35 and is prevented from lateral movement through the medium of sleeves 37 which are engaged be-
 65 tween the supports 38 and the outer eyes

36. The straps 35 are extended downwardly below the edge of the gate 33 a short distance to form lips 39 against which crank portions 40 of a locking bar 41 are engaged and employed for the purpose of locking the
 70 gate 33 in a closed position. The bottom 10 is provided across its forward edge and upon the under side thereof with a transverse bar 42, the same being formed of angle iron and having the flange thereof depend-
 75 ent for the reception of a plurality of eye-bolts 43 which loosely receive the locking bar 41 and retain the same transversely across the lower end of the gate 33. The op-
 80 posite ends of the locking bar 41 are turned at right-angles into a plane approximating the plane of the crank portions 40 to form arms 45, and are disposed against the outer faces of the sides 12 and 13 for coöperation with latches 44 to secure the gate 33 in a
 85 closed position. The latches 44 are each formed of a length of metal which is pivotally mounted at one end upon the out-turned flange of the adjacent standard 31 or 32 and is adapted to be swung outwardly
 90 into the path of the adjacent arm 45 to retain the crank portions 40 upwardly against the lips 39 of the gate 33. The body of the chute is provided at its opposite sides with handles
 95 46, the same comprising rounded bars bent into U-formation and engaged at their ends in the outer flanges of the channel bars 16 adjacent the forward ends of the same. In
 100 Figs. 1 and 2 of the drawings the improved chute is disclosed as applied to a car of the gondola type wherein the engaging portions 20 of the hooks 19 are disposed over the upper edge of the side 47 of the car and the rests 27 are loosely positioned against the
 105 outer face of the side 47 and adjusted vertically thereagainst through the medium of the retaining chain 29.

In Fig. 4 of the drawings the improved chute is disclosed as being supported upon the side of a box car 48 wherein the hooks
 110 19 are engaged over a transverse bar 49 temporarily positioned across the door of the box car 48 and the rests 27 are engaged against the lower braces or the side of the
 115 floor 50 of the car.

In the employment of the device, refer-
 120 ring to Figs. 1, 2 and 3, the body of the chute is raised to engage the hooks 19 over the upper edge of the side 47 of the car. The rests 27 are now engaged against the
 125 outer face of the side 47 and the retaining chains 29 for adjustment through the medium of the hook link 30 to raise or lower the outer end of the chute to accommodate the height of the wagon 51 which receives
 130 the material from the chute. The gate 33 is now pressed inwardly by the hand to swing the same into a closed position when the locking bar 41 is rotated to engage the crank portions 40 thereof against the lips

39 and to swing the arms 43 backwardly of the latches 44. The latches 44 are now raised or extended into an outward position against the outer edge of the arms 45 and are retained in such position by the frictional contact between the arms 45 and the latches 44. The workmen in the car now shovel the contents thereof into the inner or open end of the chute, filling the same. The wagon 51 is now drawn beneath the outer end of the chute when the driver releases the latches 44 from the arms 45 permitting the material within the chute to fall into the wagon 51. When the arms 45 are swung downwardly the crank portions 40 are carried therewith and the weight of the material against the inner side of the gate 33 forces the same into an open position, substantially as is disclosed in dotted lines in Fig. 2, the material sliding toward the open end of the chute and falling into the wagon 51. When the contents of the chute have been deposited in the wagon 51 the driver simply swings the gate 33 into a closed position and rotates the locking bar 41 to secure the gate 33 in such position and retains the bar 41 by the adjacent latch 44.

It is thus seen from this form of chute that when the wagon 51 has received its load from the chute it is permitted to convey the load wherever it is desired while the workmen in the car can continue their work in filling the empty chute preparatory to filling the wagon 51 upon its return.

If desired a number of chutes may be employed and thus the work of unloading may be continuously carried on with the employment of several wagons 51.

Having thus described the invention, what is claimed as new is:—

1. A chute including an inclined body

portion, spaced channel bars carried beneath said body portion, hooks adjustably mounted in the upper ends of said channel bars for engagement with a wall to support the body, pendent braces hinged in the outer ends of said channel bars, rests secured to the lower ends of said braces to engage against the wall to support said body portion, and connecting chains depending from the inner ends of said hooks for adjustable engagement with said rests to support the same.

2. A chute including a body, spaced hooks carried upon the inner end of the body for supporting the same against a wall, hinged braces depending from the outer end of said body, U-shape rests hinged upon the lower ends of said braces, transverse pins disposed through the upper ends of said rests, and depending chains carried by said hooks and adjustably looped about said pins for holding the rests against the wall.

3. A chute including a body, spaced channel bars positioned against the underside of the body, hinge-bolts adjustably disposed through the opposite ends of said bars, outwardly extending hooks hinged upon the bolts at the inner ends of the body and between the flanges of said bars, depending braces hinged upon said bolts at the outer end of the said body, and adjustable supporting means carried by the inner end of the bolts for retaining said braces in adjusted position beneath the body.

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

JOSEPH E. BRAZEAL. [L. S.]

Witnesses:

JAMES R. VAIL,
DANIEL H. SMITH.