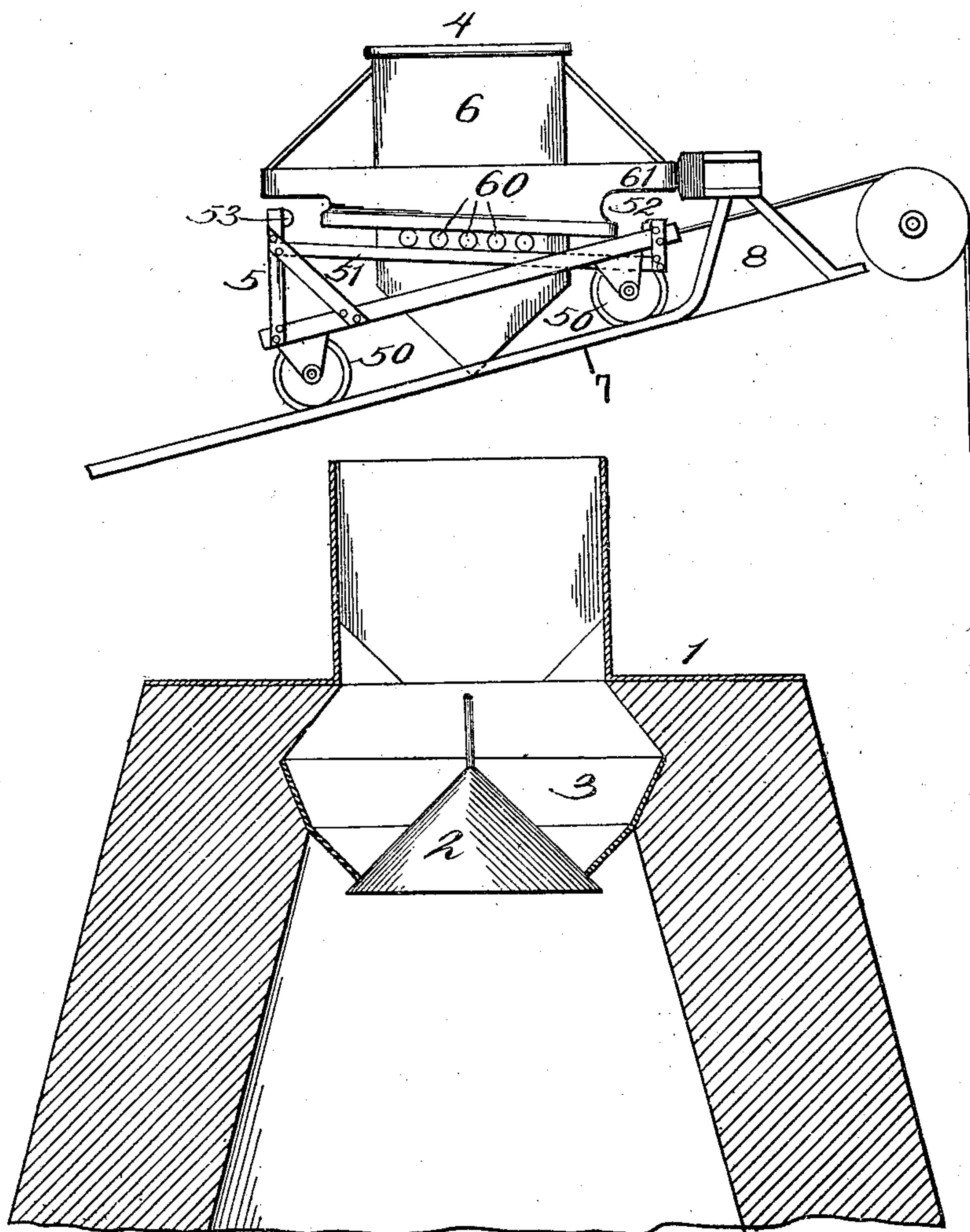


No. 736,352.

PATENTED AUG. 18, 1903.

G. W. BOLLMAN.  
CHARGING CAR FOR BLAST FURNACES.  
APPLICATION FILED MAY 13, 1902.

NO MODEL.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE W. BOLLMAN, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO OTIS ELEVATOR COMPANY, OF EAST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## CHARGING-CAR FOR BLAST-FURNACES.

SPECIFICATION forming part of Letters Patent No. 736,352, dated August 18, 1903.

Application filed May 13, 1902. Serial No. 107,123. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. BOLLMAN, a citizen of the United States, and a resident of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Charging-Cars for Blast-Furnaces, of which the following is a specification.

My invention relates to improvements in cars which are used to convey the charge to blast-furnaces. In blast-furnaces it is of vital importance that the stock be dropped over the center of the bell, so that it may be distributed equally inside of the furnace.

The object of my improvement is to provide a sure and simple means for accomplishing this object and for dumping such load over the center of the apex of the bell of the furnace.

My invention relates to the construction and arrangement of certain parts, described in the following specification, and definitely pointed out in the claims.

Referring to the drawing, 1 represents in section the top of a blast-furnace of ordinary construction.

2 is the bell, which opens and closes the hopper 3 of the furnace.

4 represents a charging-car embodying my invention. This car consists, practically, of two parts—the car-frame 5 and the bucket or load-bearing receptacle 6. The frame rests on the trucks 50 50, which run on an inclined track 7, which leads from a point where the load is to be received to the top of the blast-furnace. The upper part of the car-frame consists of parallel rails which are inclined slightly downward toward the front end of the car 52. At either end of the car-frame are stops 52 and 53, the purpose of which will presently be seen.

The bucket or load-bearing receptacle 6 rests upon the rails 51 of the car-frame 5 and is free to move within the limits of the stops 52 and 53. To facilitate this movement of the bucket 6 upon the frame 5, rollers or other antifriction-bearings are provided at 60.

At the end of the inclined track 7 is a stationary bumper 8, which stops the motion of

the bucket 6 at the desired point by the projection 61 coming in contact with it.

I have not shown the means for moving the car upon the inclined track nor the means for discharging the load from the bucket or for opening the bell 2 to the furnace, as they constitute no part of my invention.

The operation of this device is as follows: The bucket 6 will normally rest upon the forward part of the car-frame 5 against the stop 52. The car is run up the inclined track until the projection 61 runs against the bumper 8, when it is stopped, even if the car-frame should run a little farther. At this point the bucket 6 is directly over the center of the furnace, and it remains over this center even if the car-frame should run by, thus insuring the discharge of the stock directly over the center of the furnace. If the car-frame should run too far, it will be positively stopped by its forward truck running against the bumper 8 and the stop 53 coming against the bucket part of the car.

This invention is applicable to any place where it is desired to discharge the load from a dumping-car over a particular spot, and I do not confine myself to using it in connection with blast-furnaces only.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a blast-furnace the combination of an inclined track, of a car-frame running upon said track, a bucket free to move upon said car-frame, means for keeping said bucket at forward end of the car-frame, a fixed bumper to stop said bucket at a desired point substantially as described.

2. In a blast-furnace, the combination of an inclined track, of a car-frame running upon said track, a load-receptacle free to move upon said car-frame, means for keeping said receptacle at forward end of the car-frame, a bumper fixed to stop said receptacle at a point practically over the center of the furnace, substantially as described.

3. In a dumping-car, the combination of a car-frame, another part adapted to contain the load, said part being free to move back

and forth on the car-frame, means for keeping the part which contains the load normally at one end of said car-frame, and means for stopping the part which contains the load at  
5 a fixed point near the end of the travel of the car-frame, substantially as described.

4. In a dumping-car, the combination of a car-frame, another part adapted to contain the load and provided with means for dis-  
10 charging the same, said part being free to move longitudinally on the car-frame, means

for keeping the part which contains the load normally at one end of said car-frame, and a fixed bumper to stop said load-bearing part at a desired point, substantially as described. 15

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

GEORGE W. BOLLMAN.

Witnesses:

E. T. STEVENSON,  
G. D. CAMPBELL.