

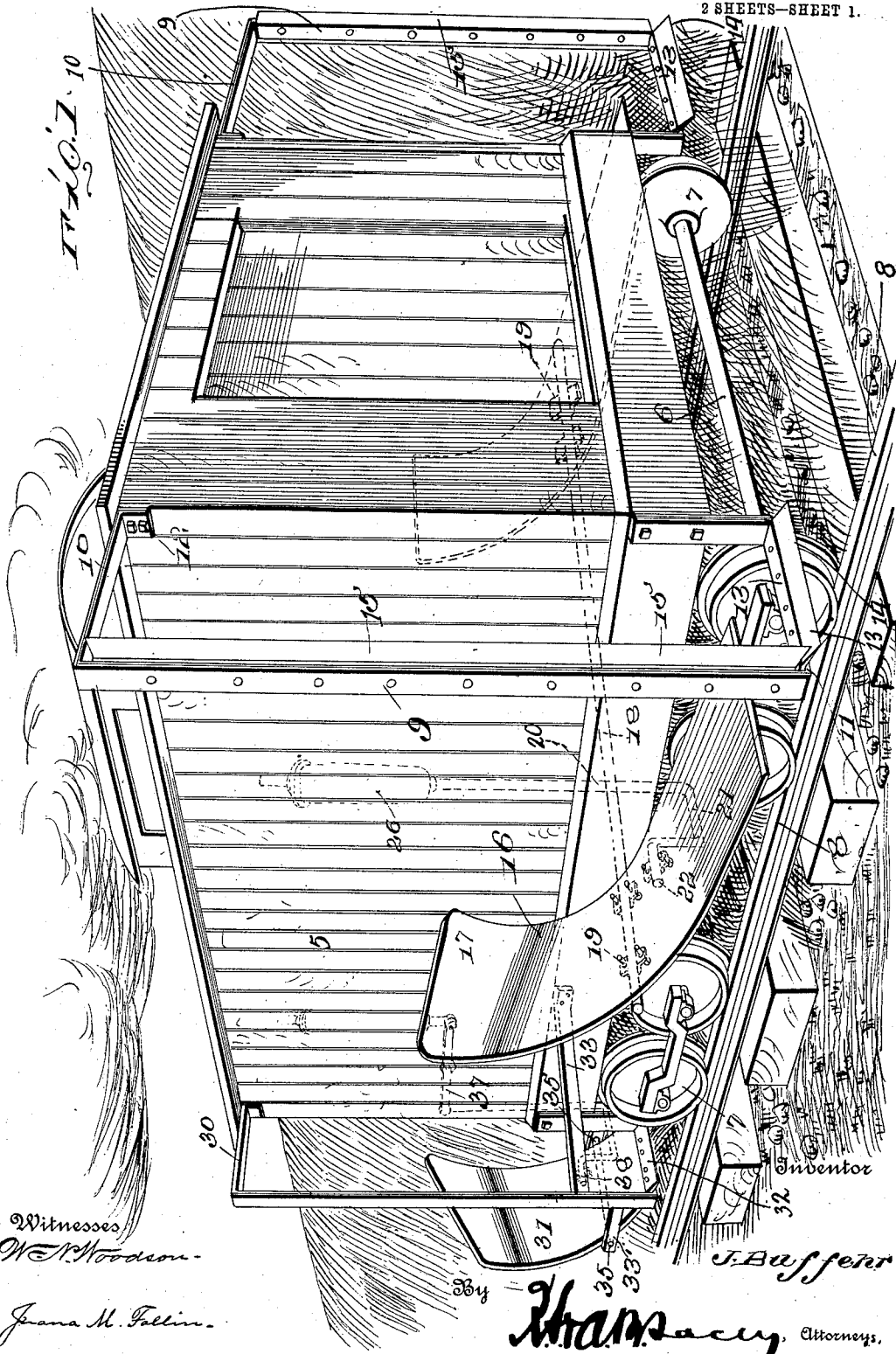
J. BUFFEHR.
SNOW PLOW.

APPLICATION FILED FEB. 18, 1911.

1,016,669.

Patented Feb. 6, 1912.

2 SHEETS—SHEET 1.



Witnesses
W. P. Woodson.

Jana M. Fallin.

J. Buffehr
Thamsey, Attorneys.

J. BUFFEHR.

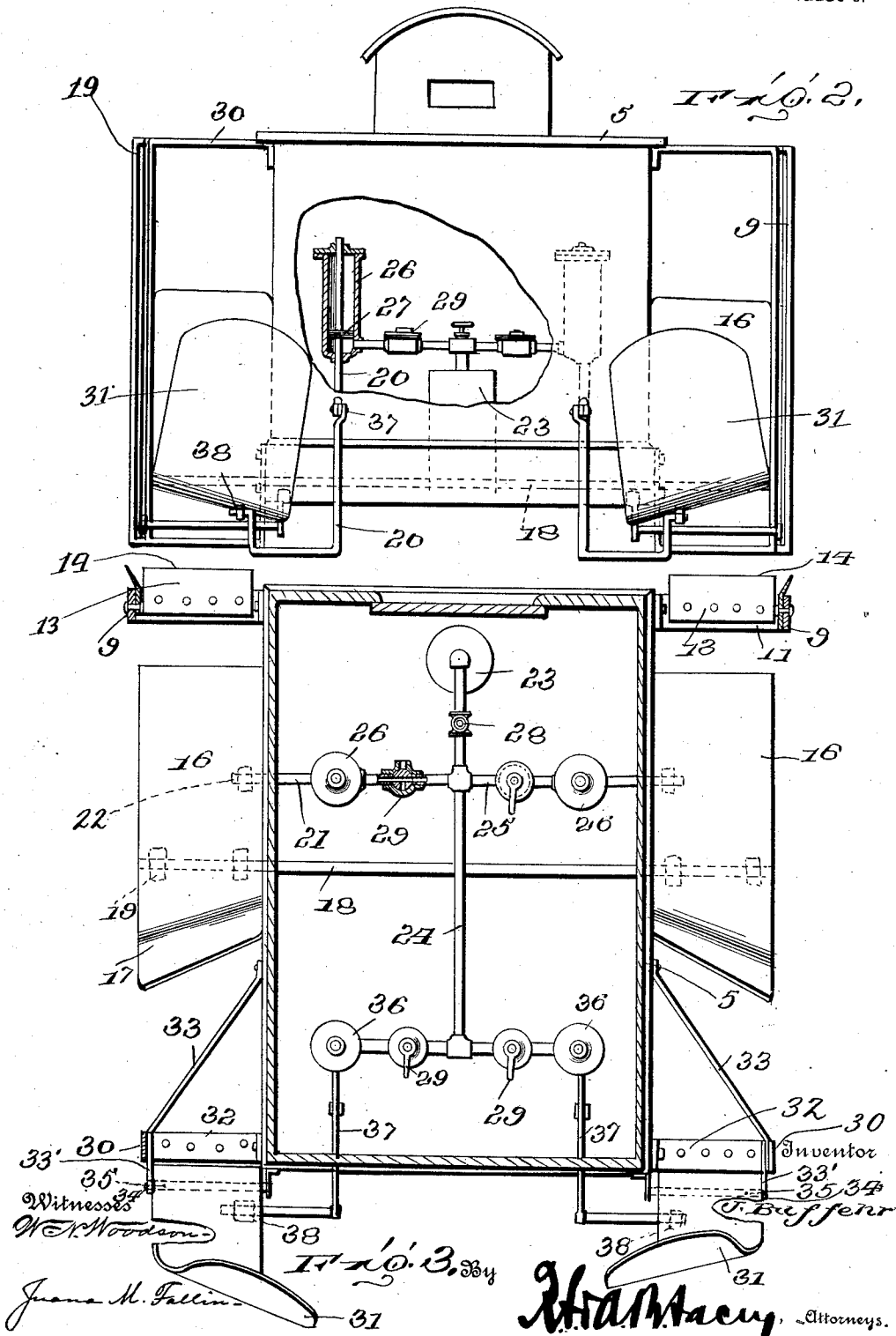
SNOW PLOW.

APPLICATION FILED FEB. 18, 1911.

1,016,669.

Patented Feb. 6, 1912.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

JOHN BUFFEHR, OF ROBINSON, COLORADO.

SNOW-PLOW.

1,016,669.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed February 18, 1911. Serial No. 609,505.

To all whom it may concern:

Be it known that I, JOHN BUFFEHR, citizen of the United States, residing at Robinson, in the county of Summit and State of Colorado, have invented certain new and useful Improvements in Snow-Plows, of which the following is a specification.

This invention relates to snow plows and more particularly to a plow especially designed for removing the snow left in the corners of cuts and snow banks after the passage of the usual rotary flangers or pilot plows.

The object of the invention is to provide a plow, the construction of which is such that the cutting blades thereof will remove the snow and packed ice at the corners of a cut and widen the road bed sufficiently to permit the passage of trains without liability of the steps and other projections thereon coming in contact with the snow and ice and retarding the movement of said train.

A further object is to provide a snow plow including a wheeled truck having cutting blades extending laterally from the opposite sides thereof, there being movable plows pivotally mounted on the car at the rear of the cutters, and adapted to direct the snow and ice removed by said cutters to one side of the track, and out of the path of the train.

A further object is to provide a pair of independently movable plows arranged at the rear of the truck and adapted to throw the snow to one side of the track or down a hillside when the front plows are elevated and the train is passing through a deep cut or over a mountainous country.

A further object is to make the cutting blades detachable so that they may readily be removed and sharpened, when necessary, without the necessity of dismantling the plow.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

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

Figure 1 is a perspective view of a plow constructed in accordance with my invention; Fig. 2 is a rear elevation of the same, a portion of the car or truck being broken away to show the plow elevating mechanism; Fig. 3 is a horizontal sectional view of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved device forming the subject matter of the present invention comprises a car or truck of any suitable size and shape, said truck being provided with axles 6 and wheels 7 adapted to travel on a railway track, indicated at 8. Extending laterally from the opposite sides of the truck or car, are substantially rectangular frames 9, preferably extending the entire height of the car and having their lower ends terminating short of the tread surface of the track 8 so as not to interfere with the passage of the car. Each frame 9 is preferably formed of a single length of metal bent to produce upper and lower horizontally disposed attaching arms 10 and 11 for engagement with the adjacent side of the car and to which they are secured by bolts or similar fastening devices 12.

Detachably secured to the lower horizontal arm 11 of each frame, is a plate 13, the free end of which is inclined downwardly and provided with a cutting edge 14 adapted to loosen and remove the snow and ice at the corners of a cut, after the main body of the snow has been shifted from the track by the usual rotary flangers or pilot plow, thus to prevent the steps and other projections on the cars of a train from dragging in the snow and retarding the movement of said train.

Detachably secured to the vertical walls of the frames 9, are similar cutting blades 15, which latter are inclined outwardly so as to direct the snow and ice removed by the cutting blades 13 and 15 onto the movable plows or shovels 16. The plows 16 are arranged at the rear of the frames 9, each plow having its lower end inclined downwardly in the direction of the adjacent frame 9, and its upper end, at the inner corner thereof, curved laterally at 17, so as to throw the snow to one side of the track and out of the path of the train.

Journaled in suitable bearings on the car

5, is a transverse shaft 18, the outer ends of which project longitudinally beyond the adjacent sides of the car and are seated in suitable suspension loops or eyes 19 fastened to the rear faces of the adjacent plows 16 near the center thereof. Arranged within the body of the car 5, are vertically disposed actuating rods 20, the lower ends of which project through the bottom of the car and are bent laterally and thence upwardly to produce squared portions 21 terminating in laterally extending fingers 22 for pivotal connection with the front ends of the plows 16, so that by raising and lowering the rods 20, the plows may be tilted on the shaft 18 to effect the raising and lowering of the forward ends of said plows.

Arranged within the car, is a compressed air tank 23, having a supply pipe 24 extending from one side thereof and connected with branch pipes 25 leading to suitable fluid pressure cylinders 26. The upper ends of the rods 20 extend within the cylinders and are provided with pistons or plungers 27, whereby when the stop cock 28 is opened, compressed air from the tank 23 may be admitted to the cylinders 26 beneath the pistons 27 for the purpose of elevating the lower ends of the plows 16.

Arranged in each branch pipe 25, is a two-way valve 29 so that the supply of compressed air to the cylinders may be controlled at will and independently of each other. Compressed air may be supplied to the tank 23 by means of a pump connected with the axle of the truck, or if desired, steam or other actuating fluid may be employed in lieu of compressed air.

Extending laterally from the opposite sides of the car at the rear end thereof, are frames 30, similar in construction to the forward frames 9 and in which are pivotally mounted rear plows 31. The upper ends of the rear plows 31 are bent inwardly so that when the front plows 16 are elevated, the snow and ice removed by the cutting blades 32 of the rear frames 30 will be deflected laterally by the plows 31 across the rear end of the car or truck and down an embankment, the rear plows 31 being particularly designed for use when the train is traveling through relatively deep cuts or over a mountainous country.

The rear frames 30 are reinforced and strengthened by the provision of braces 33, which latter are secured to the side walls of the car 5. Extending rearwardly from the frames 30 are arms 33' which form bearings 34 for suitable stub shafts 35 secured to the rear plows 31. Arranged within the car and connected with the supply pipe 24, are auxiliary fluid cylinders 36 having levers 37 pivotally connected with the plungers thereof, which levers are in turn pivotally connected at 38 with the rear plows so that said

rear plows may be raised and lowered independently of each other. When the device is traveling over a relatively level stretch of track, the lower or forward ends of the movable plows 16 are adjusted to the proper height, so that as the plow travels along the track, the cutting blades 13 and 15 will remove the snow on opposite sides of the track and direct the snow onto the plows 16, which latter will throw the loose snow out of the path of the train. When traveling through relatively deep cuts, over a mountainous country or near embankments, the forward ends of the front plows 16 and one of the rear plows 31 are elevated by opening the valves 29, in which event the cutting blade 32 of the stationary frame, on that side of the track near the base of the embankment or precipice, will remove the snow and ice and cause the adjacent rear plow to throw the snow transversely across the rear end of the car or truck, and down the embankment, as will be readily understood. Thus it will be seen that the movable rear plows 31 take the snow from one side of the track and throw it down a hillside, which feature forms an important part of the present invention.

It will here be noted that by making the blades 13, 15 and 32 detachable, said blades may readily be removed and sharpened when necessary, without the necessity of entirely dismantling the machine. It will of course be understood that the lower ends of the movable plows or shovels 16 may be provided with cutting edges or blades, if found desirable or necessary.

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

1. A device of the class described including a truck, a cutting blade extending laterally from the truck at one end thereof, a rear plow disposed at the other end of the truck, and a front plow pivotally mounted on said truck between the cutting blade and the rear plow.

2. A device of the class described including a truck, a cutting blade extending laterally from the front of the truck, a movable plow disposed at the rear of said truck and adapted to throw the snow across the track at the rear of the truck, and a front plow arranged between the cutting blade and rear plow and pivotally mounted on said truck.

3. A device of the class described including a truck, frames extending laterally from the opposite sides of the truck at the rear end thereof, and plows pivotally mounted in said frames and having their inner ends deflected laterally for throwing the snow transversely across the track at the rear end of the truck.

4. A device of the class described including a truck, frames extending laterally from

opposite sides of the truck at the front end thereof, horizontally disposed cutting blades detachably secured to said frames, and plows pivotally mounted on the truck rearwardly of the frames.

5. A device of the class described including a truck, front and rear frames extending laterally from the sides of the truck at the opposite ends thereof, cutting blades detachably secured to said frames, rear plows carried by the rear frames, movable front plows pivotally mounted on the truck between the front and rear frames, and means for raising and lowering both sets of plows.

6. A device of the class described including a truck, a frame extending laterally from the truck at one end thereof, cutting blades detachably secured to the frame, a shaft, a plow pivotally mounted on the shaft at the rear of the frame and having its upper end deflected laterally, and means operatively connected with the lower end of the plow for tilting said plow.

7. A device of the class described including a truck, a frame extending laterally from the truck at one end thereof, a horizontally disposed cutting blade secured to the frame, a vertically disposed cutting blade secured to said frame and converging inwardly in the direction of the sides of the frame, and a movable plow pivotally mounted on the truck at the rear of said frame.

8. A device of the class described including a truck, a frame extending laterally from the truck at one end thereof, horizontal and vertical cutting blades detachably secured to the frame and arranged at right angles to each other, and a plow pivotally mounted on the truck at the rear of said frame.

9. A device of the class described including a truck, a frame extending laterally from the truck at one end thereof, cutting blades detachably secured to the frame, a plow pivotally mounted on the truck at the rear of the cutting blades, a fluid pressure cylinder, a rod having one end thereof operatively connected with the lower end of the plow and its upper end extended within the cylinder, means for admitting fluid to said cylinder to raise and lower the plow,

and means for controlling the supply of fluid to the cylinder.

10. A device of the class described including a truck, frames extending laterally from the opposite sides of the truck at one end thereof, cutting blades carried by the frames, a transverse shaft, plows mounted on the shaft and arranged at the rear of the frames, fluid pressure cylinders disposed within the truck, actuating rods having their upper ends disposed within the cylinders and provided with plungers and their lower ends having crank arms pivotally connected with the lower ends of the adjacent plows, means for admitting fluid to the cylinders, and an independent valve for controlling the admission of fluid to each cylinder.

11. A device of the class described including a truck, frames extending laterally from the truck at the front and rear thereof, cutting blades carried by the front frames, front plows pivotally mounted for tilting movement at the rear of the front frames, rear plows pivotally mounted on the rear frames, and means disposed within the truck and operatively connected with the forward ends of the front and rear plows for raising and lowering said plows independently of each other.

12. A device of the class described including a truck, a cutting blade extending laterally from the truck at one end thereof, a front plow pivotally mounted on the truck at the rear of the cutting blade and having its upper end deflected laterally for directing the snow removed by the blade laterally on one side of the track, means for elevating the lower end of the front plow, and a rear plow having its free end deflected inwardly and adapted to direct the snow transversely across the rear end of the truck when the forward end of the front plow is elevated.

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

JOHN BUFFEHR. [L.S.]

Witnesses:

ANNA CASSIDY,
F. T. SMITH.