

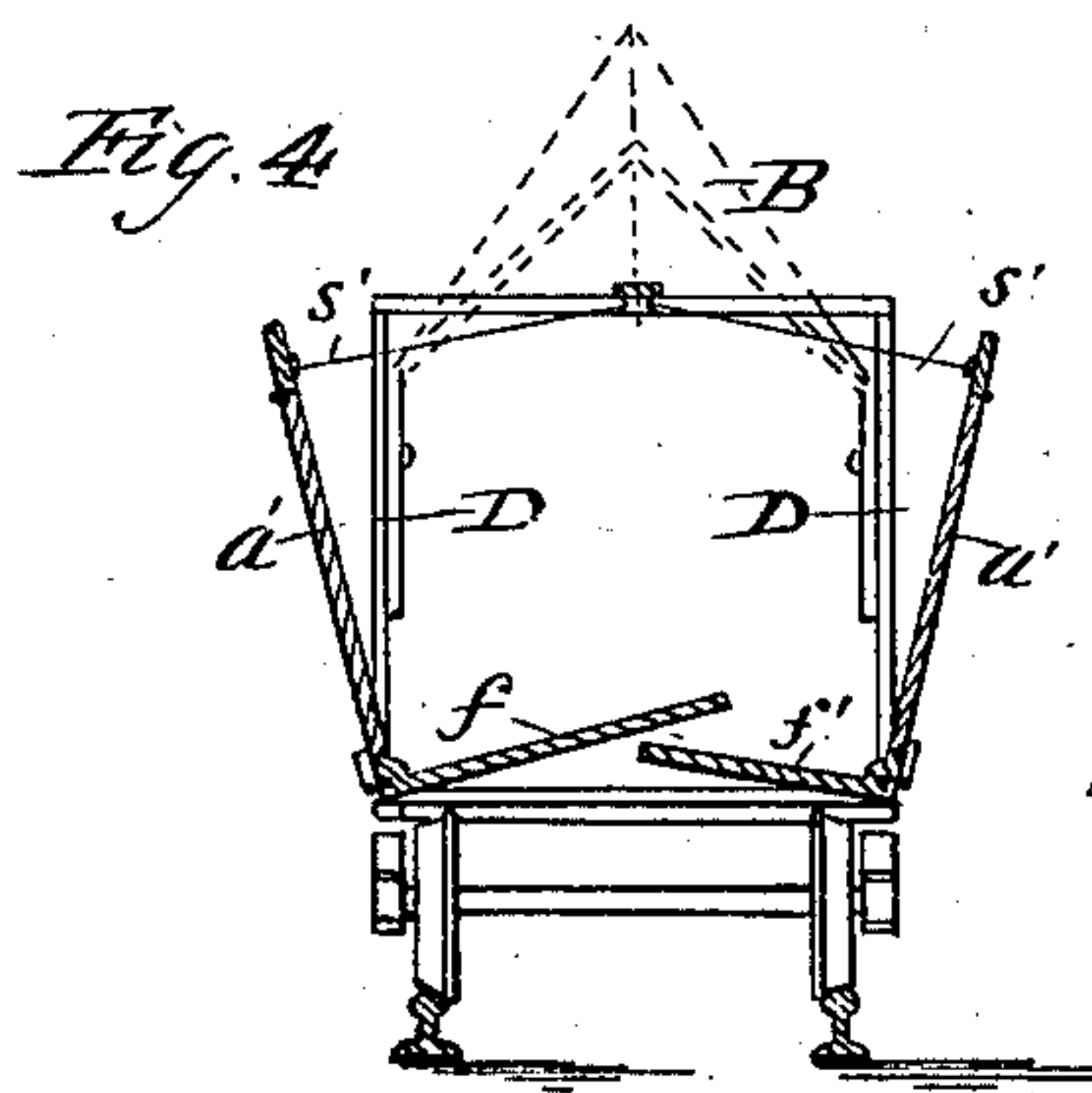
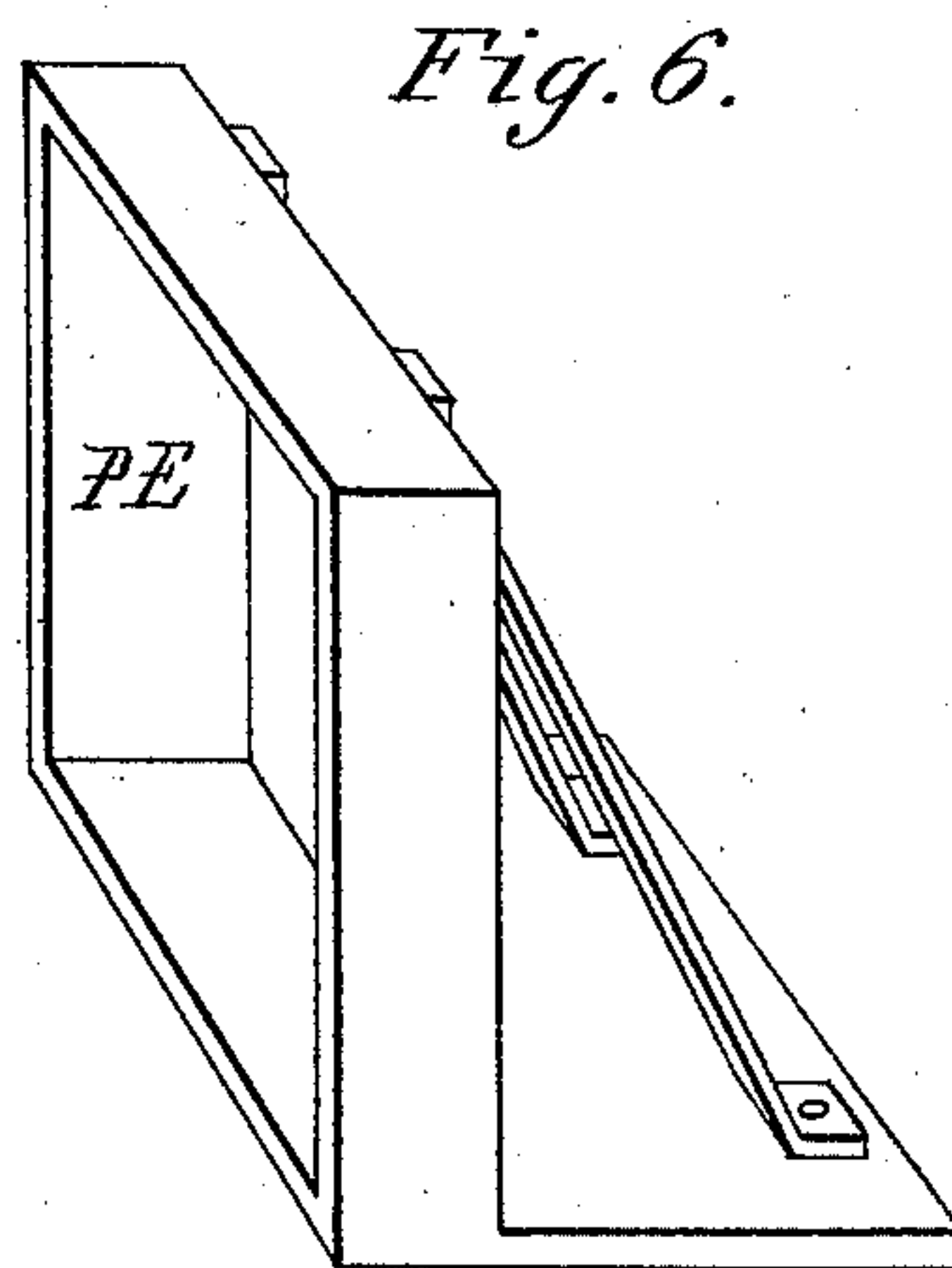
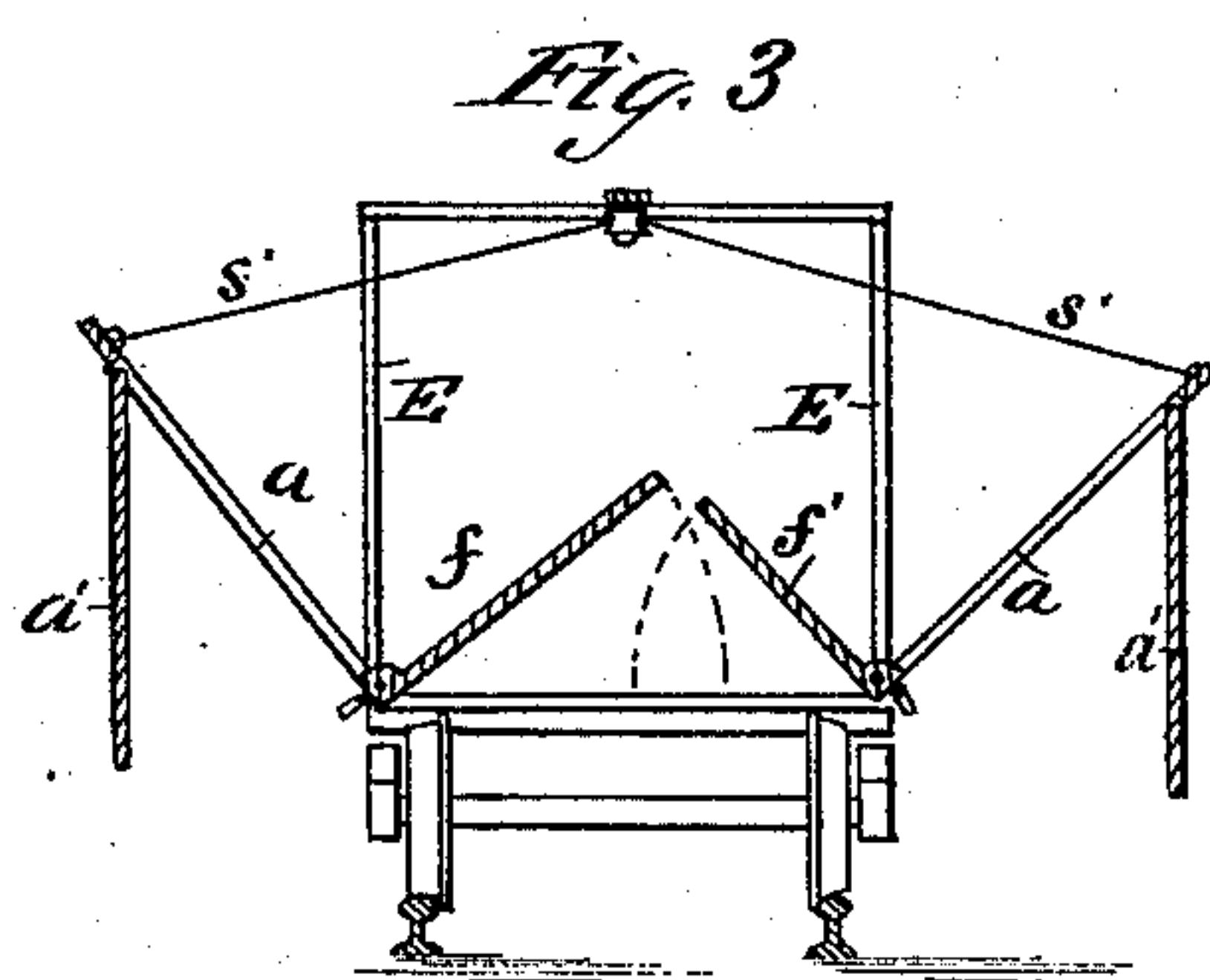
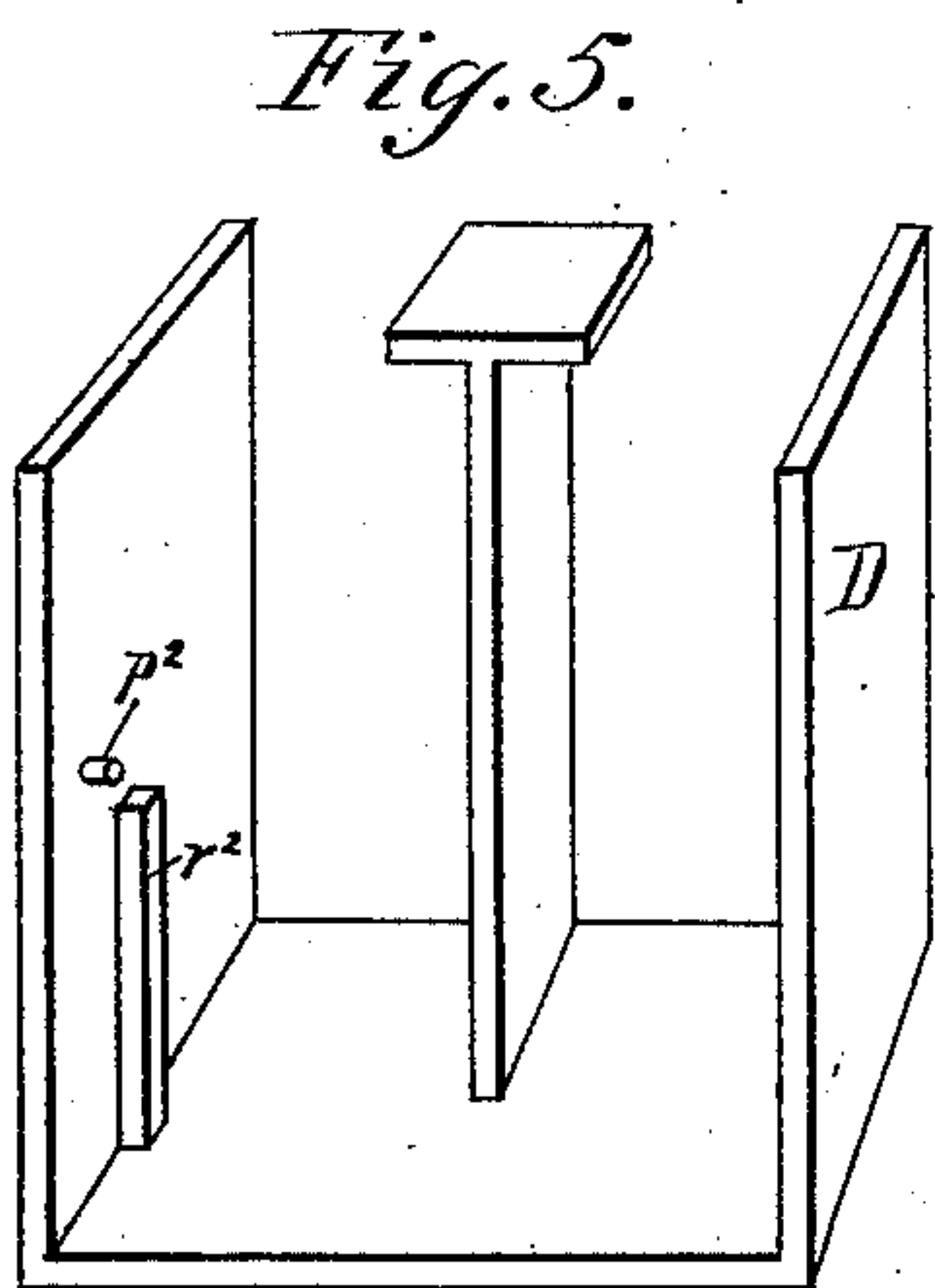
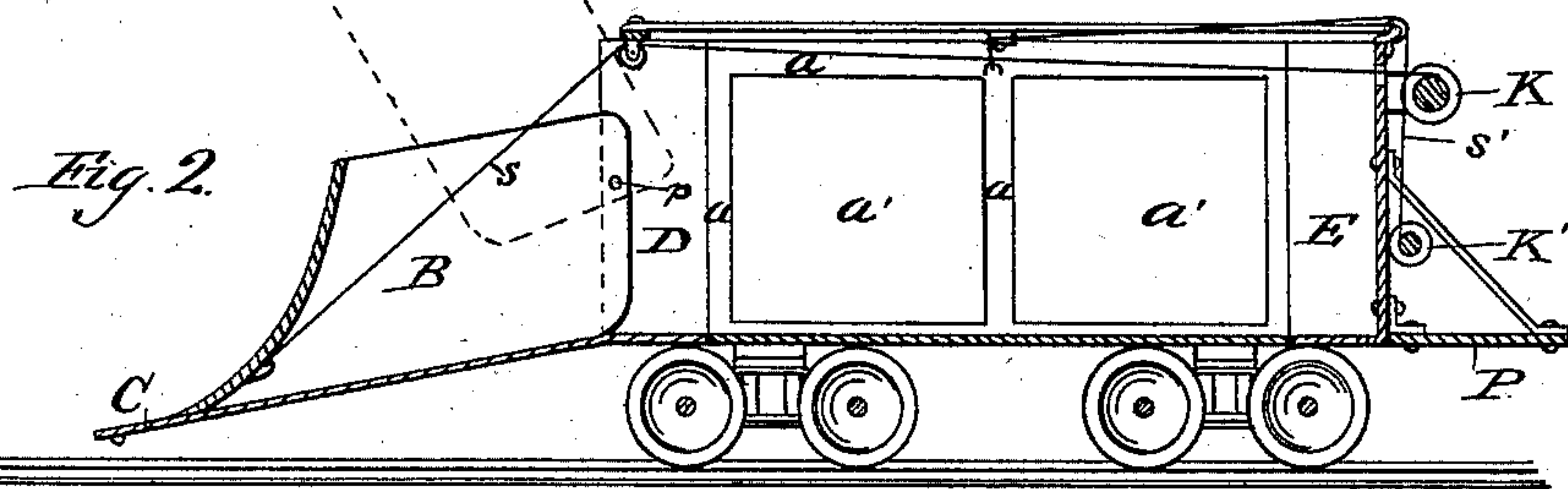
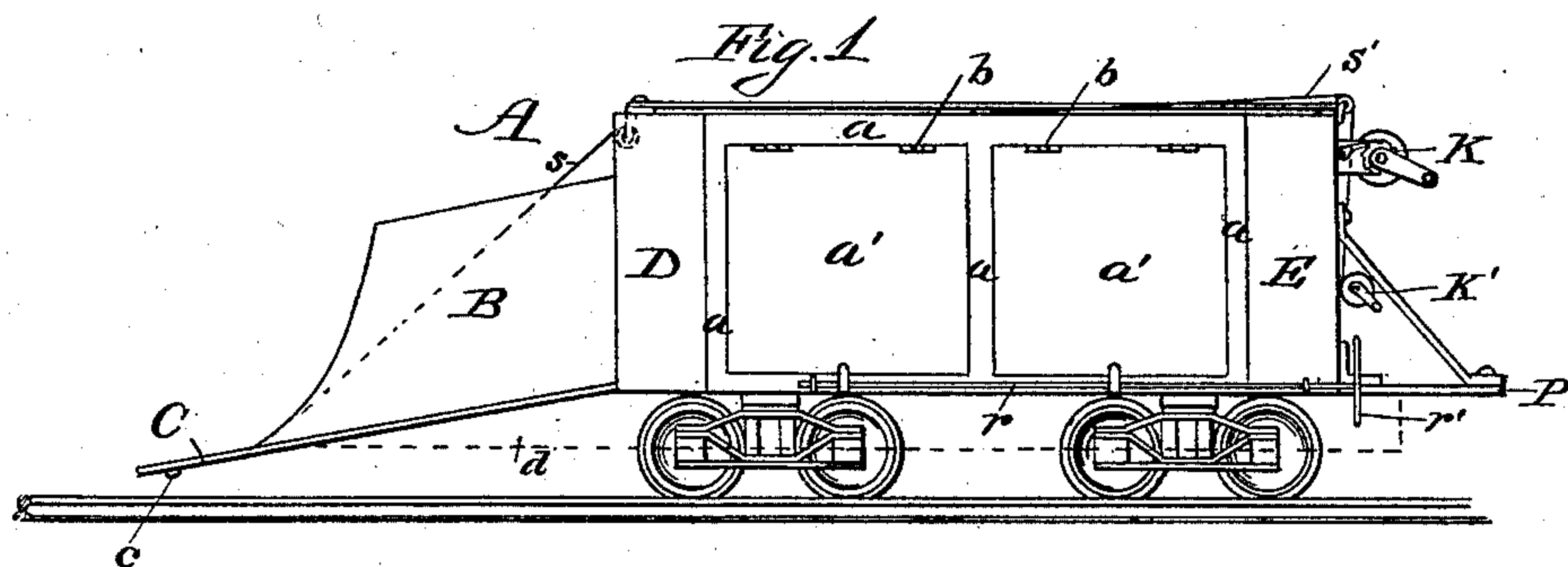
(No Model.)

R. M. MITCHELL.

SNOW PLOW.

No. 255,803.

Patented Apr. 4, 1882.



WITNESSES—

*F. B. Townsend*  
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INVENTOR—

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# UNITED STATES PATENT OFFICE.

RICHARD M. MITCHELL, OF CHICAGO, ILLINOIS.

## SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 255,803, dated April 4, 1882.

Application filed December 12, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD M. MITCHELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Snow-Plows, of which the following is a specification.

The snow-plows now in use are constructed solely with reference to being forced through the drifts. When that fails, as is often the case, there is no other recourse but to send, at great loss of time and expense, for men to clear the track with shovels. The snow-plows and engines also often become immovable and have to be shoveled out themselves. When the snow is much the deepest on one rail the unequal pressure on the outside rail sometimes turns it over. By my invention, in case of failure to get through the snow, the plow proper can be turned up, (excepting the tongue it rests upon,) leaving the front end of the car open. It (the car) is then driven into the drift, filling it full with packed snow. All of the sides of the car, except about four feet in the front end and one foot in rear end, are hinged at the bottom and turn out. In driving into the snow these sides are secured out a short distance. When the car is filled these sides are contracted or drawn in a little, so as to free the car from pressure from the snow-bank while backing out. This also cuts a more roomy channel and leaves banks less likely to cave in upon the track and cars. The bottom of the car is divided longitudinally into two parts, each being attached to its side, so that they turn with it and facilitate unloading or dumping. There are also doors as large as the sides will admit, which are hinged at the top and also open out, which can be used except when an embankment admits of turning the sides down very low.

Figure 1 is a view of the whole car with plow B in position as now used. Fig. 2 is a sectional view of the same, the dotted line showing the plow nearly turned to the upright position it will occupy when the car is to scoop up a load of snow. Fig. 3 is an end view, showing the sides *a* turned out and doors *a'* swinging still farther out. Fig. 4 shows the position of sides when driving into the drifts

to load, the dotted line showing the position of the plow, which is then turned up. The plow, having no bottom or top, presents only the edges of the two sides to the snow. Fig. 5 shows the iron piece D. The ridge *r*<sup>2</sup> is for the edge of the plow to rest against when it is down, as shown in Fig. 1. The pin *p*<sup>2</sup> is for the plow to turn upon. Fig. 6 shows the iron piece P E.

This car should be as heavy as possible and also very strong, and would necessarily be all iron. About four feet of each side D, Figs. 1 and 2, and all the floor between them should be cast all in one piece and be several inches thick. The rear end and about one foot of the side E, Figs. 1 and 2, and the platform P, Fig. 1, should also be cast in one piece. These two castings should be firmly bolted to four heavy wrought-iron beams connecting them together at the required distance. There will also be a connection between the two ends in the middle of the top of the car; but it is desirable to avoid any connection at the two upper corners, although such connection can be made, if necessary, for strength. The casting D should also be cast with an upright piece in the center, which is connected with the rear end by heavy wrought-iron beams along the top in the middle of the car.

The plow of the car B, Figs. 1 and 2, is of heavy rolled iron attached to the side and fastened to a point about six feet or more forward. The front or pointed edge should be shaped about as shown, so that the snow will add to its own weight in holding it down when plowing. It is fastened to the sides D only by a very heavy pin, *p*, Fig. 2, and can be turned up by means of chain *s* and windlass K in the rear. The iron piece D should have a shoulder or ridge on it from the pin *p* to the floor, against which the edge of the plow can press when plowing.

The plow, when down, rests upon the immovable tongue C, Figs. 1 and 2, which is stoutly supported, and should project two or three feet beyond the point of the plow, in order to first lift the snow and to some extent overcome any unequal pressure. This tongue is attached to the floor of the car, and slopes enough to bring its outward end about six inches above the rail. At this end will be fastened underneath



short crosswise-pieces *c*, Fig. 1, reaching down to about two inches from the rail. When driven into the snow the usual springs at the axles of the car will admit of the tongue pressing down until the pieces *c*, Fig. 1, will touch and slide upon the rail.

The entire sides of the car *a*, Figs. 1 and 2, extending from *D* to *E*, are hinged at the bottom and turn out, carrying the doors *a'* with them. A longitudinal half of the floor *f*, Figs. 3 and 4, between *D* and *E* is attached to each side at right angles with it, and therefore turns up as the sides turn out. In order to prevent too much of an opening in the center when these floor parts turn up, one of them should be broader and lap over the other. What little snow will fall through on the ground when unloading will be immaterial, as at such point no other snow obstructs the cars.

The sides *a*, Figs. 1 and 2, can be raised and lowered by chains *s'* and windlass *K'*. When ready to unload it may be necessary to start the sides by prying them with bars. When the sides are in position to drive into the snow, (*a*, Fig. 4,) they should be held to that position by movable rods, as may be found most convenient.

In order to prevent the escape of snow at the rear end by the gap caused by the slightly opened position of the sides, a piece of iron corresponding to such gap should be riveted to the sides at that point and open and shut with it, this piece being at right angles with the sides, and project into the car when closed. The sides *a*, Fig. 1, have large doors *a'*, hinged at the top, (*b*, Fig. 1,) which also swing out, and will usually be open when unloading, with the sides partly down, as shown in Fig. 3. The doors *a'*, Fig. 1, are fastened at the bottom by clamps attached to rod *r*, which, by wheel *r'*, can be turned out to free the doors.

The snow should be kept from underneath the car by side pieces below the floor, reaching below the axles and extending the whole length of the car to the tongue, as shown by the dotted line *d*, Fig. 1.

Plows shaped like the one herein shown are now in use; but they are immovably attached to the car; nor do I herein claim as my invention the projecting tongue, nor the windlass and chain attachments in operating the plow and sides, nor the manner of fastening and freeing the doors.

The sides are made to turn out a short distance, as shown, for the purpose of cutting a channel in the snow wider than the cars, and to slightly draw in those sides when loaded, in order to clear the snow-bank when backing out. The proposed construction, admitting of turning down the sides low enough to dump the load of snow when an embankment admitted, is only incidental thereto and may not be desirable, nor is this construction which admits of dumping the load my invention. My invention consists in constructing the sides with power to turn out but a short distance only, for purposes as set forth.

The upturning floor of the car, as described in the specification, and also the sides arranged to turn out, are not my invention; nor do I claim the sides extending below the floor to keep the snow from under the car; but the two heavy iron pieces *D* and *P*, Figs. 1 and 2, arranged and for the purposes as described, are my invention.

I claim as my invention and desire to secure by Letters Patent—

1. A snow-plow adapted to be adjusted upon the forward end of a car or truck, as shown.
2. The adjustable plow, in combination with the immovable tongue.
3. The iron piece *D*, formed substantially as shown, and for the purpose described.
4. The iron piece *P* *E*, formed substantially as shown, and for the purpose described.

RICHARD M. MITCHELL.

Witnesses:

JOSIAH EDSON,  
JAS. K. WARD.