

(No Model.)

C. M. STEENBARGER.  
SNOW PLOW.

2 Sheets—Sheet 1.

No. 353,604.

Patented Nov. 30, 1886.

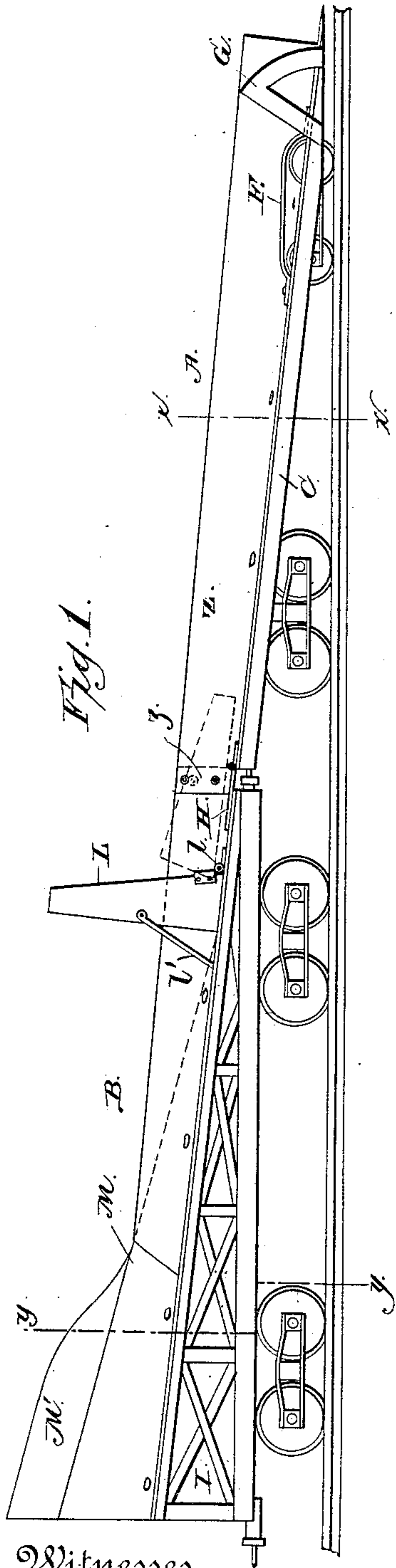


Fig. 1.

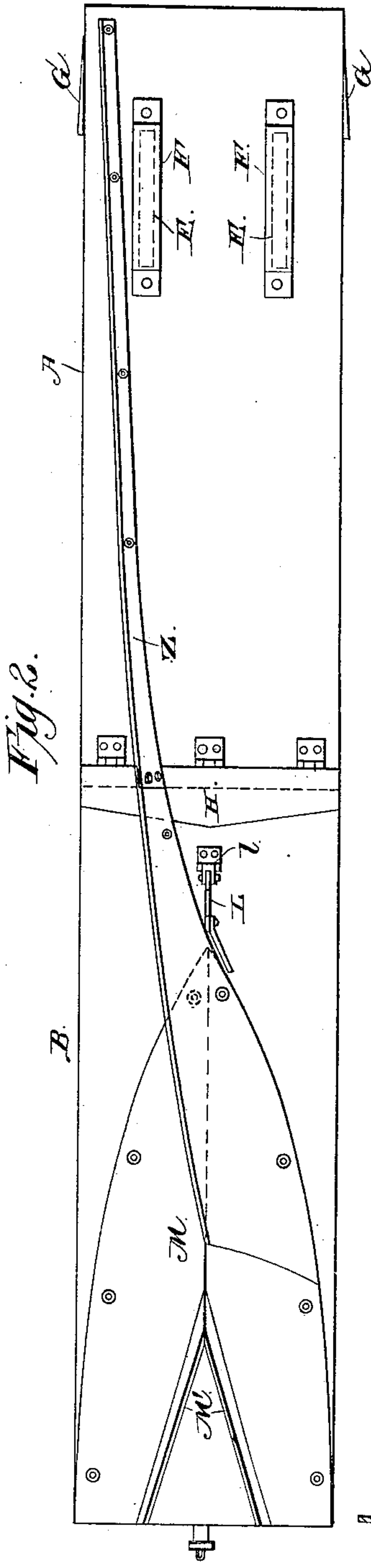


Fig. 2.

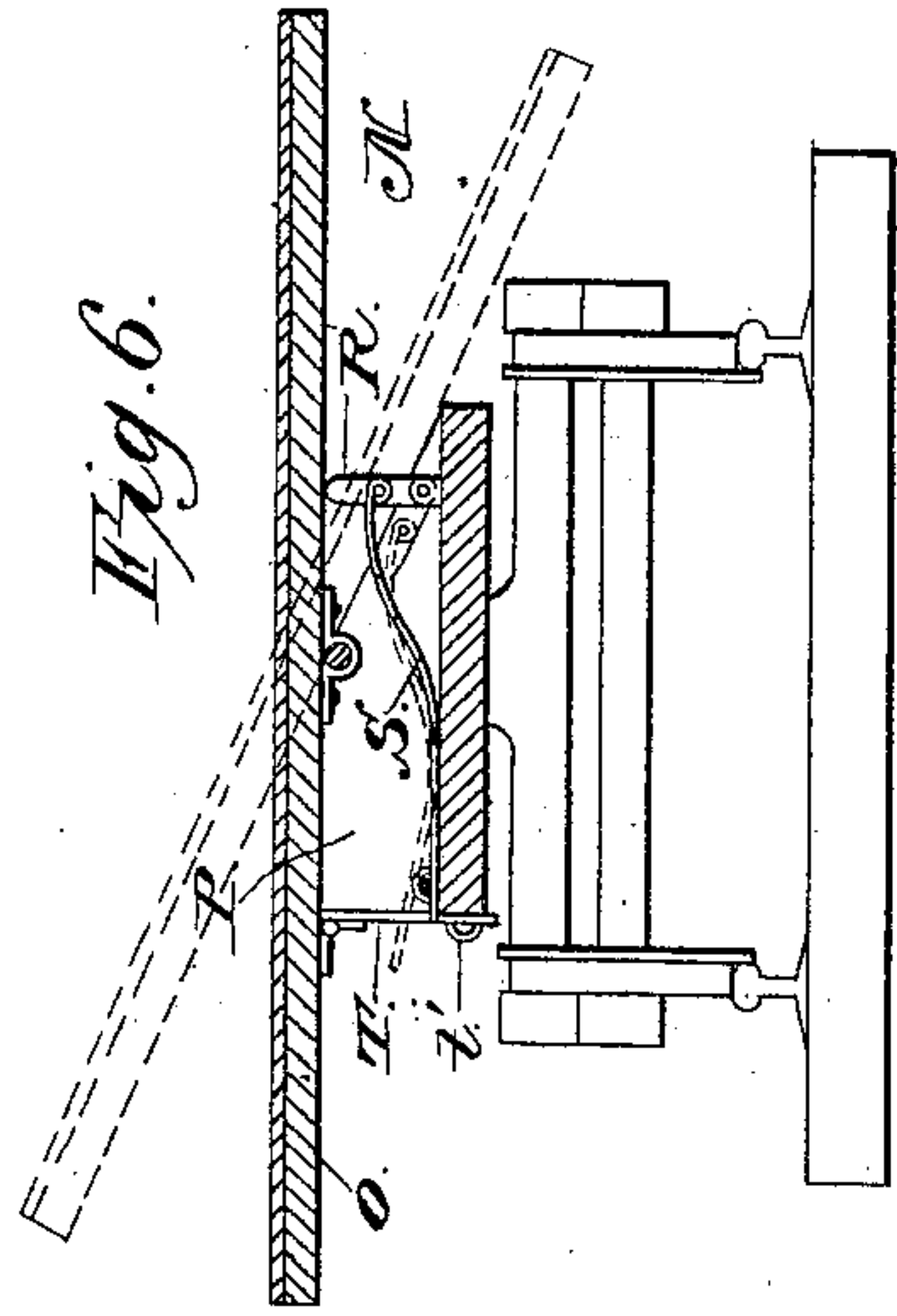


Fig. 6.

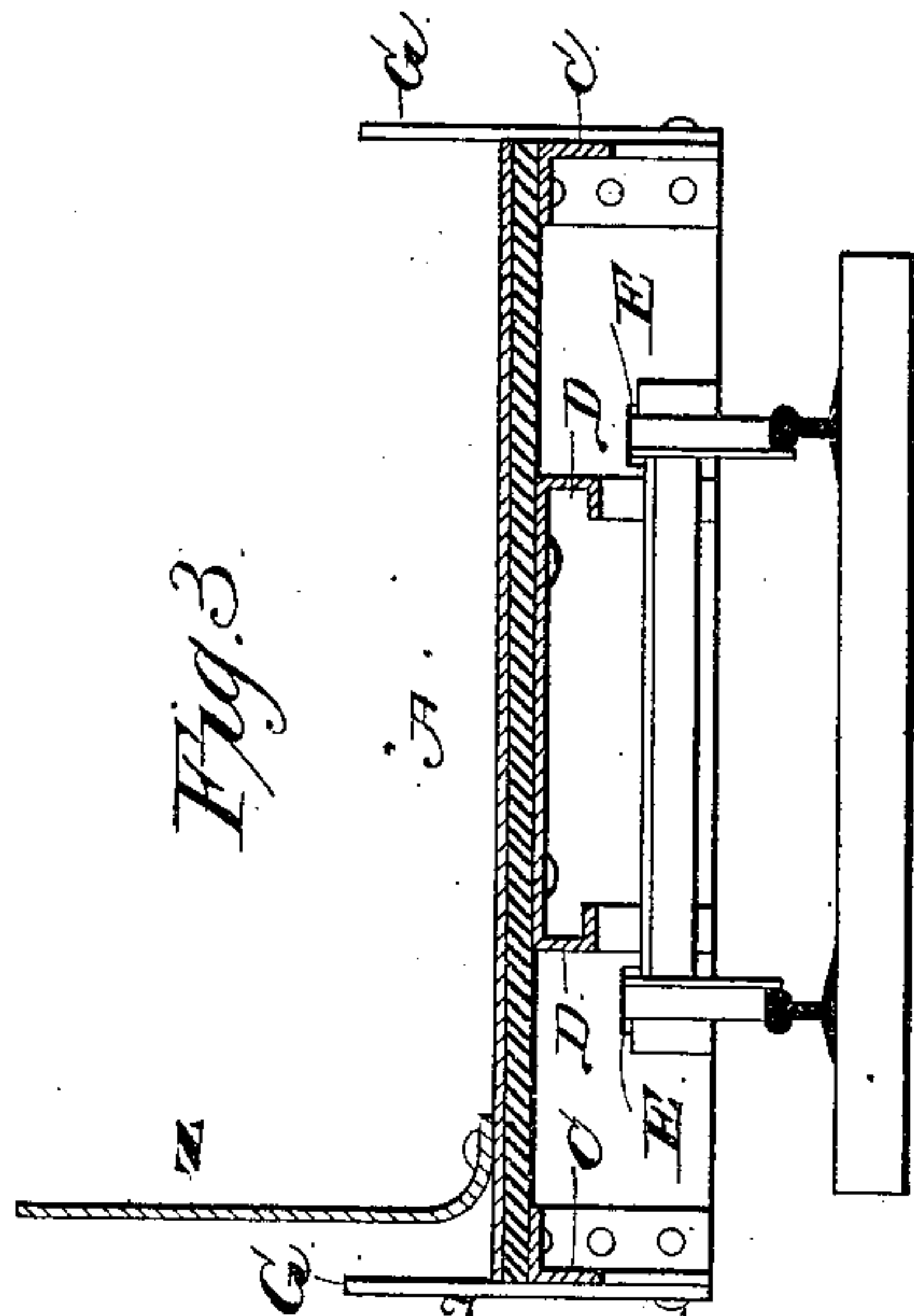


Fig. 3.

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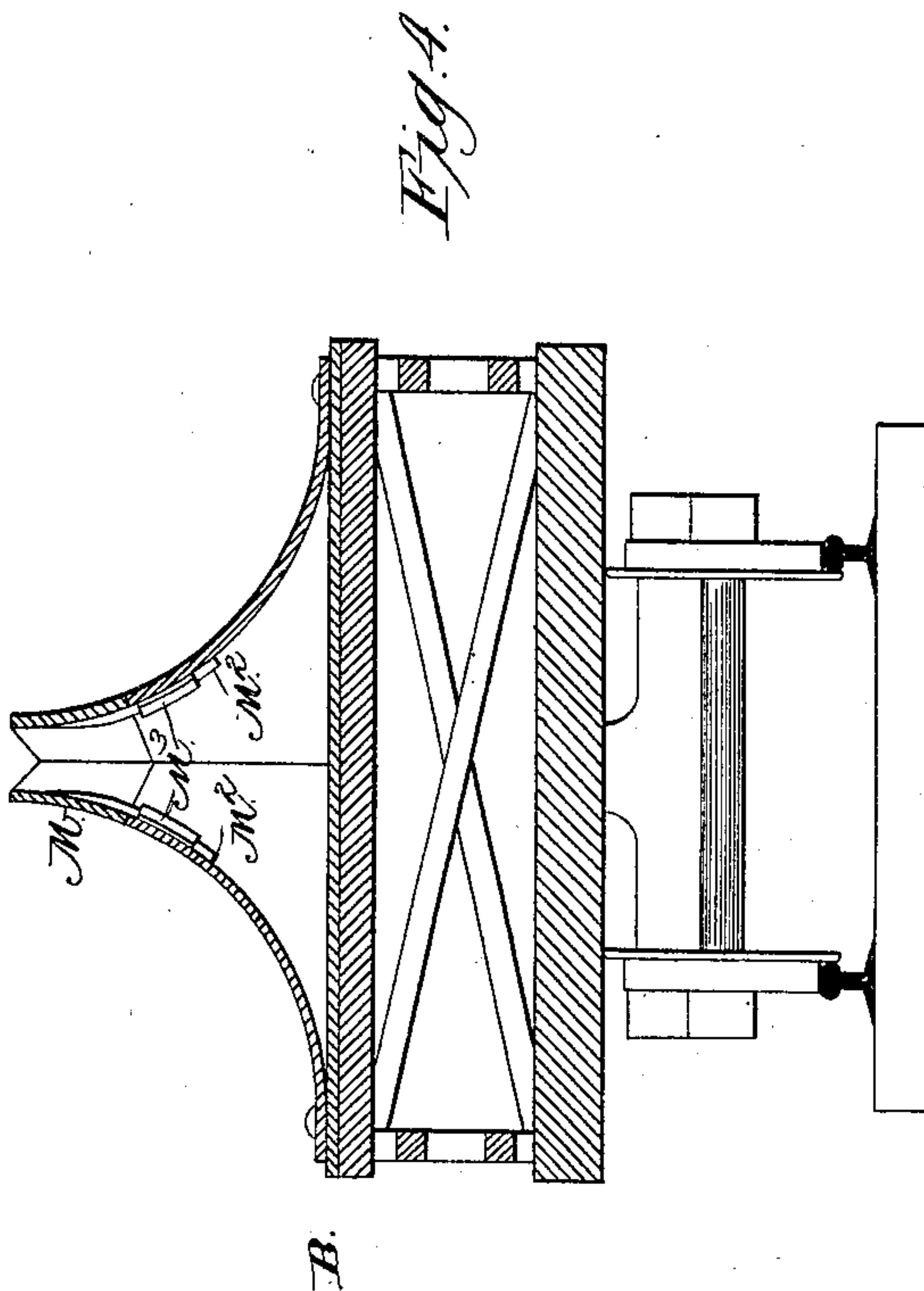
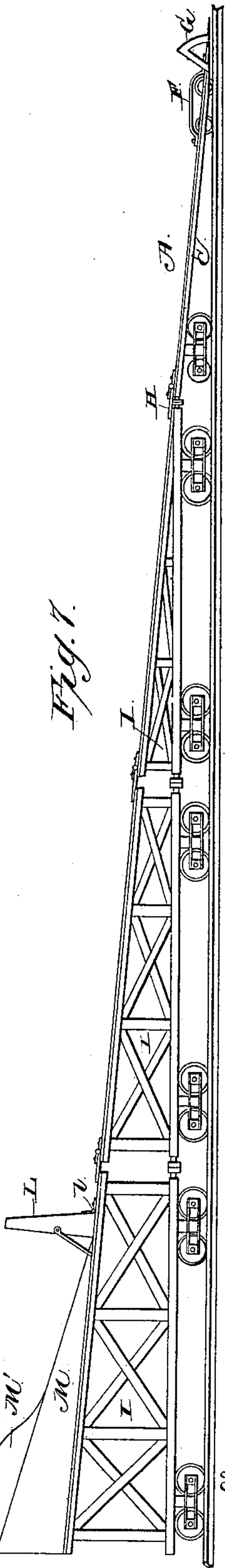
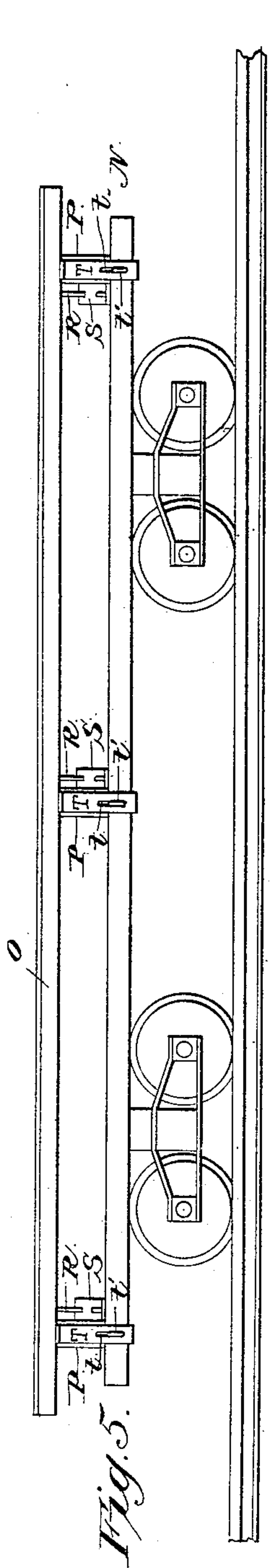
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2 Sheets—Sheet 2.

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Witnesses  
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# UNITED STATES PATENT OFFICE.

CURTIS M. STEENBARGER, OF HOWARD, KANS., ASSIGNOR OF ONE-FOURTH  
TO W. I. THOMPSON AND GEORGE H. THOMPSON, BOTH OF SAME PLACE.

## SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 353,604, dated November 30, 1886.

Application filed April 5, 1886. Serial No. 197,878. (No model.)

*To all whom it may concern:*

Be it known that I, CURTIS M. STEENBARGER, a citizen of the United States, residing at Howard, in the county of Elk and State of Kansas, have invented a new and useful Improvement in Snow-Plows, of which the following is a specification.

My invention relates to an improvement in snow-plows for clearing snow-drifts from railway-tracks; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a snow-plow embodying my improvements when two cars are used. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical section taken on the line *xx* of Fig. 1. Fig. 4 is a similar view taken on the line *yy* of Fig. 1. Fig. 5 is a side elevation of a dumping-car. Fig. 6 is a vertical transverse sectional view of the same. Fig. 7 is a side elevation of a snow-plow embodying my improvements when four inclined cars are used.

My snow-plow is constructed of two or more sections or cars A, and B, which are inclined and are supported upon suitable wheels in the usual manner. The front section, A, is an inclined platform, the lower front end of which is only a few inches above the level of the top of the track, and sharpened, and the rear end of which is somewhat higher, the platform being thus inclined at a suitable angle. This platform is made of boiler-iron covered with thin plating of steel with smooth surface, which is strengthened at the sides by longitudinal right-angled plates C, which are bolted thereto, and on the under side of the said platform and extending longitudinally on the same are secured similar strengthening longitudinal angle-irons, D. By thus constructing the platform A of boiler-iron and providing it with the angle-braces the said platform is made very strong, and is capable of sustaining great weight. The hind trucks under platform A are to be made of sufficient weight (filled with lead, if necessary) to hold them to the track. The wheels of the front truck of the said platform are very much smaller than the wheels of the rear truck thereof, in order to bring the front end of the platform nearly to the level of the track,

and the upper sides of the said front wheels extend through slots E, which are made near the front end of the platform, the said slots being covered by metallic straps F, which extend at a suitable distance above the said slots, and are secured at their ends on the upper side of the platform. Near the front end of the platform A, on opposite sides thereof, are located vertical cutters G, the front edges of which are sharpened, the said cutters being preferably made of steel and strongly braced, as shown. The width of the platform exceeds the width of the track, and the platform thus extends beyond each side of the track for a suitable distance, so as to clear a way broad enough for the passage of a train. To the rear end of the platform A is hinged a transverse lap-plate, H.

B represents the rear inclined platform, constructed of hard wood of thickness to give sufficient strength, covered, as hereinafter stated, the front end of which is on a level with the rear end of the platform A, and is supported upon suitable wheels in the usual manner, and securely braced by a trestle-work, I. The upper side of the platform B is covered with sheet-iron, and the said platform is coupled to the platform A, the rear edge of the hinged plate H of the said platform A resting on the front upper side of the platform B, and thereby providing an unobstructed inclined plane. Near the front end of the platform B is located a vertical cutter, L, which is arranged in the center of the platform, and is hinged thereto, as at *l*, and provided with a brace, *l'*. The said cutter may be thrown forward on the platform B when passing under a bridge or tunnel, as shown in dotted lines in Fig. 1. In rear of the cutter L on the platform B is arranged a plow, M, the longitudinal center of which is in a line with the longitudinal center of the platform B, the said plow being provided with two mold-boards, one on each side. For a suitable distance above the platform B the plow is integral or immovable. The said plow is provided at the rear ends of the double mold-boards with upper sections, M', which form vertical extensions of the said mold-boards, these sections M' being provided with depending arms M<sup>2</sup>, which pass through keepers M<sup>3</sup>, that are secured to the inner sides of



the rigid portions of the mold-boards. From this construction it will be readily understood that the upper sections, M', may be removed from the lower integral section of the plow or mold-board, thereby permitting the latter to pass under a low bridge or tunnel.

Z represents a front extension or mold-board, which is adapted to be attached at its rear end to either of the mold-boards of the plow M, the said extension Z having its rear end curved to correspond to the contour of the faces of the double mold-boards. This extension Z extends forward from one of the double mold-boards across the inclined platform A, in front of the platform B, and nearly to the front end of the said platform, thereby providing the platforms A and B with a mold-board which extends diagonally from the rear end of the platform B, at one side thereof, forwardly to the front end of the platform A, at the opposite side thereof, the said mold-board thus extending entirely across the platform, for the purpose of throwing the snow to one side as the machine advances when the snow-drift is on such a depth as to permit it. This extended mold-board Z may be made in two or more sections—one for each platform—the said sections being provided at their joints with lap-plates z, hinged to the rear end of each section and adapted to bear against the face of the rearward section, thus forming an unobstructed surface to the extended mold-board.

The operation of my invention is as follows: In order to clear a snow-drift from the track, the sections A and B of the snow-plow are coupled together, and an ordinary locomotive is coupled to the rear end of the section B. When the extended section Z of the mold-board is removed, as the plow advances the vertical cutters G cut vertically through the drift, and that portion thereof between the cutters is raised by the inclined platform A, and the snow is swept rearwardly over the platform A to the platform B, where it is divided by the vertical cutter L, and one half of the snow comes in contact with one face of the mold-board and the other half of the snow comes in contact with the opposite face of the mold-board. The rear end of the rear section or platform, B, is above the level of the snow-drift, and the snow, which moves rearwardly over the inclined platforms A and B, is thrown by the plow M outwardly from the rear platform, B, onto the snow on both sides of the cut, thereby making an unobstructed passage for trains.

In Figs. 5 and 6 are illustrated a dumping platform-car, which is to be used for moving snow-drifts of excessive depth, and beyond the capacity of the apparatus hereinbefore described. This dumping car or platform is coupled to the rear end of the section or platform A. The said car N has a platform, O, which is made of hard wood covered with sheet-iron, and is of suitable width, corresponding to the platform A, the said platform O being hinged centrally on vertical standards

P. One end of each of these standards is inclined or cut away, as shown in Fig. 6, thus leaving one edge of the platform O free to be lowered, whereby the said platform may be inclined to discharge its load from one side of the track. The free edge of the platform is supported normally by hinged arms R, which are provided with rods S, which extend across the frame of the car N under the platform, and are secured thereto by means of any suitable devices, and one side of the platform O is provided with depending arms T, which are slotted, as at t, and engage with staples or keepers t', which project from the adjacent ends of the brackets or standards P; thereby serving to keep the platform O normally in a horizontal position. The snow that is raised by the inclined platform A is discharged upon the platform O, and when the latter is filled the engine is backed, thus causing the said platform O to convey a load of snow from the drift to a suitable point from which the snow may be discharged from the platform, and the latter is then inclined in the position shown in dotted line in Fig. 6, thereby discharging the snow on one side of the track. This operation is repeated until a way has been cleared through the drift for trains.

When the plow is used on roads requiring it, four inclined cars are to be used to increase the length of the inclined plane and raise the snow above the snow-bank, making the platform at the mold-boards about ten feet or more above the track, and when the dumping-car is needed it is to be attached to the rear end of the second inclined car, the platform of the dumping-car to correspond in height with the rear end of the second inclined car, the platforms of the second and third inclined cars to be constructed of hard wood, covered with sheet-iron.

Having thus described my invention, I claim—

1. In a snow-plow for railways, the inclined platform made of boiler-iron faced with a smooth steel-surface, and provided with the longitudinal strengthening angle-bars, substantially as described.

2. In a snow-plow for railways, the inclined platform mounted on wheels, and having openings or slots at its front ends for the upper side of the front wheels to extend through, and longitudinal straps F, covering the said openings and the wheels, substantially as described.

3. In a snow-plow for railways, the inclined platform provided with the vertical cutter L, hinged to the platform and adapted to be thrown forwardly thereon, for the purpose set forth, substantially as described.

4. In a snow-plow, the inclined platform having the double mold-board M, provided with the removable upper section, M', substantially as described.

5. The car N, having the vertical brackets P, and the platform hinged thereon, the hinged or pivoted arms for supporting the free



edge of the platform O, and means for moving said arms to release the platform, substantially as described.

5 6. In a snow-plow, substantially as described, four inclined cars when needed to lengthen the inclined plane and raise the snow higher.

7. In a snow-plow, the combination of the inclined platforms arranged behind each other, the rear end of each platform being on a line  
10 with the front of the platform coupled to the rear thereof, whereby the snow will be gradually elevated above the track, for the purpose set forth, substantially as described.

15 8. In a snow-plow, the combination of the inclined platforms coupled together, and the diagonally-arranged mold-board formed in sections and secured on the inclined platform, substantially as described.

9. In a snow-plow, the combination of the inclined platforms coupled together, and provided with the diagonally-arranged mold-board Z, formed in sections, each section of the said mold-board being provided at its rear end with a hinged lap-plate for bearing against the front end of the rearward section, substantially as described. 20 25

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CURTIS M. STEENBARGER.

Witnesses:

D. W. DUNNETT,  
D. W. WEEDEN.