

No. 740,572.

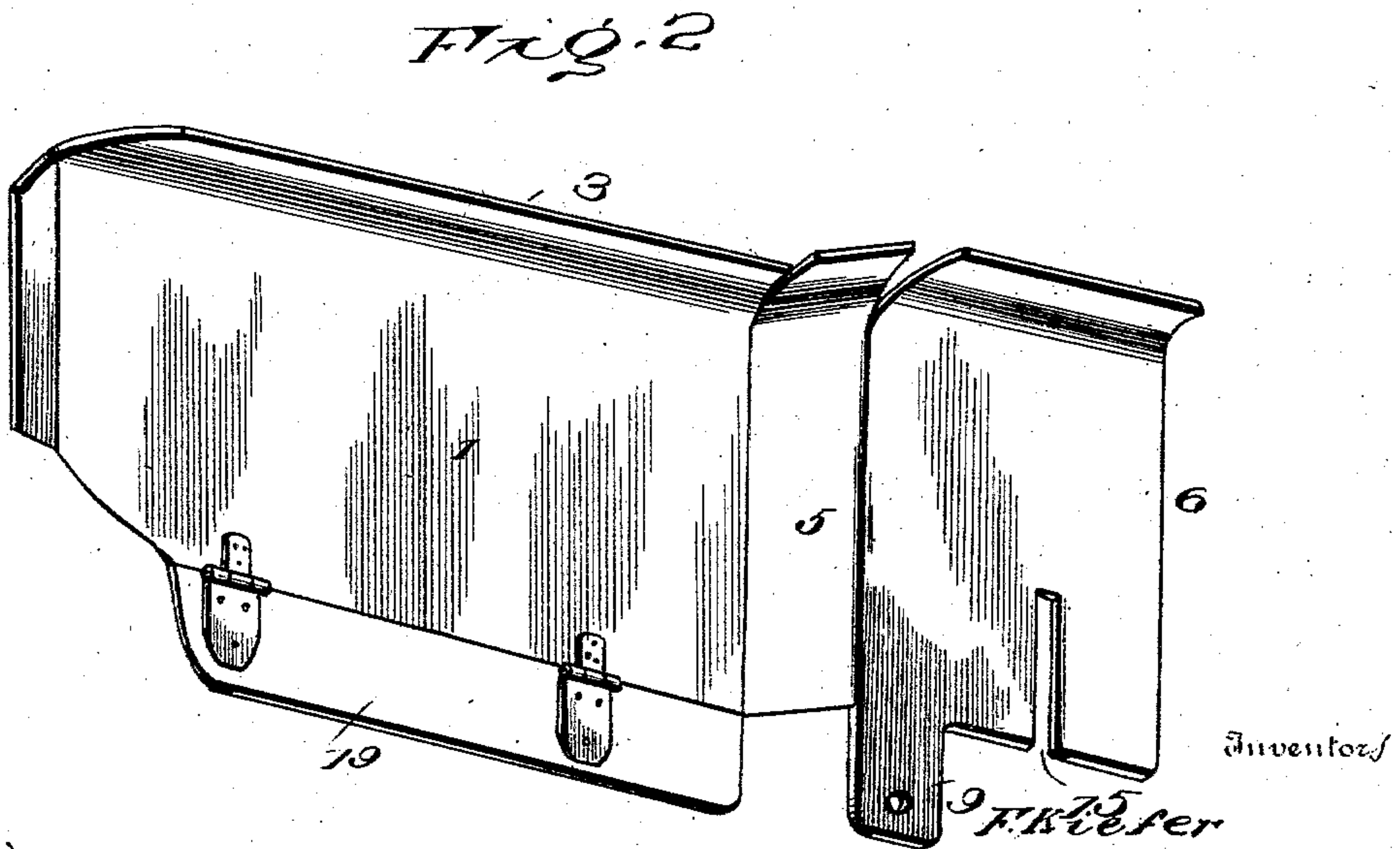
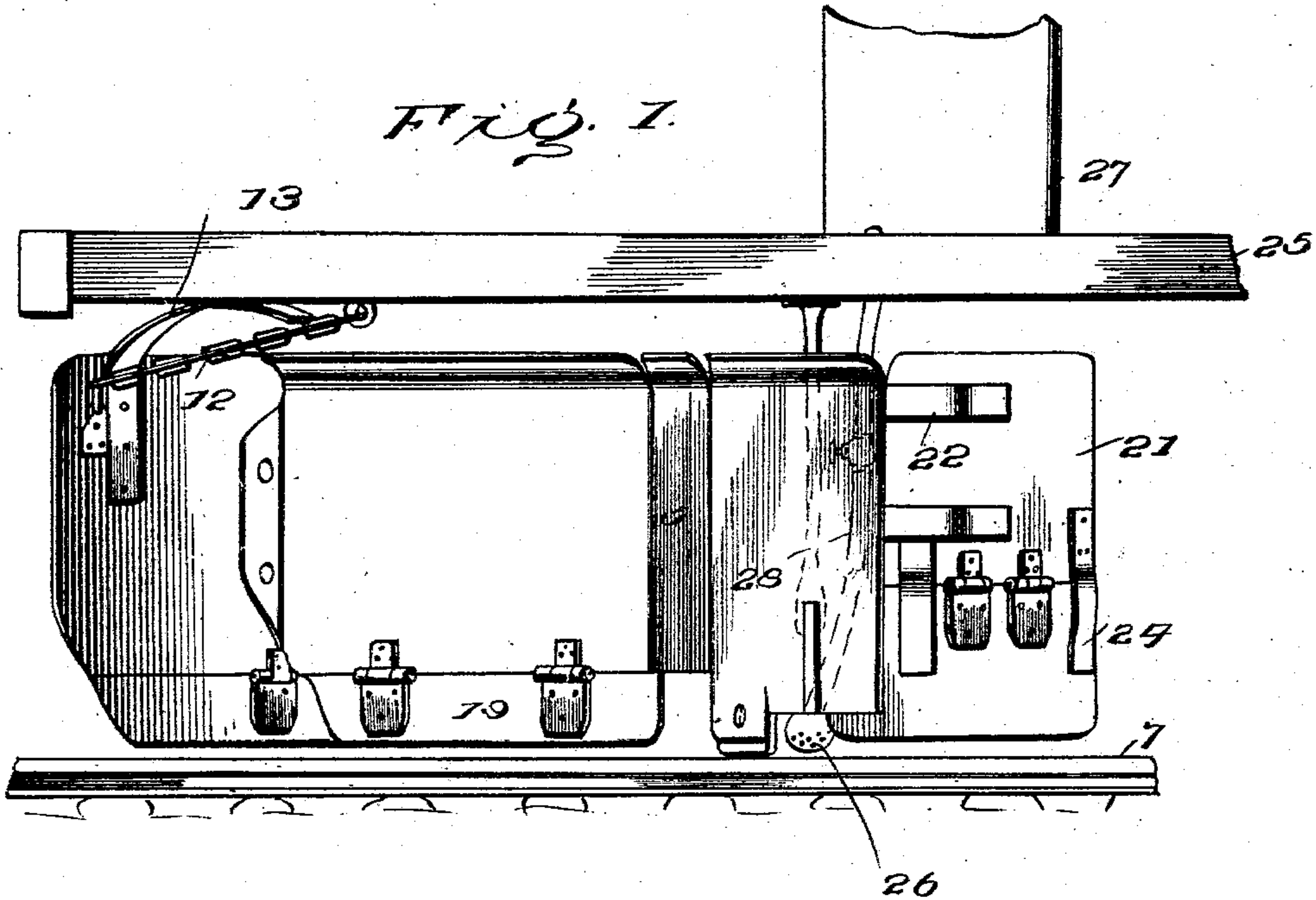
PATENTED OCT. 6, 1903.

F. KIEFER & C. FREEMAN.  
SNOW PLOW.

APPLICATION FILED JAN. 31, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses

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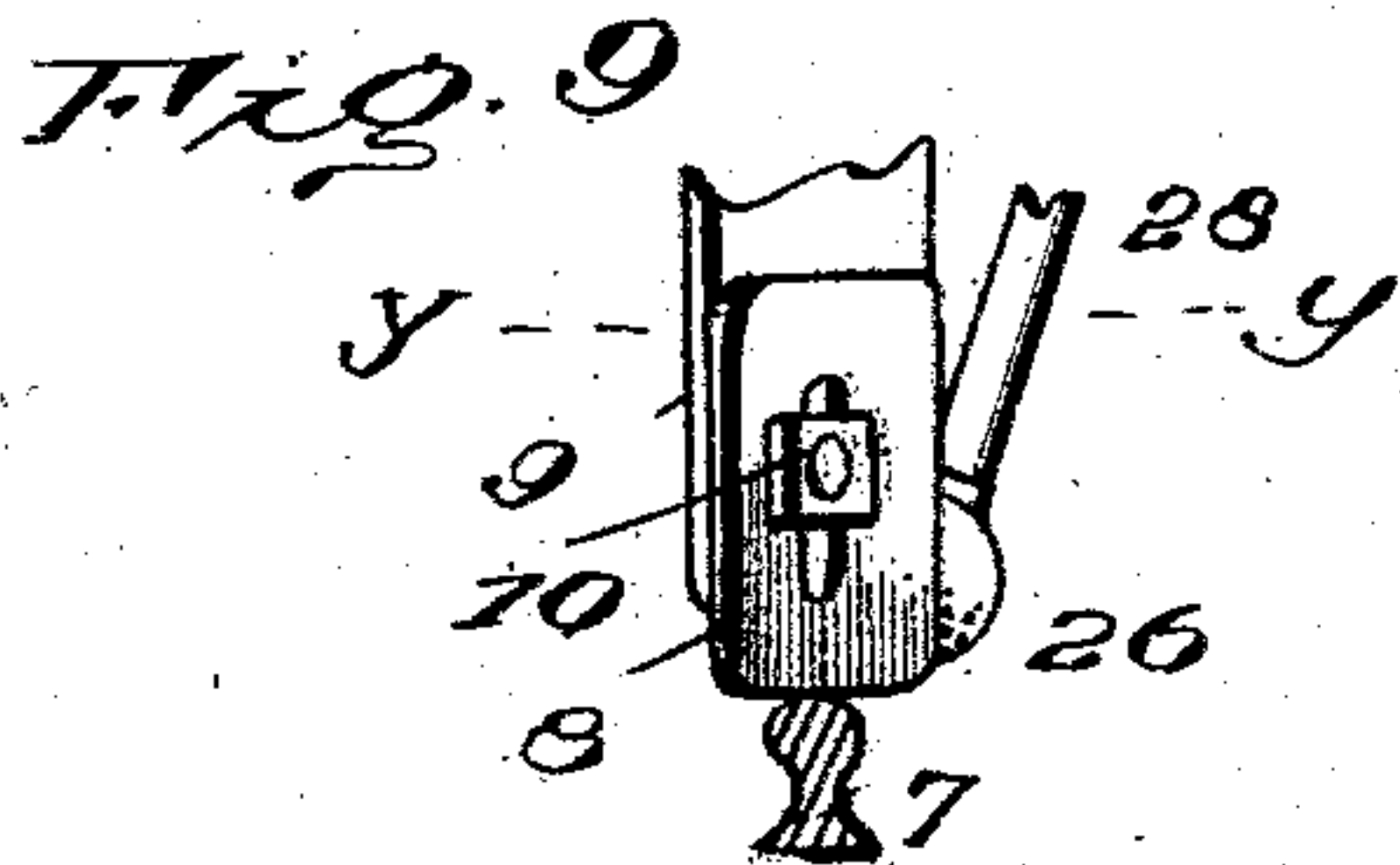
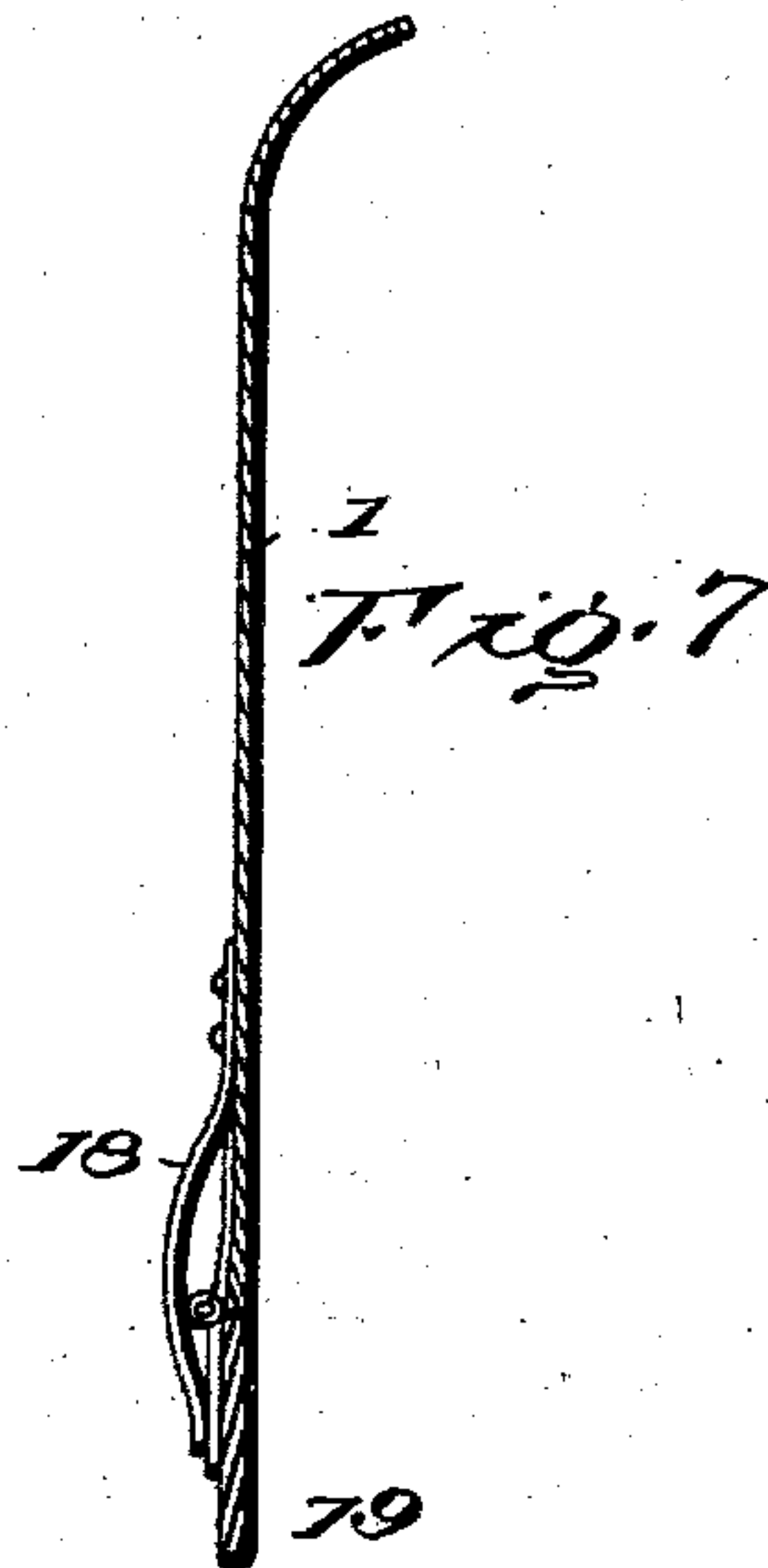
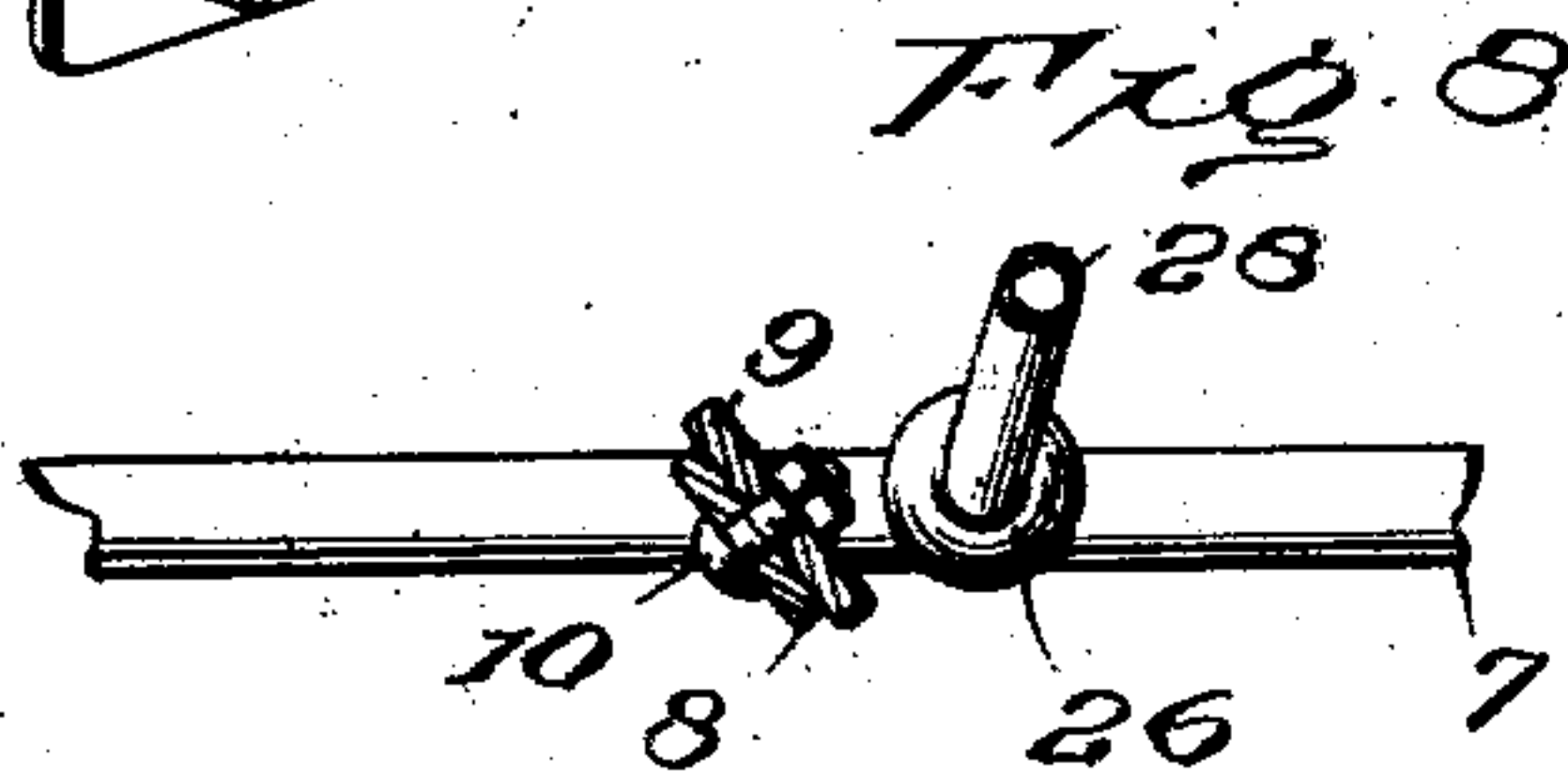
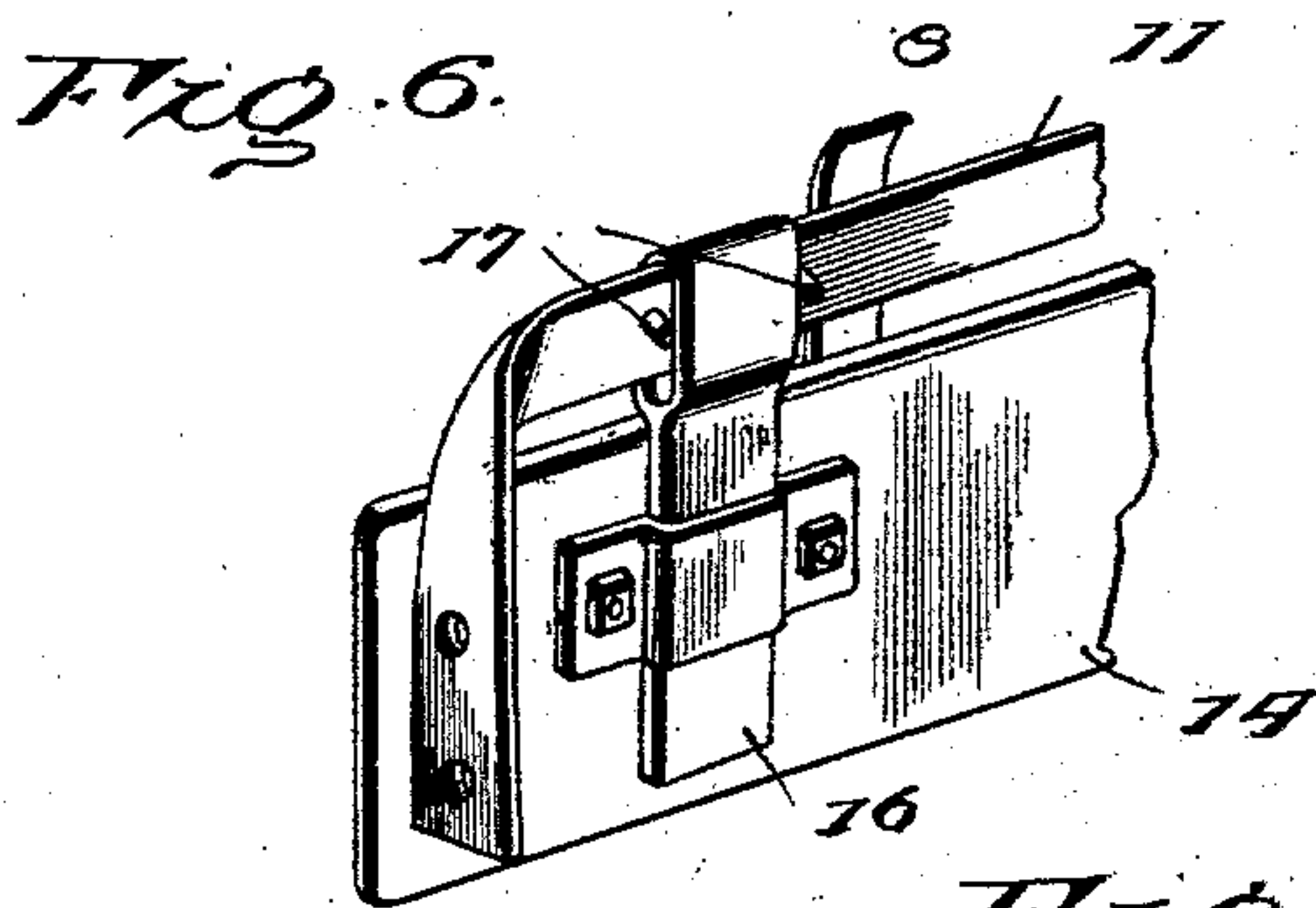
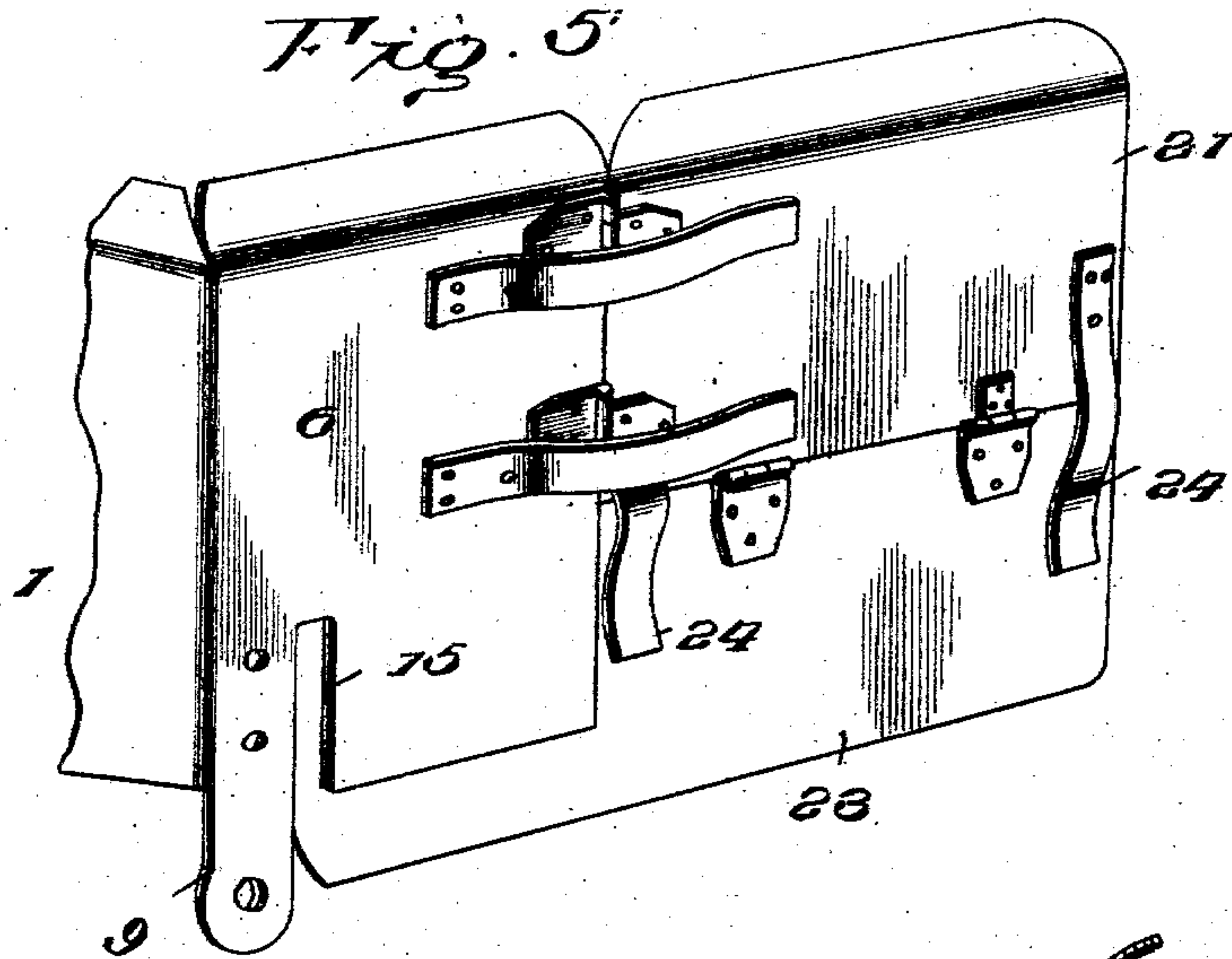
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3 SHEETS—SHEET 3.



## Witnesses

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# UNITED STATES PATENT OFFICE.

FRED KIEFER, OF PRICEBURG, AND CHARLES FREEMAN, OF SCRANTON,  
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## SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 740,572, dated October 6, 1903.

Application filed January 31, 1903. Serial No. 141,393. (No model.)

*To all whom it may concern:*

Be it known that we, FRED KIEFER, residing at Priceburg, and CHARLES FREEMAN, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, citizens of the United States, have invented certain new and useful Improvements in Snow-Plows, of which the following is a specification.

This invention provides a device for removing snow from railroad-tracks, the same being adjustable and mounted so as to clear obstructions without causing serious results. Blades are hinged to the wings of the plow and are held to place by springs, which permit of their yielding when an abnormal resistance approaching a critical point is reached, thereby obviating disabling of the device as the blades after riding over the unyielding obstruction spring back to a normal position.

For a full description of the invention and the merits thereof, and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a snow-plow embodying the invention. Fig. 2 is a perspective view of a wing of the plow. Fig. 3 is a top plan view. Fig. 4 is a view of the plow as seen from the rear. Fig. 5 is a detail perspective view of the adjacent end portions of the blade and wings. Fig. 6 is a perspective view showing the connection between the pilot-board and the transverse brace of the wings. Fig. 7 is a cross-section about on the line X X of Fig. 4. Fig. 8 is a section on the line Y Y of Fig. 9. Fig. 9 is a detail view of a rail-scraper and torch.

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 plow comprises, essentially, two wings 1 and 2, rearwardly diverged and having their upper edge portions forwardly curved, as shown at 3. One of the wings, as 1, extends

in front of the other wing, as indicated at 4, to prevent the entrance of snow between the wings when the plow is in operation. A jog or offset 5 is formed in each of the wings near their rear ends and throws the rear portions of the wings out of line with the front portion, as shown at 6. The offset portion 5 of each wing comes directly above a side portion of the rails 7 and adjacent to the rail-scrapers, which are arranged in vertical alignment with said rails so as to clear the same from ice and snow. Each rail-scraper consists of a blade 8 and a shank 9, the latter being a pendent portion of a wing. The blades 8 are vertically adjustable with reference to the shanks 9 and are adapted to be secured in the located position by a bolt or fastening 10. By this means the blades are adapted to be adjusted to compensate for wear. The rail-scrapers are transversely inclined, so as to push the ice and snow laterally from the rails in the same direction as the wings of the plow. The bulk of the snow pushed laterally by the wings 1 and 2 clears the rails in advance of the rail-scrapers, thereby preventing banking or clogging of the latter, which would be the case if the snow, slush, and the like were permitted to discharge thereon from the wings of the plow. The rear portions 6 of the wings clear any snow that may be left after the action of the wings and rail-scrapers.

A brace 11 extends transversely between the rear portion of the wings and is rigidly attached at its ends thereto and acts as a stay as well as supporting means for the rear portion of the plow. The forward ends of the wings 1 and 2 are rigidly connected and are supported by means of a chain 12 or like connection. A spring 13 exerts a downward pressure upon the front end of the plow and permits the same to move vertically to clear the unyielding obstruction when met with without crippling the device. The pilot-board 14 supports the rear portion of the plow and the rear ends 6 of the wings are slotted, as shown at 15, to feed over the pilot-board 14, thereby preventing longitudinal play of the plow when in operation. Hangers 16 have adjustable connection with the pilot-board 14 and are suspended from the transverse brace 11 and are prevented from lateral play thereon



by means of stops or pins 17. The eyes or loops at the upper ends of the hangers 16 are of such relative length as to admit of the rear end of the plow having a limited vertical play, 5 so as to adapt itself to the surface condition of the road-bed. Springs 18 are rigidly attached at their lower ends to the pilot-board 14 and their upper ends are curved and overhang the brace 11 and normally exert a downward pressure thereon to hold the plow to its 10 work and admit of vertical play when abnormal vertical resistance is encountered.

Blades 19 are hinged to the lower edges of the wings 1 and 2 in advance of the offset 15 portions 5 and approach close to the surface of the road-bed, thereby admitting of the snow, slush, and the like being removed close to the surface of the road-bed. Springs 20 are secured at their upper ends to the wings 20 and exert a pressure at their lower ends upon the blades 19 to hold them in a predetermined position and admit of said blades yielding to ride over an obstruction, so as to obviate injury to the plow, which would detract from its 25 efficiency.

According to the particular use of the plow it may be desirable to increase the length of either one or both of the wings. For a double track it is only necessary to increase the 30 length of the outermost wing; but for a single track it is preferred to increase the length of both wings, so as to throw the snow to a safe distance from the tracks. To meet these conditions, a supplemental wing 21 is 35 adapted to be hinged to the rear end of either one or both of the wings 1 and 2, and springs 22 are connected at one end to the main wing and are adapted to bear at the opposite end against the wing 21, so as to hold it in working position. A blade or wing 23 is hinged 40 to the lower edge of the wing 21 and is held in working position by springs 24, connected at one end to the wing 21 and having the opposite end bearing against the blade 23, as 45 stated. The blade or wing 23 has a swinging movement with the wing 21 and an independent movement upon its hinge connection with said wing, thereby amply providing for automatic clearance of unyielding obstacles met 50 with in the path of either one of the parts 23 or 21.

The snow-plow is adapted to be applied to a truck of any construction suitable for the purpose, the platform of the truck being indicated at 25 in Fig. 1 and overhanging the 55 plow, so as to admit of the spring 13 bearing thereagainst to force the front end of the plow downward. It frequently happens that a slight amount of ice and snow remains upon 60 the rails, thereby causing the cars to slide. To remove this ice or snow, torches or burners 26 are provided for each rail and are supplied with gasolene or like hydrocarbon from a tank 27, mounted upon the truck, by means 65 of valved pipes 28.

The plow can be lifted at any time, especially to clear the road-bed when backing the

car. For this purpose a lever 29 is mounted upon the platform of the car and is connected by a chain 30 or like part with the brace 11. 70

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

1. A snow-plow comprising rearwardly-diverged wings having jogs or offsets near their rear ends and having the portions in the rear 75 of said jogs outwardly and rearwardly diverged and provided with rail-scrapers adjacent to the said jogs or offset portions, substantially as set forth.

2. A snow-plow comprising rearwardly-diverged wings, blades hinged to the lower edges 80 of the wings, and springs interposed between said blades and wings to hold the blades in working position and admit of their yielding to clear obstructions, substantially as set 85 forth.

3. In combination, a snow-plow, a support, independent connections between the front and rear of the snow-plow and said support admitting of the snow-plow having a limited 90 vertical play, and springs interposed between the front and rear portions of the plow and the supporting means therefor to normally hold the plow to its work and admit of vertical movement thereof to clear unyielding ob- 95 structions, substantially as specified.

4. In combination with a snow-plow comprising rearwardly-diverged wings, a supplemental wing hinged to the rear end of a wing 100 of the plow, and a spring spanning the joint between the hinged wings to normally hold the supplemental wing to its work, substantially as described.

5. In combination with a snow-plow comprising rearwardly-diverged wings, a supplemental wing hinged to the rear end of a wing 105 of the plow, a blade hinged to the lower edge of the supplemental wing, and springs spanning the joints between the blade and wings to hold the parts in a normal position under 110 normal conditions, substantially as set forth.

6. In combination, a support comprising a pilot-board, a snow-plow comprising rearwardly-diverged wings having vertical slots 115 to receive the end portions of said pilot-board, and connecting means between the plow and support, substantially as described.

7. In combination, a support, a pilot-board, a snow-plow comprising rearwardly-diverged wings, a brace connecting the wings, connections 120 between said brace and pilot-board, and means for preventing lateral play of the plow, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

FRED KIEFER. [L. S.]  
CHARLES FREEMAN. [L. S.]

Witnesses to Kiefer's signature:

A. K. DETWEILER,  
C. S. TILMAN.

Witnesses to Freeman's signature:

JOHN ARGUIN,  
GEO. HILWIG.