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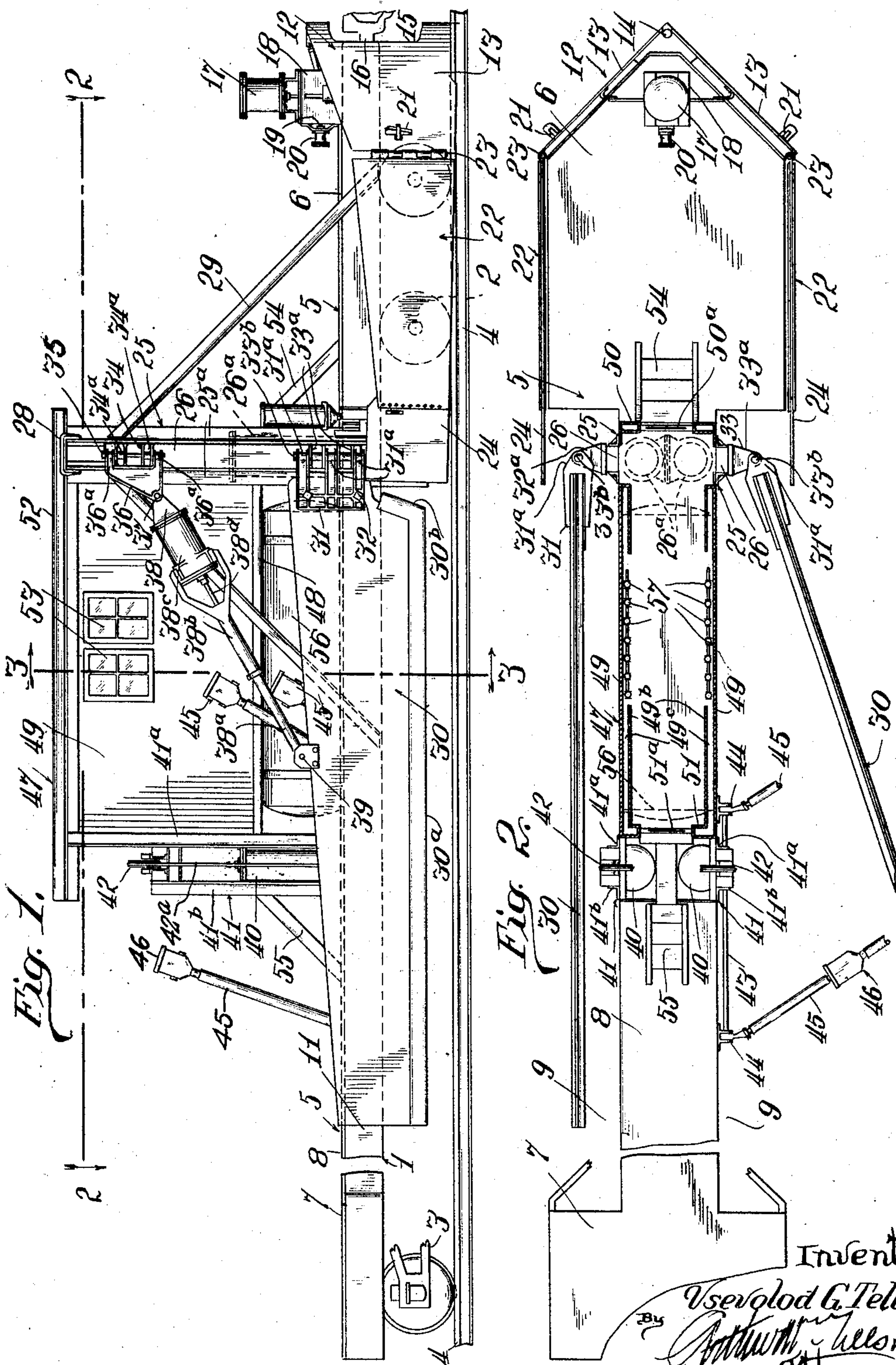
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RAILROAD SPREADER

Filed Dec. 24, 1926

2 Sheets-Sheet 1



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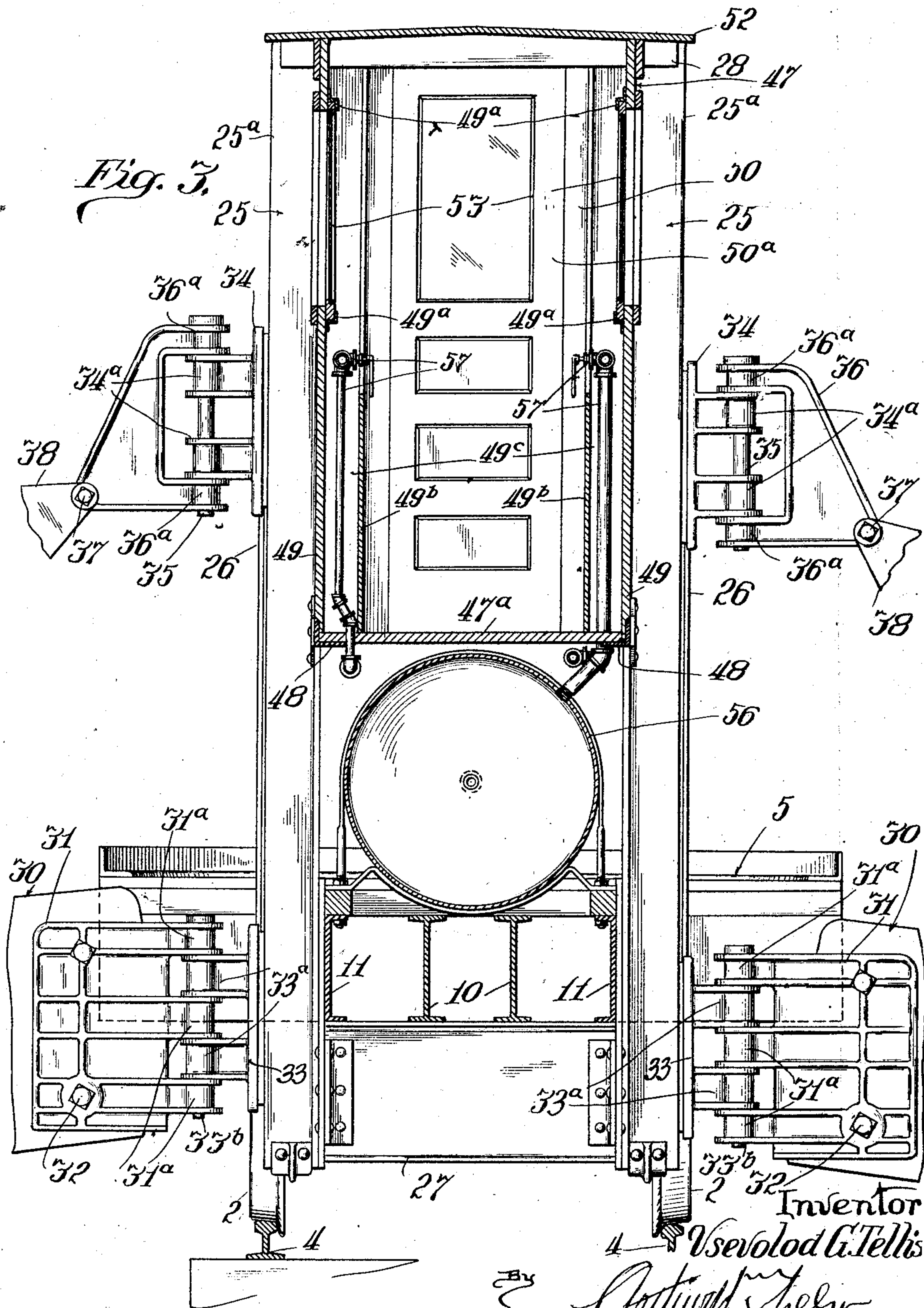
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## UNITED STATES PATENT OFFICE

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## RAILROAD SPREADER

Application filed December 24, 1926. Serial No. 158,794.

This invention relates to improvements in railroad spreaders and it consists of the matters hereinafter described and more particularly pointed out in the appended claims.

5 The primary object of the invention is to improve the general arrangement of the parts of the spreader, wherein it will be more strong and rigid, more symmetrical in appearance, better balanced and more convenient for operation in its intended use.

10 A further object of the invention is to provide a spreader wherein the operation thereof may be controlled from a central station or cab so arranged as to provide an unobstructed view for the operator fore and aft and to protect him from weather elements.

15 A further object of the invention is to provide a cab on the spreader for the operator which is positioned such a distance above the deck of the spreader car as to provide a convenient place for the air pressure tank beneath the same, the cab being supported in this position by suitable uprights or posts in which the means for operating the spreader wings are disposed.

20 My invention consists generally in a spreader of the form, arrangement, construction and coaction of the various parts whereby the above named objects together with others as well as the many advantages thereof as will hereinafter appear, are attainable and my invention will be more readily understood by reference to the accompanying drawings which illustrate what I consider, at the present time, to be the preferred embodiment thereof.

In said drawings:

40 Fig. 1 is a view in side elevation of a railroad spreader embodying therein the preferred form of my invention.

Fig. 2 is a top plan view thereof with the cab illustrated in horizontal section, the plane of said section being indicated by the line 2—2 of Fig. 1.

45 Fig. 3 is a transverse vertical sectional view through the spreader on an enlarged scale, the plane of the section being indicated by the line 3—3 of Fig. 1.

50 Referring now in detail to that embodiment of the invention illustrated in the accompanying drawings:—1 indicates as a whole the car of the spreader having the usual front and rear wheel trucks 2 and 3 respectively for rolling engagement on the rails 4 of a railroad track. Said car is similar to what is usually termed a "flat car" but in this instance its deck 5 is more in the form of an arrow, with a wide pointed front end or platform 6, a rectangular rear end or platform 7 and a narrower intermediate deck portion 8. The construction just described thus presents "cut in" or recessed sides 9 for the car between the front and rear platforms along the intermediate deck portion 8. In Figs. 1 and 2 the deck portion 8 is broken away or foreshortened as shown. The deck is supported on pairs of center and side sills 10 and 11 respectively, the former being I-beams and the latter being channels with their flanges directed inwardly as best shown in Fig. 3.

12 indicates the front plow of the spreader which comprises plow members 13—13 that are normally disposed at a right angle to each other and diverge rearwardly from a common axis 14 at the nose of plow to conform to the pointed end of the front platform 6. Said plow members are of a height at their rear ends approximating the height of the platform but are higher than said deck at the nose so that material being spread by said plow cannot pile on the front platform. The nose of the front plow is cut away between its top and bottom ends as indicated at 15 in Fig. 1 to accommodate the draw bar 16 when the spreader is in transport and this cut away portion is elongated vertically to permit a limited amount of vertical adjusting movement of the front plow. Such vertical movement of the front plow is provided by an upright power cylinder 17 mounted on a pedestal 18, at the nose end of the front platform 6. By means of said cylinder the front plow as a whole may be raised and lowered within certain limits and it is held in its raised position for purpose of transport by a locking pin 19 disposed in the pedestal 18, said pin being actuated by a smaller and horizontally disposed cylinder 20 at the rear of said pedestal. Either front

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plow member 13 may be swung about the axis 14 into a position parallel with the other member when it is desired to move the material to be spread from one side of the track to the other, as is well known in spreaders of this kind. Said plow members are normally locked in the full line position shown in Figs. 1 and 2 by means of a lug and wedge pin 21, the wedge being removed when it is desired to bring one member into line with the other.

At each side of the front platform 6 is an apron or auxiliary wing 22 which normally extends parallel with the sides of the front platform throughout their length. Said aprons are hinged at their front ends to the car, each by a vertical axis pin 23, positioned at the rear end of the associated front plow member 13 and prevent the material engaged and moved by the front plow from flowing under the car as it leaves the rear ends of the plow members. Normally such aprons parallel the platform but for light spreading in connection with the front plow they may be swung about their axis pins 23 into the desired angular position and held therein in any suitable manner. To the rear end of each apron is fixed an extension 24 in the form of a flexible metallic plate which normally projects a suitable distance beyond the rear of the front platform 6.

Arising from the intermediate deck portion 8 and on each side thereof just to the rear of the front platform 6 is an upright wing post 25 in each of which a wing post carriage 26 is capable of a vertical guided movement. Such movement is imparted to the wing post carriages by means of upright fluid pressure cylinders 26<sup>a</sup> positioned just within each associated wing post. Said posts each comprises a pair of longitudinally spaced front and rear angle bars 25<sup>a</sup>—25<sup>b</sup> so fixed to the side sills 11—11 that their bottom ends project below the same. The bottom ends of the pairs of angle bars on one side the car are connected to the like angle bars on the other side of the car by a cross sill 27 while the top and bottom ends of the angle bars of each pair are connected together by U-shaped brackets 28. The top ends of each pair of angle bars forming a post are braced from the car body by oppositely and downwardly inclined braces or struts 29—29.

30—30 indicate the main spreader or side wings, one arranged on each side of the car and normally positioned within the recesses 9—9. Each wing which is vertically edge-wise disposed has a bottom edge cutter blade 30<sup>a</sup> and the inner bottom corners of each wing are cut away as at 30<sup>b</sup> so as to clear the ties of the railroad track when the wing is disposed at an angle to the car as when in its operative position. The inner end of each wing is embraced upon both sides by the front and rear walls of a hinge plate 31 and

is hinged thereto for a swinging movement in a vertical plane by a horizontally disposed hinge pin 32. Said hinge plate has vertically spaced ears 31<sup>a</sup> positioned to engage similar ears 33<sup>a</sup> of a hinge block 33 rigidly secured to the bottom end of the carriage 26 slidable in an associated post 25. Through the engaged ears of said hinge plate and hinge block there extends a vertically disposed hinge pin 35<sup>b</sup>. To the top end of each carriage 26 is fixed a second hinge block 34 having laterally projecting spaced ears 34<sup>a</sup> which extend between top and bottom ears 36<sup>a</sup> of a second hinge plate 36, a vertically disposed pin 35, in line with the pin 33<sup>b</sup> before referred to, pivotally connecting the hinge block 34 and hinge plate 36 together.

Each hinge plate 36 is pivoted by a horizontal pin 37 to the top or inner end of a wing lifting brace 38 the bottom end of which is pivoted by a pin 39 to brackets on the top edge of an associated spreader wing 30 at a point substantially midway between its ends. Each wing lifting brace comprises inner and outer telescopic parts 38<sup>a</sup>—38<sup>b</sup>, the inner part including a power cylinder 38<sup>c</sup> the piston rod 38<sup>d</sup> of which extends down through the telescopic part 38<sup>b</sup> to be fixed to the other telescopic part 38<sup>a</sup>. When fluid under pressure is admitted to the bottom end of the cylinder, the wing is swung upwardly about its axis pin connection with its associated hinge plate into the desired angular position and is held therein in any suitable manner. When air is permitted to escape from said cylinder the wing swings downwardly under its own weight.

As before mentioned when either wing is in its normal inoperative position, it extends parallel with and alongside of the intermediate portion 8 of the car and is located wholly within the associated recess or cut in side of the car as best shown at the top of Fig. 2. However, when said wing is in its operative position it extends at quite an angle with reference to the car body as best shown at the bottom of Fig. 2. Swinging movement of each wing away from or toward the car body is imparted thereto by means operatively connected to vertically disposed cylinders 40—40 one disposed on each side of the intermediate portion 8 of the car body at a point about midway between its ends. Each cylinder is suitably positioned adjacent an upright post 41, each of which comprises front and rear angle bars 41<sup>a</sup>—41<sup>b</sup>, the front angle bar being the longer. Each post 41 suitably supports a sheave 42 about which is trained a cable 42<sup>a</sup>. Said cable is operatively connected to a piston (not shown) within the associated cylinder and is also operatively connected to a horizontally arranged, longitudinally extending shaft 43 journaled in laterally extending brackets 44 on each side of the car body por-



tion 8. The said parts are so correlated that when fluid under pressure is admitted to one end or the other of one of said cylinders, the associated shaft 43 is rocked in one direction or the other. To each shaft is operatively connected the inner ends of a plurality of folding braces 45—45, the outer ends of which are suitably connected to the rear side of an associated side wing. Folding of said bars is permitted by a knuckle joint 46 in each bar. Thus when a shaft 43 is rocked in one direction, the associated wing 30 is caused to swing away from the car body into its angular operative position with respect to the car body by reason of the unfolding of the bars 45—45 and when the said shaft is rocked in the other direction, said brace bars fold up and cause the wing to be swung into parallelism with the car body. When the wing is in its operative angular position with respect to the body, its inner end is engaged or substantially engaged by the extension 24 of an associated apron 23 so that the material operated upon cannot flow or be moved under the cutaway inner end portion 30<sup>b</sup> of the associated side wing to pile in a ridge along the rail.

47 indicates as a whole the operator's control cab which is supported a suitable distance above the car body portion 8 between the wing posts 25 and cylinder posts 41. As shown here in the posts on one side of the car body are connected together by longitudinally extending angle bars 48—48 the horizontal flanges of which face inwardly toward each other and the vertical flanges of which face upwardly, said angle bars assisting said posts in supporting the cab. Said cab has upright side walls 49 and upright front and rear walls 50 and 51, a roof 52, and a floor 47<sup>a</sup>, the floor resting upon the horizontal flanges of the angle bars 48. In said side walls are windows 53 for light and air and said windows slide longitudinally on rails 49<sup>a</sup> so that they may be readily closed or opened to permit a clear vision fore and aft for the operator. In each front and rear end wall suitable doors 50<sup>a</sup>—51<sup>a</sup> are provided which are of the kind having panes therein for clear vision fore and aft. Suitable front and rear steps 54—55 are also provided which lead from the respective ends of the cab to the deck.

Under the cab and strapped to the car body at this point is a suitable fluid pressure tank 56 which is connected by piping (not shown) to the various pressure actuated cylinders. Spaced inwardly from the side walls of the cab, and below the windows therein are false walls 49<sup>b</sup> thus providing a space 49<sup>c</sup> along each side wall. In said spaces are sets of suitable piping and valves 57—57, each set controlling the admission of fluid under pressure to the operating cylinders of the wings

and plow members and other parts thereof on the respective sides of the car.

By arranging the cab in the manner described, there is nothing to obscure the full vision of the operator with reference to the work being carried on and the front and rear platforms are free to receive such tools and extra parts as is usually carried on a railroad spreader. The spreader with its front plow is admirably adapted for snow plow work and the operator and crew are comfortably housed in the cab against the weather elements when carrying on such work. Again the parts are more symmetrically arranged than heretofore thus properly distributing the weight and providing a better balance thereof so that the car as a whole is more capable of withstanding the heavy strains to which it is subjected in use. The spreader has a more neat and orderly appearance and all controls for the various operations are grouped in the cab in a position most convenient for the operator. Again the spreader which must of course be of a massiveness commensurate with its strength is well within the width tolerance permitted on railroads.

While in describing my invention, I have referred to certain details of construction as well as form and arrangement of the parts thereof, I do not wish to be limited thereto except as may be pointed out in the appended claims.

I claim as my invention:

1. A railroad spreader embodying therein, a car having a deck, pairs of upright front and rear posts, with one post of each pair on each side of the car, a pair of side wings, operatively associated with one of said pairs of posts and capable of a vertical sliding adjustable movement with respect thereto, as well as a swinging movement toward and away from the car, a cab positioned in spaced relation above the deck and supported by said posts above and between said side wings and means in said cab for controlling the movement of said wings.

2. A railroad spreader embodying therein, a car having a deck, pairs of upright front and rear posts, with one post of each pair on each side of the car, a pair of side wings, associated with one of said pairs of posts and capable of a vertical sliding adjustable movement with respect thereto, and of also a swinging movement away from and toward the car, fluid pressure means positioned adjacent one pair of posts for imparting the vertical movement to the side wings, fluid pressure means positioned adjacent the other pair of posts for imparting the swinging movement to said side wings, a cab supported by said posts in spaced relation above the deck and above and between said side wings, a fluid pressure supply means positioned beneath the cab and operatively connected to said wing operating means and valve devices



in the cab for controlling the pressure fluid to said wing operating means.

3. A railroad spreader embodying therein, a car having relatively wide front and rear  
5 platforms and a narrow intermediate body portion, pairs of upright front and rear posts on said body portion, a pair of spreader wings normally arranged parallel with said body portion within the planes of the sides  
10 of the front and rear platforms and operatively connected to said front posts, fluid pressure means for operating said wings, a cab supported above said narrow body portion by said posts and disposed above and be-  
15 tween said spreader wings, a fluid pressure supply positioned under the cab and connected to said wing operating means and manually operable devices in the cab for controlling the passage of fluid under pressure  
20 from said fluid pressure supply to said operating means.

In testimony whereof, I have hereunto set my hand, this 11th day of December, 1926.

VSEVOLOD G. TELLIS.

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