July 14, 1925. 1,546,279

J. W. ADKINS ET AL

NONSKIDDING DEVICE FOR AUTOMOBILES

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Fig. 1.

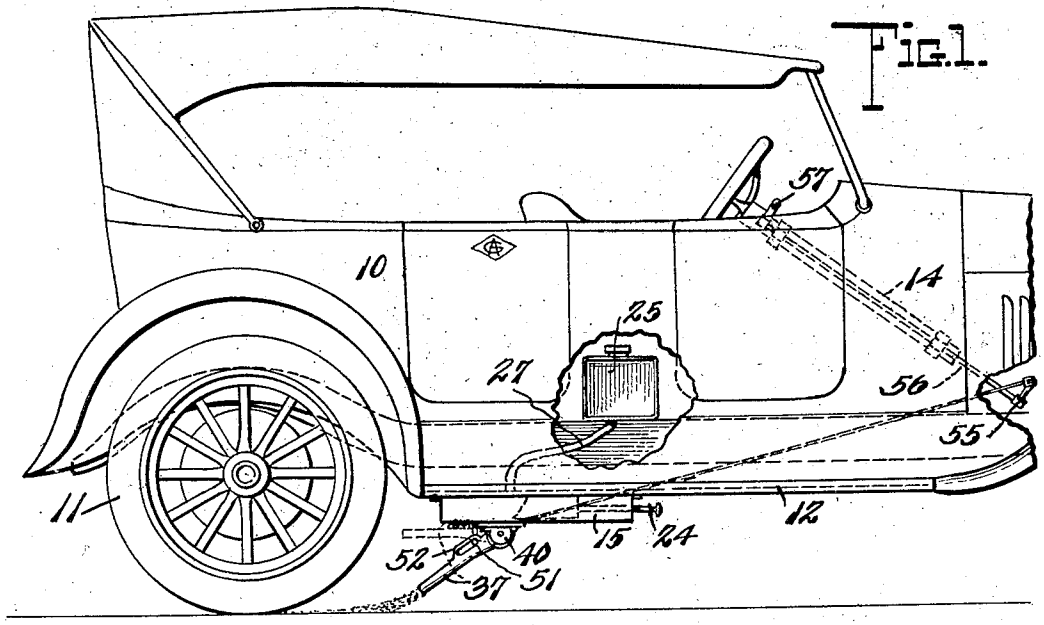


Fig. 5.

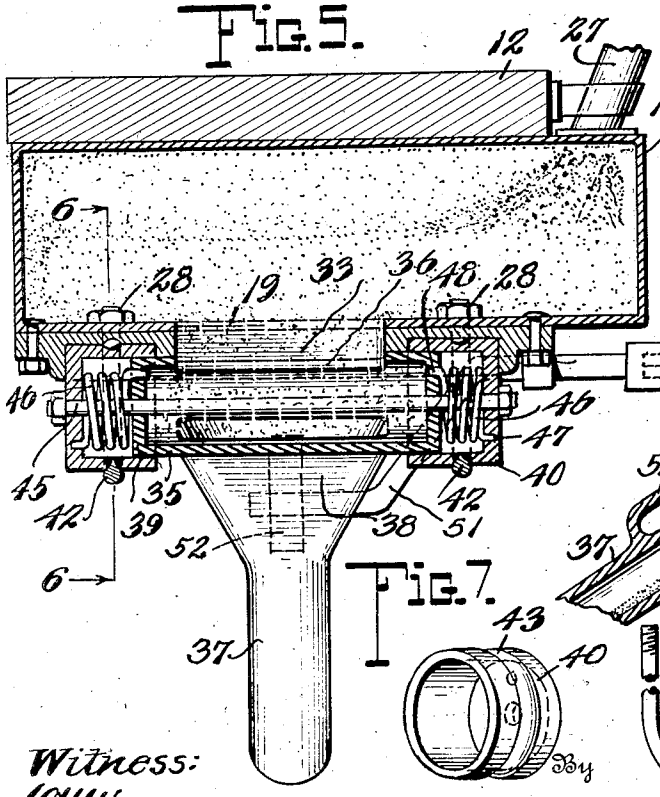


Fig. 6.

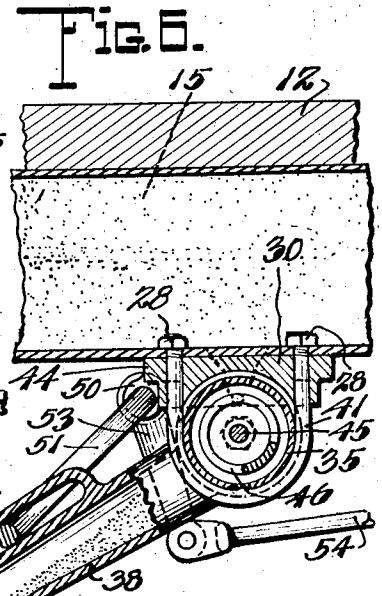
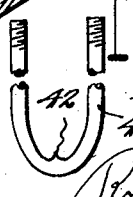


Fig. 7.

Fig. 8.



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NONSKIDDING DEVICE FOR AUTOMOBILES

Filed March 23, 1925 2 Sheets-Sheet 2

Fig. 2.

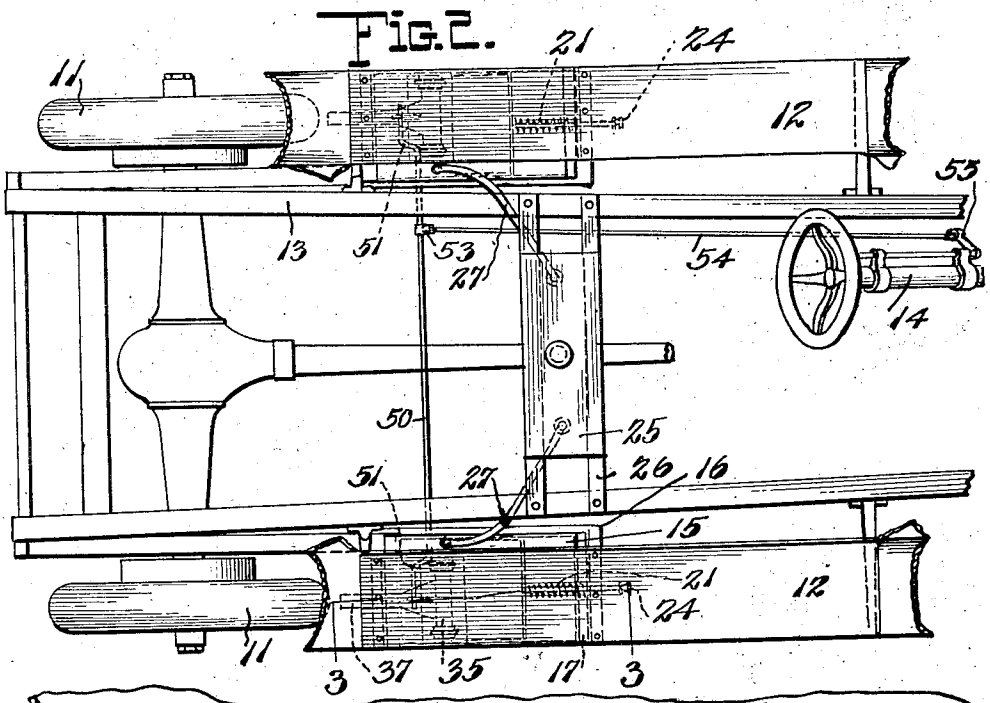


Fig. 3.

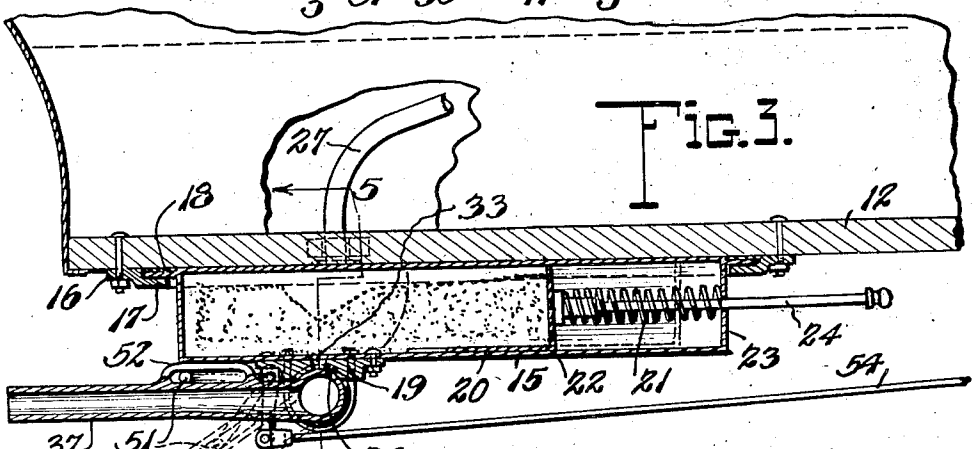
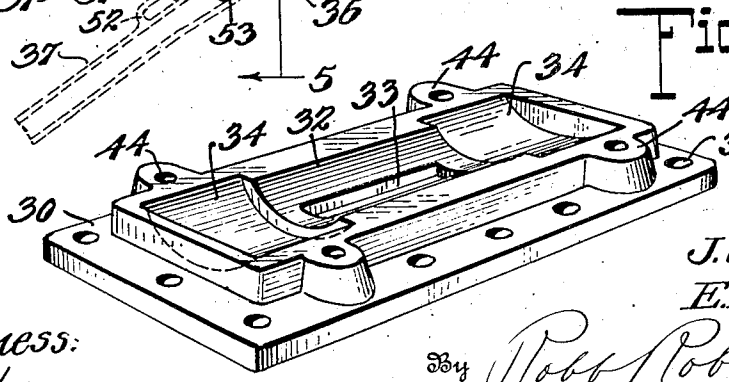


Fig. 4



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UNITED STATES PATENT OFFICE.

JOHN WILLIAM ADKINS AND ERNST EMIL GRABNER, OF THE DALLES, OREGON.

NONSKIDDING DEVICE FOR AUTOMOBILES.

Application filed March 23, 1925. Serial No. 17,705.

To all whom it may concern:

Be it known that we, JOHN WILLIAM ADKINS and ERNST EMIL GRABNER, citizens of the United States, residing at The Dalles, in the county of Wasco and State of Oregon, have invented certain new and useful Improvements in Nonskidding Devices for Automobiles, of which the following is a specification.

This invention relates to a non-skidding device for automobiles, and particularly to a construction adapted to apply sand or other material in advance of the wheels thereof to secure the proper traction upon the road bed which will prevent either skidding or slipping of the wheels.

In devices of this character practical difficulty has been experienced in securing a proper feeding of the sand to the delivery spout so as to assure the application thereof in the event of emergency, and it has also been found desirable to provide for a positive operation of this spout to effect an automatic application of the sand by means convenient to the operator of the machine and assure a cut-off of such sand supply at the proper time.

To remove these objections we have provided an improved pivotal mounting for the delivery valve and spout, and also a novel form of sand box having pressure means to effect a constant feed of the material therein toward the delivery opening in the box which when the spout is in position to apply the sand communicates with the valve member carried by said spout.

The invention has for an object to provide a novel and improved construction of sand box provided with a valve plate having a curved seat adapted to receive a cylindrical delivery valve provided with a discharge spout and also supporting caps for the ends of said valve rigidly mounted upon said plate.

A further object of the invention is to provide a construction of delivery valve and spout supported at its ends by enclosing cap members carrying retracting springs which normally maintain the spout in inoperative position, together with operating means extending from the steering wheel of the vehicle for shifting said spout into operative position relative to the wheels of the vehicle.

Another object of the invention is to provide an improved construction of sand box communicating with the delivery box and spout and provided with a tensioned feed member which causes the material in the box to be constantly fed toward the delivery opening therein.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the accompanying drawings:

Figure 1 is a side elevation of an automobile with parts broken away;

Figure 2 is a top plan of the chassis of the machine showing the location of the opposite sanding devices;

Figure 3 is an enlarged section on the line 3—3 of Figure 2;

Figure 4 is a detail perspective of the supporting plate for the delivery valve;

Figure 5 is an enlarged section on the line 5—5 of Figure 3;

Figure 6 is a section on the line 6—6 of Figure 5;

Figure 7 is a detail perspective of one valve supporting cap; and

Figure 8 is a similar view of the retaining clip for said cap.

The invention may be applied in any desired position upon the vehicle but for the purpose of illustration has been shown supported beneath the running board thereof as being a very convenient and desirable location to effectively apply the sand or other material directly in advance of a traction wheel of the vehicle. In this application of the invention the numeral 10 indicates an automobile of any desired construction having the usual traction wheels 11 at the rear and opposite running boards 12. These parts are supported in the ordinary manner by the chassis 13 of the machine which is provided with a steering post 14 and operating wheel.

The sand box 15 may be of any desired size or configuration, for instance rectangular as shown, and supported beneath the running board at the rear thereof by means of a U-shaped frame 16 which is provided with side flanges 17 adapted to receive and support the flanges 18 at the upper portion of the sand box. This sand box is provided with a delivery opening 19 and has disposed therein a telescopic feeding member 20 which is movable longitudinally of the box and relative to the discharge opening 19. This follower or feeder 20 is normally un-

der the tension of a coil spring 21 disposed between the rear wall 22 of the follower and the end 23 of the box. In filling the box with sand it is desirable to withdraw the follower so that the box may be completely filled, and this is accomplished by means of a rod 24 extending outwardly from the box and the withdrawal of this rod so tensions the spring that when released it exerts a constant pressure upon the body of the sand within the box, forcing it toward the delivery opening. Unless such means were provided it is obvious that the sand flowing from the box at the delivery opening would be quickly exhausted so that a pressure device to force the sand toward said opening is of material practical importance. The box may be filled in any desired manner, a preferred form being shown in Figures 1 and 2 where a reservoir 25 is supported by cross bars 26 upon the chassis and has extending therefrom feed pipes 27 communicating with the sand box adjacent its delivery end.

For the purpose of supporting the delivery valve and spout a bearing plate 30 is secured to the bottom of the sand box by suitable fastening devices extending through the apertures in the flange 31 thereof. The central longitudinal portion of this plate is provided with a curved recess 32 having an aperture 33 which communicates with the opening 19 from the sand box and at each end of this valve seat 32 concave bearings 34 are provided. A cylindrical valve 35 is disposed within the seat 32 and formed with an inlet opening 36 in its circumference which is adapted to register with the opening 33 of the plate when the spout 37 is in depressed position for operative purposes as indicated by dotted lines in Figure 3. This spout communicates with the valve by means of a tapering portion 38 and the opposite ends of the valve are closed by heads 39. Surrounding these ends are supporting caps 40 which seat in the concave recesses 34 of the bearing plate and are retained against movement therein by means of a U-shaped clip 41 which is formed with a projection 42 adapted to seat in an aperture of the cap at its lower portion and retain the same against any rotary movement within the clip. The cap is also provided with a circumferential groove 43 within which the legs of the clip are adapted to lie. These legs are secured in position by passing through apertured lugs 44 upon the bearing plate so that when secured in position by the nuts 28 securely retain the cylindrical valve in position and form a bearing for the outer surface thereof.

In order to permit the removal and application of the valve and caps as a unit a pivoting rod 45 extends through the opposite caps and also the end walls 39 of the valve. The space between these end walls and those of the cap is utilized to contain a restoring spring which normally holds the valve and spout in inoperative position. Such a spring is shown at 46 where it is coiled about the pivot rod 45 and has one end 47 secured in the cap head and its opposite end 48 seated in the end wall 39 of the valve.

The delivery valve and spout is normally held in elevated position as shown by full lines in Figure 3, and for the purpose of depressing the same into operative position for the delivery of the sand or other granular material directly in advance of the traction wheel a crank shaft 50 is provided and has a lifter arm 51 operating within a slide loop 52 upon the spout member 37. The crank shaft is also provided with an arm 53 from which a connecting rod 54 extends forward to the lower end of the steering post 14 of the machine where it is connected by an arm 55 to the operating rod 56 mounted upon said steering post and provided with a handle 57 preferably disposed in convenient relation to the steering wheel. While one of the sand boxes may be used if desired, still in general application they are applied at opposite sides of the machine and the rock shaft 50 extended across to secure a simultaneous and joint operation thereof.

In the operation of the invention it will be seen that upon operation of the control handle by the driver the spout is lowered into a delivery position adjacent the ground and applies the sand or other material upon the road bed directly in advance of the wheel so that it is not wasted, and the immediate traction result desired is secured. When this spout is actuated into operative position a continuous flow of sand will be maintained as it feeds through the cylindrical valve and the pressure means within the sand box continues to advance the sand to position for such feeding. This is of practical importance in the case of icy streets where it is important to use the sand for a material distance, and means must be provided to prevent clogging of the sand in the box which would prevent a proper continuous feed thereof. The location of the sand box beneath the running board protects it against moisture and when the parts are in inoperative position the box is effectually closed either against the escape of material therefrom or the entrance of moisture which would dampen and pack the same. This construction of the cylindrical delivery valve provides for its free pivoting within the caps and the location therein of the retracting springs which are thus protected from injury and rendered effective at all times.

While the specific construction of the invention has been shown and described, still

it is not confined thereto as changes and alterations therein may be made without departing from the spirit thereof as defined by the appended claims.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, a sand box having a delivery opening, a bearing plate having a curved seat provided with an aperture communicating with said opening, a cylindrical delivery valve ported to communicate with said aperture and provided with an extended spout, and supporting caps for the end of said valve carried by said plate.

2. In a device of the class described, a sand box having a delivery opening, a bearing plate having a curved seat provided with an aperture communicating with said opening, a cylindrical delivery valve ported to communicate with said aperture and provided with an extended spout, supporting caps for the end of said valve carried by said plate, and a pivot extending through the end walls of said valve and caps

3. In a device of the class described, a sand box having a delivery opening, a bearing plate having a curved seat provided with an aperture communicating with said opening, a cylindrical delivery valve ported to communicate with said aperture and provided with an extended spout, supporting caps for the end of said valve carried by said plate, and an elevating spring disposed within one of said caps and connected thereto and to said valve.

4. In a device of the class described, a sand box an apertured bearing plate secured beneath the delivery therefrom and provided with a central concave valve seat and concave seats at the opposite ends thereof, a cylindrical valve disposed within said valve seat, caps disposed within the end seats and having bearings upon the periphery of said valve, and means for securing said caps to said plate.

5. In a device of the class described, a sand box, an apertured bearing plate secured beneath the delivery therefrom and provided with a central concave valve seat and concave seats at the opposite ends thereof, a cylindrical valve disposed within said valve seat, caps disposed within the end seats and having bearings upon the periphery of said valve, and U-shaped clips in interlocked relation to said caps and secured to said plate.

6. In a device of the class described, a sand box, an apertured bearing plate secured beneath the delivery therefrom and provided with a central concave valve seat and concave seats at the opposite ends thereof, a cylindrical valve disposed within said valve seat, caps disposed within the end seats and having bearings upon the periphery of said valve, means for securing said caps to said plate, and a coiled spring disposed between the ends of the valve and caps and secured at its opposite terminals to said ends.

7. In a device of the class described, a sand box, an apertured bearing plate secured beneath the delivery therefrom and provided with a central concave valve seat and concave seats at the opposite ends thereof, a cylindrical valve disposed within said valve seat, caps disposed within the end seats and having bearings upon the periphery of said valve, means for securing said caps to said plate, a coiled spring disposed between the ends of the valve and caps and secured at its opposite terminals to said ends, and a pivoting rod having bearings in the end walls of said valve and the corresponding walls of the cap.

8. In a device of the class described, a sand box, a discharge spout and valve member rotatably mounted beneath the same and adapted to communicate with said box when the spout is in lowered position, a rock shaft provided with an arm disposed within a slide loop upon the spout from the delivery valve, an opposite operating arm upon said shaft, a connection for said operating arm to the base of the steering post, and an operating rod mounted upon the steering post and coupled to said connection.

9. In a device of the class described, a sand box, a discharge spout and valve member rotatably mounted beneath the same and adapted to communicate with said box when the spout is in lowered position, a rock shaft provided with an arm disposed within a slide loop upon the spout from the delivery valve, an opposite operating arm upon said shaft, a connection for said operating arm to the base of the steering post, an operating rod mounted upon the steering post and coupled to said connection, and tension means for automatically raising said valve and spout into inoperative position.

10. In a device of the class described, a sand box, a delivery valve and spout communicating with the lower portion thereof, a feeding member disposed within the sand box to move material toward the delivery point, and means for maintaining said member under compression.

11. In a device of the class described, a sand box, a delivery valve and spout communicating with the lower portion thereof, a feeding member disposed within the sand box to move material toward the delivery point, means for maintaining said member under compression, and means for retracting said member when filling said box.

12. In a device of the class described, a sand box, means for supporting the same

beneath a running board, a delivery valve and spout communicating with said box, compression means within the box to effect a feed to said valve, and a reserve reservoir mounted upon a fixed part and communicating with said sand box.

13. In a device of the class described, a supporting flange provided at the under face of a running board, a sand box provided with a cooperating flange at its upper portion, a delivery valve and spout communicating with said sand box, and a compressed follower disposed within said sand box.

14. In a device of the class described, a supporting flange provided at the under face of a running board, a sand box provided with a cooperating flange at its upper portion, a delivery valve and spout communicating with said sand box, a compressed follower disposed within said sand box, tension means for normally supporting said valve and spout in inoperative position, and manually actuated means for depressing said spout into operative position.

In testimony whereof we affix our signatures.

JOHN WILLIAM ADKINS.
ERNST EMIL GRABNER.