E. M. LITTELL.

ANTISKID SANDER FOR AUTOMOBILES.

APPLICATION FILED OCT. 21, 1919.

1,338,640. Patented Apr. 27, 1920.

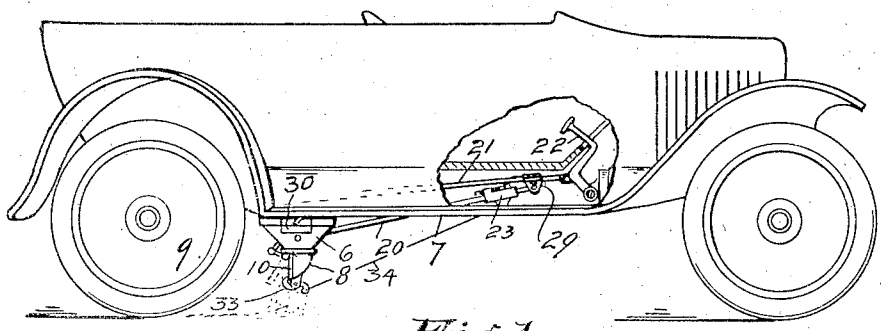


Fig. 1.

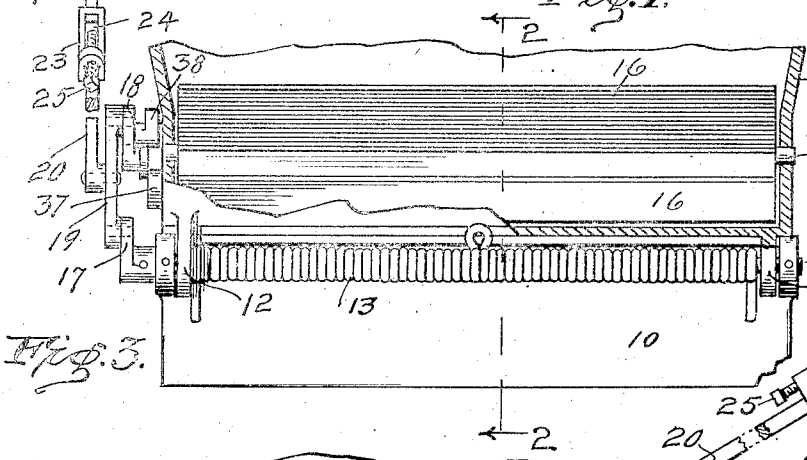


Fig. 3.

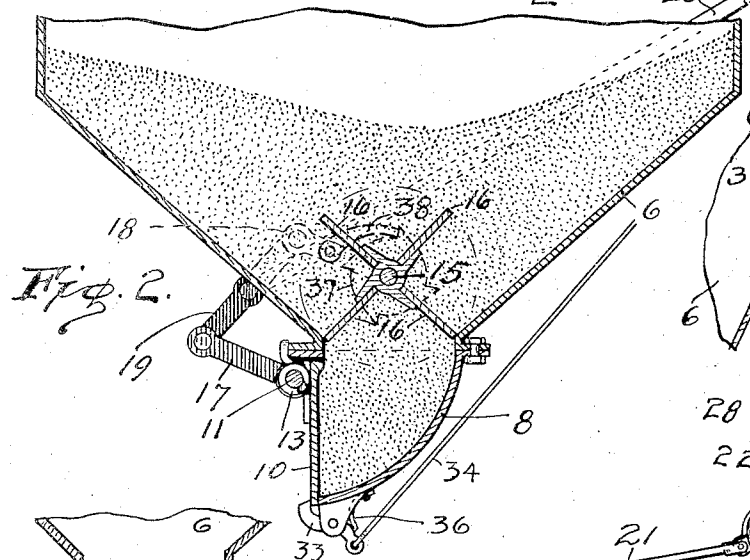


Fig. 2.

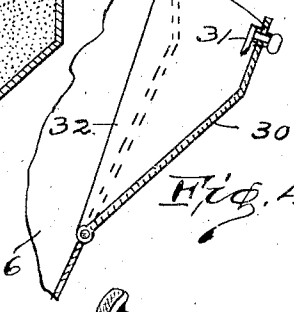


Fig. 4.

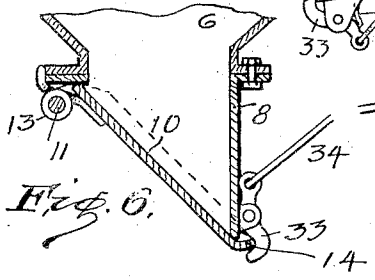


Fig. 6.

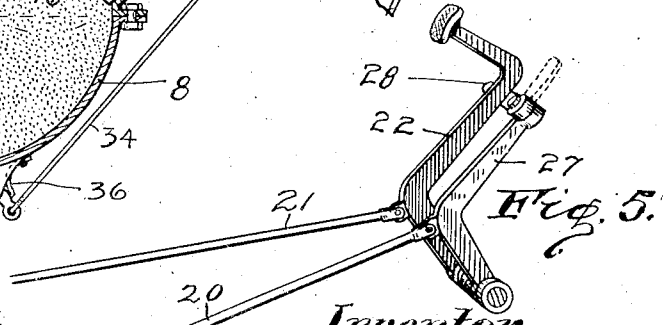


Fig. 5.

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UNITED STATES PATENT OFFICE.

EARL M. LITTELL, OF INDIANAPOLIS, INDIANA.

ANTISKID-SANDER FOR AUTOMOBILES.

1,338,640. Specification of Letters Patent. Patented Apr. 27, 1920.

Application filed October 21, 1919. Serial No. 332,248.

To all whom it may concern:

Be it known that I, EARL M. LITTELL, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Antiskid-Sander for Automobiles, of which the following is the specification.

Much danger to life and damage to property results from the tendency of motor car wheels to skid when turning corners or deviating from a straight path while the roadway is slippery from rain or ice or other causes.

It is well known that sand on the track adds to the traction of railway car wheels and it is the object of this invention to provide means for discharging sand just ahead of the drive-wheels of automobiles, and the like, on slippery pavements, not so much to increase their pulling efficiency as to prevent side-sliding commonly known as skidding.

I accomplish the object of the invention by the mechanism illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of an automobile with my invention assembled therewith in position to operate, portions of the car being broken away to show the mechanism.

Fig. 2 is a view in vertical cross section on the line 2—2 of Fig. 3 of the sand discharging mechanism.

Fig. 3 is a rear elevation and partial vertical section of the same.

Fig. 4 is a fragment in vertical section of the sand receptacle showing the door construction for filling the receptacle.

Fig. 5 is a perspective view of a modified form of device for actuating the sand-discharge from the brake-lever, in common use, and Fig. 6 is a modified form of discharge.

Like characters of reference indicate like parts in the several views.

The supply of sand for my purpose is contained in a receptacle 6 which is fastened under and to the rear of the running board 7 of the car as close to the rear drive-wheel as practicable. This receptacle has a tapering bottom which preferably discharges through an oblong hole to insure the discharge of a thin and comparatively wide layer of sand so there will be less likelihood of the drive-wheel missing the sand layer deposited through it.

An extension surrounds the discharge hole and slopes to the rear to discharge in a rearward direction toward the adjacent drive-wheel 9. The discharge from the extension is controlled further by a plate 10 hinged at its upper end by attachment in a fixed manner to a shaft 11, which shaft passes loosely through ears 12, integral with the extension 8. A spring 13 acts to normally press the plate against the extension 8 to close the discharge from the latter.

Mounted in the receptacle above its discharge hole, on a rock-shaft 15, is a stirrer having blades 16, here shown as four in number, which stirrer agitates the sand to keep it from packing and sticking and to insure a readier discharge. The blades are preferably so proportioned and located as to measure the amount of sand and cut off the discharge when the shaft 15 is rocked a quarter of a revolution. The swinging open of plate 10 and rocking of the stirrer-blades 16 are synchronized by the following mechanism: The shaft 11 is provided with a fixed arm 17 and the shaft 15 with a loose arm 18 having a pawl 38 which engages with appropriate teeth on a ratchet-wheel 37, fixed on the shaft 15; the outer arms 17 and 18 are connected by means of a link 19. One end of a rod 20 is pivoted to the link 19, and the other end of the rod is hinged to the brake-rod 21, which connects with a foot-lever 22, present in all motor cars as now commonly constructed.

By the above mechanism whenever the brakes are set, which generally occurs in turning corners on the road, sand will be simultaneously deposited in front of the traction wheels, in the roadway.

To regulate the amount of opening of plate 10, and consequent discharge of sand, I prefer to make the rod 20 in two pieces connected by a slip-joint, with a set-screw to regulate the extent of joint movement. One piece of rod 20 enters a sleeve 23 on the other piece and terminates with a lateral lug 24, which extends outside of the sleeve through a longitudinal slot in the latter. The sleeve has a lateral lug with a threaded hole through which is a set-screw 25, which contacts the lug 24. The amount of lost motion permitted between the two parts of

rod 20 before the set-screw, contacts the lug 24 depends on the projection of the set-screw, and this can be regulated.

A latch lever 33 is pivoted to ears from the extension 8 and is pressed by a spring 36 to position to lock the plate 10 when the latter is closed. A rod 34 connects the lever 33 with the sleeve 23. The sleeve moves an appreciable distance before the rod 20 is actuated to swing plate 10 open, which advance movement unlatches the plate 10 in time for it to be opened without being held by the latch.

The drawing shows the rod 20 as attached to the general brake-rod, but it may be connected with the emergency brake-rod where it is thought only desirable to use sand on those occasions which call for the use of the emergency brake.

The modification shown in Fig. 5 is to conserve sand in dry and warm weather when the roads are not slippery. A separate lever 27 is pivoted beside the foot-lever 22, and the rod 20 to my sanding device is hinged to the lever 27. The latter terminates with a pivoted extension 28, adapted to be turned into a lateral position under and in the path of the foot-lever 22, when it is desired that the sanding mechanism should function. At other times it is turned to the position shown by the dotted lines, when the operation of the foot-lever in controlling the brakes will not operate the sanding mechanism. A hinge-piece 29, for the attachment of rod 20 to brake-rod 21, is in two parts, clamped together by bolts as shown in Figs. 2 and 3, for quick and convenient attachment to cars in use.

I have described the device for one side of an automobile, but it will be understood that the mechanism is used in duplicate—one for each running board to supply sand in front of both of the traction wheels of the car. The two operating rods 20 will connect with the same brake-lever 22.

A door 30 is provided in an opening in the front of the sand-receptacle for filling the latter. It is hinged at its lower edge and has a suitable lock 31. It also has side flanges 32 to keep the sand from falling out there during the filling operation.

Having thus fully described my invention, what I claim as new and wish to secure by Letters Patent of the United States, is:—

1. The combination with an automobile, of sand-holding receptacles having discharges upon the roadway immediately in front of the traction wheels of the automobile, closures for said discharges, manually operated means for opening the discharges and adjustable means in said last means for varying the extent of the opening.

2. The combination with an automobile having a brake lever, of sand-holding receptacles having discharges upon the roadway immediately in front of the traction wheels of the automobile, closures for said discharges, means for opening the discharges when the brake is set, and means for regulating the amount of discharge.

3. The combination with an automobile having a brake-lever, of sand-holding receptacles having discharges upon the roadway immediately in front of the traction wheels of the automobile, closures for said discharges, means operated by the manipulation of the brake-lever for opening the discharges, means for regulating the size of the openings, and brake-lever mechanism adapted at will to render the sanding mechanism inoperative.

4. The combination with an automobile, of sand-holding receptacles having discharges upon the roadway in front of the traction wheels of the automobile, closures for said discharges, latches to hold the closures in closed positions, manually operated means for opening the discharges and for the automatic unlatching of the closures preliminary to said opening.

5. The combination with an automobile, of sand-holding receptacles having discharges upon the roadway, closures for said discharges, stirrers in the receptacles which also measure the amount of sand discharged, and manually operated means for opening and closing the closures and for simultaneously operating the stirrers.

In witness whereof I have hereunto set my hand at Indianapolis, Indiana this 16th day of Oct., 1919.

EARL M. LITTELL.