Nov. 13, 1928. 1,691,298

W. H. MINIER

AUTOMOBILE SANDER

Filed Sept. 14, 1927

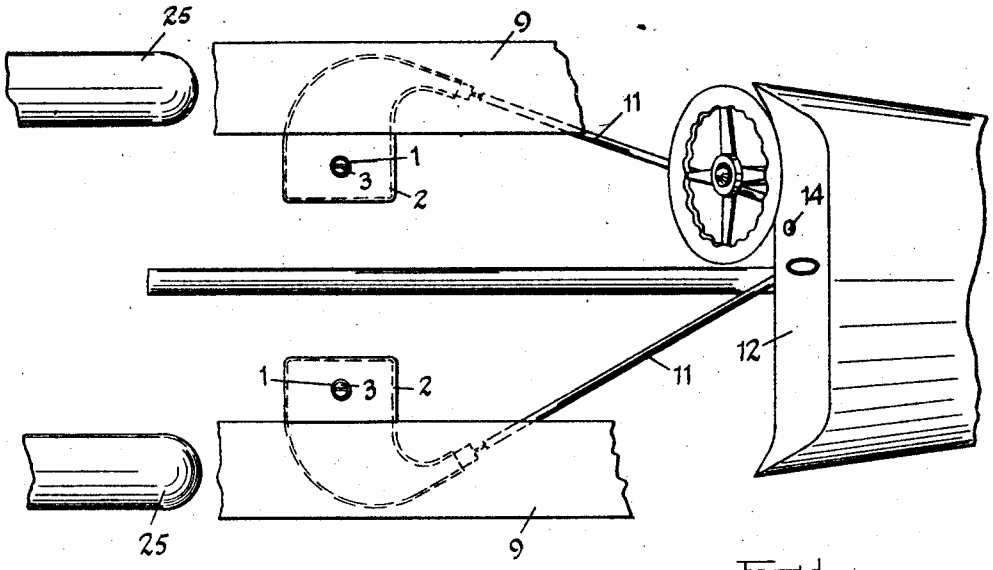


Fig 1

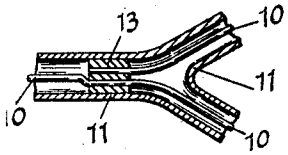


Fig 4

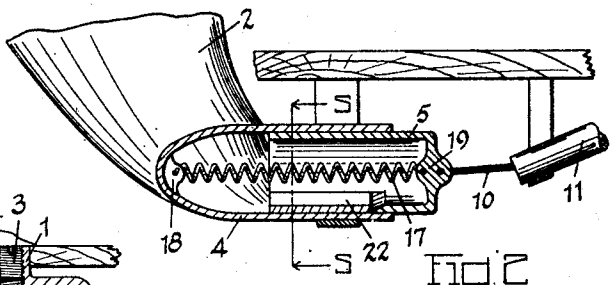


Fig 2

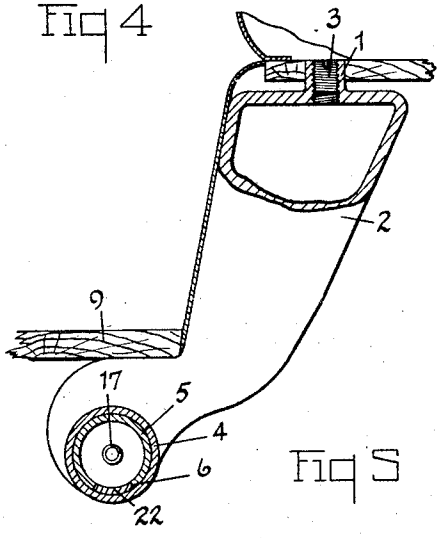


Fig 5

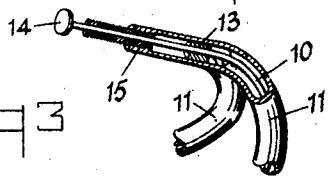


Fig 3

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UNITED STATES PATENT OFFICE.

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AUTOMOBILE SANDER.

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My invention has for its object to provide an efficient means for depositing sand in the path of an automobile wheel to reduce or eliminate skidding and to enable starting of the car when the car is located on a slippery roadbed or pavement. The invention particularly provides an efficient means for controlling the outlet of the sand box and a construction whereby the outlet will be substantially moisture-proof and mud-proof so that the depositing of the sand will be insured and thereby produce certainty of operation of the sander and thus quite entirely eliminate the possibility of skidding on a slippery road when the car is in motion. The invention also has for its object other advantages and features which will appear upon examination of the drawing forming a part hereof and from the disclosure hereinafter.

The invention may be contained in structures that vary in their details and arrangement of parts and, to illustrate a practical application of the invention, I have selected a structure containing the invention and shall describe it hereinafter. The structure selected is shown in the accompanying drawing.

Fig. 1 is a top view of the sander and the figure illustrates somewhat diagrammatically the location of the parts of the sander with reference to parts of the automobile on which it is mounted. Fig. 2 illustrates a section of the mouth of the sander and the stopper that is used for opening and closing the mouth. Fig. 3 illustrates the push rod that is used for operating the stopper. Fig. 4 is a view of a section of the pipes that are used for confining the wires that interconnect the sanders with the push rod that controls the outlets of the sanders. Fig. 5 is a view of a section taken on the plane of the line 5—5 indicated in Fig. 2 and also illustrates a view of a section of the upper end of the hopper for the purpose of showing the plug that closes the opening through which the hopper may be filled with sand.

The sander may comprise but a single container that may be located in any suitable position in the automobile provided the container is located slightly above the outlet of the sander. Preferably, the outlets of the sanders are located in chambers that form the end of suitable passageways leading from the container, the chambers being of such a size as to contain ordinarily sufficient sand that which when deposited will prevent skidding and, as the car is moved along the road, will be quite quickly refilled from the container by reason of the jouncing and vibration that all parts of the car receive. This will cause the sand to work to the chamber preparatory to it being deposited in the pathway of the wheels when the outlets are open. In the particular form of construction which has been selected as an example of embodiments of my invention, I have provided two containers which may be supported in any manner, preferably beneath the aprons of the running boards. The containers terminate in funnel-shaped passageways that lead to the outlets. They are each provided with throats 1 that are located in the upper ends of the container 2 and through which the container may be filled with sand and then closed by a suitable stopper or by a threaded plug, such as the plug 3. The lower end of the hopper-shaped container 2 is provided with a substantially horizontally extending chamber 4 in which is located a stopper 5. The stopper 5 is movable in the chamber 4. The lower side of the stopper 5 is cut away so as to leave an opening 6 that extends from a point remote from the outer end of the stopper to the inner end of the stopper. In the form shown the chamber 4 and the stopper 5 are cylindrical and the portion of the cylindrical stopper 5 that extends from edge to edge of the opening 6 is preferably slightly more than two-thirds of the distance around the stopper in order to provide a good cylindrical guiding surface for the stopper as it is moved longitudinally with respect to the chamber at the lower end of the funnel or hopper. When the stopper 5 is pulled outwardly the edge of the opening in the stopper 5 will eventually be located on the outside of the edge of the end of the funnelled end, thus forming an opening through which the sand may pass and drop to the road.

In order that the stoppers 5 may be operated together, they are connected to a wire 10 that extends through a suitable guiding pipe 11 that leads forward to a point back of the instrument board 12 of the automobile. They are connected together at the Y where the pipes are united as shown in Fig. 4. They may be connected together by any suitable means. In the form of construction shown, a sleeve or button 13 may be welded to the ends of the wires to securely connect

them together. If desired, one of the wires may be extended and connected to a pull handle 14 located in an extension of the shank of the Y of the pipe as shown in Fig. 3. The sleeve or button 13 may be used as a stopper to limit the outward pull of the handle 14 when the sander is open to deposit a quantity of sand. The end of the pipe may be closed by a suitable plug 15 that will be engaged by the sleeve 13 when the handle 14 is pulled to its extreme point.

If desired, the stopper 5 may be operated by pulling and pushing the handle 14. Preferably, however, a spring 17 is connected to an ear 18 located near the lower end of the funnel of the sander and to an ear 19 located on the inside of the stopper. When, therefore, the handle 14 is released, the spring 17 will operate to pull the handle into the instrument board and pull the wires 10 along the pipes 11 and move the stopper 5 to close the lower end of the funnel.

In order to prevent rotation of the stopper 5 on its axis and to maintain the opening 6 of the stopper on its lower side, a ridge 22 may be located in the opening 6 of the stopper. Preferably the ridge is in the form of a plate that is secured, as by soldering or welding, to the lower side of the exit chamber of the funnel. Preferably, the plate 22 substantially fits the opening 6 and thus its edges form a guide along which the edges of the stopper 5 move. The edge of the stopper 5 at the end of the plate 22 is preferably bevelled so as to prevent any of the particles of sand from getting between the end edge of the opening 6 of the stopper and the outer end edge of the plate 22.

In order that the sand may be efficiently manipulated or controlled it must of necessity be kept exceedingly dry and also closure must be such that, in its opening movement, the sand will have an outlet. If the outlet is plastered or caked with mud produced by splashing, the sander will lose its efficiency entirely. By constructing the stopper so as to break any plastering of mud about the stopper and the end of the funnel and drawing the slotted portion of the stopper 5 out of the delivery chamber of the sander, delivery of the sand will be insured. Thus the invention provides an efficient means for sanding the roadbed in the path of the wheels of the automobile.

Preferably, the outlet of the sanders is located at a point well in advance of the rear wheels 25 of the automobile. Since the outlet of the sander must be located well above the roadbed in order to avoid obstructions that may exist when the automobile is being driven over a rough road and yet provide for the depositing of the sand on the roadbed in the pathway of each of the rear wheels, the outlet of the sander must be located remote from the rear wheel and so that the sand may drop from the outlet to the ground before it strikes the wheel to such an extent as to cause a material amount of sand to be deflected to the sides of the wheels even though the automobile is moving at a considerable speed. Thus the location of the outlet of the sander with respect to the wheel of the automobile forms an important part of the construction in so far as the results obtained are concerned.

I claim:

1. In an automobile sander, a container for containing sand, the container having a funnelled end terminating in a cylindrical throat, a cylindrical stopper having a slot and fitting the throat and movable longitudinal with respect to the axis of the throat.

2. In an automobile sander, a container for containing sand, the container having a funnelled end terminating in a cylindrical throat, a cylindrical stopper having a slot and fitting the throat and movable longitudinal with respect to the axis of the throat, a chamber having an inwardly extending ridge fitting the slot of the stopper.

3. In an automobile sander, a container for containing sand, the container having a funnelled end terminating in a cylindrical throat, a stopper for fitting the throat, a spring located in the stopper and in the throat and connected to the container and to the stopper for closing the stopper.

4. In an automobile sander, a container for containing sand, the container having a funnelled end terminating in a throat, a stopper for fitting the throat, a spring located in the stopper and in the throat and connected to the container and to the stopper for closing the stopper.

5. In an automobile sander, a container for containing sand, the container having a funnelled end terminating in a throat, a hollow stopper having a slot formed along one side wall thereof and fitting the said throat, a tension spring located on the inside of the stopper and connected to the stopper and the container, the throat located above the roadbed in the pathway of the wheel of the automobile at a height substantially equal to that of the running board and in front of the wheel a distance materially greater than the height of the running board, and means for drawing the stopper from the throat against the tension of the spring.

In witness whereof I have hereunto signed my name to this specification.

WILLIAM H. MINIER.