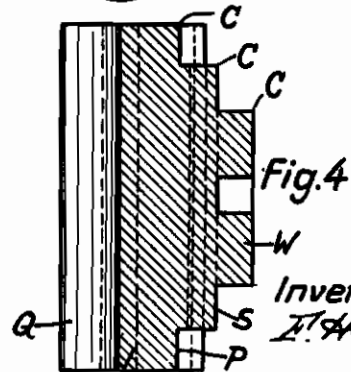
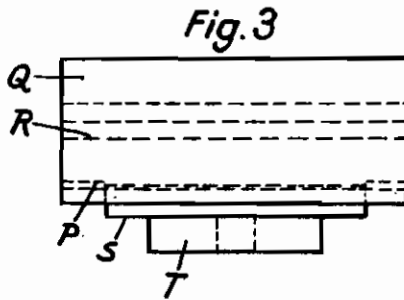
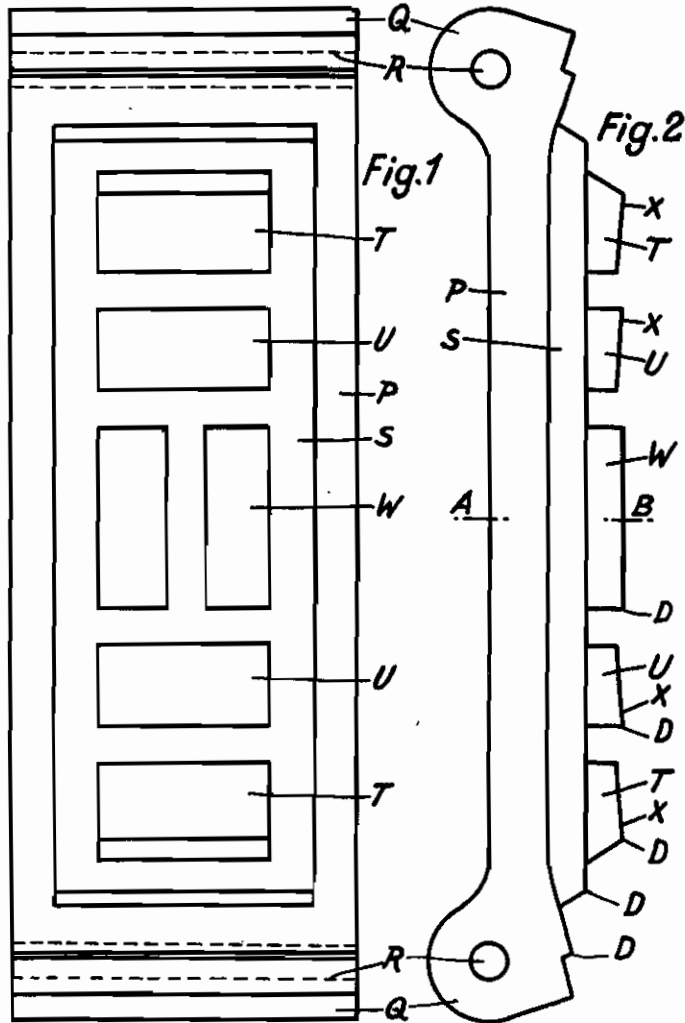


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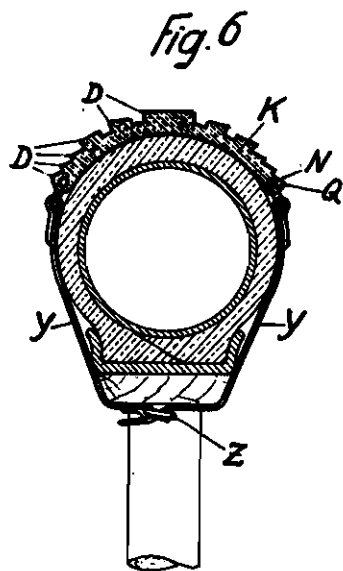
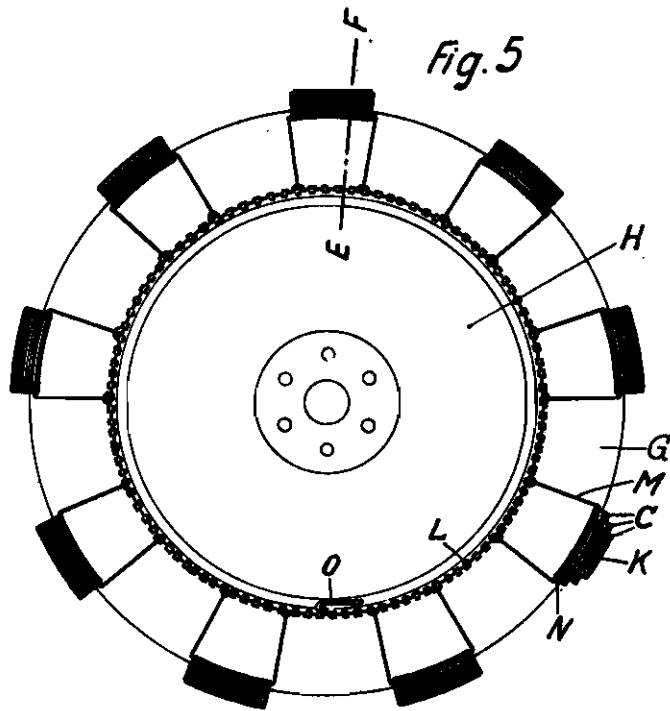


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ALIEN PROPERTY CUSTODIAN

NON-SKID DEVICE

Fritz Hetz, Ettlingen/Baden, Germany; vested in
the Alien Property Custodian

Application filed February 4, 1941

This invention relates to non-skid devices for the tires of motor vehicles, of the type to be additionally applied to the tires to prevent skidding, especially in case of snow and ice on the road.

It is an important object of the present invention to provide a non-skid device which gives maximum friction and grip on the road.

A special object of the invention is to provide a non-skid device which is adapted to prevent the jerks and jolting movements occurring on slippery roads especially when starting, where the conventional non-skid chains with rubber shoes and are used.

With these and further objects in view, as may become apparent from the within disclosures, the invention consists not only in the structures herein pointed out and illustrated by the drawings, but includes further structures coming within the scope of what hereinafter may be claimed.

The character of the invention, however, may be best understood by reference to certain of its structural forms, as illustrated by the accompanying drawings in which:

Fig. 1 is a plan view of a shoe element for a non-skid device, having the invention applied thereto,

Fig. 2 is a side view of Fig. 1,

Fig. 3 is an end view of Fig. 1,

Fig. 4 is a section on line A—B of Fig. 1,

Fig. 5 is a side view of a tire provided with my novel non-skid device, on a smaller scale, and

Fig. 6 is a fragmentary cross sectional view on line E—F of Fig. 5, on a somewhat larger scale, but showing a modified mounting method. Both in Fig. 5 and 6 the shoe elements are indicated schematically only.

Referring now to the drawings in greater detail, and first to Fig. 5, it will be observed that the tire G of the motor car wheel H is fitted with a non-skid chain comprising a plurality of rubber strips or shoes K lying across the tire as best seen from Fig. 6, and secured to a chain L by means of U-shaped members M of steel wire or other suitable material engaged through end holes N (Fig. 6) in the rubber strips and connected to the chain L in any suitable manner. It will be understood that in the construction shown in Fig. 5 another chain L and another series of U-members M have to be arranged on the rear side of the wheel. Both chains L may be provided with a chain lock as indicated at O in Fig. 5, but in many instances it will be satisfactory to provide a chain lock on one side only, applying the non-skid device onto the wheel

from the outer side of the wheel and then connecting the chain lock at the inner side of the wheel. The chain lock may be in the form of any suitable device adapted to connect and disconnect the free chain ends and to tighten the chain.

Referring now to Figs. 1 to 4, showing a single shoe element, it will be seen that the shoe element is provided with a plurality of steps and edges C in the form of stairs extending in its longitudinal direction, i. e., at right angles to the direction of motion of the vehicle, whereby an increased gripping effect is achieved. I have found that the gripping effect of the non-skid device is considerably enhanced by the fact that a plurality of gripping edges C are created in accordance with my invention which are coming into action on the ground at the same time. Thus, jolting is avoided, especially when starting, and smooth, safe driving is ensured on snow, ice, slippery country roads and on ploughland. Also the jerks resulting, especially when starting with the use of the conventional shoe members having one active edge only, are smoothed down.

As best shown in Figs. 1 and 2, the shoe element which preferably consists of soft rubber, of the type used for rubber tires, is formed of a basic strip portion P having end lugs Q which are formed with holes R, a second strip portion S of smaller width and length, and a plurality of small prismatic portions T, U, W, on said second strip portion S. Moreover, the end lugs Q of strip P are recessed to form steps and edges D. The strip P, and the portions T, U, W, are arranged to recede from the edges of the basic strip P, or of the strip portion S, respectively, in such a manner that in addition to the transverse steps and edges C, further steps and edges D are formed in the longitudinal direction or direction of motion of the vehicle, whereby lateral skidding and side slipping of the vehicle is safely prevented and the vehicle is reliably kept in the track.

The steps or stairs are suitably made with sharp edges C and D but it will be understood that the edges may show some rounding off such as will result due to wear and tear during practical use of the device, without departing from the scope of the invention, the main feature of my invention residing in the fact that a plurality of consecutive steps is provided on each element, offering a plurality of attacking and supporting surfaces.

According to a further feature of the invention, some of the blocks or prismatic portions T, U, W,

may be made with top surfaces rising towards the ends of the strip, as indicated at X, whereby the number of edges acting against side slip is further increased. Also, to a certain extent this will make up for the bending of the shoe member around the tire (Fig. 6) which of course tends to reduce the gripping effect of the outer edges D.

Referring now to Fig. 6 in greater detail, it will be noted that in this case a single non-skid shoe K is secured to the wheel by means of a strap Y connected to bore N of lug Q in any suitable manner and placed around the rim of the wheel, a buckle Z serving for tightening shoe K.

If desired, a single non-skid shoe K according to Fig. 6 may be attached to one or more wheels of the vehicle, but it is also possible to secure a plurality of such shoes on each wheel to meet special conditions.

It will be understood that the portions S, T, U, W, of the shoe K constitute an integral body together with the basic strip P, said integral body being made in any suitable manner, e. g. by molding. If desired, other materials such as, leather or metal may be used in place of rubber for making the shoes K.

The apparatus of the present invention has been described in detail with reference to specific embodiments. It is to be understood, however, that the invention is not limited by such specific reference but is broader in scope and capable of other embodiments than those specifically described and illustrated in the drawing. Especially the shoe members may be shaped in a manner different from the drawings, provided only that a plurality of steps and edges are created for the purpose set forth.

FRITZ HETZ.