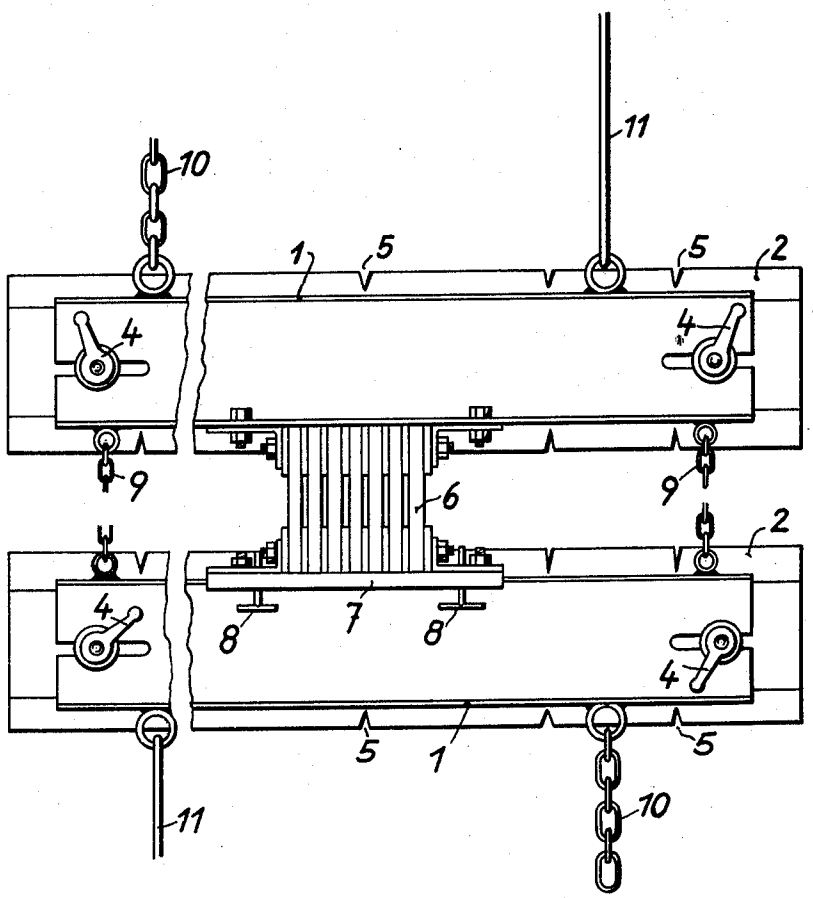
Sept. 8, 1959 G. REISSINGER 2,902,909

DRAG-PLOUGH FOR USE ON ROADS AND HIGHWAYS

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Fig. 1



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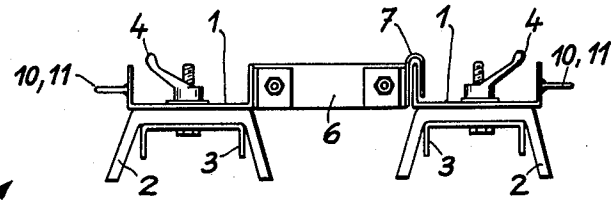
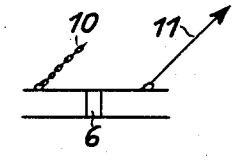
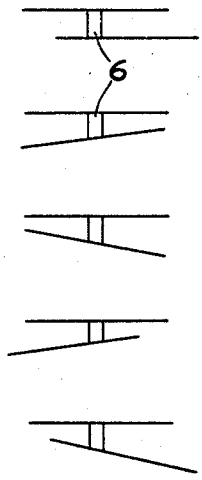


Fig. 2





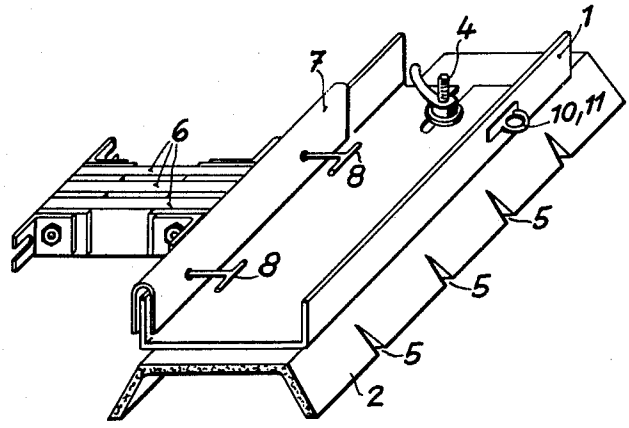


Fig. 4

Fig. 3

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United States Patent Office 2,902,909 Patented Sept. 8, 1959

2,902,909

DRAG-PLOUGH FOR USE ON ROADS AND HIGHWAYS

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Application October 9, 1956, Serial No. 614,933

Claims priority, application Germany October 15, 1955

6 Claims. (Cl. 94—44)

This invention concerns a drag-plough for use on roads and highways, of the type including elongate runners arranged transversely to the direction in which the plough is to be dragged. Such ploughs are normally intended for work which involves gripping the road surface, and accordingly conventionally possess rigid elongate runners, the operational range of which is restricted to the extent of road surface over which they are dragged, a fact which also holds good for conventional street cleansing and sweeping machines, whose rubber scrapers do not engage the road surface, but are very restricted in their elastic operation due to the close support imparted to them by their mounting.

It is already a widely employed practice to strew across a road, fine grained material, such as sand and split stones or so-called stone chips, for protection of the road surface, just as roads are often covered with synthetic surfacing materials constituting protection against hard frost and ice. Because of the high speed of traffic often travelling over such surfaces, the material spread over the road in this way is quickly thrown to the sides, especially where the traffic is heavy, so that it can no longer fulfil its intended purpose, and it must consequently be regularly swept back to its proper place from the edges by hand brooms. Mechanical devices to effect this operation have not been proposed so far or have not been introduced on a sufficient scale because of high production costs. The drag ploughs and road sweeping and cleansing machines mentioned above are quite unsuited to such a purpose, since over the range of their operation the road is intended to be swept clean, which is not what is required in the present device.

According to the present invention, a drag plough having elongate runners lying transversely of the direction of drag is characterised in that said runners comprise elastic strips carried on spaced elongated bases, said bases being secured to rigid elongated ribs and said strips thus being capable of flexing relative to said bases. As in this case the elongate runners are not only elastic in themselves but are also elastically supported, novel combination of results is obtained that the rigid road surface not only remains uncontacted by the runners, but is not completely swept clean and still retains a layer of loose stone chips; and the excess chips are flung and spread beyond the actual range of operation of the plough. Practical experience with such a plough has given successful results with simple and cheap resilient materials.

It has been found of advantage if the elongate elastic strips are subdivided in length or are provided at intervals with notches. Individual stones and the like projecting from the road surface can easily be accommodated. The individual sections of a set of longitudinal strips thus act somewhat as a broom. Partial recoil of the elastic strips promotes a forward projection of the stone chips.

An especially advantageous embodiment of the invention is one in which the elongate elastic strips are the arms of a member of U-shaped section, and the base portions thereof may easily be firmly backed by an overhanging horizontal edge of the rigid support rib to which the base of the U-shaped member is attached without impairing the elasticity of the arms. The channel space between the arms allows stone chips to be ejected from the lateral openings of the channel to a considerable distance; its elastic walls operate to some extent like the barrel of a shot-gun. In this embodiment, the tread portion of a worn vehicle tire casing may be cut out and used as the U-section member, where the walls are still sound, and may of course be acquired cheaply. It is of advantage for the arms of the U-section member to be somewhat outwardly inclined.

The rigid longitudinal support ribs, according to a further feature of the invention, may be connected together by means of a set of elastic strips, arranged in an upright and level manner. Such a connection is relatively unyielding in the vertical space co-ordinate, but on the other hand is pliant in the horizontal sense, so that individual parts of a plough can adjust themselves laterally and angularly to any given road surface. The set of elastic connecting strips is preferably arranged substantially centrally of the elongate rigid ribs, adjustable chains or the like tension members being provided between each pair of adjacent ribs. In this manner even an arrangement wherein the ribs are turned angularly with respect to each other is possible, apart from a parallel arrangement of said ribs.

Yet another feature of the invention relates to securing the set of elastic connecting plates at least to one elongated, rigid rib by means of a slide movable longitudinally on said rib. Two adjacent plough-shares may thus be staggered laterally to the left or right, so that the breadth of operation of the plough as a whole can be increased.

The elongated, rigid ribs are preferably channeled ribs, the sides thereof standing upright. Weighting matter, for example stones and the like, may easily be loaded thereon.

The invention will be described further, by way of example, with reference to the accompanying drawings, in which:

Fig. 1 is a plan view of a drag plough constructed in accordance with the invention,

Fig. 2 is a cross-section thereof,

Fig. 3 a perspective view of a part of the plough, and

Fig. 4 diagrammatically shows various possibilities of use.

Referring firstly to Figs. 1 to 3, the plough shown therein includes two channeled ribs **1** made of steel, and each placed with its sides directed upwardly, such that the base of the channel forming the underside carries in base to base relationship, a U-sectioned, elastic, elongated member having elastic strips **2**, the two bases being readily detachably held together by means of a channeled clamp bar **3**, and wing-handled screws **4**. The arms of the elongate rubber strips **2** are somewhat outwardly inclined, and are provided with notches **5**. Alternatively the strips **2** may each comprise a number of spaced individual members. A set of rectangular and upright rubber strips **6** arranged at given distances from each other is screwed at one end to the middle of the inner side of one elongated support rib, and at its other end to a slide **7**. Said slide **7** is saddled over the inner arm of the other elongated support rib and is longitudinally adjustably clamped thereto by means of threaded pins **8** and corresponding threaded bores. Chains **9**, whose operative length is adjustable, are provided on both sides of the set of rubber plates **6** as connecting tension members between the two ribs. On each outer horizontal side of the ribs **1**, a draw chain **10** and a draw bar **11** are provided for towing purposes.

Figure 4 shows the following possible relative positions

of both rib assemblies in arrangement with each other, reading from top to bottom: Parallel and flush in line in series; parallel with rear rib displaced to the left; parallel with rear rib displaced to the right; inclined outwardly towards the left and flush in line in series; inclined outwardly towards the right and flush in line in series; inclined outwardly towards the left and displaced to the left; inclined outwardly towards the right and displaced to the right.

The direction of pull can be varied in all cases.

What is claimed is:

1. A drag plough for use on roads and highways comprising the combination of at least one pair of horizontally disposed elongated spaced rigid channel-shaped members, the walls of one member projecting in an opposite direction to the walls of the other member, and an inverted U-shaped elastic runner the base of which is disposed between the bases of the said channel members, the base of the U-shaped elastic runner also being of less cross-sectional width than that of the uppermost channel member, the legs of said elastic runner projecting downwardly so as to constitute flexible elastic road and highway engaging strips, the disposition of the U-shaped runner with respect to said channel-shaped members being such that the strips thereof are capable of flexing relative to both of said channel-shaped members while also being elastically supported with respect thereto.

2. A device as set forth in claim 1 wherein the strips on the elastic runner are provided with notches.

3. A device as set forth in claim 1 wherein said runner is made up of a plurality of U-shaped sections.

4. A device as set forth in claim 1 wherein the strips are outwardly inclined relative to the base of the U-shaped elastic runner.

5. A device as set forth in claim 1 wherein said runner is slidably secured to said channel-shaped members.

6. A device as set forth in claim 1 wherein the walls of the uppermost channel-shaped member project upwardly and the walls of the lowermost channel-shaped member project downwardly.

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