Feb. 12, 1952 G. D. EDER 2,584,993

EXPANSION JOINT CLEANER

Filed Aug. 3, 1945 2 SHEETS—SHEET 1

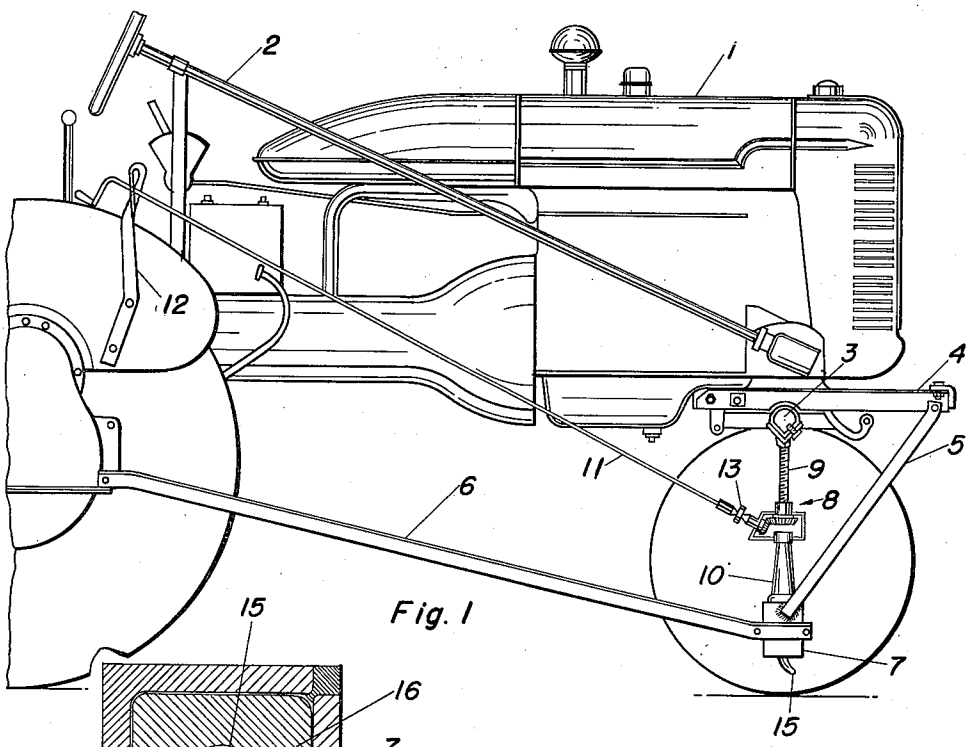


Fig. 1

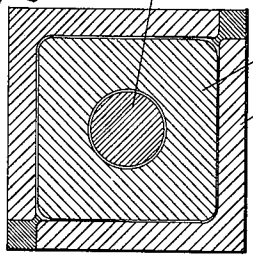


Fig. 6

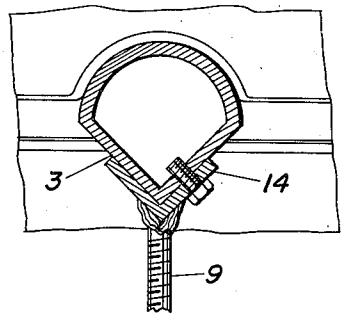


Fig. 4

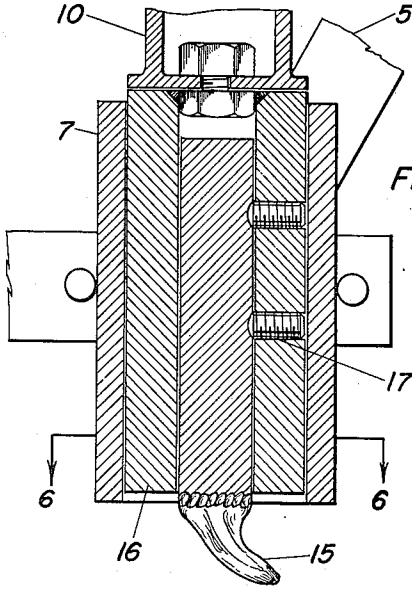


Fig. 5

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EXPANSION JOINT CLEANER

Filed Aug. 3, 1945 2 SHEETS—SHEET 2

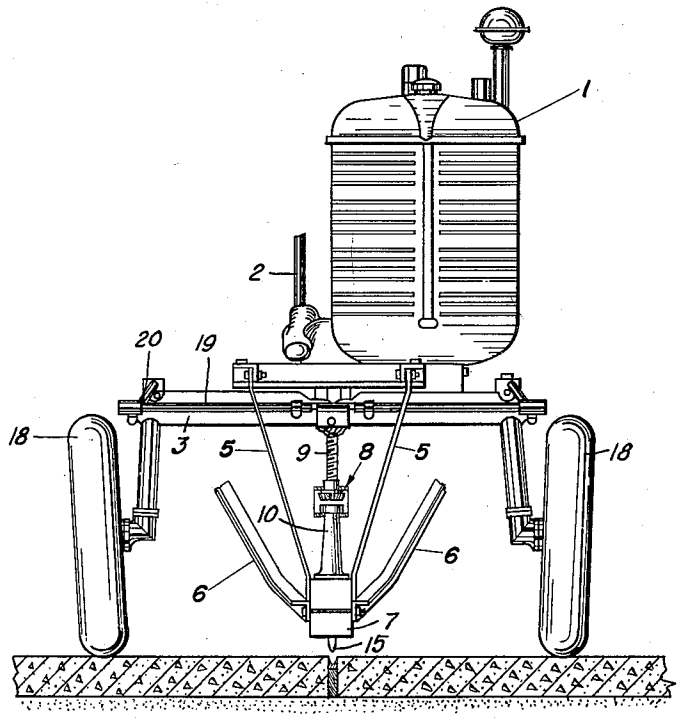


Fig. 2

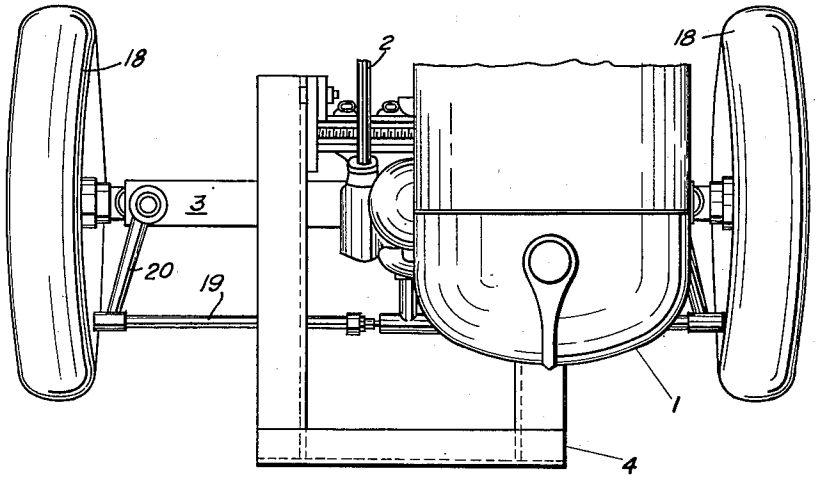


Fig. 3

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2,584,993

EXPANSION JOINT CLEANER

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3 Claims. (Cl. 262—8)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

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This invention relates to an expansion joint cleaner and especially to one in which a cutting edge is used to remove all or part of the expansion joint filler.

In concrete paving maintenance it has often been found necessary to remove all or a portion of the existing expansion joint filler especially where extrusion has taken place so that a new filler can be poured into the expansion joint space.

Heretofore one of the methods of accomplishing the removal is to mount a steel cutting edge on a heavy sled. The sled is then pulled across the expansion joint. Difficulty has been encountered in performing this operation due to lack of adequate control of the cutting edge.

It is an object of the present invention to provide an expansion joint cleaning mechanism that may be affixed to a motor vehicle having a steering mechanism that is critical to the touch so that easy and quick guidance of the vehicle may be had to the end that the cutting tool will follow the joint to be cleaned, reducing to a minimum damage to the edges of the joint.

Details of the invention are described in connection with the following drawings in which:

Figure 1 is an elevation of the tractor and cutting tool;

Figure 2 is a front elevation;

Figure 3 is a partial plan view;

Figure 4 is a detail section of the front axle mounting for the jack screw;

Figure 5 is a detail section of the cutting edge and mounting; and

Figure 6 is a section on line 6—6 Figure 5.

In the drawings Figure 1 shows tractor 1 having sensitive steering control 2 operatively connected to wheels 18 through steering links 19 and 20. Preferably the engine is offset as shown in Figure 3 to obtain better visibility of the cutting tool from the operator's seat or platform. Any commercial tractor, however, can be used.

A structural frame 4 is mounted above the front axle and beneath the tractor body in any suitable manner. The frame may be made of short lengths of standard structural members such as angle member or channel members suitably bolted together.

Cutting tool guide sleeve 7 is suspended from the frame below the front axle 3 by means of straps 5. This sleeve may be made up of two short lengths of angle iron welded together as shown in Figure 6. Struts 6 extend between guide sleeve 7 and the rear axle to form an adequate support for the sleeve.

A heavy screw jack 8 is secured to the front

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axle as shown in Figure 4. The screw jack consists of screw 9, base 10, and rotary operating handle 11. As indicated, the operating handle extends rearwardly within easy reach of the operator and is held in place by bracket 12. A universal joint is provided at 13 for necessary flexibility.

The screw portion of the screw jack is welded to angle bracket 14, which in turn is bolted to the front axle as shown in Figure 4. Cutting tool 15 is mounted in piston 16 by means of set screws 17. This cutting tool assembly is secured to the base of the jack as shown in Figure 5 and slides vertically in guide sleeve 7.

In operation the cutting edge is adjustable vertically in the guide sleeve 7 by operation of rotary jack handle 11. The cutting blade is directed in its path by careful steering of the tractor.

It will be apparent that specific details of the invention, can be modified within the scope of the invention.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

Having described my invention, I claim:

1. In combination with a motor vehicle having a front axle, a frame interposed between the vehicle body and front axle, a guide member suspended from said frame, stabilizing members connecting the guide member and rear portion of the vehicle, a jack-screw having a movable portion, secured to and depending from the front axle of the vehicle, a hollow slidable cutting tool carrying member secured to the movable portion of the jack and operable in the guide member, a cutting tool detachably mounted in and movable with the hollow member, and means for operating the jack to impart vertical movement to the cutting tool.

2. In a motor vehicle the combination of a pair of front and rear wheels, a manual control steering mechanism connected to said front wheels, said steering mechanism including a control positioned in the rearward portion of the vehicle, an engine for supplying power to the motor vehicle, a pavement expansion joint cleaning tooth, a support on the motor vehicle for supporting the expansion joint cleaning tooth between the pair of front wheels, said engine being sufficiently offset relative to said tooth that the tooth is in sight of an operator positioned at the steering location, whereby contact of the tooth against a side of an expansion joint may be sensed by the operator through his hands on the steering mechanism as

well as seen by the operator, raising and lowering means for said tooth, and control means adjacent the manual steering mechanism for operating said raising and lowering means.

3. In a motor vehicle having a sensitive manual control steering mechanism, a pair of front and rear wheels, said steering mechanism having a steering control positioned above and centrally of the rear wheels, an engine for supplying power to the motor vehicle, a pavement expansion joint cleaning tooth, a support on the motor vehicle for supporting the expansion joint cleaning tooth between the front wheels, said support including a jack-screw having a vertically movable portion for the tooth, control means for the jack-screw adjacent the steering control so that a single operator may conveniently operate both from the same position on the rear of the vehicle, said engine being sufficiently offset that the tooth is in sight of an operator positioned at the steering location, whereby contact of the tooth against the side of an expansion joint may be sensed by the operator through his hands and sight and the vehicle controlled according to the requirements.

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