

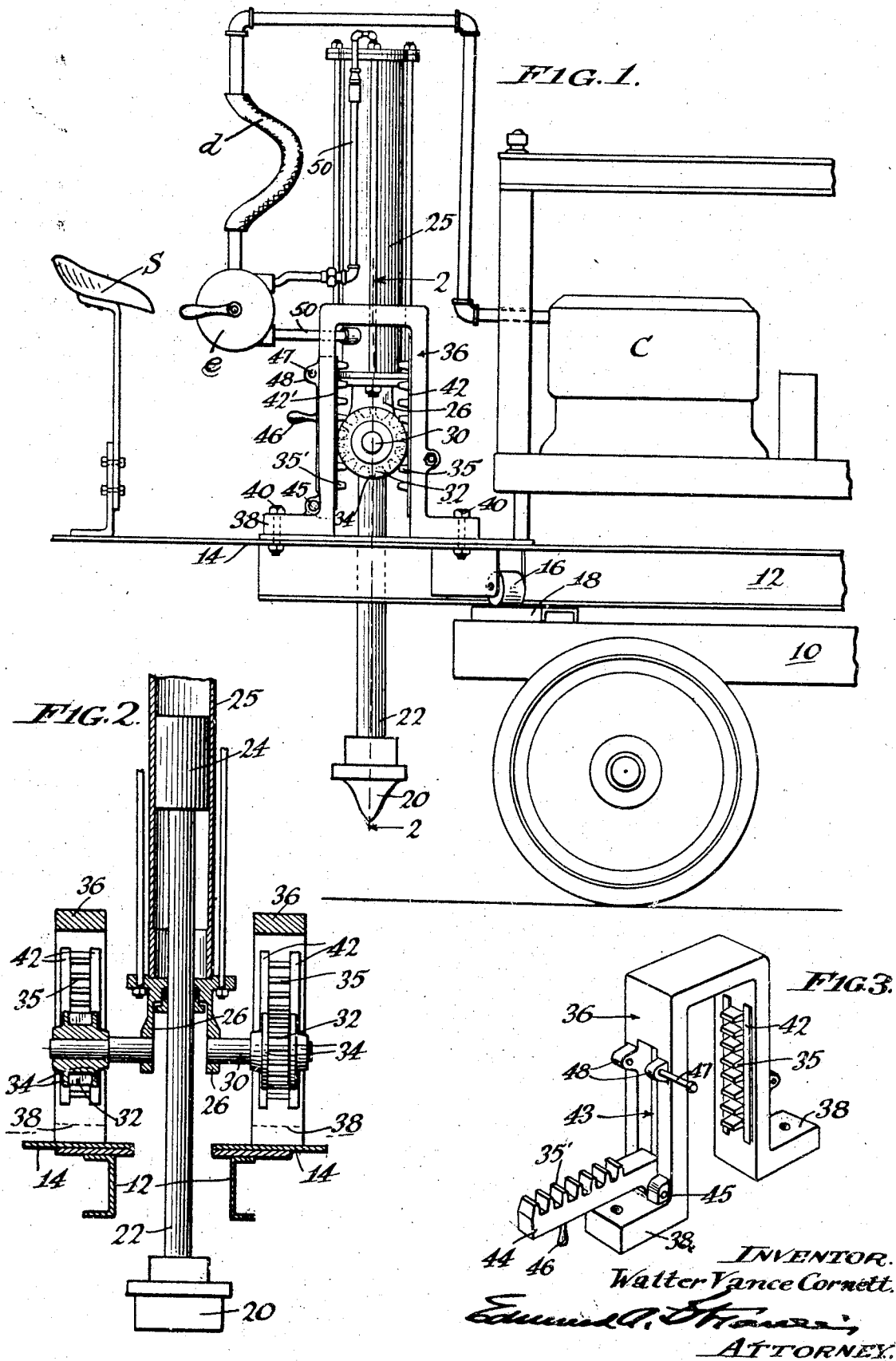
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PAVEMENT BREAKING MACHINE

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## UNITED STATES PATENT OFFICE

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## PAVEMENT BREAKING MACHINE

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This invention relates to machines to be used for breaking pavement, concrete walks, roads, floors and the like where it is necessary to remove portions thereof for such purposes as repair, laying of conduits and the like, the invention constituting an improvement in the type of machine disclosed and claimed in my copending application Serial No. 166,366, filed February 7, 1927, wherein a vertically reciprocable impact member is employed and is pneumatically actuated by a piston and cylinder.

The object of the invention is to provide means of bodily adjustment for the cylinder disclosed in said application in order that the stroke of the impact tool may be varied with respect to its mounting to increase its range of usefulness, either for the purpose of varying the effective length of the stroke or for the purpose of obtaining a sufficiently effective blow upon an elevated object to be broken such as a curb.

The invention, briefly stated, resides in providing an adjustable mounting for the cylinder in which reciprocates the piston which supports and actuates the impact tool. This mounting is provided with means adapted to move along a suitable support therefor to the desired height, and means are provided for then anchoring such mounting in the adjusted position. In the preferred form, this construction comprises an inverted U-shaped bracket which constitutes the support, this bracket being provided with an integral rack and an oppositely disposed movable rack, and also with tracks, the cylinder mounting carrying a pinion to engage the racks and also carrying roller-like portions to travel on said tracks. When the impact tool is rested upon a block or the like, and motive fluid applied to the cylinder, the cylinder is caused to be elevated, the pinion and rollers traveling along the integral rack and the tracks. When adjustment is reached, the movable rack is swung into engagement with the pinion thus locking the parts in position. The invention resides also in such other novel combinations and features of construction as may be apparent from the disclosures contained herein.

In the accompanying drawings wherein one

embodiment of the invention is disclosed by way of illustration;

Fig. 1, is a side elevation of the rear end of a truck equipped with the improvement.

Fig. 2, is a vertical section taken on line 2-2 of Fig. 1.

Fig. 3 is a perspective detail of the rack-carrying bracket which supports the cylinder.

The chassis 10 of the truck carries a swinging frame composed of side rails 12 and a platform 14 the under side of which carries rollers or wheels 16 which are adapted to travel on an arcuate track 18, whereby the impact tool 20 which is also supported by the platform may be swung from side to side during operation. The impact tool 20 is carried on the lower end of a stem 22 supported by a pneumatically actuated piston 24 contained in a cylinder 25 which in turn is carried by a mounting 26 including stub-shafts 30 or the like on whose outer ends are mounted pinions 32 shrouded at 34 to provide portions which act as track-engaging rollers. Each pinion 32 is always in engagement with racks 35 fixed on a supporting bracket 36 of inverted U-shape, the bases 38 of said bracket being secured to the platform 14 by means of bolts 40. Tracks 42 are provided at opposite sides of each rack 35 for engagement with the circular shrouds 34 by which the parts are guided and positioned in their movements. At the opposite side, each bracket 36 is provided with a rack 35' which is movable into a slot 43 by reason of being formed on a swinging bar 44 pivoted at 45 and operable by a handle 46. Each rack 35' when in the lowered position shown in Fig. 3, disengages the pinion 32 so that the latter is free to move, but the rack 35' and its bar 44 are normally held in elevated position in slot 43 by means of a pin 47 engaging in eyes 48 whereby said rack 35' is made to engage the pinion 32 and prevent movement. Tracks 42 are provided at the sides of the slot 43 for engagement by said shrouds 34 to assist further the movements of the pinions.

The platform may also be provided with a seat —S— for an operator who controls the supply of compressed air to the cylinder 25

through conduits 50 from a compressor plant —C—, the air passing via conduit "d" (which may be flexible) to the two way valve "e" within reach of the operator who can by manipulation of this valve admit air on opposite sides of the piston 24 to reciprocate the same in the cylinder 25.

In operation, the position of the cylinder 25 is adjusted upwardly by driving the piston up toward the top of the cylinder and then placing a block under the impact tool. Then the racks 35' are swung into pinion-disengaging position as in Fig. 3. Then, by forcing air into the top of the cylinder 25, the cylinder itself is forced upward, the pinions 32 riding up along the racks 35, and the rollers or shrouds 34 working along the tracks 42 and 42' to guide the movement. The desired position having been reached, the bars 44 and their racks 35' are swung into retaining positions as in Fig. 1, and secured by the pins 47, whereby further movement of the pinions 32 is prevented. The reverse may be accomplished by dropping the impact tool to its lowest point, withdrawing rack 35' and then admitting air to the underside of the piston, whereupon the cylinder will drop.

Thus it will be seen that I have provided a convenient and desirable means for increasing the range of usefulness of my earlier construction.

I claim:

1. A pavement breaking machine comprising a pavement-engaging tool, a piston carrying said tool, a cylinder containing said piston, means for adjusting said cylinder vertically to vary the stroke of the tool, and a swinging frame supporting said piston, cylinder and adjusting means.
2. A pavement breaking machine comprising a pavement-engaging tool, a piston carrying said tool, a cylinder containing said piston, means for adjusting said cylinder vertically to vary the stroke of the tool, said means including a support for said cylinder, a rack and a pinion engaging said rack and movable therealong, and means to engage and hold said pinion from movement.
3. A pavement breaking machine comprising a pavement-engaging tool, a piston carrying said tool, a cylinder containing said piston, means for adjusting said cylinder vertically to vary the stroke of the tool, said means including a support for said cylinder, a rack thereon, a pinion carried by the cylinder and engageable with and movable along said rack, and means to engage and hold said pinion in adjusted position on said rack.
4. A pavement breaking machine comprising a pavement-engaging tool, a piston carrying said tool, a cylinder containing said piston, means for adjusting said cylinder vertically to vary the stroke of the tool, said means including a support for said cylinder, a rack thereon, a pinion carried by the cylinder and

engageable with and movable along said rack, and means to engage and hold said pinion in adjusted position on said rack, said support being provided with tracks adjacent the sides of the rack and the pinion being provided with rollers to travel along said tracks and to retain the pinion in engagement with the rack.

5. A pavement breaking machine comprising an impact tool, a piston carrying the tool, a cylinder in which the piston reciprocates, a support for said cylinder comprising a rack and a pinion engaging said rack and adapted to travel therealong, and a second rack movable with respect to the first mentioned rack to be moved away from the pinion to permit movement of the latter with respect to the first mentioned rack and movable into engagement with the pinion to prevent such movement.

6. A pavement breaking machine comprising a vehicle, a swinging frame thereon, a pavement engaging tool including a cylinder mounted on said frame and movable therewith, power means carried by said frame for actuating said tool, means for controlling the actuation of said tool, and means for vertically adjusting said cylinder on said frame.

7. A pavement breaking machine comprising a vehicle, a swinging frame thereon, an air compressor on said frame, a cylinder mounted on said frame, a piston in said cylinder, a pavement engaging tool connected to said piston, and a seat carried by said frame adjacent said cylinder.

8. A pavement breaking machine comprising a vehicle, a swinging frame thereon, an air compressor on said frame, a cylinder mounted in said frame, a piston in said cylinder, a pavement engaging tool actuated by said piston, a pipe connection between said compressor and cylinder, a valve in said pipe whereby air may be admitted on opposite sides of said piston to reciprocate the same in said cylinder, means partly on said frame and partly on said cylinder for vertically adjusting the cylinder relative to said frame, and a seat for the operator on said frame adjacent said adjusting means, whereby said operator may operate the same simultaneously together with said valve.

In testimony whereof I affix my signature.  
WALTER V. CORNETT.