

Oct. 27, 1942.

J. B. ALLEN

2,300,192

HYDRAULIC CONTROLLED DRAG BROOM

Filed Nov. 5, 1941

3 Sheets-Sheet 1

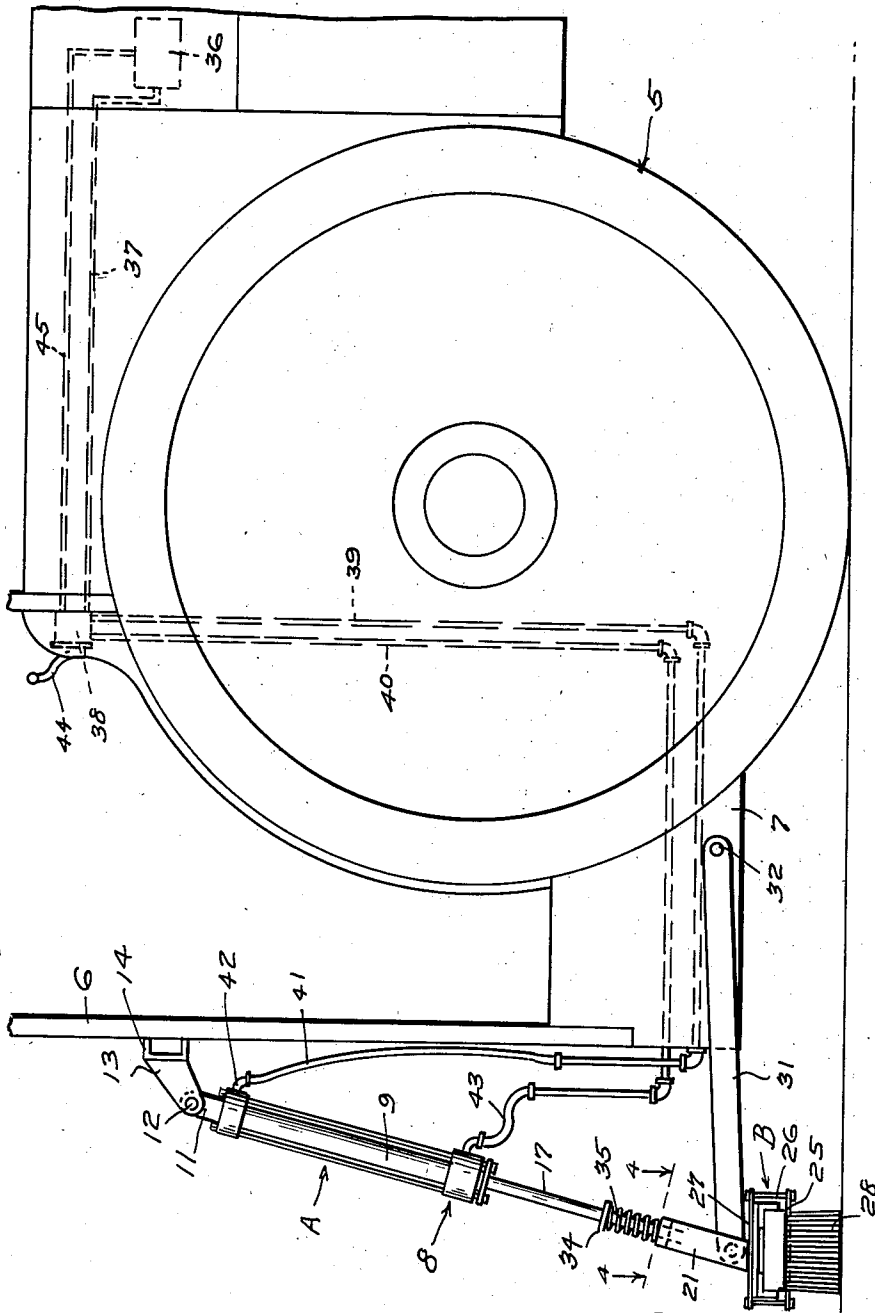


Fig. 1.

Inventor

JAMES B. ALLEN,

By

Clarence A. O'Brien

Attorney

Oct. 27, 1942.

J. B. ALLEN

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3 Sheets-Sheet 2

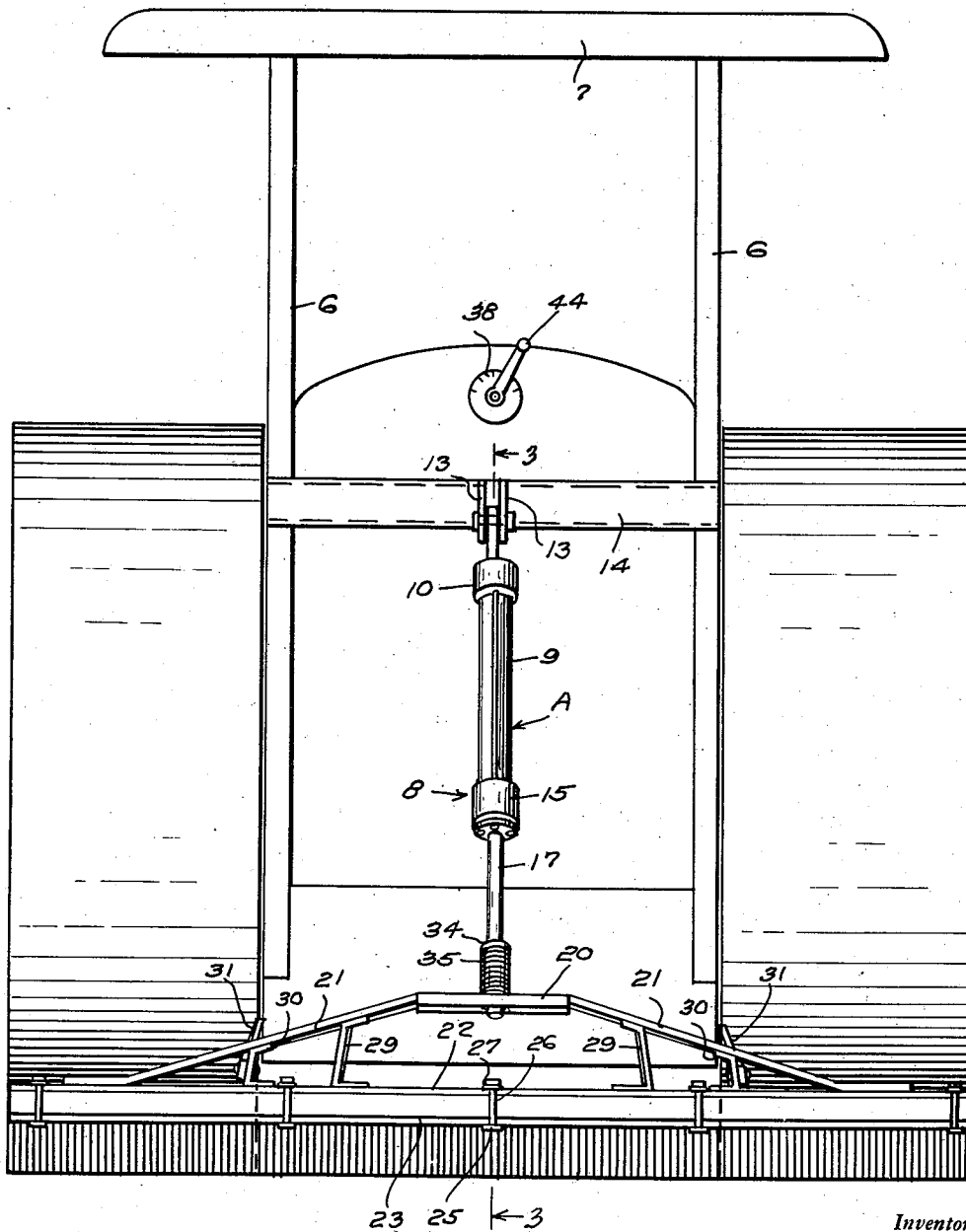


Fig. 2.

JAMES B. ALLEN,

By

Clarence A. O'Brien

Attorney

Oct. 27, 1942.

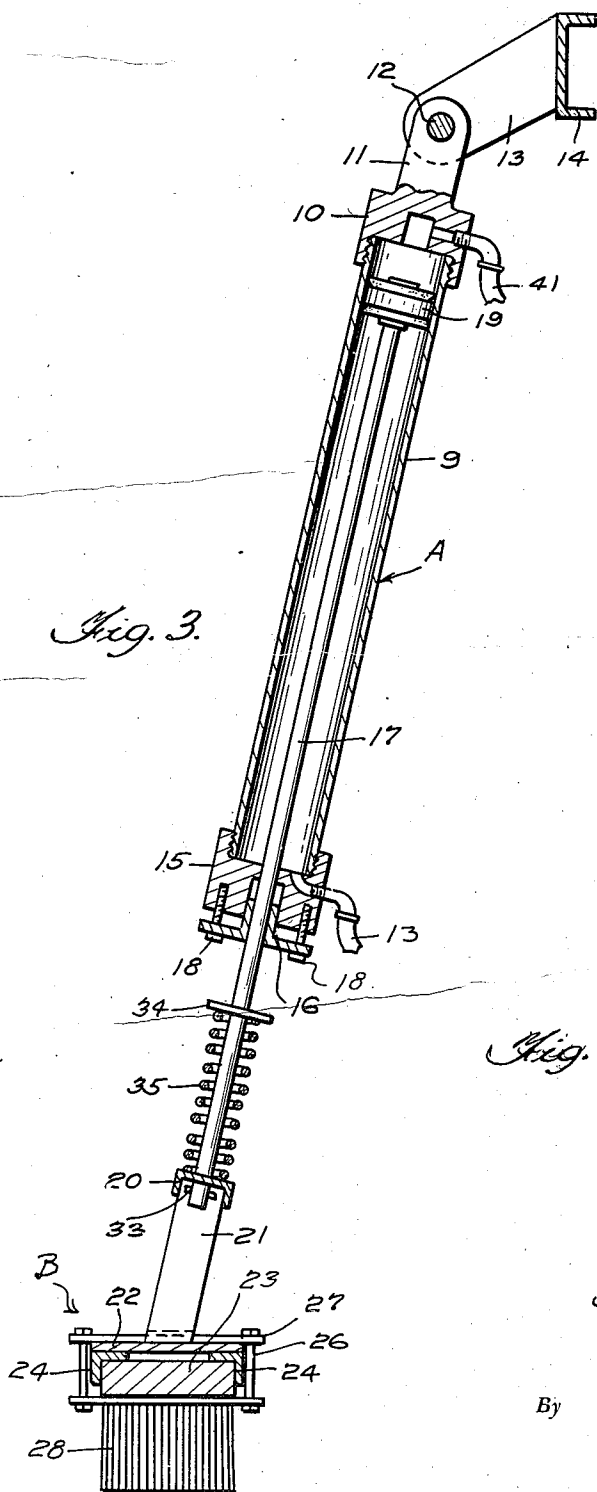
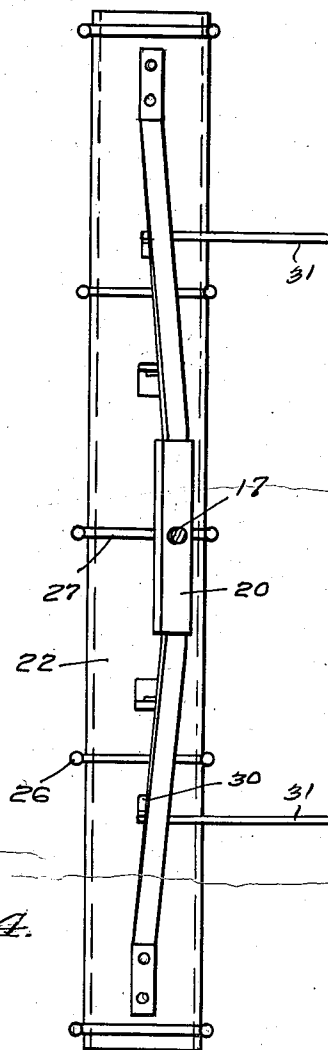
J. B. ALLEN

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HYDRAULIC CONTROLLED DRAG BROOM

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3 Sheets-Sheet 3



Inventor

JAMES B. ALLEN,

 $B\dot{\gamma}$

Clarence A O'Brien

Attorney

UNITED STATES PATENT OFFICE

2,300,192

HYDRAULIC CONTROLLED DRAG BROOM

James Bradley Allen, Winchester, Ky., assignor
to Allen-Codell Company, Winchester, Ky.

Application November 5, 1941, Serial No. 417,967

1 Claim. (Cl. 15—78)

This invention relates to new and useful improvements in apparatus for the construction of roads and highways, and more particularly to an improved drag broom and hydraulic ram for operating the same.

The principal object of the present invention is to provide a hydraulic ram which can be used for controlling drag brooms such as are used in sweeping in choke material on water bound macadam roads and leveling off highways and the like preparatory to the operation of rolling the same smooth.

Another important object of the invention is to provide a hydraulically controlled drag broom adapted to be mounted on a roadway roller and wherein operating means is provided permitting quick raising or lowering of the broom as the need requires.

Other objects and advantages of the invention will become apparent to the reader of the following description.

In the drawings:

Figure 1 is a fragmentary side elevational view showing the hydraulically controlled broom attached to a roller.

Figure 2 is a rear elevational view of a roadway roller with the broom appliance attached.

Figure 3 is a vertical sectional view taken substantially on line 3—3 of Figure 2.

Figure 4 is a horizontal sectional view taken substantially on line 4—4 of Figure 1.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 generally refers to a conventional roadway roller having back corner posts 6 for supporting the roof 7 of a driver's cab. Numeral 7^a denotes the lower side walls of the cab.

The present invention is generally referred to by numeral 8 and is made up broadly of a hydraulic ram generally referred to by A and a broom assembly generally referred to by letter B.

The ram A consists of an elongated cylinder 9 threaded into a head 10 at its upper end, this head having a projection 11 through which a pin 12 is disposed, this pin 12 being journaled through ears 13 projecting rearwardly from a channeled bar 14 bridging the rear corner posts 6, 6. (See Fig. 2.)

The lower end of the cylinder 9 is threadedly disposed into a head 15 which has a packing gland 16 therein through which a piston rod 17 is slidable. Bolts or screws 18 are provided between the packing gland element 16 and the head 15. The end of the rod 17 in the cylinder 9 is

provided with a piston 19, while the lower end of the rod 17 passes downwardly through an opening in the intermediate portion of a channeled member 20. Frame members 21, 21 extend from the ends of this channeled member 20 and connect to the end portions of an elongated plate 22 which is disposed along the top side of a brushback 23. It may be found desirable to place angle members 24, 24 along the upper edges of the brushback 23, as in the manner shown in Figure 3.

Cross straps 25 pass under the brushback 23 and tie bolts 26 connect the ends of the cross straps 25 with cross straps 27 passing over the elongated plate 22. Thus, the plate 22 and brushback 23 from which the bristles 28 depend are firmly clamped together. Struts 29 are provided between the frame members 21 and the plate 22 and brace members 30 are also provided between the frame members 21 and the plate 22, and to these brace members 30 connect the rear ends of arms 31 which are pivotally connected, as at 32, to the side walls 7 of the driver's cab.

Reverting now to the piston rod 17, it can be seen that the same passes downwardly through an opening in the channeled member 30 and has a cotter key 33 at the lower end thereof to prevent displacement of the rod from the channeled member.

On the piston rod 17 is a fixed collar 34 between which and the channeled member 20 is a compression spring 35.

Suitably mounted on the roller 5 is an oil pump 36 from which a supply pipe 37 extends to a control valve 38. From this control valve 38 extends two pipe lines 39 and 40, one connecting to a hose 41 which is connected by a fitting 42 and communicates with the upper end of the cylinder 9, while the other pipe 40 connects to a hose 43 which in turn is connected by a fitting to the head 5 in communication with the lower portion of the cylinder 9.

It can now be seen that when the control valve 38 is operated by a handle 44, the pipe line 39 can be placed in communication with the supply pipe 37 for supplying fluid in the brushes to the upper end of the cylinder 5, which of course will exert pressure on the piston 19 to force the rod 17 downwardly, lowering the broom assembly B and holding the same under pressure against the roadway.

When it is desired to raise the broom B, the lever 44 can be moved to the opposite position, connecting the line 40 with the line 37 and the line 39 with a return line 45 to the pump 36.

Fluid under pressure will now be supplied to the lower end of the cylinder 9 for raising the piston 19 and the broom B, while fluid will return from the upper end of the cylinder by way of the line 39 to the return line 45 and the pump 35.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention what is claimed as new is:

The combination with a road roller having a back cab structure, of a bar extending across the

back structure, a fluid pressure ram comprising a cylinder depending from said bar and having an upper end pivoted thereto, a piston rod extending out of the lower end of said cylinder, an elongated brush including a back extending crosswise of said roller in the rear thereof, an upwardly arching frame on top of said back and having ends connected to said back adjacent opposite ends of the latter, a yielding connection between said piston rod and the center of said frame, and means to introduce fluid under pressure into opposite ends of the cylinder selectively.

JAMES B. ALLEN.