

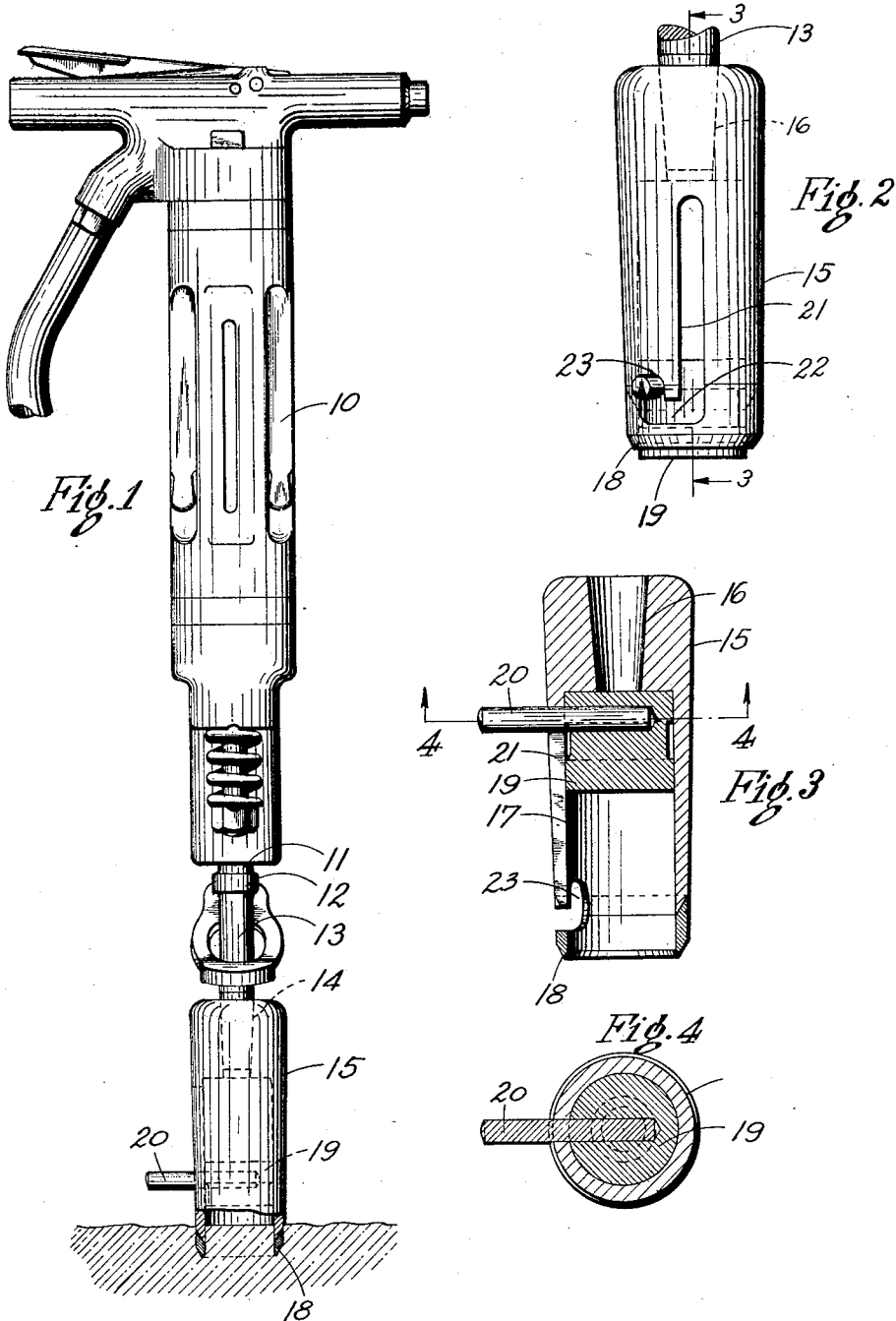
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TOOL FOR FLUID ACTUATED MACHINES

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TOOL FOR FLUID ACTUATED MACHINES

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The present invention relates to tools for fluid actuated machines of the hammer type.

One object of this invention is to secure a tool for producing the bitumen core required
5 as a sample in testing asphalt pavement or other materials.

Another object of this invention is to provide a fluid actuated machine of the rock drill type with a tool for removing a portion of the bitumen surface covering of a road,
10 preparatory to drilling holes for determining the underground conditions, and for replacing the said portion after the hole has been refilled, thus avoiding the necessity of repair
15 work on the pavement.

Another object of this invention is to provide a tool for a rock drill which can readily be attached to and detached from said machine.

20 Other objects and advantages more or less ancillary to the foregoing and the manner in which the various objects are realized reside in the specific construction and aggroupment of the elements peculiar to this structure, as
25 will become apparent from a more complete examination of this specification.

In the drawings—

Figure 1 is an elevational view illustrating a preferred embodiment of the cutting tool
30 connected to a rock drill and positioned upon the work.

Figure 2 is an elevational view of the cutting tool with a portion of its shank.

Figure 3 is a longitudinal sectional view
35 of the tool taken on a plane indicated by line 3—3 on Figure 2.

Figure 4 is a transverse sectional view taken on a plane indicated by line 4—4 on Figure 3.

40 Referring to the drawings, 10 is a fluid actuated machine of the hammer type. Secured to the machine in the usual manner there is a shank 11 formed with a retaining collar 12 and an arm extension 13 terminating in a tapered shank 14. The tool proper is formed
45 of a cylindrical member 15 provided at one end with a tapered socket 16 adapted to fit snugly over the tapered shank 14. Centrally disposed within member 15 is a bore
50 17 of adequate size to produce the core de-

sired. The outer end of member 15 is provided with a cutting edge 18 formed of any suitable metal which will satisfactorily resist the wear and therefore reduce the cost of operation. Freely mounted therein there is a
55 piston 19 having an integral stem 20 projecting outwardly and engaging freely within a longitudinal slot 21 in the wall of the cylindrical member 15. Adjacent the cutting
60 edge 18, the slot 21 communicates with a short transverse slot 22 which terminates in an upwardly extending notch 23 adapted to receive the stem 20 and lock the piston 19 in its outermost position.

In the operation of the device, the shank
65 of the tool is inserted into the machine in the usual manner. The blows from the reciprocating hammer are transmitted to the member 15 by the stem 13 and thus to the cutting
70 edge 18, causing the tool to penetrate into the bitumen composition. Due to the malleability of the composition, the tool will enter without much difficulty a distance equal to the thickness of the asphalt. At this point
75 the operator will notice a greater resistance to the penetration and will stop the machine to remove the tool from the work. Due to expansion the core will remain within the tool. The operator can then eject the core
80 from the tool by applying his foot to stem 20 and pushing forwardly, thus transmitting a forward movement to the piston and expelling the cut portion from the tool. After the necessary tests have been performed, the
85 hole can be refilled with any desirable composition and the core can be returned to its original place. For this operation, the stem 20 is engaged in the notch 23, causing the piston 19 to project slightly beyond the cutting
90 edge 18 as illustrated in Figure 2. The blows received by member 15 will be transmitted to the piston 19 by way of stem 20 and the projecting end of the piston may therefore be placed against the end of the core
95 and used as a hammer to drive the core into its original position without injuring the pavement in any way.

Although the foregoing description is necessarily of a detailed character in order to completely set forth this invention, it is to be

understood that the specific terminology is not intended to be restrictive or confining and it is to be further understood that various rearrangements of parts and modifications of structural detail may be resorted to without departing from the scope or spirit of the invention as herein claimed.

I claim:

1. A tool formed of a shank and a cylindrical member, a cutting edge at one end of said member, a piston within said member and means for maintaining said piston projecting from said member beyond said cutting edge.

2. In combination with a rock drill, a tool including a cylindrical member and a shank, a piston within said member, and means for maintaining said piston in a pre-determined position with said piston partially projecting from said member.

3. A tool including a cylindrical member and a shank, a piston within said member and having a stem associated therewith, a guiding slot for said stem limiting the longitudinal movement of said piston, and a locking recess in said slot arranged to accommodate said stem and to maintain said piston projecting from said member.

In testimony whereof I hereunto affix my signature this 21st day of November, 1929.

GEORGE RAUBERSTRAUCH.