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No. 763,605. PATENTED JUNE 28, 1904.

D. HEPP.

TOOL HOLDER.

APPLICATION FILED JULY 17, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

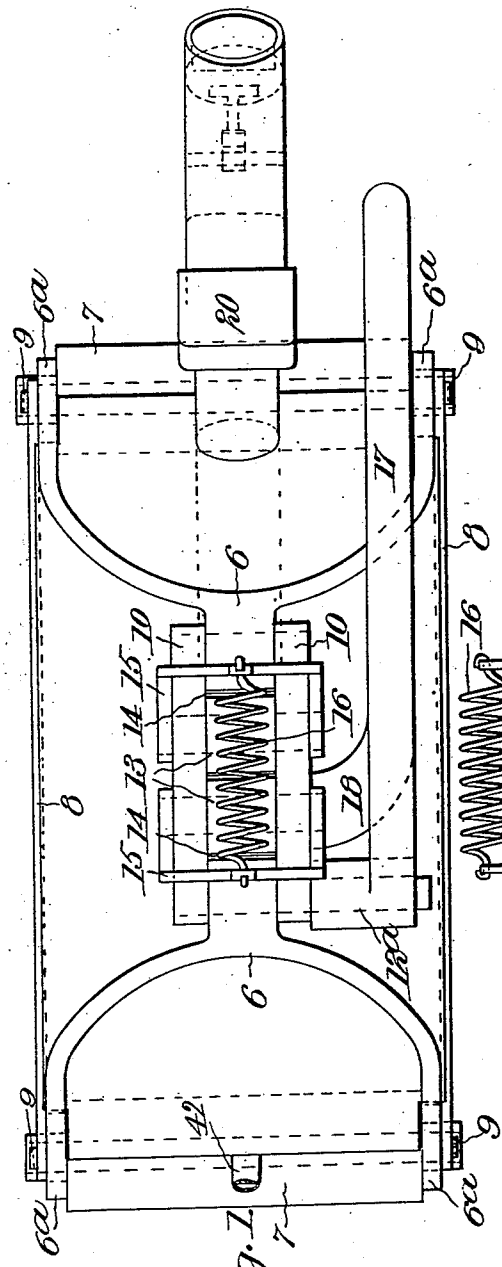


Fig. 1.

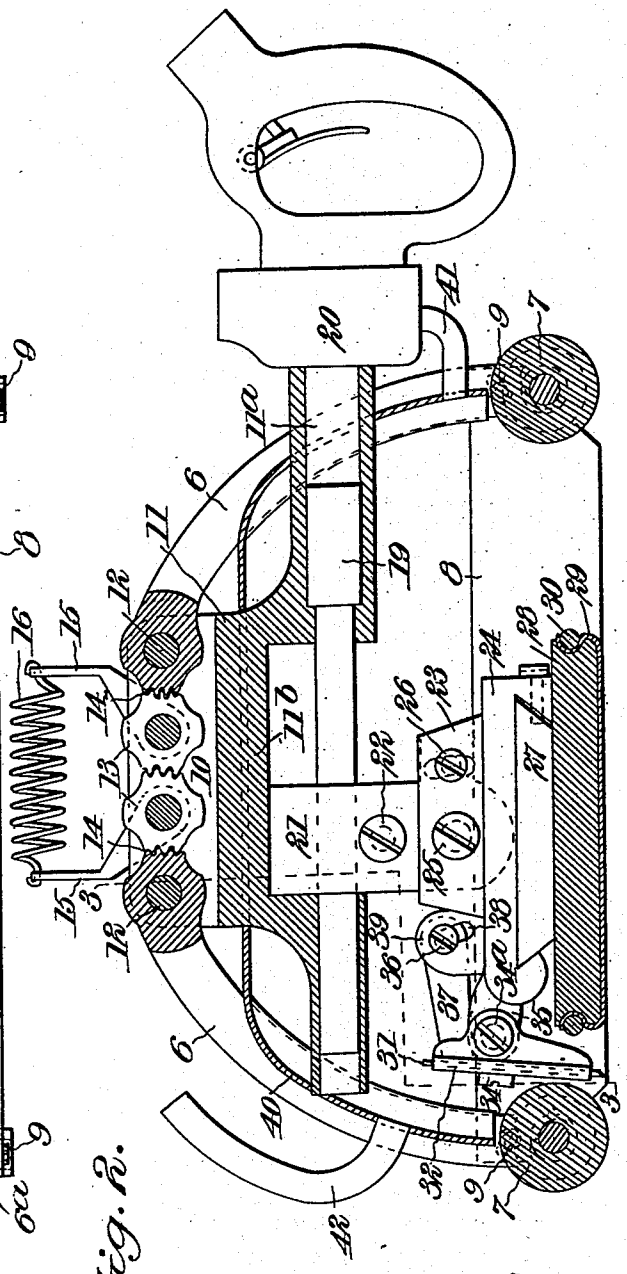


Fig. 2.

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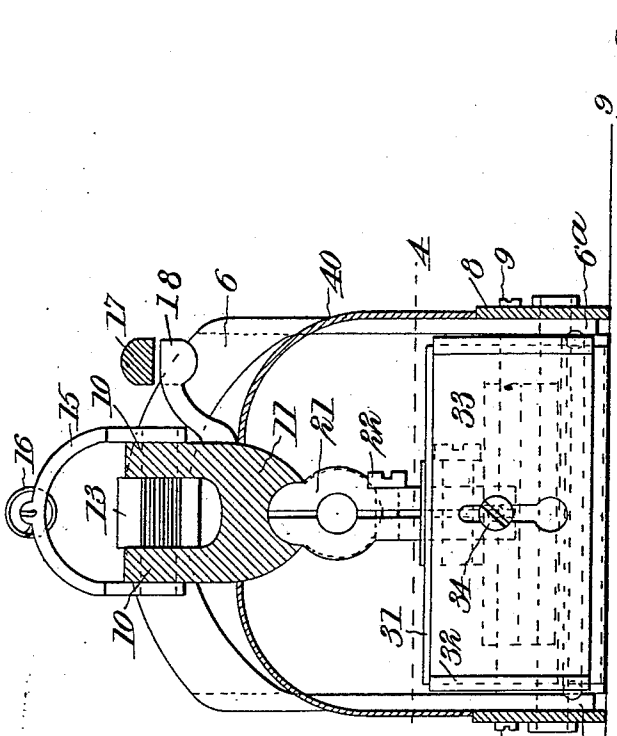


Fig. 3.

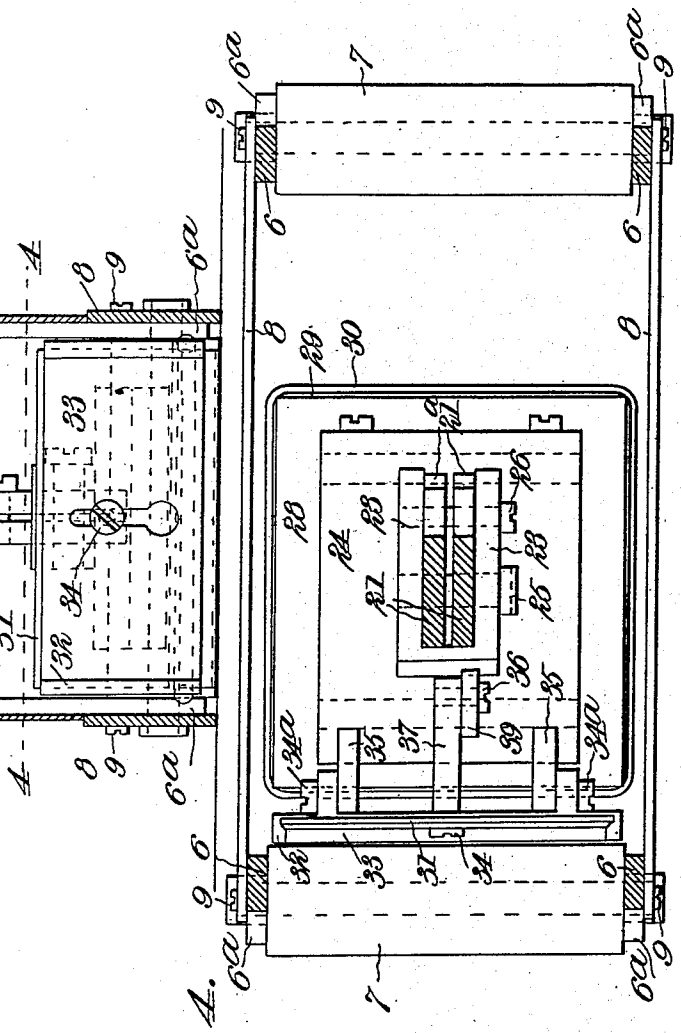


Fig. 4.

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No. 763,605.

UNITED STATES PATENT

DANIEL HEPP, OF CHICAGO, ILLINOIS.

TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 763,605, dated June 28, 1904.

Application filed July 17, 1903. Serial No. 166,040. (No model.)

To all whom it may concern:

Be it known that I, DANIEL HEPP, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Tool-Holders, of which the following is a specification.

This invention relates particularly to tools for scraping, sandpapering, rubbing, and finishing woodwork and to holders therefor; but it may be used for all purposes wherein it is necessary or desirable to work a reciprocating tool upon the surface of a piece of material, especially a plane surface. It may thus be conveniently used to scrape or polish stone, metal, hides, and the like.

The invention embodies the use of a holder for a tool of the kind stated in connection with a fluid-pressure motor, such as a pneumatic engine, connected to the holder to give the motion thereto.

The holder is characterized by an adjustment which permits variable pressure or depth of cut on the surface being worked by the use of a carriage mounted on rollers in which the holder is movable with respect to the surface of the work.

Another feature of the invention is the use of the exhaust from the engine to carry off the scrapings and dust. This is effected by a cover over the tool more or less air-tight and a dust-tube leading from the cover.

The machine is adapted for bench use or for scraping floors and the like, conveniently by the addition of a long handle.

In the accompanying drawings, Figure 1 is a top plan view of the device. Fig. 2 is a vertical longitudinal section. Fig. 3 is a vertical cross-section on the line 3 3 of Fig. 2. Fig. 4 is a horizontal section on the line 4 4 of Fig. 3.

Referring specifically to the drawings, the carriage comprises a yoked frame 6 at each end, at the lower ends of the arms of which are bearings 6^a for the shafts of the rollers 7. Side slats 8 are joined to the frames by screws at 9. The screw-holes are slightly enlarged to permit a movement of the frames, to be hereinafter explained. The lower edges of the side slats run in easy contact with the surface of the work.

The upper ends of the frames 6 are held between the ears 10, projecting upwardly from a block 11, by bolts 12, said bolts acting as pivots to permit a slight rock or movement of the frames 6 thereon. The block 11 carries the tool and motor, and this block is raised or lowered to vary the pressure on or cut in the surface of the work by means of the gears 13, which mesh with each other and with teeth produced on the end of the frames 6, as shown at 14. The motion is slight, as will be understood, and the gears rock slightly on their shafts in bearings in the ears 10. The outer ends of the shafts of the gears carry cranks 15, which project upwardly and have their upper ends connected by a spring 16 in tension, the tendency of which is to turn the gears, and consequently the frames 6 on their pivots 12, to the extent permitted by the enlarged screw-holes at 9, whereby, the rollers 7 being lowered the tool and its block are correspondingly raised.

One of the pivot-bolts 12 is extended on one side, as indicated at 12^a, and has fixed thereto a handle 17, which is oppositely disposed to a fixed handle 18, projecting laterally from the casting or block 11. Now if the handles be grasped and pressed together it will have the effect of slightly turning the pivots 12 and the frames 6, fast thereto, thereby raising the rollers and depressing the tool accordingly to give greater pressure for a polishing-tool or a deeper cut for an abrading-tool. The handles 17 and 18 thus serve to regulate the pressure and also to control the movements of the whole device.

The block 11 is bored, as at 11^a, to form the barrel for a piston or plunger of a reciprocating engine, as indicated at 19, the engine itself being indicated at 20. This engine may be of any suitable or approved kind, conveniently one such as is used in pneumatic tools having a handle and a latch therein controlling the pressure-inlet valve. The block 11 is also recessed or grooved, as at 11^b, to form a space for the reciprocation of the clamp 21, which is fixed and fastened on the plunger by the

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...end
...piece or plate
...id. The clamp 21
...ted to the socket-piece by
..., extending through the ears thereof,
...d a limited rocking movement is thus permitted. If a rigid tool be desired, it may be produced by tightening the lock-bolt 26, which extends through the ears 23 and through a rearward extension 21[a] on the clamp.

The socket-piece 24 has a dovetail mortise on its face to receive the corresponding tenon 27, fixed to the back of a tool, which in the drawings I have shown as a polishing or sanding block 28. This is shown as having a grooved edge to receive and clamp the sandpaper or polishing cloth 29 by means of a hoop-clamp 30.

In connection with a sanding or rubbing block a scraping-tool 31 is shown carried by the tool-holder. The scraping-blade 31 is held in the holder 32 by a slotted wedge 33 and its bolt 34. The scraper can be set at an angle upon bolts 34[a], by which it is pivoted or hinged to lugs 35, projecting from the socket-piece 24 at each side thereof, as shown in Fig. 4. The scraper may thus be rocked on the hinges to the desired adjustment, which is fixed by the lock-bolt 36, which is carried by the lug 37, projecting from the back side of the scraper-holder and extending through a slot 38 in an ear 39 on the socket-piece 24.

At 40 a tin cover is indicated connected to the upper edges of the slats 8 and to the outside of the block 11. The barrel of the engine extends through this cover, and the exhaust from the engine enters within the cover, as indicated at 41, at the rear end of the device. At the front the cover is tapped by an exhaust-tube 42. The force of the exhaust from the engine is thus utilized to blow the dust and the like from the surface of the work and out through the dust-pipe to any desired outlet.

Although the invention is shown in connection with a scraping and polishing tool, it is not limited thereto. Instead of the scraping and polishing block any kind of tool desired may be substituted by attachment to a tenon, such as 27. Thus a polisher, a brush, a cupped cutter or scraper, a groover, planer, or other tool may be used. For use on a floor the handle may be lengthened, and for certain kinds of work it may be advisable or necessary to remove the rollers and allow the weight and pressure to be supported entirely by the tool.

In operation the reciprocation of the plunger of the engine causes a corresponding movement of the entire tool carried by the holder, which may be directed and guided on the work by the handle of the engine, and the pressure of the tool on the surface of the work is controlled and regulated by the handles 17 and 18, as above described. The flexible supply-pipes commonly used in pneumatic tools will allow the holder to be moved about as desired.

The invention is not limited to the exact construction shown and described nor otherwise than is indicated in the following claims.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a carriage adapted to move over the surface of a piece of work, of an engine having a reciprocating plunger supported on the carriage, and a tool-socket secured to the plunger.

2. The combination with a carriage adapted to move over the surface of a piece of work, of a reciprocating plunger on the carriage, adjustable to vary its distance from the said surface, and a tool-holder attached to the plunger.

3. The combination with a carriage adapted to move over a surface, of an engine-driven tool-holder reciprocable on the carriage and adjustable therein to vary its distance from said surface.

4. The combination with an engine-barrel, and a carriage on which it is supported substantially parallel to the surface on which the carriage is movable, of a plunger working in the barrel, and a tool-holder clamped to the plunger and extending perpendicularly thereto, to hold a tool against said surface.

5. The combination with a carriage, of a fluid-driven engine thereon having a plunger reciprocating substantially parallel to the base of the carriage, and a tool-holder carried by the plunger and extending therefrom toward said base.

6. The combination with a carriage adapted to travel upon the surface of a piece of work, and a fluid-operated reciprocating tool-holder therein carrying a tool acting under the base of the carriage, of means to relatively adjust the carriage and holder to vary the elevation of the tool with respect to the base of the carriage.

7. The combination with an engine-barrel and its reciprocating plunger, and a perpendicularly-extending tool-holder clamped to the plunger, of a wheeled frame carrying the barrel and adjustable perpendicularly with respect thereto to vary the distance of the plunger with respect to the wheel-base.

8. The combination with a block bored to form the barrel of a fluid-driven engine, having a reciprocating plunger in the barrel, and a tool-holder secured to the plunger, of wheeled frames pivotally joined to the block and means to turn the frames on ther pivots to raise or lower the wheels.

9. The combination with wheeled frames pivoted and geared together at the top, of a reciprocating tool-holder suspended from the frames between the wheels, and means to turn

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the frames on their pivots, to vary the distance of the tool-holder from the plane of the wheel-base.

10. The combination with a fluid-driven reciprocating plunger, of a laterally-extending clamp on the plunger and a tool-socket pivotally connected to the clamp and adjustable angularly with respect to the plunger.

11. The combination, an engine-barrel, a reciprocating plunger therein, a tool-socket carried by the plunger, carriage-frames pivoted to the barrel and having rollers at their lower ends, a spring connected to the frames tending to turn the frames and lower the rollers, and a handle connected to the frames and acting in opposition to the spring to raise the rollers.

12. In a tool-holder, in combination, a carriage, a tool-socket carried thereby, a scraper-clamp secured to the socket and adjustable thereon, and means to reciprocate the socket.

13. The combination with a tool and a fluid-driven engine connected thereto, to operate the same, of a cover over the tool and forming a close joint with the work, means to conduct the exhaust from the engine into the cover, and a dust-outlet from the cover.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DANIEL HEPP.

Witnesses:
EWALD W. DIERSSEY,
PAUL SCHAEPPI.