May 12, 1925.

1,537,358

L. S. LARTIGUE

SURFACE TREATING TOOL

Filed Dec. 1, 1923

2 Sheets-Sheet 1

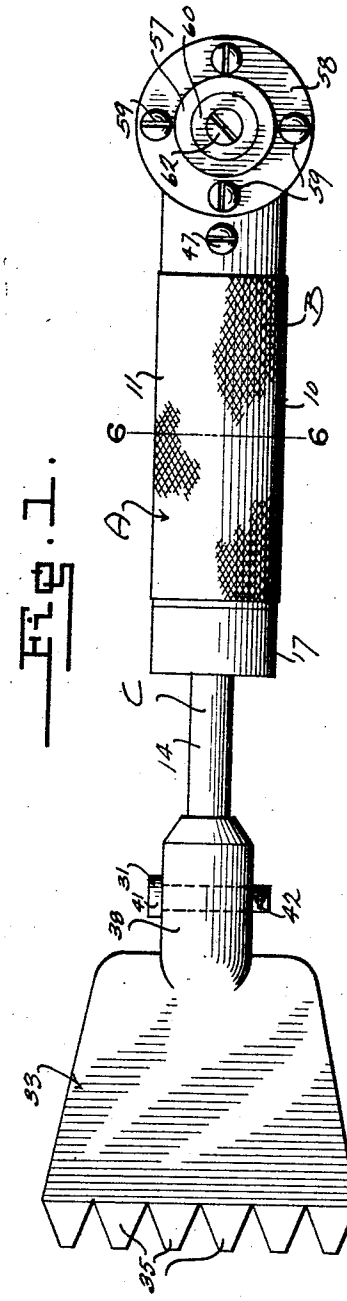

Fig. 1.

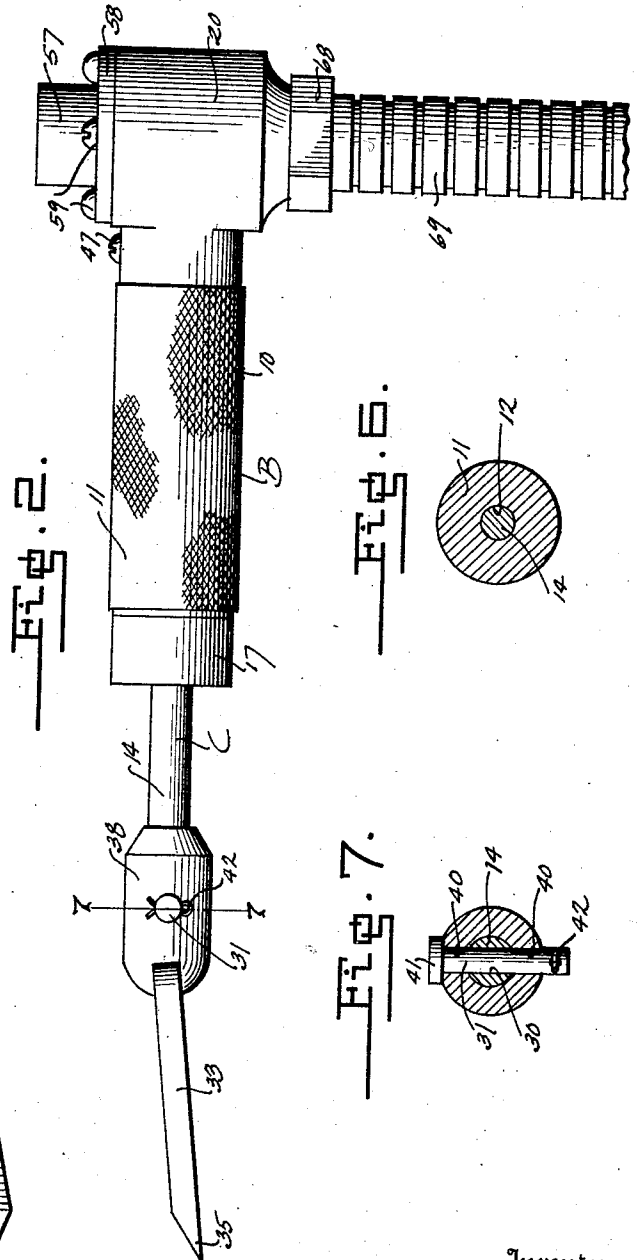

Fig. 2.

Fig. 6.

Fig. 7.

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2 Sheets-Sheet 2

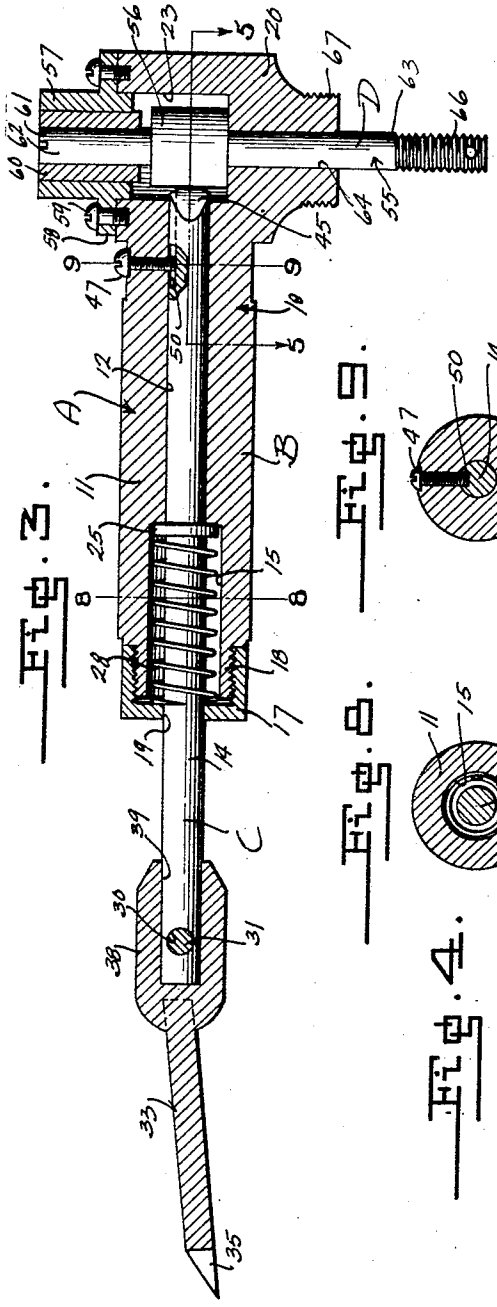

Fig. 2.

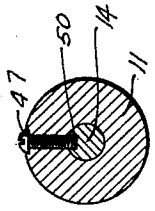

Fig. 3.

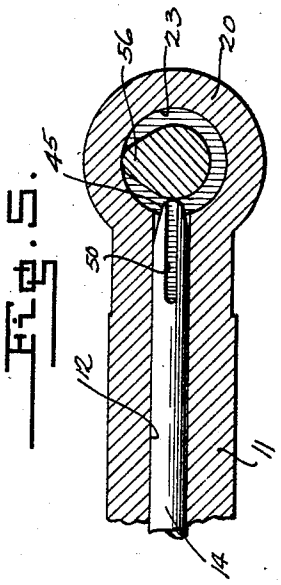

Fig. 5.

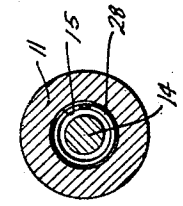

Fig. 6.

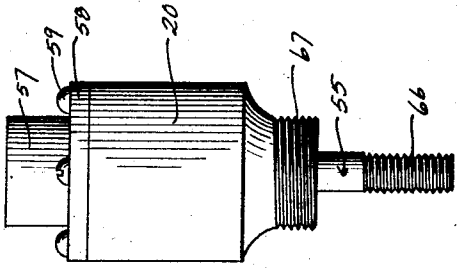

Fig. 4.

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UNITED STATES PATENT OFFICE.

LOUIS STEWART LARTIGUE, OF CHARLESTON, WEST VIRGINIA.

SURFACE-TREATING TOOL.

Application filed December 1, 1923. Serial No. 678,035.

To all whom it may concern:

Be it known that I, LOUIS S. LARTIGUE, a citizen of the United States, residing at Charleston, in the county of Kanawha and State of West Virginia, have invented certain new and useful Improvements in a Surface-Treating Tool, of which the following is a specification.

This invention relates to improvements in tools for treating the surfaces of objects for cleaning, scoring, finishing, or decorating the same.

The primary object of this invention is the provision of a hand operated tool primarily adapted for use in connection with cleaning of bricks so that they may be reclaimed in an economical and expedient manner.

A further object of this invention is the provision of a relatively simple and efficiently operated tool for the cleaning of bricks, stone, or other objects such as the sides of ships and buildings, embodying a reciprocating blade element which may be easily controlled over the object to be cleaned or otherwise acted upon to perform the desired operation.

A further object of this invention is the provision of a simple, compact, and effective hand controlled tool for the purposes above set forth embodying a reciprocating work performing construction, and a novel arrangement to effect the reciprocation thereof.

Other objects and advantages of this invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this specification, and wherein similar reference characters designate corresponding parts throughout the several views.

Figure 1 is a plan view of the improved tool, showing assembled details thereof.

Figure 2 is a side elevation of the tool illustrated in Figure 1.

Figure 3 is a longitudinal cross sectional view taken through the improved tool.

Figure 4 is a rear end elevation of the tool.

Figure 5 is a cross sectional view taken substantially on the line 5—5 of Figure 3.

Figure 6 is a cross sectional view taken substantially on the line 6—6 of Figure 1.

Figure 7 is a cross sectional view taken substantially on the line 7—7 of Figure 2.

Figures 8 and 9 are cross sectional views taken on their respective lines in Figure 3 of the drawings.

In the drawings, wherein for the purpose of illustration is shown but the preferred embodiment of this invention, the letter A may generally designate the improved surface treating tool, which may include a casing B; reciprocating means C; and means D for performing the reciprocation of the means C.

Referring to the construction of the casing B, the body portion 10 thereof is preferably formed of aluminum, and provides the cylindrical shaped hand grip portion 11 having a passageway 12 longitudinally therethrough within which the drive shaft 14 of the means C is reciprocably mounted. As its lower end the hand grip portion 11 of the body 10 is provided with an enlarged compartment or recess 15, and as a closure for this compartment a brass cap 17 is provided for detachable screw threaded engagement with the reduced externally screw threaded end 18 of the casing portion 11; the cap 17 preferably having an opening 19 through which the shaft 14 slidably extends in a slidable engagement therewith. The head portion 20 of the casing B is, of course, a part of the body 10 and integral with the handle portion 11, and provides a chamber 23 therein into which the passageway 12 communicates.

The reciprocating means C preferably includes the shaft 14 above mentioned, which is slidably positioned in the handle portion 11 of the casing B. Intermediate its ends the shaft 14 preferably has an annular flange or collar 25 fixedly positioned thereon, either by shrinking, or by pin connection therewith. A spring 28, under compression is adapted to be positioned in the casing compartment 15, engaging the annular flange or collar 25 at one end, and the fore part of the detachable cap 17 at the other end, to normally force the shaft 14 into its most inward position within the casing B. At the forward or outer end of the shaft 14 a transverse passageway or opening 30 is provided, which is adapted to receive a detachable pin 31 for the connection of a blade construction 33 to said shaft. The blade 33 may assume various shapes, although for brick cleaning and the like, it is preferred that the blade construction 33 be flat, and at its forward edge having the teeth 35 thereon, which are of tapered or pointed formation and beveled

to a pointed or chiseled edge. At the rear of the blade 33, an attaching sleeve 38 may be an integral part thereof, providing a socket 39 into which the forward end of the shaft 14 may extend, so that the passageway 30 of the forward end of said shaft may align with diametrically opposed openings 40 provided in the attaching sleeve 38, to receive the connecting pin 31; the connecting pin 31 at one side of the sleeve engaging said sleeve at its head portion 41, and its other side having a cotter pin 42 extending therethrough to prevent its detachment. The inner end of the shaft 14 is preferably rounded, as at 45, and which rounded end extends into the compartment 23 in the head 20 of the casing, for cooperation with the operating means D, and as will be subsequently described. The shaft 14 has a reciprocating movement within the casing B, and to prevent its rotation a detachable or adjustable screw 47 is threaded radially in the casing B, in the handle portion 11 thereof adjacent the head 20, so that the inner end thereof may extend into a groove 50 which is longitudinally provided in the driven shaft 14 and which groove 50 extends to the rounded end portion 45, so that the shaft 14 may be slipped from its casing without necessity of rearranging the adjustment of the screw 47.

Referring to the means D for operating the means C, the same preferably comprises a shaft 55, which intermediate its ends has a cam 56 integrally connected therewith. The shaft 55 is rotatable in the head 20, with its axis at right angles to the axis of the shaft 14, and the cam 56 is rotatably located in the chamber or compartment 23 of the head 20. To effect the placement of the cam within the compartment 23, a detachable bearing sleeve 57 is provided, which includes the annular attaching flange 58 having openings therein for receiving screws 59 by means of which the cap 57 may be attached to the head 20. Within the sleeve 57 a bushing 60 is supported, which provides a passageway 61 within which the top end 62 of the shaft 55 is journalled. The opposite end 63 of the shaft 55 is journalled in the head passageway 64, and provides a screw threaded portion 66 which extends outwardly of the head 20, and to which any suitable coupling may be connected for the connection of a flexible drive shaft to the shaft 55. The lower part 67 of the casing head 20 may be screw threaded for receiving a coupling nut 68, by means of which the flexible housing 69 may be connected thereto, and within which housing 69 the flexible drive shaft (not shown) is disposed.

Referring to the operation of the improved tool A, the flexible drive shaft (not shown) is driven by any suitable motor, and of course, rotates the shaft 55 within the casing B. The cam 56 coming into engagement at its throw portion with the rounded end 45 of the driven shaft 14 will push the driven shaft 14 outwardly of the casing head notwithstanding the normal tendency of the spring 28. Rapid rotation of the drive shaft 55 will cause the driven shaft 14 to reciprocate within the casing B, and the operator may move the blade 33 into engagement with any object to be cleaned or treated to perform the desired operation.

From the foregoing description of this invention it is apparent that a surface treating tool has been provided, which is relatively compact in character, and which an operator can handle with one hand, while holding the object to be treated with the other. The tool is primarily adapted for small work, such as the cleaning of bricks and resurfacing of other objects, although its use with respect to such articles is not to be limited.

Various changes in the shape, size, and arrangement of parts may be made to the form of the invention herein shown and described, without departing from the spirit of the same, or the scope of the claims.

I claim:

1. A surface treating tool comprising a casing providing a hand engaging portion thereon with a passageway therethrough and a head portion thereon providing a compartment therein and a passageway at right angles to the first mentioned passageway, a shaft reciprocably mounted in the passageway of the hand engaging portion of said casing, a blade carried by said shaft at the outer end thereof, said shaft having the end thereof opposite the blade carrying end rounded, spring means normally urging the blade carrying shaft rounded end into the compartment in the head of said casing, means to permit longitudinal reciprocation of the blade carrying shaft in the casing but preventing rotational movement thereof in the casing, a drive shaft having a cam integral therewith, said drive shaft providing ends extending on each side of said cam with one of said ends bearing directly in the passageway of the head of said casing and extending outwardly therefrom, a detachable bearing sleeve for the head of said casing providing a bushing therein for the opposite side of said drive shaft and by means of which said cam is fixed within the compartment in the head of said casing for rotation therein whereby upon rotation of the drive shaft the cam may engage the rounded end of said blade carrying shaft for reciprocating the same.

2. A surface treating tool comprising a casing providing a hand engaging portion having a passageway therethrough and a head portion having a compartment therein opening through one end of the head, and

a passageway disposed axially of the compartment and at right angles to the first mentioned passageway, a bearing sleeve detachably carried by said head at the open end of said compartment, a rotatable drive shaft extending axially of the compartment and through the bearing sleeve and second mentioned passageway, a cam carried by said drive shaft and positioned in said compartment, a blade carrying shaft extending into the first mentioned passageway and slidable longitudinally therein with its inner end extending into said compartment, abutment means carried by said blade carrying shaft within the casing, a cap carried by said casing and disposed about the blade carrying shaft, and a spring in said casing between the abutment and cap and serving to yieldably hold the blade carrying shaft against outward movement and its inner end in engagement with said cam.

3. A surface treating tool comprising a casing having a compartment provided therein and a passageway leading from the compartment longitudinally through the casing and having an enlarged forward end portion forming a spring receiving pocket, a perforated cap removably carried by the forward end of said casing, a cam rotatable in said compartment and having an operating shaft extending externally of the casing, a blade carrying shaft extending through the cap and passageway with its inner end extending into said compartment, a collar carried by said blade carrying shaft within said spring pocket, and a spring in said pocket about the blade carrying shaft with one end engaging the cap and its other end engaging the collar and serving to yieldably hold the shaft against outward movement and its inner end in engagement with the cam.

4. A surface treating tool comprising a casing having a compartment provided therein and a passageway leading from the compartment longitudinally through the casing, a cap carried by the forward end of said casing and having an opening disposed axially of the passageway, a cam in said compartment and rotatable therein, a blade carrying shaft extending through the cap and passageway into the compartment and having an abutment, and a spring between the cap and abutment and yieldably holding the blade carrying shaft against outward movement and its inner end in contact with said cam.

LOUIS STEWART LARTIGUE.