

C. O. SOBINSKI.
PNEUMATIC MASSAGE TOOL.
APPLICATION FILED OCT. 28, 1910.

1,010,699.

Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.

FIG. 1.

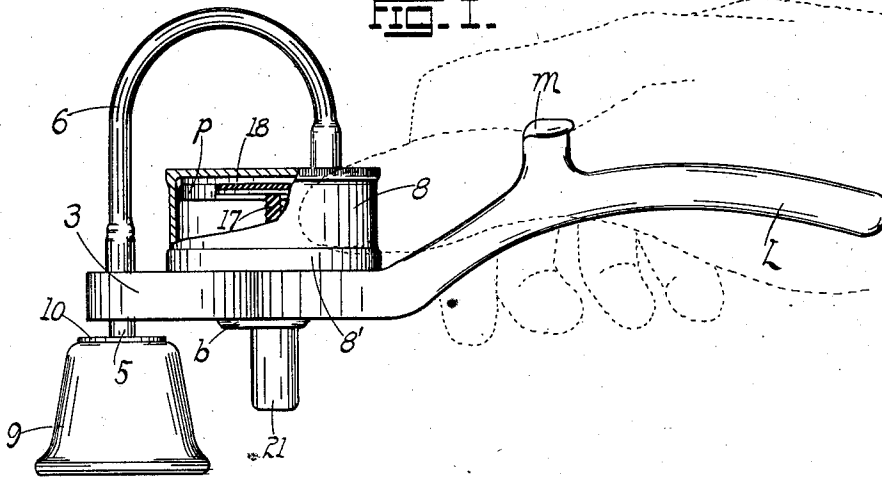
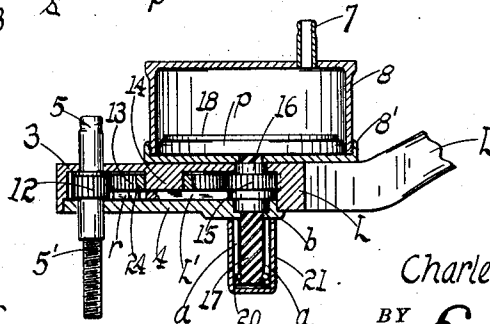
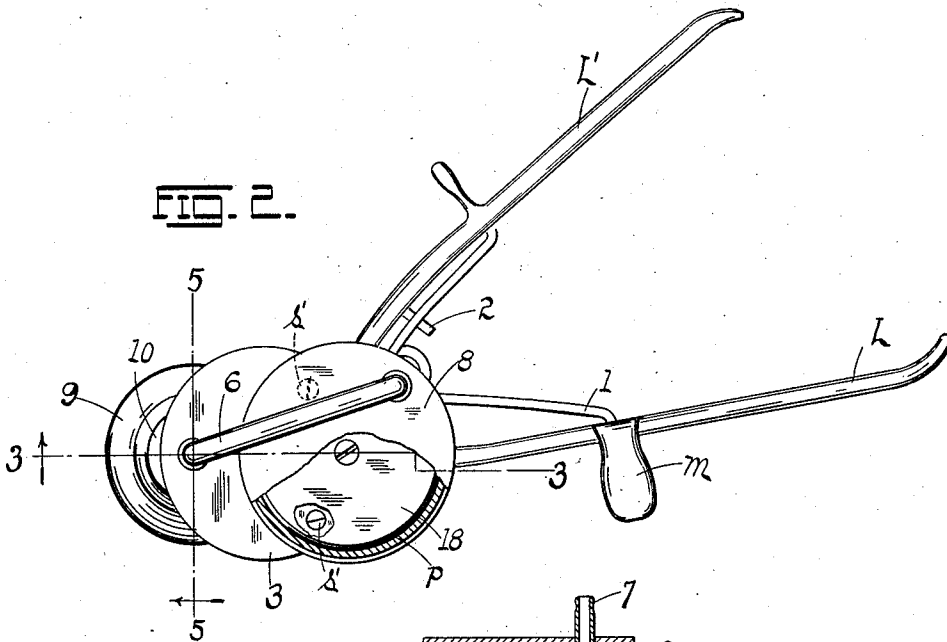


FIG. 2.



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2 SHEETS—SHEET 2.

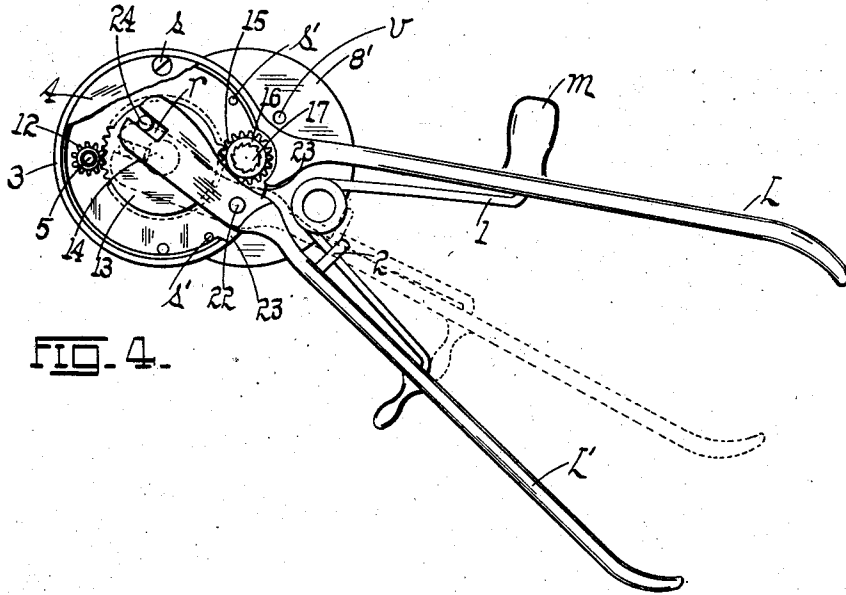


FIG. 4.

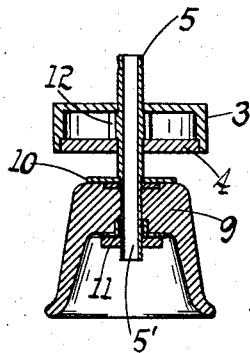


FIG. 5.

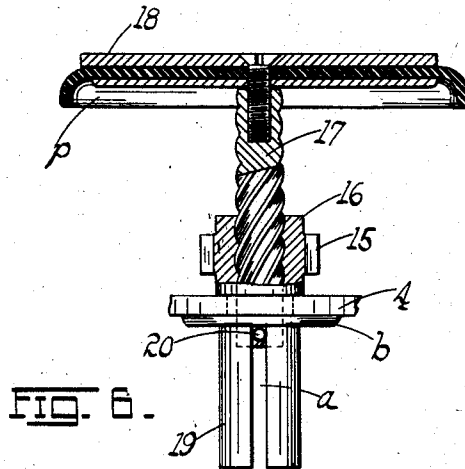


FIG. 6.

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PNEUMATIC MASSAGE-TOOL.

1,010,699.

Specification of Letters Patent.

Patented Dec. 5, 1911.

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To all whom it may concern:

Be it known that I, CHARLES O. SOBINSKI, citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Pneumatic Massage-Tools, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in pneumatic massage-tools; and it consists in the novel construction of tool more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the tool, parts being broken away; Fig. 2 is a top plan thereof, parts being broken away; Fig. 3 is a longitudinal section on the line 3—3 of Fig. 2, (after the levers have been closed); Fig. 4 is a bottom plan view, with cover plate removed to expose the working parts; Fig. 5 is a cross-section on the line 5—5 of Fig. 2; and Fig. 6 is an enlarged section and elevation of the piston or plunger and actuating nut therefor.

The object of my invention is to construct a hand-operated pneumatic massage-tool to be applied to the face (or body), the air currents availed of in the treatment being generated by the action of an air-pump, the operating parts of which shall be concealed from view; one in which the pump mechanism shall be simple, positive, and reliable in its action; one which shall be light, easily manipulated, convenient to handle, and one possessing further and other advantages better apparent from a detailed description of the invention, which is as follows:

Referring to the drawings, L, L', represent two handles or levers in pivotal or hinged relation, the handle L' being for convenience hereinafter referred to as the movable member, in contradistinction to the relatively stationary handle L which in the operation of the tool is held by the thumb passed under a lip *m*, the movable handle L' being actuated or forced toward the member L by the fingers of the hand. This distinction however, is for convenience only, as the handles are mounted in pivotal relation like a pair of shears, and it is of no consequence whether one or both are considered as movable. The handles are normally spread apart by a spring 1 of familiar de-

sign, a lug 2 on the member L' holding the spring against accidental displacement.

The member L is provided with a terminal enlargement or circular cup-shaped base 3, the cup being closed by an outer cover plate or disk 4 shouldered against the edge of the cup and fastened by screws *s*. For convenience the parts 3 and 4 will be referred to collectively as a base or cup. Mounted rotatably at a convenient point on the cup is a hollow rotatable spindle 5 projecting above and below the cup, the upper end being adapted to enter the adjacent end of a rubber or other flexible air-tube 6, the opposite end of the tube being connected to a nipple 7 leading from the head of the pump-cylinder 8. Over the lower reduced screw-threaded extension 5' of the spindle 5 is passed a rubber (or equivalent) cup-shaped suction head 9 the roof of which bears against a metal washer 10 shouldered against the spindle 5 (Fig. 5), the head being held in place by a retaining nut 11 on the inside of the head as shown. Mounted on the spindle 5 within the cup (3, 4) is a pinion 12 with which meshes a gear-wheel 13 (shown conventionally in Fig. 4) mounted rotatably within the cup or base 3 on a stud 14 (Fig. 3), the gear 13 in turn meshing at a point substantially diametrically opposite the pinion 12 with the toothed periphery 15 of a nut 16 passed over the high-pitched screw-stem 17 constituting the piston-rod of a piston or plunger 18 screwed to the upper end of the stem and reciprocating within the pump cylinder 8. The piston is preferably composed of two metal plates with an intermediate rubber or leather packing *p* as shown (Fig. 6), a construction very common in the art. The body of the cylinder 8 is screwed to a circular flanged plate 8' secured by screws *s'* to the base of the handle L. The screw-stem 17 plays loosely through a boss *b* and a longitudinally slotted guide-tube or sleeve 19 extending from said boss on the cover-plate 4, the diametrically disposed slots *a*, *a*, of said guide-tube being traversed by the projecting ends of a cross-pin 20 passed through and carried by the lower terminal of the stem 17. The parts are protected by a thimble or casing 21 slipped over the tube 19, remaining frictionally held thereto, the pin ends not extending beyond the widths of the slots *a*, *a*. It may be stated in pass-

ing that the base of the spring 1 engages the plate 8' on one side, the lug 2 being on the opposite side, so that no danger of the spring being displaced can arise.

5 The operation of the tool is as follows:— It will be seen that the movable handle-lever L' is pivoted about a stud 22 in the base 3, the short arm of the lever passing into the chamber or cavity of said base through a
10 cut-away portion 23 in the side walls of said cavity, the gear wheel 13 being between the top wall of said chamber and the short arm of the lever. This arm is provided with a slot or recess *r* which receives a pin or stud
15 24 projecting from the bottom face of the gear-wheel 13 at a convenient point from the axis of rotation of the wheel. The operator seizes the tool placing the middle of the thumb under the lip *m*, and the free end of
20 the thumb against the wall of the pump cylinder, grasping the movable lever-handle L' with his fingers. By then drawing the lever L' toward the lever L, or in other words by oscillating the member L' about
25 its pivot 22 toward the member L, the inner slotted short arm of the lever L' engaging as it does the pin 24, will rotate the gear-wheel 13 in a given direction, the said wheel in turn imparting a rotation not only to the
30 hollow spindle 5, and to the rubber massage-head 9 carried thereby, (through the pinion 12), but also to the nut 16 through the gear teeth 15, the rotation of the nut imparting a longitudinal movement to the high-
35 pitched screw-stem 17 in a given direction and hence to the piston or plunger 18 which the stem 17 serves as a piston-rod. The latter is held against rotation by the pin 20 traversing the slots *a, a*, of the guide-tube
40 19. With a release of the lever L' (or the opening of the hand) the spring 1 (compressed in the closing movement of the lever L') will force the member L' away from the member L, or to the original separated po-
45 sition of the members, the parts described now being actuated in a reversed direction. It follows therefore that with a successive closing and opening of the hand (or a suc-
50 cessive closing and opening of the members L, L') the piston 18 will be reciprocated in its cylinder. With a downward stroke of the piston (following the closing movement of the levers) air will be drawn into the suc-
55 tion or massage head 9 (Fig. 1) passing through the flexible tube 6 into the pump-cylinder behind the piston; with the reverse stroke of the piston the air will be expelled through the hollow spindle 5. The head 9 however has a rotation imparted to
60 it with each stroke of the piston, the direction of rotation being reversed with each reversal of the piston stroke. Since the head 9 is applied to the face or body during these oscillations or reverse rota-
65 tions, the air will be drawn into the hollow

of the rubber head 9 between the edge of the head and the skin of the person undergoing treatment with one rotation, and expelled through the same channels with the opposite rotation, thereby inducing a rapid and
70 healthy circulation of blood under the skin. The bottom of the pump-cylinder is provided with a vent *v* so the piston may reciprocate freely.

Having described my invention, what I
75 claim is:—

1. A pneumatic massage-tool comprising a pair of pivoted handles, a rotatable suction-cup, and a pump-cylinder provided with a reciprocating piston mounted on one
80 of the handles, means interposed between the piston and cup and the opposite handle for simultaneously actuating the piston and rotating the cup in one direction with a movement of said handle in one direction,
85 means for returning the handle to its original position and actuating the piston and rotating the cup in the opposite direction, and an air-tube between the cup and pump-cylinder.

2. A pneumatic massage-tool comprising a pair of pivoted handles, a rotatable hollow spindle mounted on one of the handles, a suction cup at one end of the spindle, a
90 pump-cylinder on the same handle, a flexible tube leading from the opposite end of the hollow spindle to the pump-cylinder, a pinion on the hollow spindle, a rotatable gear wheel on the aforesaid handle engaging the
95 teeth of the pinion, a nut provided with peripheral gear-teeth meshing with the gear wheel at a point opposite the pinion aforesaid, a high-pitch screw-stem passing through the nut, means for guiding the stem and preventing rotation thereof, a piston
100 head or plunger at one end of the stem operating in the pump-cylinder, means between the gear-wheel and opposite handle for rotating the gear-wheel with an oscillation of the handle in one direction whereby
105 the piston is reciprocated and the cup rotated in one direction and the air sucked through the cup and tube into the cylinder behind the piston, and an expanding spring between the handles for spreading the han-
110 dles apart and actuating the piston and cup in the opposite direction, and expelling the air from the cylinder through the tube and out of the cup.

3. A pneumatic massage-tool comprising
120 a pair of pivoted handles, a rotatable hollow spindle mounted on one of the handles, a suction cup at one end of the spindle, a pump-cylinder on the same handle, a flexible tube leading from the opposite end of the
125 hollow spindle to the pump-cylinder, a pinion on the hollow spindle, a rotatable gear-wheel on the aforementioned handle engaging the teeth of the pinion, a nut provided with peripheral gear-teeth meshing with the
130

gear wheel at a point opposite the pinion, a high-pitch screw-stem passing through the nut, a hollow longitudinally slotted sleeve for guiding the screw-stem, a pin on the stem traversing the slots of the sleeve, a piston at one end of the screw-stem operating in the pump-cylinder, a pin projecting from one face of the gear-wheel at a point removed from the axis of rotation of the wheel, the opposite handle terminating in a slotted arm engaging said pin, and an expanding spring between the handles, the parts operating substantially as, and for the purpose set forth.

4. In a pneumatic massage-tool, a pair of levers in hinged relation, a pump pro-

vided with a reciprocating piston mounted on one of the levers, means interposed between the pump and the opposite lever for actuating the piston with an oscillation of said lever, a suction head communicating with the pump-cylinder, and means for rotating said head with an oscillating movement of the lever and a reciprocation of the piston.

In testimony whereof I affix my signature, in presence of two witnesses.

CHARLES O. SOBINSKI.

Witnesses:

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A. W. POWELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."