H. B. BRADSHAW.

HAND MASSAGE DEVICE.

APPLICATION FILED JULY 12, 1911.

1,106,276. Patented Aug. 4, 1914

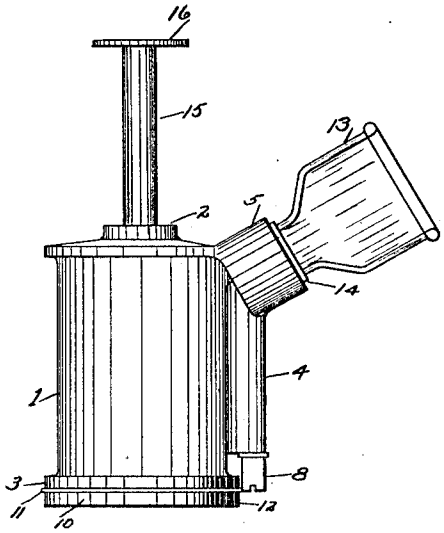



Fig. 1

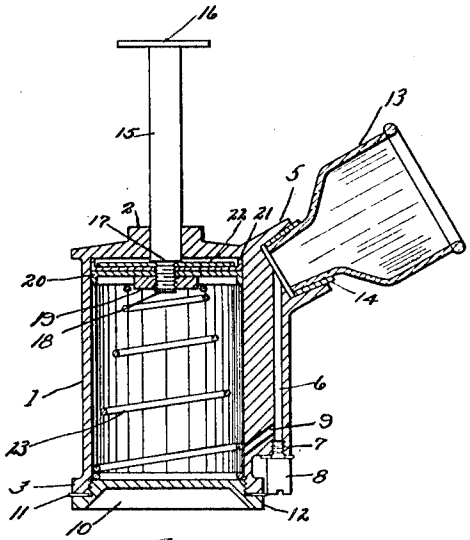



Fig. 2.

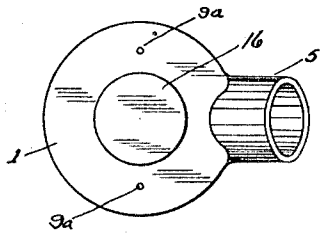



Fig. 3.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## HAND MASSAGE DEVICE.

1,106,276. Specification of Letters Patent. Patented Aug. 4, 1914.

Application filed July 12, 1911. Serial No. 638,178.

*To all whom it may concern:*

Be it known that I, HERBERT B. BRADSHAW, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Hand Massage Devices, of which the following is a specification.

My invention relates to hand massage devices and is particularly designed to be an improvement upon application, Serial Number 577,763, filed August 18, 1910.

It is particularly designed in an endeavor to improve various structural features of this particular type of massage device and to thereby greatly increase, not only the rigidity of the device, but to produce such a structure that the suction produced is materially increased. Furthermore, it is aimed to provide a resilient return means for the piston utilized, which return means will be free of any tendency to disarrangement.

I preferably construct my improved massage device with a casing formed in one piece, cast to suitable form, and having a main cylinder and passages leading to the suction aperture. Within this cylinder, I desirably provide a reciprocating piston having a shouldered stem, with its reduced extremity threaded for the reception of a nut, which is adapted to clamp the piston head upon the stem and against the shoulder. The piston is desirably of peculiar construction in that it is a metallic disk having an annular wall formed integral therewith and upon the outer surface thereof, which piston head has, superimposed thereon, a similarly formed washer of flexible material having its annular wall upon its inner surface. Superimposed upon such flexible washer, is a metallic disk which serves by coaction with the shoulder upon the piston stem to positively maintain the flexible washer in contact with the piston head throughout its surface. It will be seen that this structure gives the piston a comparatively large bearing surface upon the interior wall of the cylinder. Furthermore, the resilient means for automatically returning the piston to normal position is a spring, desirably in the form of a conical helix having its smaller end bearing upon the outer face of the piston head and accurately centered by its retention between the nut upon the piston stem and the annular wall of the piston head. This centering action is further effected and enhanced by the broad base of the spring which rests upon a removable base for the cylinder.

My invention further contemplates the provision of the clean-out device for the massaging apparatus, preferably in the nature of a threaded plug disposed at a proper point in the passages leading to the suction aperture. Further than this, I desirably utilize small exhaust ports to permit exhaust of the air upon automatic return of the piston, which exhaust ports are further utilized for the introduction of a lubricant in proper quantities and because of such additional function, are advisably located in the top of the casing.

The preferred embodiment of my invention is shown in the accompanying drawings, in which similar characters of reference designate corresponding parts, and in the structure shown in such drawings: Figure 1 is a side elevation of my invention in assembled form, Fig. 2 is a vertical sectional view of my massaging device, and, Fig. 3 is a top plan view of the massaging device with the suction cup removed therefrom.

The device preferably comprises a casing 1 formed in one piece and reinforced at its upper end to provide a bearing 2. This casing 1 is internally threaded at its lower end and preferably reinforced as at 3. Along one side of the said casing, there is disposed an enlargement 4 formed integral therewith and terminating at its upper end in a cup-shaped extension 5. Extending longitudinally of such enlargement 4 is a duct 6 communicating at its upper end with the cup-shaped extension 5 and having its lower end threaded as at 7 for the reception of a threaded plug 8. Leading into the duct 6 at a point near its lower extremity is a passage 9 connecting the duct with the interior of the casing 1. This casing 1 is further provided with a removable cap 10 adapted to be threaded into the reinforcement 3 and preferably having a leather washer 11 interposed between the shoulder 12 on such cap 10 and the reinforcement upon the casing proper.

The extension 5 of the casing is desirably of cup form as hitherto indicated, for the reception of a cup of glass, or flexible material, such as rubber, and designated as 13. It is frequently advisable to friction-

ally maintain such cup 13 in place by utilization of a cylindrical washer 14. It will further be noted, which is one of the essential features of my improvement, that both the neck of the cup 13 and the socket of the extension 5 are flared in order that there may be obtained a tighter frictional fit. The casing is desirably provided with apertures $9^a$ formed in its upper end.

The piston which reciprocates within the casing 1, preferably comprises a stem 15 working in the bearing 2, having a hand piece 16 on its outer extremity and formed with a shoulder 17 near its lower extremity and a reduced threaded extension 18 for the reception of a nut 19. This nut 19 serves to clamp the piston head 20 upon the reduced extension 18. The said piston head 20 is especially constructed of disk form with an integrally annular wall upon its outer surface and the said piston head has preferably superimposed thereon a flexible washer 21 of substantially identical form and contour with the piston head. The washer 21 is maintained in complete contact with the inner surface of the piston head by a metallic disk 22. It will be understood that the piston head 20, washer 21 and disk 22 are normally in superimposed relation and are clamped against the shoulder 17 by means of the nut 19.

The piston is normally maintained in extended position by the utilization of a metallic spring in the form of a conical helix and designated 23. The base of such spring is desirably in contact with the cap 10 which forms a broad bearing surface therefor, whereas the apex of the spring is adapted to embrace the nut 19 and by bearing upon the piston head, to accurately center such spring and prevent buckling thereof and consequent displacement of the spring.

It will be understood that, in operation, the casing may be carried in one hand of the operator and a finger used to depress or force the piston inwardly by application of pressure to the hand piece 16 of the piston stem. The cup may be applied to the skin to be massaged and the hand piece released, whereupon the piston will be gradually returned to position owing to the exhaust of the air through the apertures in the upper end of the casing. The size of these apertures permits a prolonged suction effect to be produced through the passage 9 and the duct 6. It will further be understood that the duct 6 and the passage 9 may be readily cleansed by the removal of the plug 8.

It will further be apparent that the provision of the apertures at the upper end, permit the introduction of lubricant, at the same time obviating danger of spilling or forcing the lubricant out of the casing by the operation of the device. Likewise it will further be apparent that the suction effect of the piston head is greatly enhanced by the provision of the annular wall thereon, as well as the provision of the similarly shaped washer which is mounted upon such piston head.

What I claim, is—

A hand massage device comprising a casing, a cylinder in said casing, an integral formation thereon having a vertical suction passage leading from said cylinder, said formation having a socket formed therein with which the said suction passage communicates, a reciprocable piston in said cylinder, a removable plug forming one end of said cylinder, a clean-out trap in the said suction passage near its point of communication with said cylinder, and a plug threaded into said trap and removable for cleaning the same.

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

HERBERT B. BRADSHAW.

Witnesses:

JOSEPH P. EAYLERM,

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