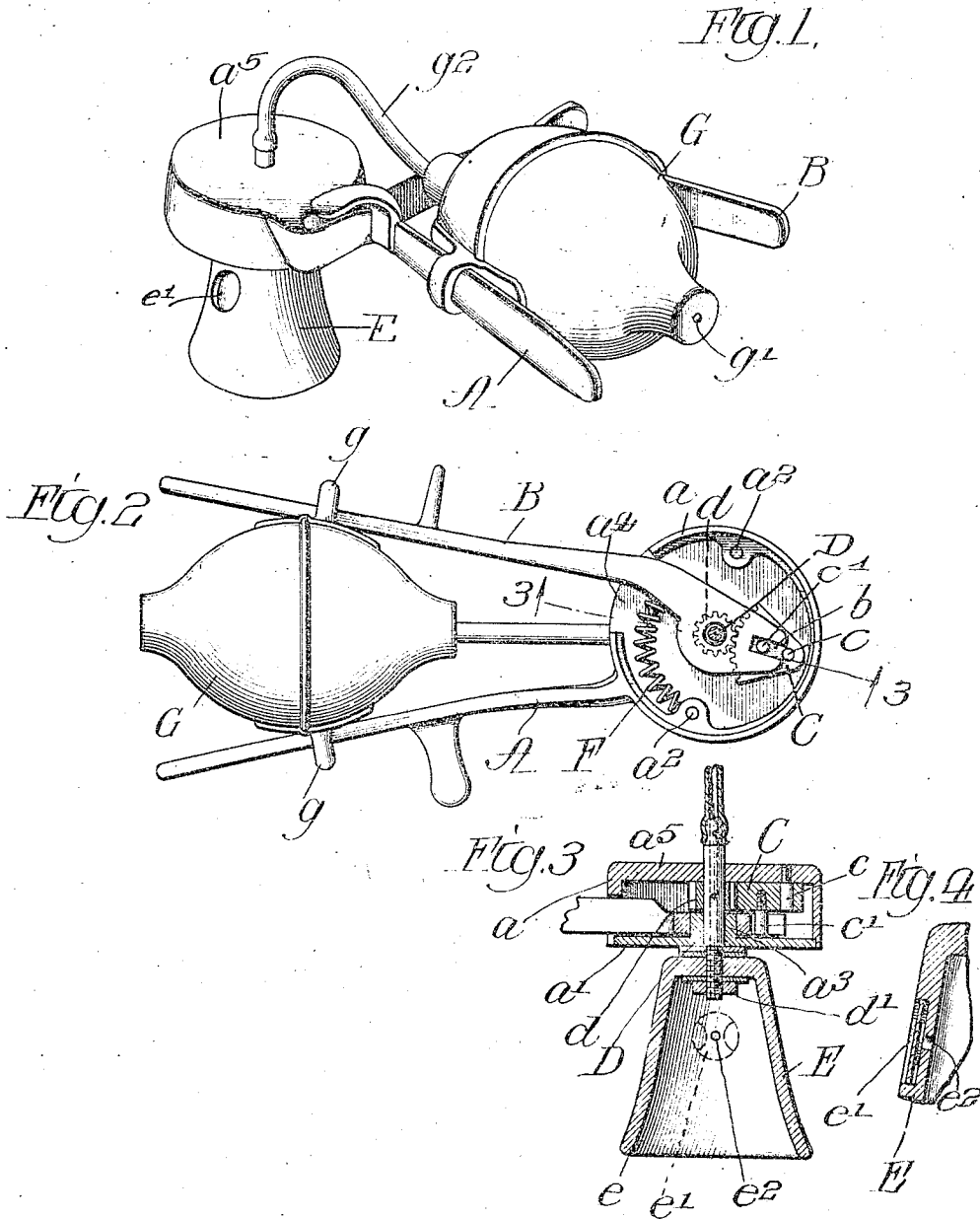


H. A. GRASS.
 MASSAGE INSTRUMENT.
 APPLICATION FILED JULY 11, 1908.

1,058,173.

Patented Apr. 8, 1913.



Witnesses:
J. D. Perry
J. J. Sommaro Jr.

Inventor:
 Henry Andrew Grass,
 By *Bureau of Demand & Supply*
Attys.

UNITED STATES PATENT OFFICE.

HENRY ANDREW GRASS, OF CHICAGO, ILLINOIS, ASSIGNOR OF FORTY ONE-HUNDREDTHS TO, LOUIS J. MITCHELL, OF CHICAGO, ILLINOIS.

MASSAGE INSTRUMENT.

1,058,173.

Specification of Letters Patent.

Patented Apr. 8, 1913.

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To all whom it may concern:

Be it known that I, HENRY A. GRASS, a citizen of the United States of America, and resident of Chicago, Cook county, Illinois, have invented a certain new and useful Improvement in Massage Instruments, of which the following is a specification.

My invention relates to hand operated massage tools of the kind disclosed in my prior Patent No. 927,786, July 13, 1909.

The object of my present invention is the simplification and improvement of the gearing and connection between the two handles of the instrument, and between the two handles and the rotary cup or applicator; the provision of an improved arrangement by which the valve is in the cup or applicator, instead of in the bulb by which the air is exhausted from the cup or applicator, whereby the same bulb can be used on an atomizer, as hereinafter set forth; and the provision of certain details and features of improvement, as will also hereinafter more fully appear, tending to increase the general efficiency of an instrument of this particular character.

To the foregoing and other useful ends, my invention consists in matters hereinafter set forth and claimed.

In the accompanying drawings—Figure 1 is a perspective of a massage instrument, embodying the principles of my invention. Fig. 2 is a bottom view of the same, showing the applicator and bottom plate of the instrument removed to show the spring and gearing inclosed within the circular enlargement formed at the juncture of the two handles. Fig. 3 is a detail section on line 3—3 in Fig. 2. Fig. 4 is an enlarged detail section of the valve in the side of the rubber cup or applicator.

As thus illustrated, the handle A has a circular enlargement *a* provided with a removable bottom plate *a*¹ held in place by screws inserted in the threaded sockets *a*² formed within the inclosure provided by said enlargement. Said bottom plate is provided with a boss *a*³, and the cup-shaped enlargement *a* has its side provided with a slot *a*⁴, as illustrated. The other handle B extends through the slot *a*⁴, and is pivoted or fulcrumed upon the boss *a*³, so that the two handles are pivotally joined together and capable of moving toward and away from each other about a common axis. Within

the enlargement *a* there is a segment gear C which is pivoted by a stud *c* to the top of upper wall *a*⁵ of the said enlargement. A hollow stem D extends upwardly through the boss *a*³, and also through the wall *a*⁵, the same being provided with a pinion *d* interposed between the upper end of the boss *a*³ and the lower side of the wall *a*⁵, as shown. To the lower end of said hollow stem is secured the rubber cup or applicator E, the rim or edge *e* of which latter is circular and adapted to bear upon the face of the person receiving the massage treatment. The said stem can be threaded and provided with a nut *d*¹ for holding the said cup or applicator in place. With this arrangement the opening and closing movements of the handle provide a back and forth rotation of the cup or applicator, inasmuch as the handle B is provided with a slot *b* into which extends a pin or stud *c*¹ secured to the segment gear C—that is to say, the opening and closing movements of the handles produce a back and forth movement of the said segment gear, with a consequent oscillatory or back and forth rotation of the hollow stem, to the end of which the cup or applicator is secured.

The handles can be pressed together, and the separation or opening movements of the same is then produced by the coil spring F, which latter is interposed between the two handles and inclosed within the interior of the enlargement *a*, in the manner shown more clearly in Fig. 2. When the handles are pressed together, the said spring is compressed, and when the pressure on the handles is relaxed, the said spring then throws the handles back to their normal position, such movement being limited by the slot *a*⁴. During such operation of the handles, the air is exhausted from the said cup or applicator by the bulb G interposed between the two handles. This bulb has a couple of ears *g* that slip over the handles, the bulb and its two ears being preferably of molded rubber. At its rear end the bulb is provided with a small aperture *g*¹, and at its other end it is connected by a flexible tube *g*² with the upper end of the stem D, whereby the interior of the cup or applicator has free or unrestricted communication with the said bulb. The said cup or applicator is preferably provided in one side thereof with a valve *e*¹, which latter may be simply a thin sheet of

rubber formed integral with the body of the said cup or applicator. Underneath the said thin sheet of rubber is a small hole or opening e^2 , through which the air from the bulb may escape outwardly from underneath said thin sheet of rubber, when the bulb is compressed. When the bulb is allowed to expand, the air is drawn from the interior of the cup or applicator, and a partial vacuum produced therein, inasmuch as the air cannot pass into the cup or applicator through the opening e^2 , the valve e^1 closing the passage when the air attempts to pass in this direction. Thus, as stated, the expansion of the bulb is accompanied by the formation of a partial vacuum within the cup or applicator, which tends to increase the intimacy or contact between the cup or applicator and the surface upon which it is working, and producing a more effective massage action on the face of the person receiving the treatment. The opening g^1 allows the air to pass slowly into the bulb, when the latter is expanded, and thus prevents the vacuum from holding the handles together—that is to say, if it were not for this opening g^1 the expansion of the bulb and the separation of the handles would be impeded by the vacuum. The spring F could be made sufficiently heavy and powerful to quickly separate the handles, but this would make it somewhat harder to work the instrument, and for this reason I find it preferable to use the small relief opening in the end of the bulb, in the manner explained. This opening also, of course, allows the air to escape from the bulb when the latter is compressed, thus reducing the air pressure in the cup or applicator.

It will be seen that a massage instrument thus constructed in accordance with my invention is simple and easily operated, being in the nature of a small hand tool that can be held and operated by one hand, and which can be carried about without inconvenience to the user.

The object of the valve e^1 is to permit the escape of the air when the bulb is compressed, and then prevent the admission of air when the bulb expands. The purpose of the said valve, and the specific location thereof in the side of the applicator, is to make it possible to use the said bulb in conjunction with an atomizer, by simply disconnecting the tube g^2 from the applicator, and by then working the handles A and B in the manner previously described—that is to say, after the said tube g^2 has been suitably connected with the said atomizer. During such operation the applicator E will oscillate back and forth, but without in any way interfering with the atomizing action, and thus the one bulb and pair of handles answers the purpose for both the massaging

operation and the atomizing operation. As the valve in a well-known form of atomizer opens to admit air into the atomizer when the bulb is compressed, it is necessary to locate the valve e^1 in the side of the applicator, for should it be located in the side wall of the bulb, for example, it would then prevent the use of said bulb and pair of handles in conjunction with the atomizer, as in such case the air, instead of being forced into the atomizer, would be expelled through the valve and into the atmosphere. It will be seen, therefore, that by locating the valve e^1 in the side of the applicator, the said bulb is made free from valves and rendered suitable for use in compressing air and forcing it into the atomizer. This, as stated, is the purpose of the location of the valve e^1 in the side of the applicator.

What I claim as my invention is:

1. A massage instrument comprising a pair of handles, a hollow enlargement at the end of one handle, a bottom plate removably secured to said enlargement and provided with a boss upon which the other handle is pivoted or fulcrumed, a rotatable stem extending through said boss and the upper wall of said enlargement, a pinion secured directly to said stem at a point between the said boss and upper wall, a segment gear pivoted on the said upper wall, means on said segment gear for engaging the handle that is fulcrumed on the said boss, and a cup or applicator carried by said stem.

2. A massage instrument comprising a pair of handles, a hollow enlargement at the end of one handle, a bottom plate removably secured to said enlargement and provided with a boss upon which the other handle is pivoted or fulcrumed, a hollow rotatable stem extending through said boss and the upper wall of said enlargement, a pinion secured directly to said stem at a point between the said boss and upper wall, a segment gear pivoted on the said upper wall, means on said segment gear for engaging the handle that is fulcrumed to the said boss, a cup or applicator carried by said stem, and means connected with said stem and operated by the handles for exhausting the air from said cup or applicator.

3. A massage instrument provided with a hollow cup or applicator, means for operating the same, operative to produce an oscillatory motion on the part of said applicator, means for exhausting the air from said cup or applicator, and a valve for the purpose described opening outwardly in the side of said cup or applicator.

4. A massage instrument comprising a pair of handles, a hollow enlargement at the end of one handle, a cup or applicator, means within said hollow enlargement for operating said cup or applicator by the

opening and closing movements of the handles, operative to produce an oscillatory motion on the part of said applicator, and a coil spring interposed between the handles within the said enlargement, as set forth.

5 5. A massage instrument comprising a pair of handles, a cup or applicator operated by the opening and closing movements of said handles, a bulb interposed between
10 the handles and connected for exhausting the air from said cup or applicator, and a valve for this purpose in the side of said cup or applicator, said bulb being provided with a small relief opening, as set forth.

15 6. A massage instrument comprising a pair of handles, a hollow enlargement at the end of one handle, a bottom plate removably secured to said enlargement and provided with a boss upon which the other handle is
20 pivoted or fulcrumed, a rotatable stem extending through said boss and the upper wall of said enlargement, said stem being coincident with the axis of the two handles, a pinion secured directly to said stem at a
25 point between the said boss and upper wall, a segment gear pivoted on the said upper wall adapted to engage said pinion, means on said segment gear for engaging the handle that is fulcrumed on the said boss, and a
30 cup or applicator carried by said stem, said cup or applicator being mounted for and having an oscillatory or back and forth rotary motion.

35 7. A massage instrument comprising a pair of handles, a hollow enlargement at the end of one handle, a bottom plate removably secured to said enlargement and provided with a boss upon which the other handle is pivoted or fulcrumed, a hollow
40 rotatable stem extending through said boss and the upper wall of said enlargement, a pinion secured directly to said stem at a point between the said boss and upper wall, a segment gear pivoted on the said upper
45 wall, means on said segment gear for en-

gaging the handle that is fulcrumed to the said boss, a cup or applicator carried by said stem, said cup or applicator being mounted for and having an oscillatory or back and forth rotary motion, and means connected
50 with said stem and operated by the handles for exhausting the air from said cup or applicator.

8. A massage instrument provided with a hollow cup or applicator, said cup or applicator being mounted for and having an oscillatory or back and forth rotary motion, means for operating the same, means for exhausting the air from said cup or applicator, and a valve for this purpose provided
60 in the side of said cup or applicator.

9. A massage instrument comprising a pair of handles, a hollow enlargement at the end of one handle, a cup or applicator, said cup or applicator being mounted for and
65 having an oscillatory or back and forth rotary motion, means within said hollow enlargement for operating said cup or applicator by the opening and closing movements of the handles, and a coil spring interposed
70 between the handles within the said enlargement, as set forth.

10. A massage instrument comprising a pair of handles, a cup or applicator operated by the opening and closing movements of said handles, said cup or applicator being mounted for and having an oscillatory or back and forth rotary motion, a bulb interposed between the handles and connected for exhausting the air from said
80 cup or applicator, and a valve for this purpose in the side of said cup or applicator, said bulb being provided with a small relief opening, as set forth.

Signed by me at Chicago, Cook county, Illinois, this 8th day of July, 1908.

HENRY ANDREW GRASS.

Witnesses:

ALBERT J. LAUSER,
ELLEN CLEGG.