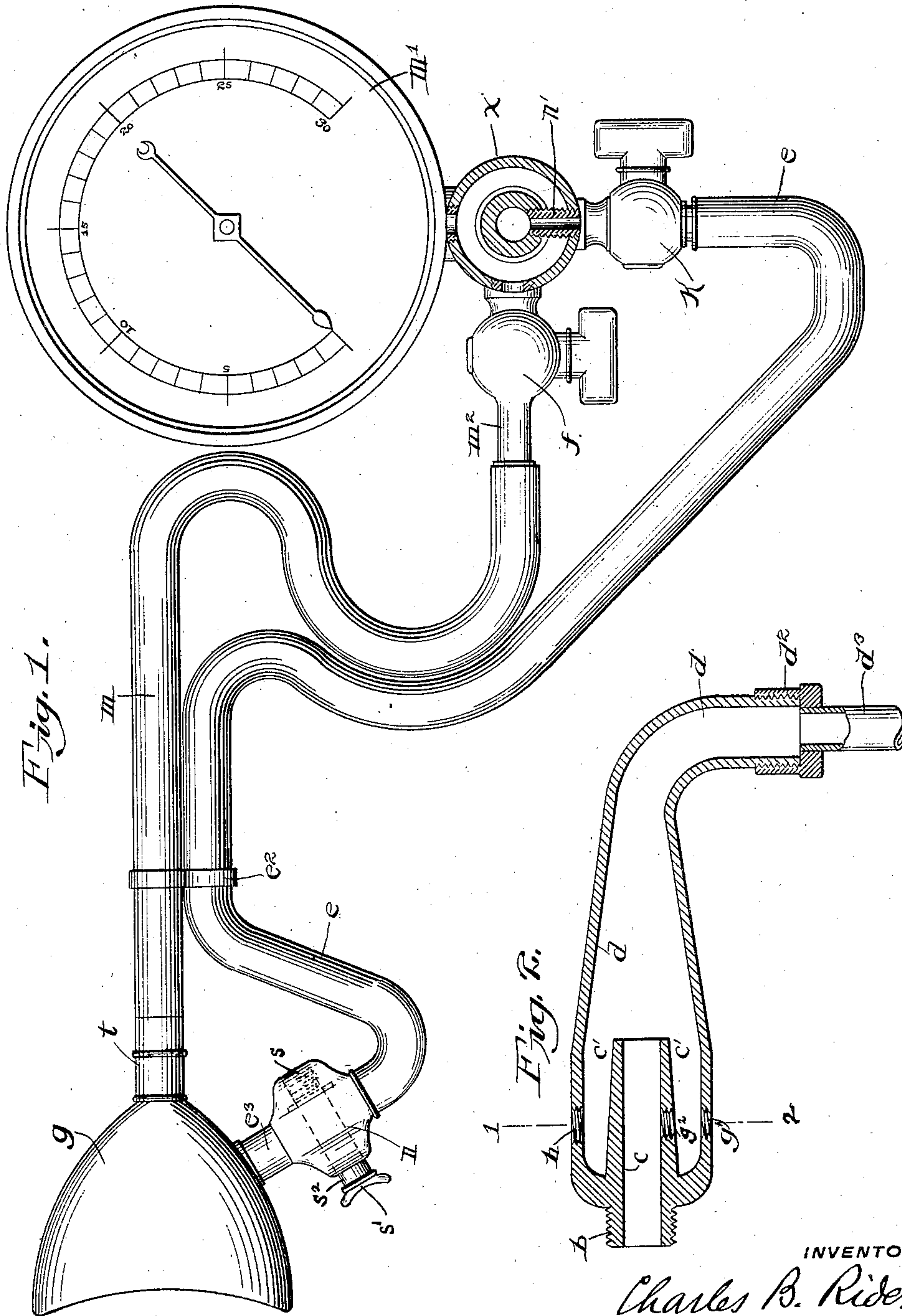


C. B. RIDER.
VACUUM MASSAGING MACHINE.
APPLICATION FILED AUG. 12, 1908.

929,112.

Patented July 27, 1909.

2 SHEETS—SHEET 1.



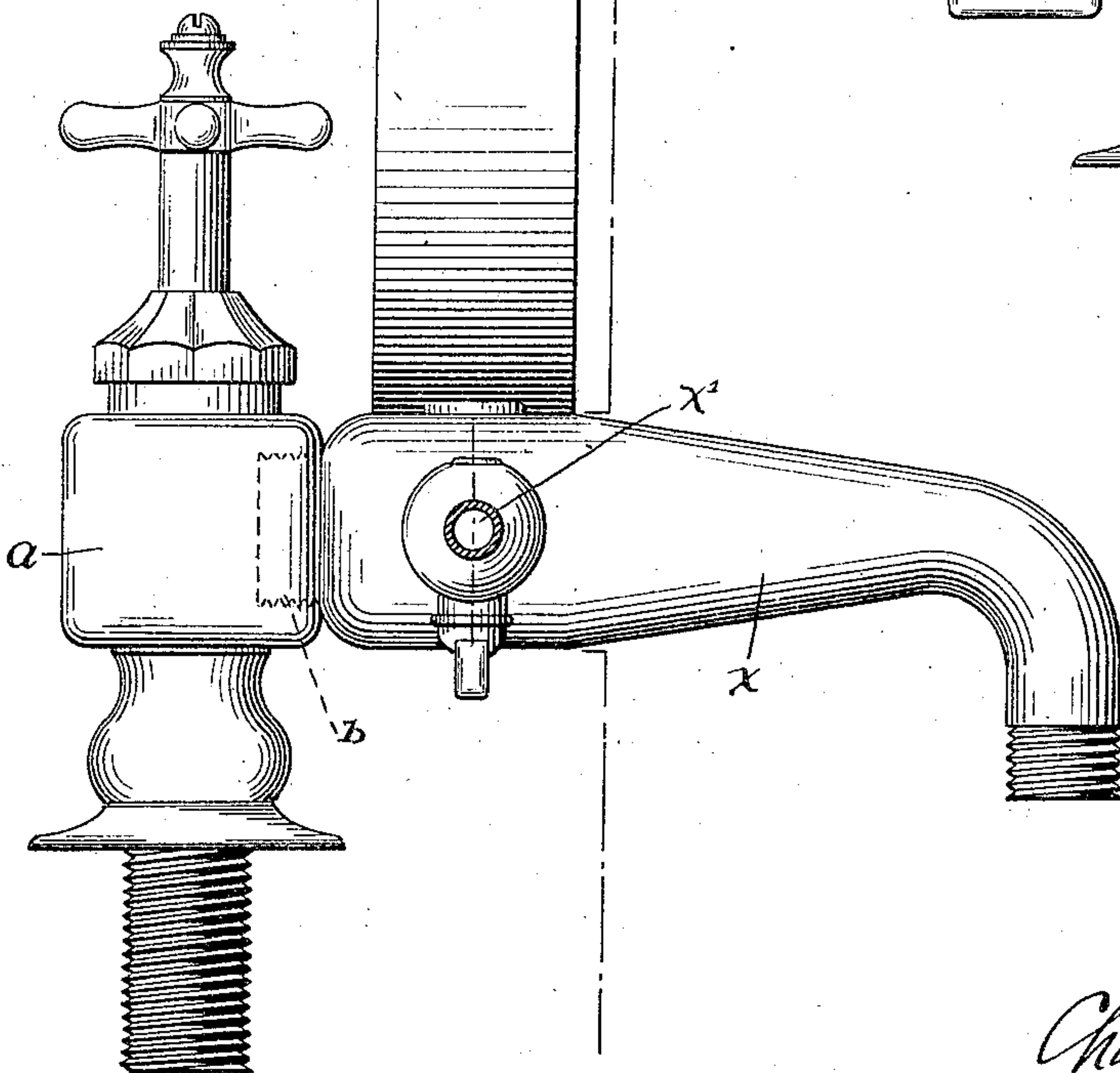
WITNESSES
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BY

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CHARLES B. RIDER, OF OCEAN CITY, NEW JERSEY, ASSIGNOR OF ONE-HALF TO SAMUEL H. HANN, OF CAMDEN, NEW JERSEY.

VACUUM MASSAGING-MACHINE.

No. 929,112.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed August 12, 1908. Serial No. 448,113.

To all whom it may concern:

Be it known that I, CHARLES B. RIDER, citizen of the United States, residing at Ocean City, county of Cape May, State of New Jersey, have invented certain new and useful Improvements in Vacuum Massaging-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates generally to massaging machines and particularly to that type thereof operating by vacuum or suction; and it has for its object to provide a device of simple construction, in which the vacuum or suction is produced by a flow of water through a vacuum tube constituting a portion of the instrument, wherein also there is supplied a supplemental water tube in which, after creation of the suction, a portion of the water flow is led to the operating cup to intermittently reduce or break the vacuum therein and operating also to clean or wash the massaged part.

A further object is the construction of the elements and their combination in such manner that the concrete device is adapted to be detachably applied to any ordinary washstand bib or faucet.

To these ends my invention consists of the apparatus hereinafter described, the novel and identifying features of which are pointed out in the appended claims.

In the accompanying drawings illustrating a machine constructed according to my invention, Figure 1 is a side elevation partly in section, of the complete apparatus, in its best form, the vacuum tube X being in section on the line 1—2 of Fig. 2 which is a central vertical section, taken longitudinally, of the vacuum tube of the apparatus. Fig. 3 is a side elevation, illustrating particularly a side view of the vacuum-tube shown detachably attached to a water-supplying bib; Fig. 4 is an elevation, partly in section, of a modified form of the apparatus, wherein the supplemental washing tube is not employed; and also illustrates the applicability of different forms of massage cups to the instrument.

Referring now to said drawings in which similar letters of reference refer to like parts in the several views, *a* indicates a washstand bib or faucet, and X the vacuum tube element of my device, which may be operatively and removably supported on the bib by means of its screw-threaded end, indicated at *b* in

dotted lines Fig. 3, and in section lines in Fig. 2.

The vacuum-tube X is preferably constructed as a single casting and consists of the inlet tube *c*, operating as an injector-nozzle, and which is centrally disposed within a tube *d* of greater length, of larger diameter, so as to form between them an annular chamber, and tapering to a smaller diameter toward its discharge end, and which is preferably curved at the extremity as shown in Fig. 2, so as to discharge into the washstand, and to insure this, without a splashing effect, I prefer to add a perforated cap *d*² carrying a discharge tube *d*³, which is curved, if rigid, otherwise is flexible. The exterior tube *d* of the vacuum tube may be tapped at *h* to apply thereto a pressure gage, indicated at *m'* in Figs. 1 and 4. It is further tapped at *g'* as is also the inner or injector tube *c* at *g*² to admit the passage, through both tubes, of the tubular screw *n'* leading downward, through a petcock *k* to a supplemental water-tube *e*, which operates as a supplemental water discharge and is preferably a flexible tube in order that for a short distance intermediate its length, as at *e*², it may be brought into parallelism with the air-exhaust tube *m*, about to be described, and so held by means, for example, of a clamping band *e*². This flexible tube *e* at its other end is secured to one end of a short rigid tube *e*³ mounted on the wall of the cup *g*, the said tube having an intermediate valve *n*, and the latter is preferably constructed as a spring-controlled thumb-valve, in order that it may be in a normally closed position relatively to the tube *e* which it governs. The walls of the cup *g* are preferably curved and the tube *e*³ so mounted thereon that the entering water will naturally follow the curvature of the wall of the chamber *g*.

The construction of the vacuum tube X is such as to provide an annular exhaust chamber *c'* between the interior wall of the tube *d* and the exterior periphery of the contained injector tube *c*, and in the region of this chamber *c'* the outer tube *d* is tapped as at *x'* (see Fig. 3) to admit one end of the rigid tube *m*² (see Fig. 1) which is provided intermediate its length with a petcock *f*, the other end of the tube *m*² communicating with the tubular connecting handle *t* of a massaging or other operating cup *g*, by means of an intermediate flexible tube *m*. Any form of such cup which presents a

chambered interior and a rim adapted to rest closely upon any portion of the human body, may be employed. One form of this cup is shown in Fig. 1 and another form in 5 Fig. 4.

Referring again to the supplemental water-tube *e*, (Fig. 1), it will be observed that its spring-controlled thumb valve *n* is shown as consisting preferably of an ordinary valve 10 casing *n* whose port is governed by a plug *s*² having on its projecting end an operating thumb-piece *s'* and with its rear end held to its seat by a spring *s*, shown in dotted lines, whereby the valve port is normally closed, 15 and the petcock *k* on tubular screw *n'* may be turned to either open or closed position, hence the said cock *k* may be closed and the tube *e* detached temporarily therefrom, and the tube *e* then employed to eject a fluid 20 medicament through it into the operating cup *g*, if desired, by thumb control of its valve *n* after and supplemental to its use as a vacuum massaging cup; but the principal functions of the supplemental water-tube *e* 25 are that it may be used, with great advantage, in washing the surface of the part massaged, by closing, in whole or in part, the petcock *f* in the exhaust tube *m*², and opening the cock *k* leading to the injector nozzle. 30 Its other function is that of producing a special character of massaging action, without moving the cup, namely, by means of the spring-controlled thumb-valve *n* in the supplemental or wash-tube *e*; the latter can be 35 utilized to cause the pressure to be made intermittent in the operating cup, so as to produce a successive series of pulling and releasing actions on the skin under the cup, if such form of massage is for any reason de- 40 sired. Indeed, the flow of the fluid through the supplemental water-tube *e*, may be governed to a nicety by the sensitive thumb-valve *n*, and employed instantly to temporarily reduce the vacuum pressure in the cup 45 *g* at any moment, when desired, and intermittently if desired. The pressure gage *m'*, attached directly to the vacuum-tube *d* at a point *h* in its external peripheral wall opening directly into the annular exhaust-chamber *c'* (into which annular chamber, water 50 never enters), will be sensitively actuated to show the actual approximate to a vacuum below atmospheric pressure within the operating cup.

55 The operation of the device may be briefly stated as follows: The apparatus being attached, by the screw-threaded inlet end *b* of the vacuum tube *d* to a washstand bib, as indicated in Fig. 3, the flow of water passing 60 through the tube *X* will discharge into the washstand, and on its passage create a suction or exhaust of air in its annular chamber *c'*, and in the connected exhaust tubes *m*² and *m*, and in the operating cup *g* to which 65 flexible tube *m* is attached. For a massag-

ing and cleaning instrument for the human body, the operating or suction cup is manually movable, with rubbing pressure if need be, over the parts of the human body to be treated, and the supplemental water-tube is 70 adapted as well for washing purposes as stated, as also to control at all times the vacuum or exhaust pressure within the operating cup during its use.

The apparatus is effective, is simple in 75 construction, compact and having no parts liable to get out of order, and may be removably attached to the water supply of an ordinary washstand.

Having thus described my invention, I 80 claim as new and desire to secure by Letters Patent:—

1. The combination with a vacuum cup and connecting tubular means, of a vacuum 85 device adapted to be operated in a horizontal position and consisting of a tubular casing having a tapering and downwardly curved discharge end, an injector nozzle of lesser diameter supported concentrically within 90 and in spaced relation to the air-chamber of said casing, providing an annular air-chamber surrounding the nozzle, said nozzle projecting through the inlet end of the casing and provided at said projecting end with 95 means to detachably couple the device to a fixed source of water supply.

2. An apparatus of the character recited comprising in combination a vacuum-tube 100 provided with means to cause a flow of water through its injector nozzle, said vacuum tube comprising a tubular casing and an injector nozzle mounted in spaced relation therein and forming an annular chamber surrounding 105 said injector nozzle, peripheral openings in said casing, a valve-controlled air-tube communicating through one of said openings with the annular air-exhaust chamber of the vacuum-tube, a flexible tube communicating 110 with said air-tube, a chambered-cup mounted on the free end of said flexible tube, and supplemental valve-controlled tubular means 115 between said cup and the interior of the injector nozzle of the vacuum tube.

3. An apparatus of the character recited comprising a vacuum-tube adapted to be 115 coupled by the inlet end of its injector nozzle to a source of water supply, tubular means leading from the interior of a chambered cup and communicating with the annular chamber in the vacuum tube surrounding its in- 120 jector nozzle, an air-pressure indicator communicating with said annular air-exhaust chamber of the vacuum-tube, said chambered cup, and means between the chambered-cup and the vacuum-tube adapted to 125 control the vacuum pressure in said cup.

4. In apparatus of the character recited, comprising a vacuum-tube consisting of an injector nozzle and a casing therefor provid- 130 ing an annular exhaust chamber surrounding

said nozzle, means to couple the inlet end of the injector nozzle to a source of water supply, a chambered cup, valve-controlled tubular means between said cup and the exhaust chamber of the vacuum tube, and supplemental tubular means between the said cup and the interior of the injector nozzle, consisting of a rigid tube e^3 mounted on said chambered cup and having a spring-controlled thumb-valve n , a tubular screw n' leading to the interior of the injector nozzle

and having a pet-cock k , and a removably mounted flexible tube e between said valve and cock.

In testimony whereof, I have hereunto 15
affixed my signature this 30th day of July
A. D. 1908.

CHARLES B. RIDER.

Witnesses:

A. M. BIDDLE,
R. A. DUNLAP.