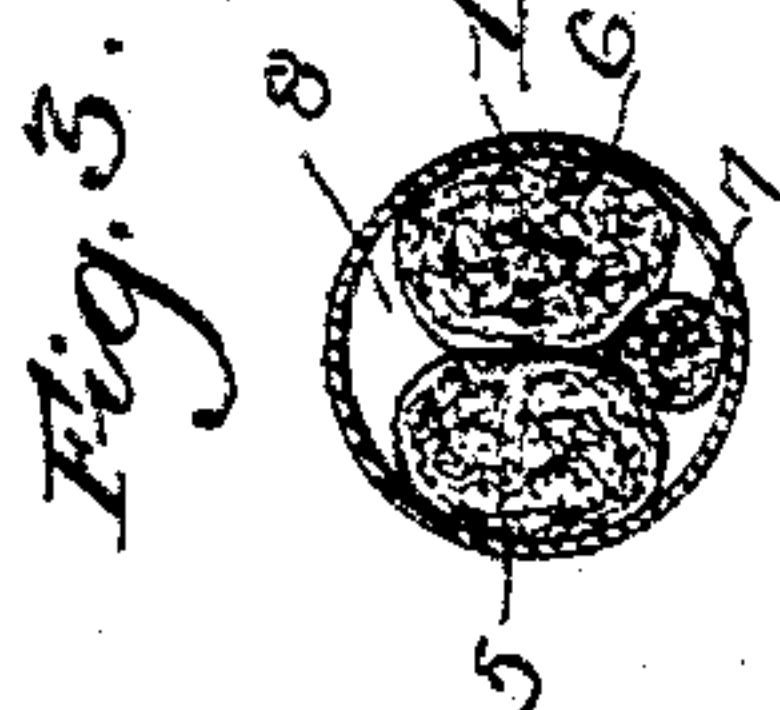
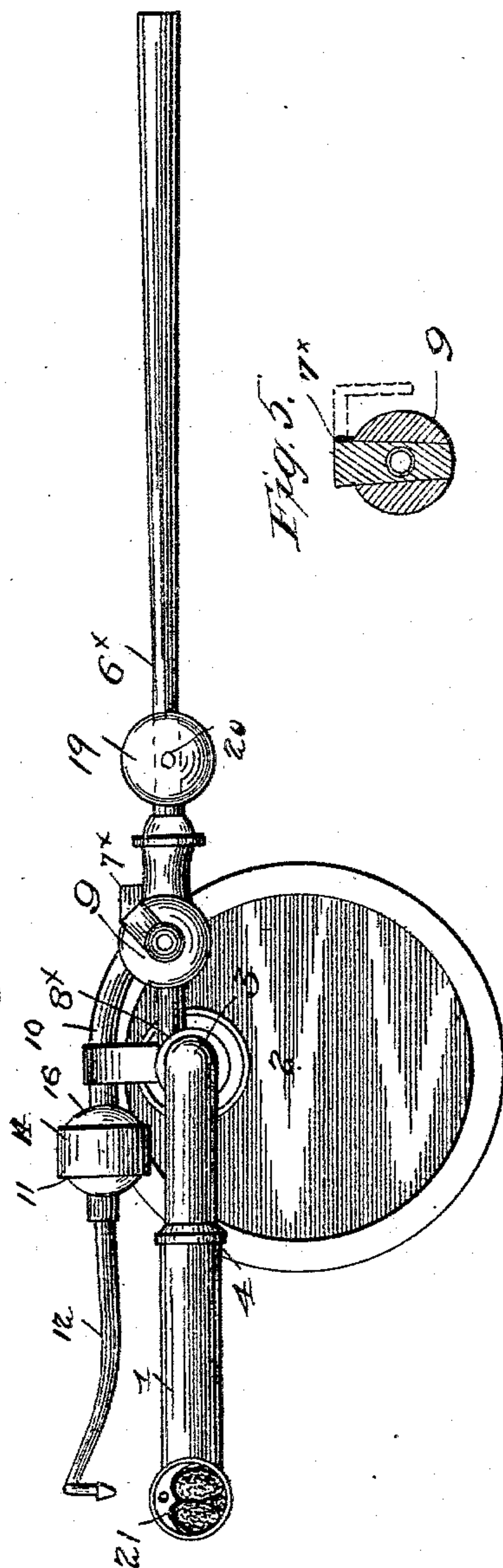
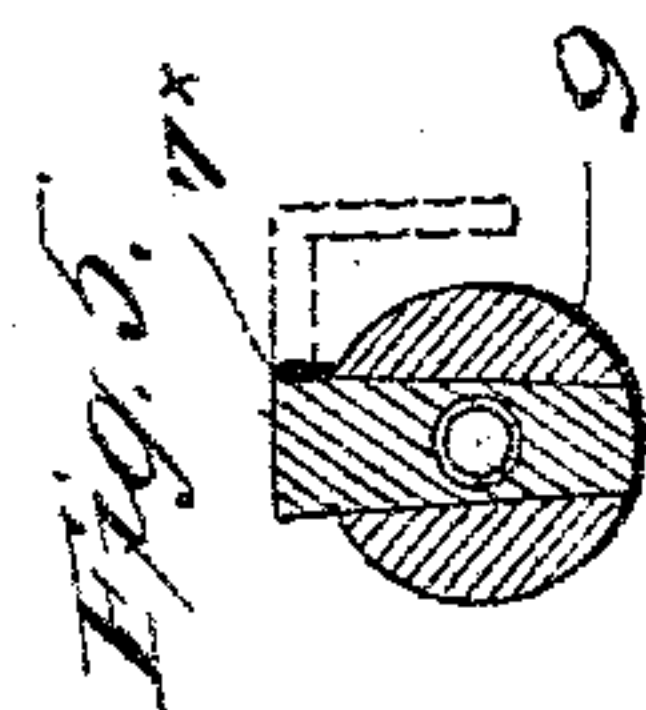
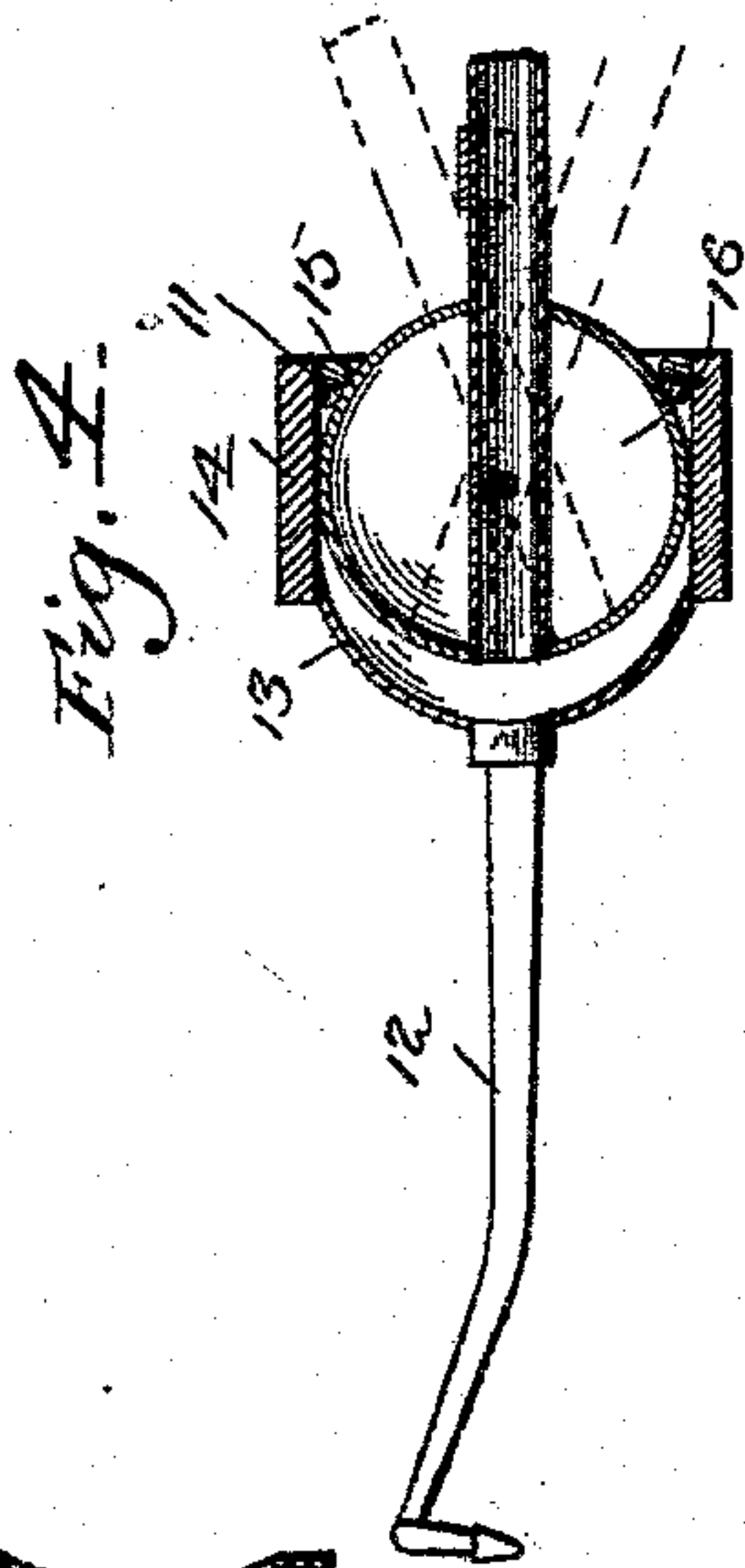
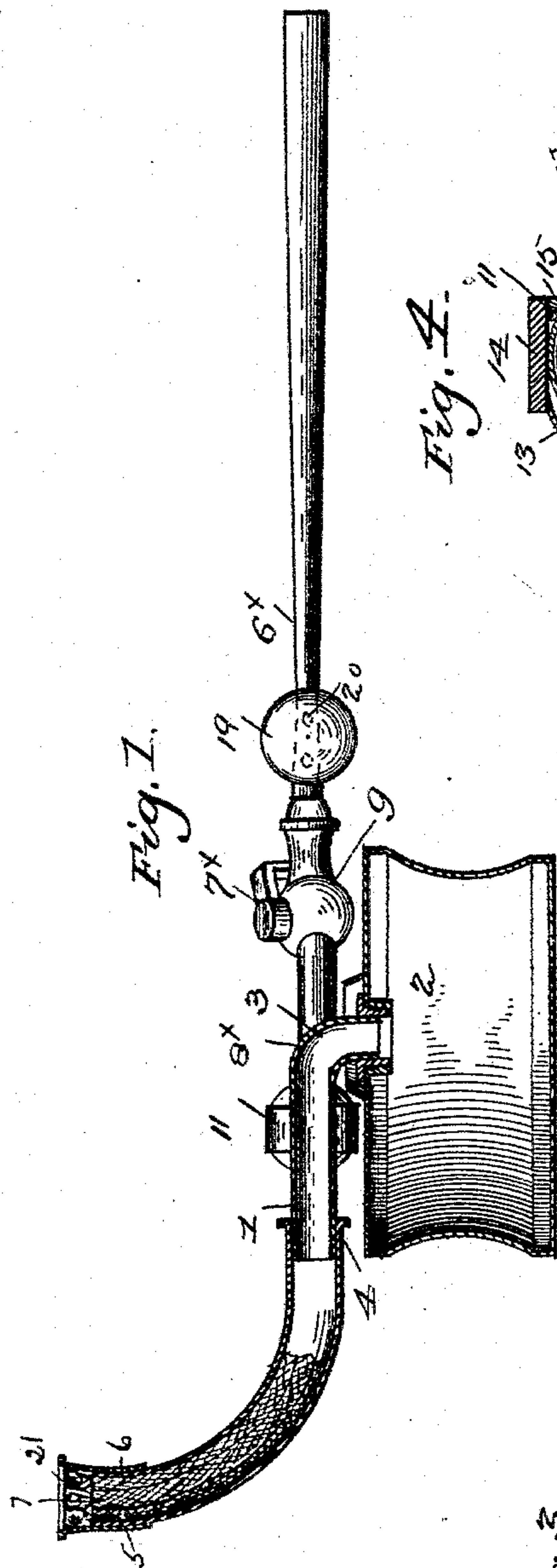


(No Model.)

J. D. ENNES.
BLOWPIPE.

No. 515,425.

Patented Feb. 27, 1894.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN D. ENNES, OF NORFOLK, VIRGINIA.

BLOWPIPE.

SPECIFICATION forming part of Letters Patent No. 515,425, dated February 27, 1894.

Application filed August 29, 1891. Serial No. 404,060. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. ENNES, a citizen of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Blowpipes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures marked thereon, which form a part of this specification.

Jewelers, dentists, chemists and others having occasion to use a jet of flame in their work have often experienced much loss of time and great difficulty in making the jet impinge properly at the desired point, and it has often been found necessary to build or arrange a suitable supporting structure in order to accommodate the work to the position of the jet. The flames in gas and alcohol appliances have not been in such relation to the blow pipe as would enable the workman to direct the jet to any point desired and the common practice has been to fasten the work upon a vertical plane and then direct the flame upon it. This is a tedious and laborious process and it is the object of my invention to provide a combined lamp and blow pipe which will avoid the difficulties hinted at above and will enable the workman to direct the jet of flame to any desired point in the work without requiring any special arrangement of the piece operated upon the access to the interior of articles such as pitchers being as easy as to the exteriors of objects.

My object is also to increase the usefulness of the device by providing means whereby the flame may be blown as a whole in the direction in which it issues or as a small jet laterally of its natural course.

My object is to get the maximum power from a small sized wick to provide for the regulation of the feed of the combustible liquid to the wick and to generally improve such devices in order to get the greatest use from them.

The invention consists of a wick tube adjustable in various ways to meet different requirements combined with a portable reser-

voir to which the tube is attached and a blow pipe having a nozzle opening into the wick tube and a supplemental adjustable nozzle leading to the end of the wick tube said nozzles being controlled by a valve whereby the air may be directed into the wick tube to pass along the wick or may be shut off from the wick tube and caused to pass through the supplemental nozzle to blow a jet laterally from the end of the wick tube.

The invention includes other features hereinafter pointed out in the claims.

In the accompanying drawings Figure 1 is a central vertical section through the device. Fig. 2 is an elevation showing the universal joint for the supplemental nozzle in section. Fig. 3 shows a cross section of the wick tube with the wicks therein. Fig. 4 is a detail sectional view of the supplemental nozzle and the universal joint. Fig. 5 is a cross section through the casing 9, showing a valve.

In the drawings 1 is the wick tube extending parallel and close to the face of the reservoir 2, and having its end 3 bent and screwed to the said reservoir at a point near the periphery thereof. The burner end of the wick tube is bent on a curve to one side and the tube is formed in sections jointed at 4 to permit turning or telescoping of the outer or bent section which terminates in the burner, and thus allows the said burner end to be adjusted to different positions to direct the flame as desired.

In the use of the device the feed of the fluid can be regulated by turning or rotating the blow pipe axially relatively to the reservoir chamber and thus moving the reservoir into a higher or a lower plane in relation to the wick tube and this turning movement is permitted by the joint at 4 while the bent burner end is maintained in its adjusted position to properly direct the flame to the work.

It will be understood that the device can be held in any of the inclined positions as are found necessary in the use of the ordinary blow pipe—the feed of alcohol regulated by rotating the blow pipe with the main section of the wick tube about their longitudinal axis, elevating or depressing the reservoir. The wick is composed of three sections 5, 6, 7 arranged to leave an air channel 8

through which the blast of air from the blow pipe 6^x may pass when the valve 7^x is properly turned to permit this. The nozzle of the blow pipe enters the wick tube at 8^x and the valve is located in a casing 9 carried by the blow pipe. The blast of air when admitted to the wick tube blows the flame in a full and powerful jet in the direction of its issue from the tube and by the adjustments of the tube heretofore described any desired point may be reached and the device may be held in any desired position or at any angle the blow pipe and the main part of the wick tube and reservoir being turned to suit each particular case. A branch pipe 10 leads from the valve casing and this is connected by a universal joint 11 to the supplemental nozzle 12 which has a lateral bend at its upper or outer end terminating near the burner and when it is desired to obtain a lateral jet from the burner of thinner or finer proportion this nozzle is adjusted near the burner and the valve 7^x is turned to shut off the air from the wick tube and direct it through the branch pipe and supplemental nozzle.

It will be clearly seen that the device may be inserted in hollow articles for soldering them such as pitchers, tea and coffee urns and may be successfully used in all cases where the point of work would be inaccessible or difficult to reach by the ordinary means.

The universal joint includes an outer semi-spherical part or shell 13 embracing a saliva ball and an outer rim 14 within which is the leather packing to prevent the escape of air. The leather is confined in place by a resilient rim 15 which is sprung into position after the leather packing.

16 indicates the saliva ball into which the end of the branch pipe passes and this is perforated to allow the saliva to flow into the ball.

The end of the wick tube is provided with a flaring piece to secure more perfect combustion at this point, and it forms a seat for the cap piece which is used to prevent evaporation of the fluid for which purpose also the valve 7^x should be turned to shut off the air from the wick tube and reservoir when the device is not in use.

A saliva ball 19 is placed on the blow pipe and this has perforations 20 through which the saliva passes into the ball.

21 is a crescent shaped piece fixed at the end of the wick tube to bear upon and confine the wicks to one side of the tube and provided with an opening which should be kept open or unobstructed for the air to pass and mingle with the flame and control it.

About the joint of the wick tube with the reservoir is an inverted funnel shaped flange and this prevents waste or spreading of the fluid when refilling the lamp.

It will be understood that the fixed section of the wick tube, main blow pipe, branch pipe, reservoir and supplemental nozzle are all combined so that when the main blow pipe

is rotated axially they all turn with it and maintain their relation thereto.

The walls of the reservoir are of spring material and upon the application of pressure thereto the fluid may be pumped or forced into the wick tube when the supply of fluid is low.

It will be noticed that the supplemental nozzle extends alongside of and in close proximity to the wick tube and its end is near the flame so that the supplemental nozzle eventually becomes heated and thus the blast of air in its passage therethrough is heated so that there is no danger of decreasing the full force of the flame but as a matter of fact the heat of the flame is increased. The same may be said of the wick tube itself and its air blast.

Having thus described my invention, what I claim is—

1. In combination the reservoir the wick tube having a swiveled section and a blow pipe connected with the reservoir to move therewith and a connection between the blow pipe and wick tube substantially as described.

2. In combination the reservoir the wick tube connected thereto near its periphery and a blow pipe connected with the wick tube by a swiveled connection substantially as described.

3. In combination the reservoir the blow pipe and the swiveled wick tube connected with the blow pipe by a movable connection in connection with the reservoir substantially as described.

4. In combination the reservoir the wick tube having a swiveled section, the blow pipe connected with the wick tube and the supplemental nozzle adjustably supported and extending near to the end of the wick tube.

5. In combination the reservoir the wick tube having a bent outer section swiveled to a straight section attached to the reservoir and a blow pipe connected with the wick tube substantially as described.

6. In combination the reservoir the wick tube connected therewith, the wick having a channel or air space along it and a crescent-shaped cap piece and a blow pipe communicating with the interior of the wick tube substantially as described.

7. In combination the reservoir, the wick tube and blow pipe connected with the wick tube and the supplemental nozzle connected with the branch pipe by a universal joint substantially as described.

8. In combination the reservoir, the wick tube adjustable in relation thereto, the blow pipe connected with the wick tube and supplemental nozzle movable with the wick tube and the universal joint for the nozzle substantially as described.

9. In combination, the reservoir and wick tube with the blow pipe and saliva ball supported by a universal joint and communicating with the said pipe by openings therein substantially as described.

10. In combination the reservoir, wick tube

and blow pipe connected together, and the saliva ball supported by a universal joint said reservoir having spring sides whereby the fluid may be forced into the wick tube
5 substantially as described.

11. In combination the wick tube and blow pipe with a reservoir portable therewith and carried thereby and adapted for insertion into the article operated on and a saliva ball
10 supported by a universal joint, substantially as described.

12. In combination the reservoir the wick tube connected therewith, the blow pipe connected with the wick tube and the confining

piece 21 at the end of the wick tube provided 15 with a perforation.

13. In combination the reservoir, the wick tube, the wick extending therethrough and so arranged as to leave an air passage and the blow pipe connected with the wick tube 20 substantially as described.

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

JOHN D. ENNES.

Witnesses:

R. W. DUPUY,
C. M. DORAN.