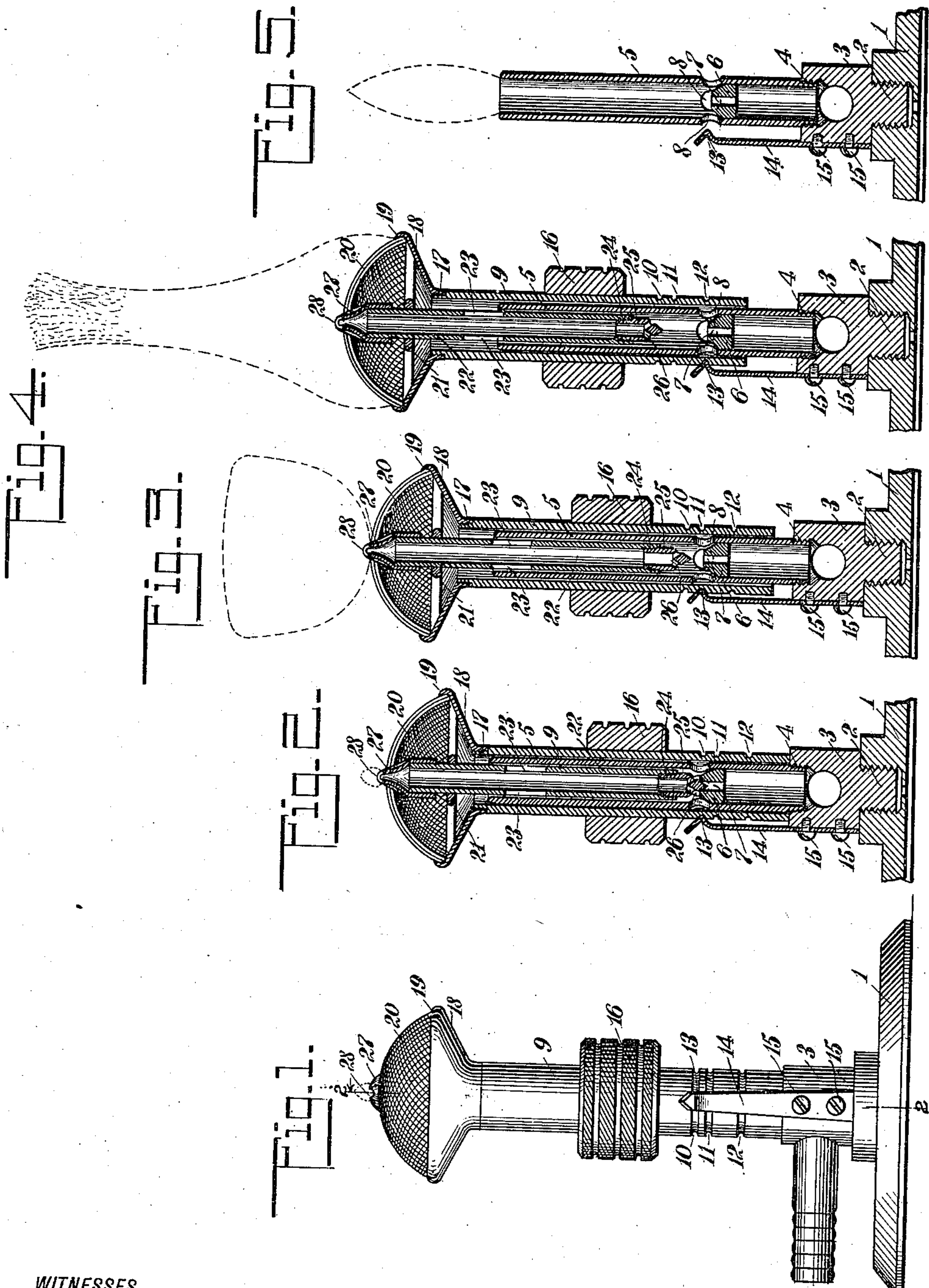


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JEWELER'S AND DENTIST'S BURNER.  
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# UNITED STATES PATENT OFFICE.

ABRAHAM ZAREMBOWITZ AND CHARLES ZAREMBOWITZ, OF NEW YORK, N. Y.

JEWELER'S AND DENTIST'S BURNER.

976,112.

Specification of Letters Patent.

Patented Nov. 15, 1910.

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*To all whom it may concern:*

Be it known that we, ABRAHAM ZAREMBOWITZ and CHARLES ZAREMBOWITZ, both citizens of the United States, and residents of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Jeweler's and Dentist's Burner, of which the following is a full, clear, and exact description.

This invention relates to a burner to be used in the workshop of jewelers and dentists, or in any other profession where an easily adjusted flame is desired.

An object of this invention is to provide a burner which may be quickly and readily adjusted to give any one of a number of different flames, as desired, and with means for holding the parts in their adjusted position.

A further object of this invention is to provide a device which will be simple in construction, strong, durable, capable of ready and positive adjustment, and which may be readily taken apart and assembled.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a side view in elevation; Fig. 2 is a vertical section through the center of the burner showing the parts in the first position, giving a small white flame; Fig. 3 is a view similar to Fig. 2, showing the parts in their second adjusted position, giving a larger white flame; Fig. 4 is a view similar to Figs. 2 and 3, showing the parts in their third adjusted position, giving a bulging or globular white flame; and Fig. 5 is a view similar to Figs. 2 to 4, showing part of the burner removed, giving a straight Bunsen flame.

Referring more particularly to the separate parts of the device, 1 indicates a base, to which is secured in any suitable manner, as by means of a screw-threaded lug 2, an elbow joint 3, which is provided with suitable passages, through which a suitable combustible gas, such as illuminating gas, is adapted to pass. Extending in alinement with one of the passages in the elbow 3 and

secured to said elbow in any well known manner, as by means of a screw-thread 4, there is provided a tube 5. The tube 5 is provided with a nipple 6, which is secured thereon in any well known manner, and has an opening 7, through which the combustible fluid is adapted to pass. Adjacent to the upper end of the nipple 6, there is provided in the tube 5 a plurality of air inlets 8.

As far as has been described, the device is similar to an ordinary Bunsen burner, and if a combustible fluid is allowed to escape from the top of the tube 5 and is ignited, an ordinary Bunsen flame will be obtained, as is indicated in Fig. 5.

Concentric with the tube 5 and adapted to slide thereover in telescopic relation, there is provided a tube 9, which is of such internal diameter as to form a practically airtight joint with the tube 5. The tube 5 is provided on its outer surface with a plurality of graduated notches or rings 10, 11 and 12, which are adapted to be engaged by an angle 13 in a spring detent 14, which is secured in any well known manner, as by means of screws 15, to the angle-pipe 3. Inasmuch as the tubes 5 and 9 are made of a metal suitable to withstand the action of the burning flame, it would be inadvisable to grasp the same to manipulate the tube 9. There is therefore provided an annular ring 16, which is made of any suitable non-conducting material, such as india rubber or indurated fiber, and is secured to the tube 9 in any well known manner.

Secured to the top of the tube 9 by means of a screw-thread connection 17, so that it may be adjusted relative to the tube 9, there is provided a cap 18, which may be of any suitable metal and of such a form that it flares outwardly from the tube 9 toward its top. Its top edge turns in to form an angular flange 19, which is adapted to secure a dome-shaped screen 20, that is formed of two sheets of wire screen laid one on top of the other.

Secured to the cap 18 in any well known manner, there is provided a cross bar 21, which forms a support for a tube 22, which is of somewhat smaller diameter than the tube 5 and extends downwardly through the center of the same. The tube 22 is of such diameter as to form a close fit with the tube 5, so as to prevent the gases flowing between the sides of the two, and is provided with a



plurality of side openings 23, through which the gas is adapted to flow from the interior of the tube 22 to the interior of the tube 9, in the position indicated in Fig. 4.

5 Secured to the lower end of the tube 22 by any adjustable means, such as a screw-threaded connection 24, there is provided a valve 25, which is formed with a seat, such that it will engage the nipple 6, so as to  
10 almost but not entirely close the opening 7 therein. The valve 25 is provided with a plurality of openings 26, which form communicating passages between the interior of the tube 5 and the interior of the tube 22.

15 Removably secured to the upper end of the tube 22, there is provided a tip 27, which has an opening 28 in the upper end thereof, and extends through an opening in the dome-shaped screen 20.

20 The operation of the device will be readily understood from the above description. The open end of the elbow 3 is connected up to a suitable source of combustible gas, and a lighted match applied to the tip 27. A  
25 small flame, such as that illustrated in Figs. 1 and 2 will be obtained when the outer tube 9 is down in its lowermost position with the spring detent 14 engaging the grooved ring 10. This is brought about by  
30 the valve 25 never entirely closing the opening 7 in the nipple 6, so that a small amount of gas will pass through the openings 26 and up into the interior of the tube 22 and out through the opening 28.

35 When it is desired to obtain a somewhat larger flame, but still a white flame, the tube 9 is advanced to the position indicated in Fig. 3, where the spring detent 14 engages the second notch 11. In this position, the  
40 valve 25 is removed from its seat in the nipple 6, and permits a full flow of gas to pass through the openings 26 into the interior of the tube 22, and out at the opening 28 in the tip 27, forming a large white flame.

45 In the third position of the tube 9, the spring detent 14 engages the lower notch 12 in the tube 9, and holds it in such a position that the valve 25 is entirely removed from its seat in the nipple 6, and permits a full  
50 flow of gas to pass from the interior of the tube 5 to the interior of the tube 22, but at the same time, the openings 23 in the tube 9 have been raised to such a position that they are not closed by the tube 5, so that  
55 gas not only passes through the tube 22 and out at the tip 27, but also passes out through the openings 23 in the tube 9 and the cap 18, and out through the gauze screen 20, forming a large globular or ball flame, as is  
60 clearly illustrated in Fig. 4.

When it is desired to have a Bunsen flame, the tube 9, with its appended parts, is entirely removed from the tube 5, and the air is then admitted at the openings 8 and mixes  
65 with the gas before it is burned, forming a

hot Bunsen flame. The strength of the spring detent 14 and its engagement with the grooved rings 10, 11 and 12, is such that by exerting a slight force on the non-conducting ring 16 in either direction, the tube 9  
70 may be slipped up and down to any of its adjusted positions. By this arrangement, not only a great saving of gas is obtained, but any form of flame may be obtained with the least possible amount of adjustment and  
75 manipulation.

If it is desired to change the extent which the valve closes or opens the opening in the nipple 6, the valve itself may be adjusted by reason of its screw-thread connection 24, and  
80 also the tube 9 may be adjusted on the cap 18, thereby adjusting the height of the valve with relation to the tube 9.

Having thus described our invention, we claim as new and desire to secure by Letters  
85 Patent:—

1. In a burner, the combination with a supply pipe, of a stationary tube connected to said supply pipe, a plurality of tubes telescopically engaging said stationary tube,  
90 burners connected to said second-mentioned tubes, and means for locking said second-mentioned tubes in any adjusted position.

2. In a burner, the combination with a supply pipe, of a tube connected to said  
95 supply pipe, a tube connected to said first-mentioned tube, a tip burner on said tube, a valve on said second-mentioned tube, adapted to control the supply of fuel from said first-mentioned tube to said second-  
100 mentioned tube, means for regulating said valve, and means for locking said valve in any adjusted position.

3. In a burner, the combination with a supply pipe, of a tube connected to said  
105 supply pipe, an inner tube adjustably connected to said first-mentioned tube and having side openings therein, a tip connected to said inner tube, means for regulating the flow of gas to said inner tube, and means for  
110 regulating the flow of gas through said openings in said inner tube.

4. In a burner, the combination with a supply pipe, of a tube connected to said  
115 supply pipe, an inner tube adjustably connected to said first-mentioned tube, a valve on said inner tube, coacting with said first-mentioned tube, for controlling the supply of fuel to said inner tube, a tip on said inner  
120 tube, an outer tube connected to said inner tube and adjustable relatively to said first-mentioned tube, and means for locking said outer tube in any adjusted position.

5. In a burner, the combination with a supply pipe, of a tube connected to said  
125 supply pipe, an inner tube connected to said first-mentioned tube and having side openings therein, a tip on said inner tube, a valve on said inner tube, a cap connected to said  
130 inner tube, a gauze screen connected to said



cap and surrounding said tip, an outer tube connected to said cap, a non-conducting hand-hold connected to said outer tube, and means for locking said outer tube in any adjusted position.

5 6. In a burner, the combination with a supply pipe, of a tube, having side openings therein, connected to said supply pipe, a nipple in said tube, an inner tube connected to said first-mentioned tube and having side openings therein, a valve in said inner tube, adapted to coact with said nipple to control the supply of fuel to said inner tube, a tip on said inner tube, a cap connected to said inner tube, a gauze burner surrounding said tip and connected to said cap, a non-metallic handle on said outer tube, and means for locking said outer tube in any adjusted position.

15 20 7. In a burner, the combination with a stationary tube, of inner and outer movable tubes adjustable telescopically with respect to said stationary tube, and a burner on each of said movable tubes.

8. In a burner, the combination with an outer tube, of an inner tube, an intermediate tube, and means adapted to be simultaneously operated, for controlling the flow of gas from said intermediate tube to said inner tube and from said inner tube to said outer tube.

9. In a burner, the combination with a tube, of a gas supply pipe connected to said tube, and a valve on one end of said tube, for regulating the flow of gas into the interior of said tube, said tube having a burner opening adjacent its upper end and also having auxiliary openings therein, whereby the gas within said tube may flow out around said tube.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ABRAHAM ZAREMBOWITZ.

CHARLES ZAREMBOWITZ.

Witnesses:

GERSHON BAUM,  
HIANAN RAJALSKY.