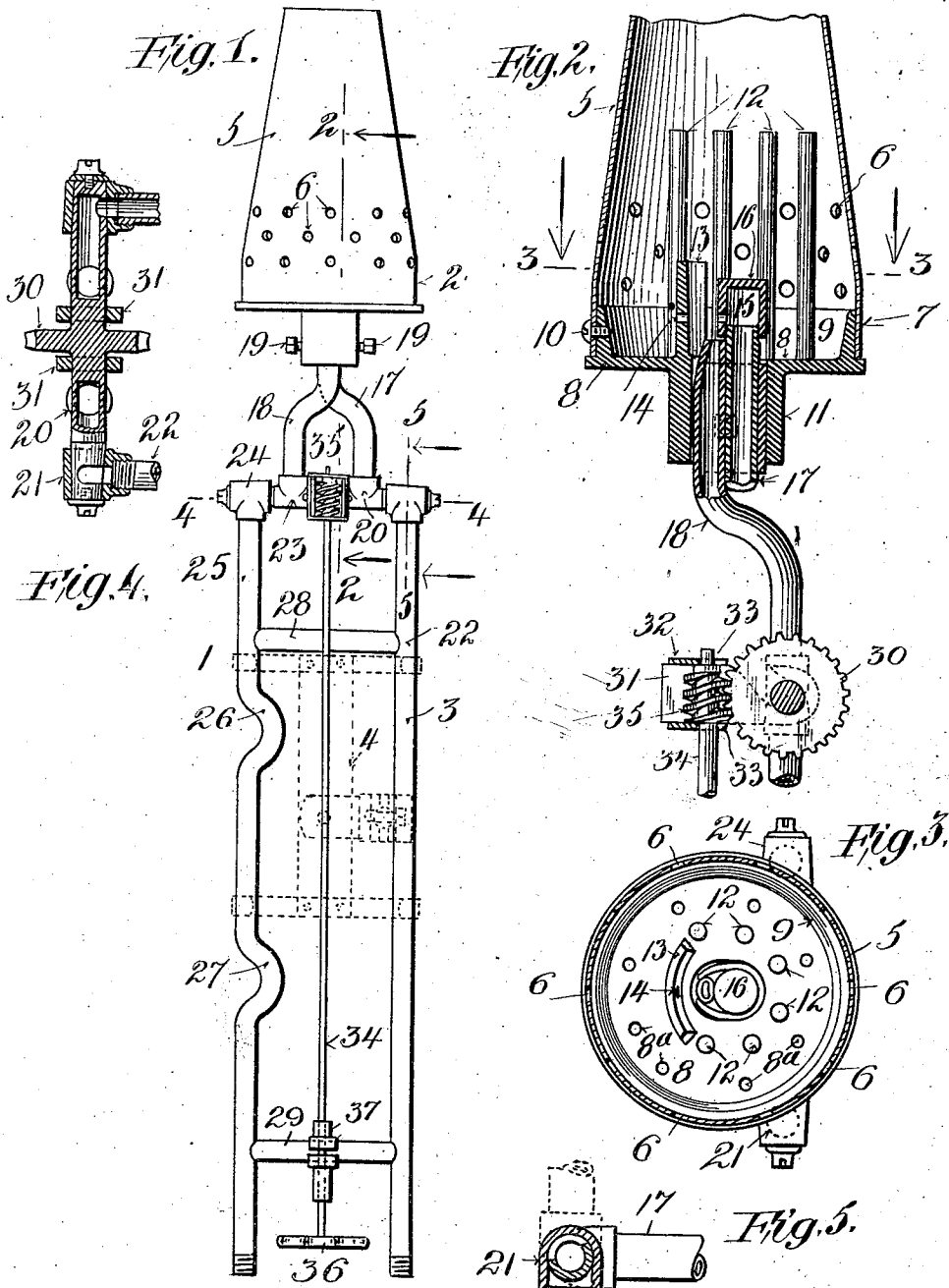


A. E. HAUCK.
OIL BURNER.
APPLICATION FILED APR. 6, 1908.

951,394.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.



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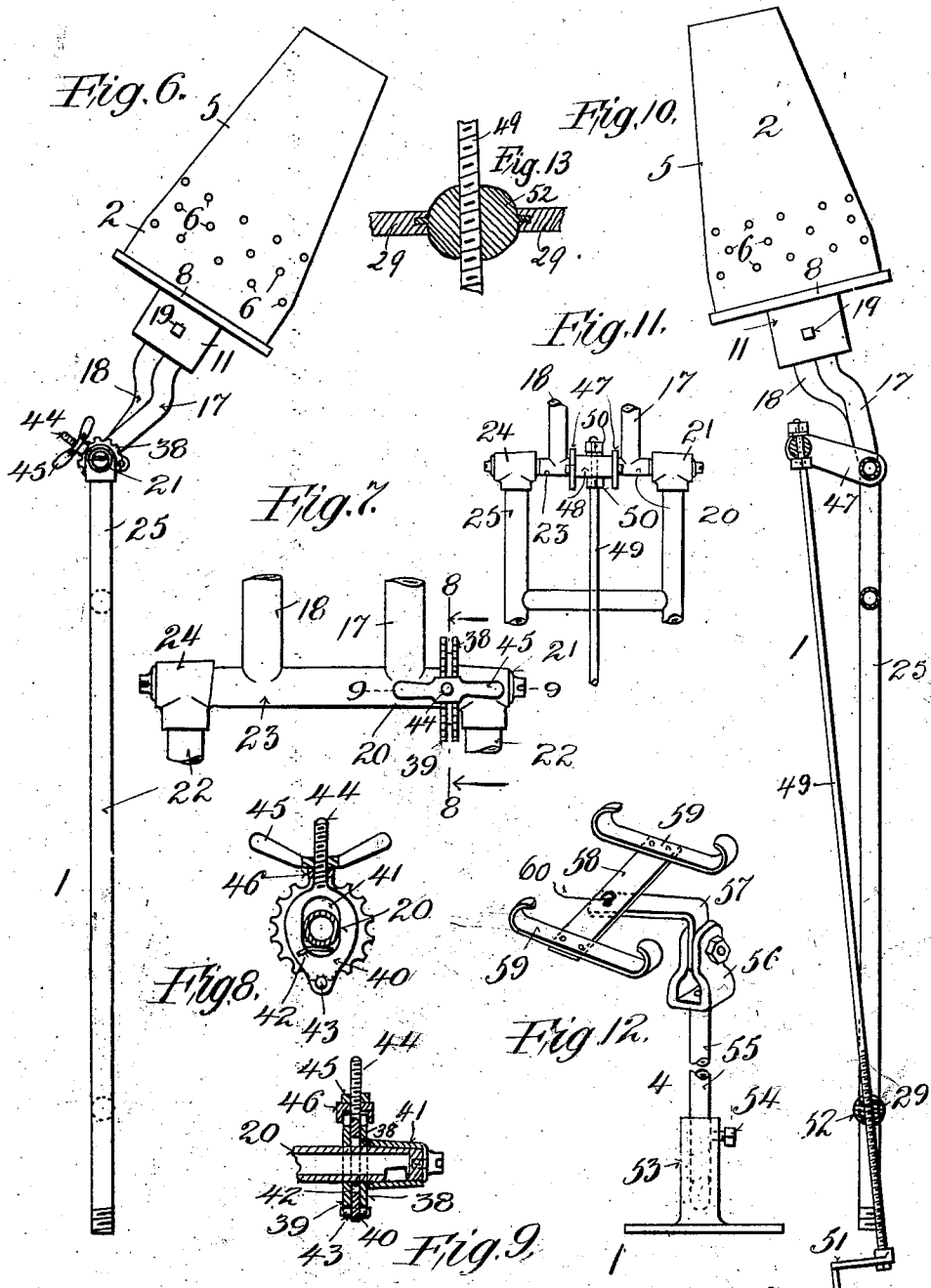
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ARTHUR E. HAUCK, OF NEW YORK, N. Y.

OIL-BURNER.

951,394.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed April 6, 1908. Serial No. 425,354.

To all whom it may concern:

Be it known that I, ARTHUR E. HAUCK, a citizen of the United States, and a resident of the city of New York, county of Kings, and State of New York, have invented a new and useful Improvement in Oil-Burners, of which the following is a specification.

The object of this invention is to provide a burner and heater of this class which may be used wherever a powerful heating or lighting flame is desired. This object is accomplished by my invention, certain embodiments of which are hereinafter more particularly described.

For a more particular description of my invention reference is to be had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is a plan view of my improved burner and connections. Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1, looking in the direction of the arrows. Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2, looking in the direction of the arrows. Figs. 4 and 5 are sectional views taken on the lines 4—4 and 5—5 of Fig. 1, respectively, looking in the direction of the arrows, the pipes being shown at a different angle from that shown in Fig. 1. Fig. 6 is a side elevation of a modification. Fig. 7 is an enlarged detailed view of the joint. Figs. 8 and 9 are sectional views taken on the lines 8—8 and 9—9 respectively of Fig. 7 looking in the direction of the arrows. Fig. 10 is a side elevation of a further modification. Fig. 11 is a view of the joint taken at right angles to the view shown in Fig. 10. Fig. 12 shows a stand for holding my improved heater, parts being broken away. Fig. 13 is a vertical section through the rod 49 and nut 52 of Fig. 10.

Throughout the various views of the drawings, similar reference characters designate similar parts.

My improved heater 1, is composed of a burner 2, air and oil pipes designated generically by the character 3 and a suitable stand 4.

The burner 2 is composed of a funnel 5 which is preferably, in the form of a truncated cone, except for a short distance from the large end which is cylindrical, open at both ends and provided with perforations 6 near the larger end of the conical part. The extreme larger end of this funnel 5 is preferably made cylindrical in form as shown

at 7 so that it can be mounted on the base plate 8 of the burner 2 by means of an integral collar 9 and screws 10. The funnel 5 is made to be removed from the base plate 8 by withdrawing the screws 10 as is obvious. The center of this base plate 8 is perforated and provided with an exterior collar 11, through which the oil or fuel and air pipes pass, as will appear below and on its interior surface this base plate 8 is provided with a number of integral and projecting pins 12 each of which has its axis parallel or substantially parallel to the axis of the burner 2, these pins being preferably placed in a ring which is substantially concentric with the center of the disk 8. A number of air vents 8^a are also made in the base 8 as shown in Fig. 3. This base 8 is also provided with an integral circular baffle 13, which extends for about 90° and it extends where the pins 12 are omitted and this baffle 13 is also preferably concentric with the axis of the burner 2. This baffle 13 has a perforation 14 opposite the perforation 15, in the cap 16, through which the oil is forced, passing through the pipe 17 which is one of the pipes indicated generically by the numeral 3. The second pipe 18 rests against the pipe 17 and is flattened at its inner end to form a nozzle so that air is blown through the pipe 18 at right angles to the direction of flow of oil through the opening 15 so that this blast of air will spray the oil when the burner is in use. The function of the hole 14 is to provide a vent through which a small amount of oil and vapor will pass and form a pilot light which will prevent the burner from becoming extinguished while in use, owing to a sudden shifting or other causes, and which will at the same time cause a more complete combustion. The pins 12 also assist in performing these functions as they will soon be heated to a cherry red when the burner is used and they will retain their heat sufficiently long to reignite the combustible elements, should they become entirely extinguished while the burner is in use. These pins 12 also perform the functions of giving the heat more uniform intensity.

The pipes 17 and 18 are secured in place by any suitable means such as screws 19.

The pipes 17 and 18 are twice bent so as to form a compound curve and are then extended straight and parallel to each other, the pipe 17 running to an elbow 20 which

connects with cock valve 21 which in turn is connected with a pipe 22 through which oil or other fuel is supplied from any suitable source, not shown. The pipe 18 is also connected with a similar elbow 23, which is connected to a cock 24 identical in all respects with the cock 21, and this cock 24 is connected with an air pipe 25 which at two points is curved toward the pipe 22 as shown at 26 and 27 in Fig. 1 and is cross connected for bracing purposes only with the pipe 22 by means of crossings 28 and 29.

The elbows 23 and 20 are preferably formed of one integral piece of metal and they are suitably plugged so that no fuel can flow from one to the other, and they are also provided with a worm gear 30 either fixed thereon or integral therewith. On each side of the worm gear 30 are hooks 31 which are united at the outer end by plates 32 suitably recessed at 33, to receive the shaft 34 at which is suitably journaled therein and provided with a hand wheel 36 so that by turning this hand wheel which is fixed to said shaft 34, the worm 35 may be turned and thereby turn the worm gear 30. A suitable bearing 37 is mounted on the crossing 29 so that the shaft 34 is suitably journaled therein.

The cocks 21 and 24 are of the conventional kind so that a detailed description is unnecessary. It is sufficient to say that their openings are so arranged that when the burner 2 is turned around so as to be close to the pipes 22 and 25 and on either side as desired, the supply of air and oil is shut off and the burner then becomes inoperative.

In the modification shown in Figs. 6 to 9 inclusive the worm gear 30 and the worm 35 and their attendant parts are omitted entirely and in lieu thereof are placed two toothed disks 38 and 39 respectively, the disk 38 being fixed to the outside casing of the cock 21 and the disk 39 being fixed to the elbow 20. These disks are separated about an eighth of an inch and sandwiched in between them is a disk 40 having an elongated opening 41 with a spring 42 having one end fixed therein and the other end freed and bearing against the elbow 20. This disk is also provided with a laterally extending pin 43 and diametrically opposite this is a screw threaded shank 44 on which is a thumb nut 45 and a washer 46. The pin 43 is adapted to fit between the teeth of the disks 38 and 39 so that by turning the thumb nut 45 the spring 42 will cause the pin 43 to be disengaged from said teeth and then the burner 2 may be turned to any desired angle to the plane of the pipes 25 and 22. This form of apparatus, just above described, is not capable of the same exact adjustment as the embodiment of my invention, shown in Figs. 1 to 5 inclusive, but is somewhat simpler and is capable of sufficient adjustment for

most purposes. In the modification shown in Figs. 10 and 11, the mechanism for shifting the burner 2 with regard to the pipes 25 and 22 is changed somewhat from that shown in Figs. 1 to 5 inclusive.

The structure shown in Figs. 10 and 11 has two parallel arms 47 fixed to the elbows 20 and 23, in lieu of the worm gear 30, and these arms 47 are connected by a spindle 48 journaled therein and this spindle 48 has a central perforation running at right angles to its axis through which passes a rod 49 which turns freely therein and is held in position by means of nuts 50. The other end of the rod 49 is screw threaded and at its extreme end is provided with a crank 51. The screw threaded portion runs through a nut 52 that turns freely in the crossing 29 so that by turning the crank 51, the burner 2 may be shifted with regard to the pipes 22 and 25.

In Fig. 12 is shown a suitable stand which preferably consists of a base 53, of any suitable form and provided with a rod 55 held by a set screw 54 and at the top of the rod 55 is a clamp 56 with two jaws which are clamped against the bent rod 57 which has one portion bent at right angles to the other and the extreme end of the rod 57 supports a plate 58 to which it may be clamped by a bolt or screw 60 or other suitable means. The rod 57 and its connections form a universal joint. The ends of the plate 58 are each provided with clamps 59, preferably made substantially as shown in Fig. 12, so that when the support is in use, the pipe 22 is first placed so as to have a bearing in one end of the clamps 59 and the pipe 25 has its curved portions 26 and 27 resting on the other end of the clamps 59. The support is then moved to the position shown in dotted lines in Fig. 1 in which position the pipes 25 and 22 are firmly held and then by adjusting the clamp 56, or the set screw 54 or the screw between the rod 57 and plate 58, one or more of them, the burner may be thrown into any desired position by simply turning the hand wheel 36 or the crank 51 or the nut 45, according to which form of apparatus is used.

When in use the flame issues from the funnel with a substantially uniform intensity, the perforation 14 in the baffle 13 tending to promote combustion and keep the flame from extinction as described above.

Various other embodiments of my invention may be made so that I do not regard it as restricted to the precise disclosure herein made, but as broad enough to cover all structures that come within the scope of the annexed claims.

Having thus described my invention, what I claim is,

1. In a device of the class described, a base, air and fuel pipes extending through

said base, pins extending from said base and partially surrounding said pipes and a baffle adjacent to said pipes.

2. In a device of the class described, a base, an air pipe and a fuel pipe extending through said base, and a perforated baffle adjacent to said pipes and projecting from said base.

3. In a device of the class described, a burner, fuel and air pipes extending to said burner, elbows fixed to said pipes, cocks secured to said elbows, parallel pipes secured to said cocks, and means for securing said first mentioned pipes at any desired angle to said second mentioned pipes.

4. In a device of the class described, a burner, fuel and air pipes leading thereto, and elbows fixed to said pipes, cocks secured to said elbows, and a second set of pipes fixed in said cocks, means for securing said first mentioned pipes at any suitable angle to said second mentioned pipes thereby regulating the supply of fuel and air.

5. In a device of the class described, a burner and pipes attached to the same, a pair of connected elbows fixed to said pipes, cocks connected with said elbows, a second

set of pipes fixed to said cocks and means for supporting said second set of pipes.

6. In a device of the class described, a burner and pipes attached to the same, a second set of pipes and means for connecting said first and second pipes, and a support having a universal joint, said support being adapted to engage and secure two of the said pipes, whereby the burner can be held in any suitable position.

7. In a device of the class described, a burner and suitable means for supplying the same with fuel and air, said means including two parallel pipes connected by suitable crossings, one of the said pipes being curved toward the other at two places, clamps adapted to enter said curved portions and slide along said parallel pipes and means for supporting said clamps.

Signed at New York in the county of Kings and State of New York this 31 day of March A. D. 1908.

ARTHUR E. HAUCK.

Witnesses:

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A. P. LINK.