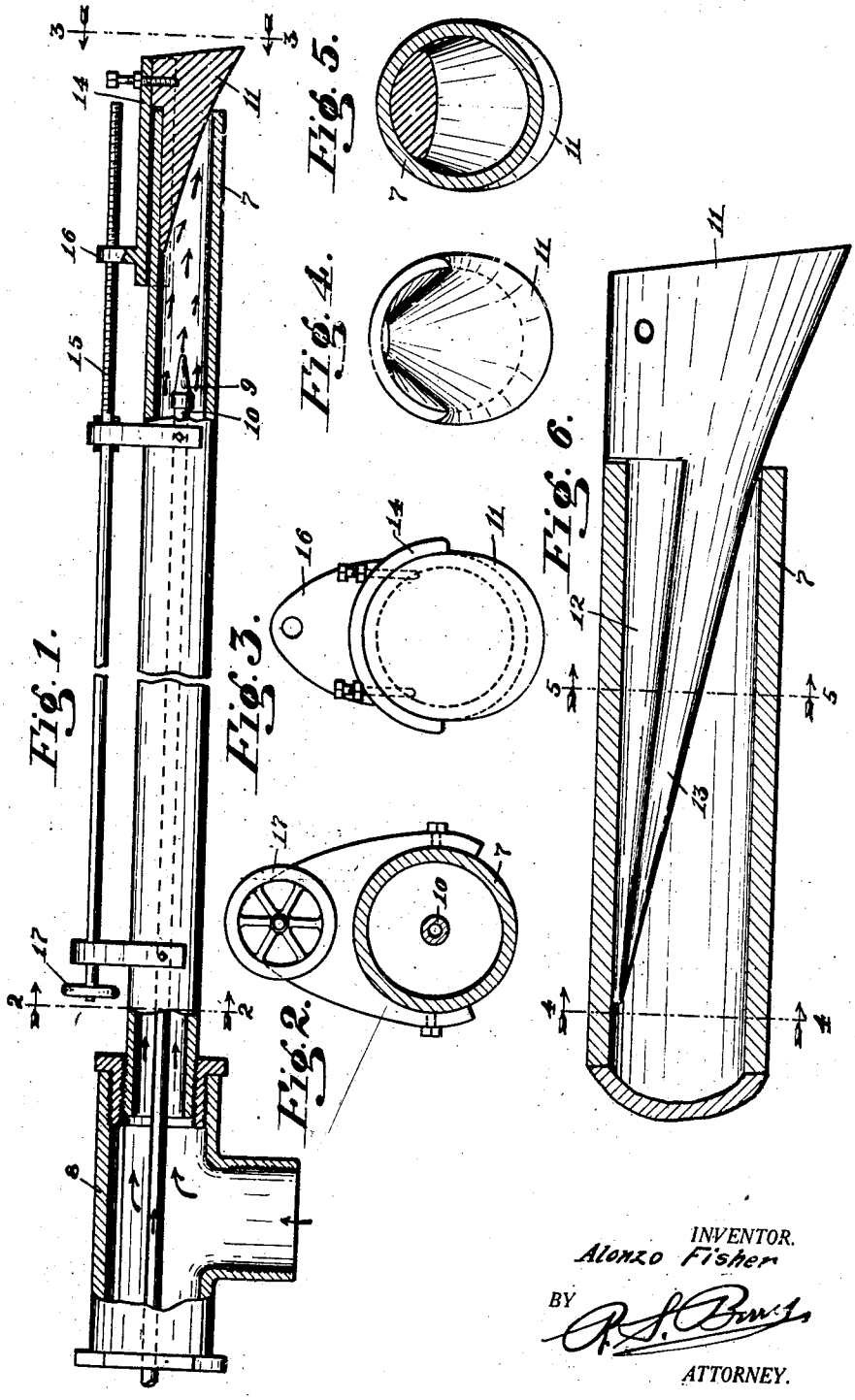
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OIL URNER.

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ALONZO FISHER, OF SANTA MARIA, CALIFORNIA.

OIL-BURNER.

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To all whom it may concern:

Be it known that I, ALONZO FISHER, a citizen of the United States, residing at Santa Maria, in the county of Santa Barbara and State of California, have invented a new and useful Oil-Burner, of which the following is a specification.

This invention relates to an oil burner and particularly pertains to an adjustable spreading nozzle therefor.

It is the object of this invention to provide means whereby the spread of the steam and oil ejected from a burner nozzle may be regulated according to various requirements.

Another object is to provide an adjustable flame spreader for oil burner nozzles adapted to be adjusted relative to the nozzle tip from a point exterior of the fire box in which the burner is mounted.

A further object is to provide a spreader so formed and constructed as to cause the flame to spread downwardly and laterally in a concave fan-like form.

Other objects will appear hereinafter.

The invention is illustrated in the accompanying drawings, in which:

Figure 1 is a view in part side elevation and longitudinal section illustrating a burner with the invention as applied.

Fig. 2 is a view in section and elevation as seen on the line 2—2 of Fig. 1 in the direction indicated by the arrows.

Fig. 3 is an end view as seen in the direction indicated by the arrows 3—3 of Fig. 1.

Fig. 4 is a view illustrating the spreader in elevation as seen in the direction indicated by the arrows 4—4 in Fig. 6.

Fig. 5 is a view in section and elevation as seen in the direction indicated by the arrows 5—5 in Fig. 6.

Fig. 6 is a view of the spreader as seen in side elevation and as applied to the nozzle tip.

More specifically 7 indicates the burner nozzle which is here shown of cylindrical and tubular form having its inner end communicating with a source of oil fuel supply through a coupling 8 and having a steam nozzle 9 therein on a pipe 10 leading through the coupling; the steam nozzle 9 being arranged to discharge into the burner nozzle a distance from the tip of the latter.

The discharge end of the burner nozzle is formed with a circular opening in which the spreader 11 constituting the essence of the present invention is mounted.

This spreader is in general of approximately cone-shape with a base of a diameter greater than that of the discharge orifice of the burner nozzle and arranged with its apex extending into the open end of the latter. The medial portion of the spreader is circular in cross section at the point where it is adapted to contact the marginal edge of the burner discharge opening so as to close the latter when the spreader is in its innermost position. The enlarged portion of the spreader exteriorly of the burner is flared laterally and downwardly so as to cause fluids to be discharged under pressure between the lower portion of the spreader and the nozzle tip in a substantially concave fan-like form. As a means for preventing the discharge of the fluid fuel around the upper portion of the spreader the part of the latter extending into the burner tip is formed on its upper face on an arc corresponding to the inner periphery of the burner tube as particularly shown in Fig. 5 so as to form a contact throughout the length of the inwardly projecting portion of the spreader and the top inner wall of the burner nozzle. The under portion of the inwardly extending part of the spreader is tapered to converge substantially in continuation of the outer portion to form a deflecting face by which the liquid fuel is directed downwardly so that it will be discharged only around the lower half of the discharge orifice.

The outer end of the spreader is attached to a slide block 14 mounted to move longitudinally of the burner nozzle. This slide block is arcuate in cross section and seats on the upper face of the burner nozzle, and through its connection with the spreader serves to keep the top face 12 of the latter in contact with the top inner wall of the burner nozzle throughout the longitudinal adjustment of the latter.

As a means for shifting the slide block to vary the area of the discharge orifice around the spreader a threaded stem 15 is provided which passes through a threaded opening in a lug 16 on the slide block and extends exteriorly of the burner nozzle to a point adjacent the outer end thereof and is fitted with a hand wheel 17 by which the stem may be turned to retract or ad-

vance the slide block and spreader as occasion may require.

The operation of the invention is apparent from the foregoing, it being seen that the area of the discharge orifice may be regulated by shifting the slide block longitudinally on the burner tip through the medium of the threaded rod 15, and that when the spreader is disposed in the required position the oil fuel will be discharged only around the lower portion of the spreader and caused to assume a concave fan-like form.

While I have shown and described a specific embodiment of my invention it is manifest that various changes may be made in the details of construction without departing from the spirit and scope of the invention as set forth in the appended claims.

I claim:

1. An oil burner comprising an ejector tube having a circular end-discharge orifice, a cone spreader slidably extending into said orifice, a carriage movable longitudinally of the tube exteriorly thereof attached to the spreader, and a threaded stem attached by screw engagement to said carriage whereby the latter may be shifted to dispose the spreader at various positions relative to the discharge orifice.

2. In an oil burner, a cylindrical ejector tube having an end discharge orifice, a substantially cone shaped spreader having its apex portion extending obliquely into said discharge orifice and slidably contacting the upper inner wall of the ejector tube throughout the length of said apex portion, and having its base portion projecting downwardly from the discharge orifice whereby a concave fan-shaped spray may be ejected from the tube, an arcuate slide block slidably seating on the upper face of the ejector tube connected to the base portion beyond the end of the tube serving to slidably hold the spreader against the upper wall of the tube.

ALONZO FISHER.