

(No Model.)

B. CROSS.  
OIL BURNER ATTACHMENT.

No. 525,261.

Patented Aug. 28, 1894.

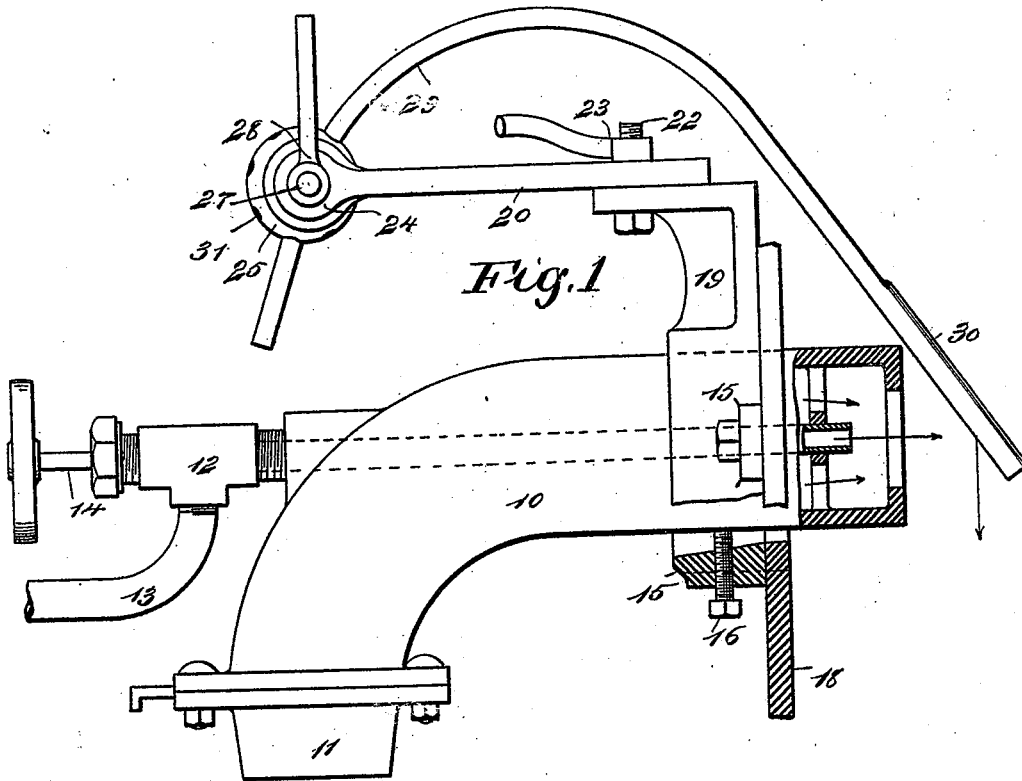


Fig. 1

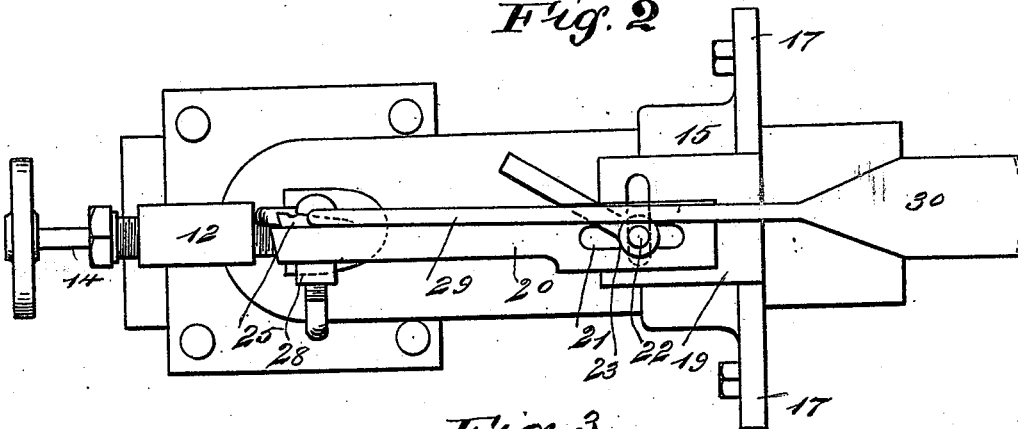


Fig. 2

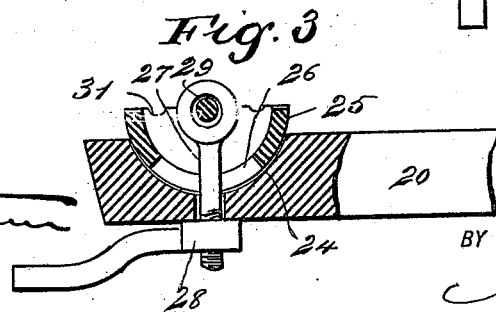


Fig. 3

WITNESSES:

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# UNITED STATES PATENT OFFICE.

BRADFORD CROSS, OF MOLINE, ILLINOIS.

## OIL-BURNER ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 525,261, dated August 28, 1894.

Application filed April 10, 1894. Serial No. 507,034. (No model.)

*To all whom it may concern:*

Be it known that I, BRADFORD CROSS, of Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Oil-Burner Attachments, of which the following is a full, clear, and exact description.

My invention relates to improvements in attachments for oil burners such as are used in furnaces of various kinds; and the object of my invention is to produce simple attachments which enter the furnace to be securely fastened to the furnace, which also permit the burner to be adjusted in and out and to be turned into any desired position, which has a deflector adapted to throw the flame of the oil burner in any direction, which deflector has an easy means of adjustment, and which is also constructed so that the deflector protects the brick-work of the furnace and also the mouth of the burner, and it also better vaporizes and mixes the oil and air thereby producing better combustion.

To these ends my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

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

Figure 1 is a broken detail side elevation, partly in section, showing the burner turned so as to bring the deflector and its support above the burner. Fig. 2 is a plan view of the burner and its attachments; and Fig. 3 is a detail sectional view of the ball joint and connections by which the deflector is held and adjusted.

The oil burner 10 is of substantially the usual kind, having one end provided with connections 11 to connect with an ordinary air pipe, and it has the usual connection 12 with the oil supply pipe 13 which is controlled by a valve having a projecting stem 14. The mouth of the burner is adapted to project into the furnace, but the construction above described is not claimed as a part of this invention.

The burner 10 is encircled loosely by a collar 15 and is held in place by a set screw 16

and consequently may be adjusted longitudinally in the collar or may be turned round so as to connect with the air supply pipe. The collar 15 is provided with side flanges 17 which are adapted to be bolted to the furnace 18, and projecting from one side of the collar is an angle bracket 19 which Fig. 1 shows to be above the burner but which may be placed at one side of the burner if desired. The bracket 19 has secured to its outer end an arm 20, which projects rearwardly and substantially parallel with the burner 10, this arm being slotted at its inner end, as shown at 21, so as to receive the bolt 22 by which it is fastened to the bracket and, for convenience, the bolt is provided with a tail nut 23. This arrangement permits the arm 20 to be adjusted in and out on the bracket 19 and using the bolt 22 as a pivot it may be turned right or left.

The outer end of the arm 20 has on one side a socket 24 to receive the hollow semi-spherical cup 25 which thus forms a ball bearing, and this cup is slotted in the center, as shown at 26, to receive the bolt 27 which projects through it and through the arm 20, the bolt being fastened by a tail nut 28, and the bolt has an eye at its outer end adapted to receive and support the arm 29 of the deflector. The shank of this arm is preferably rounded and it may be held in notches 31 in the edge of the bearing ball or cup 25, and by tightening the nut 28 both the arm and ball are locked securely in position.

The arm 29 is bent so as to bring the deflector 30 opposite the mouth of the burner 10, and it will be seen that the ball 25 and arm 20 may be adjusted so as to bring the deflector into any desired position and cause it to deflect the flame to either side or below the burner. The deflector causes the flame to be thrown into the desired direction, it saves the brick-work from being burned out, also protects the mouth of the burner, and it is not itself burned away because it is kept wet with the oil and air which issue from the burner.

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

1. The combination, with the burner, of a supporting collar thereon, a rearwardly-extending arm carried by the collar, and a de-

flector held by a ball joint to the arm and extending in front of the burner mouth, substantially as described.

2. The combination, with the burner, of a  
5 collar secured thereon, a bracket projecting laterally from the collar, a rearwardly-extending arm on the bracket, and a deflector adjustably secured to the arm and projecting in front of the burner, substantially as described.

10 3. The combination, with the burner, of the collar thereon, the laterally extending bracket on the collar, the rearwardly-extending and longitudinally and horizontally adjustable arm on the bracket, and the deflector secured  
15 by a ball joint to the arm and projecting opposite the mouth of the burner, substantially as described.

4. The combination, with the burner and the collar thereon, of the arm carried by the  
20 collar and provided with a socket in one side,

a slotted ball held in the socket and provided with notches therein, a fastening eye bolt projecting through the ball and arm, and a deflector held in the eye bolt and against the ball, the deflector projecting opposite the  
25 mouth of the burner, substantially as described.

5. The combination with the burner, of the deflector herein described, the same consisting of an arm having its outer or free end  
30 broadened, the arm being curved and pivoted as shown, whereby its outer end is capable of adjustment vertically and laterally relative to the mouth of the burner, as shown and described.

BRADFORD CROSS.

Witnesses:

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