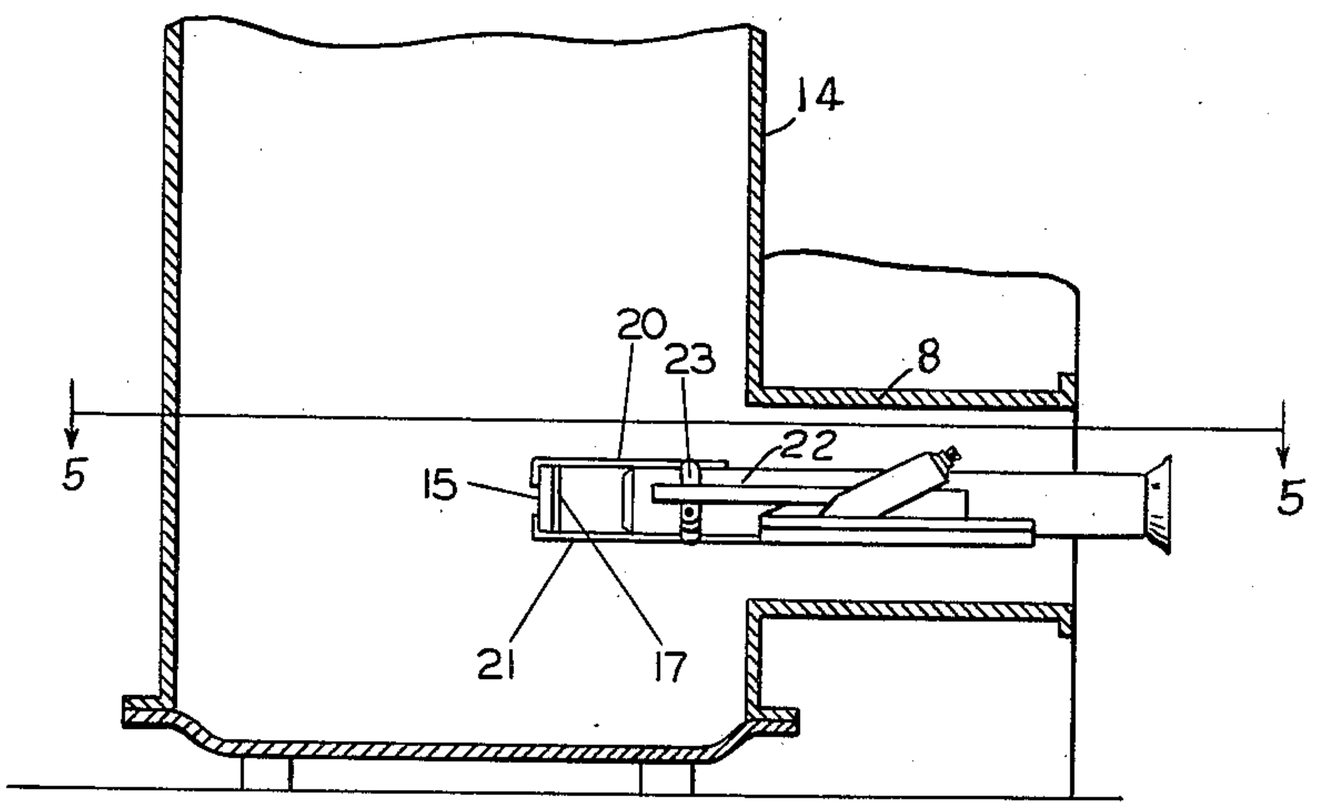
Feb. 6, 1951 H. WEYENBERG ET AL 2,540,308

GAS BURNER TARGET

Filed May 2, 1946

Fig. 1



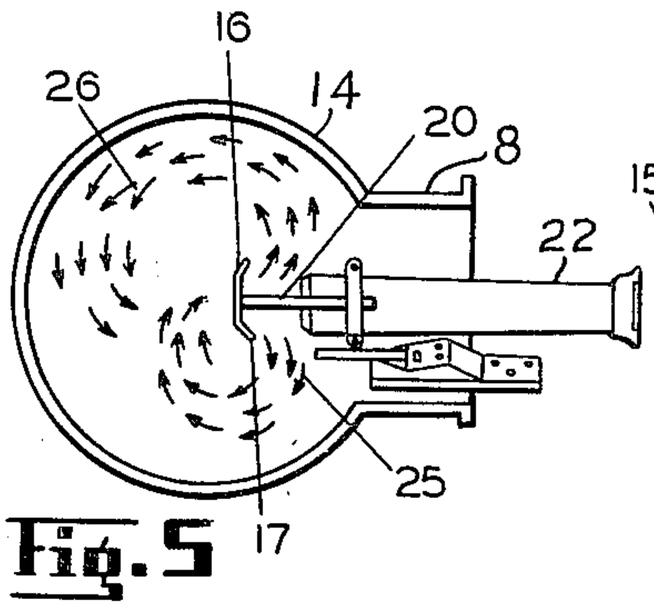


Fig. 5

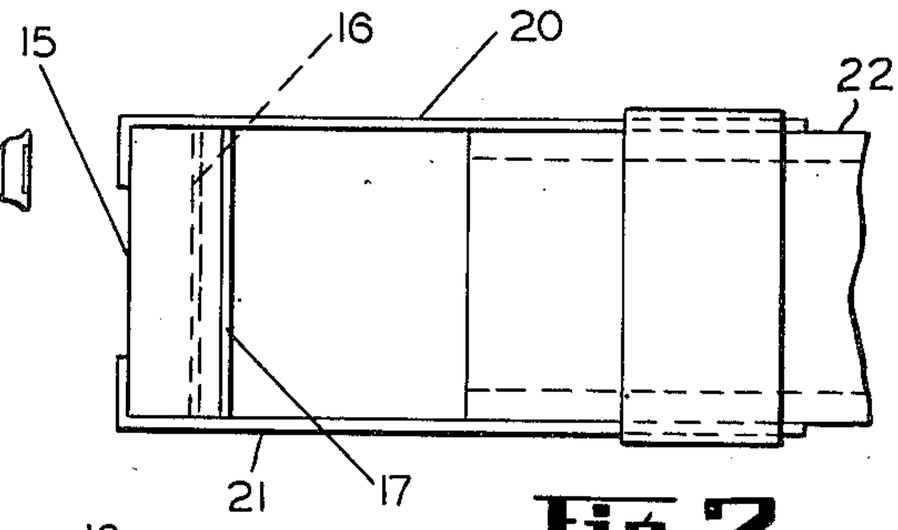


Fig. 2

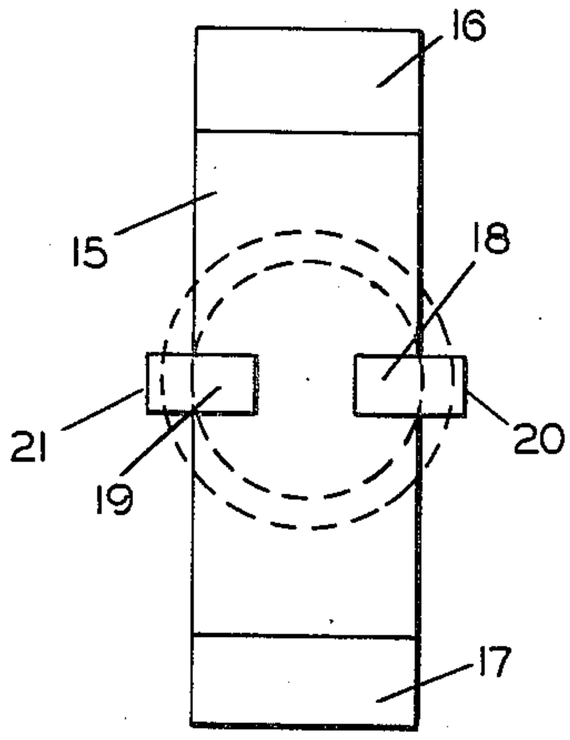


Fig. 3

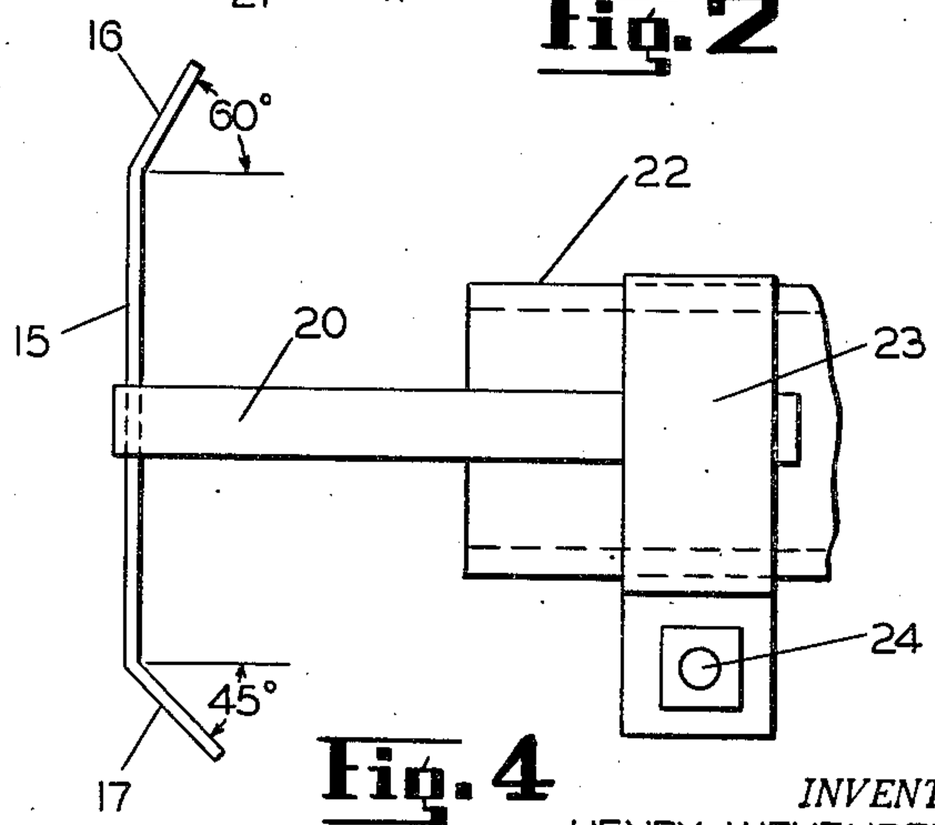


Fig. 4

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Patented Feb. 6, 1951 2,540,308

UNITED STATES PATENT OFFICE

2,540,308

GAS BURNER TARGET

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Application May 2, 1946, Serial No. 666,635

4 Claims. (Cl. 158—113)

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This invention relates generally to a gas burner target and more particularly to such target having provision for centralizing the flame and to deflect the flame throughout the drum in order to obtain more or less even heating element temperatures, with better combustion.

Among the objects of our invention are: to provide a novel and improved gas burner target; to provide such a burner target that will give better combustion, and enable the production of even temperatures on the heating element; to provide a gas burner target having two angular ears, one of which is bent at an angle with relation to the body portion, and the other of which is bent at an angle different from that of the first mentioned angle; to provide a gas burner target having at its opposite sides ears of different angularity so that one ear will cause a shorter flame and the other ear will cause a longer flame; and to provide a gas burner target which is formed with a general inclination from one edge to the other.

Other objects and advantages will become readily apparent from the following detailed description taken in connection with the accompanying drawings, wherein:

Fig. 1 is a fragmentary vertical section through a gas burner and combustion chamber of a furnace, and including one form of a target embodying our invention.

Fig. 2 is a fragmentary side elevation on a larger scale of a portion of the burner tube and the target of the device of Fig. 1.

Fig. 3 is an end elevation of Fig. 2 looking toward the left hand side thereof.

Fig. 4 is a top plan view of Fig. 2.

Fig. 5 is a transverse section on a smaller scale, and taken on the line 5—5 of Fig. 1.

While our invention further resides in the combination, construction and arrangement of parts illustrated in the accompanying drawings, we have shown therein for illustrative purposes only, preferred embodiments, and wish it understood that the same are susceptible of modification and change without departing from the spirit and scope of the appended claims.

In the form shown in the drawings, the target is a flat metal plate 15, somewhat elongated and having angularly extended wings or ears 16 and 17 at its opposite ends. Plate 15 has secured thereto, by welding or other suitable means, on its two side edges and midway of its length, the end flanges 18 and 19 of a pair of metal bars or arms 20 and 21 which at their opposite ends are clamped against opposite sides of a burner

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tube 22 by clamping ring 23. Ring 23 securely clamps arms 20 and 21 against the sides of the burner tube by tightening the clamping screw 24 which when loosened permits removal of the target plate 15 for repairs, adjustment or substitution of a new plate. A burner tube 22 is shown in operative position in an inlet 8 of a furnace chamber 14.

As seen in Fig. 4, ear 16 of plate 15 is inclined at an angle of 60 degrees to the longitudinal axis of the burner tube, and ear 17 is inclined at an angle of 45 degrees thereto. This means that the ear 16 forms an angle of 30 degrees, and the ear 17 forms an angle of 45 degrees, with the plate 15, which latter constitutes the body of the target. This structure results in the ear 17 causing a shorter flame and the ear 16 causing a longer flame which will be better understood in Fig. 5, in which the shorter flame is indicated by the curved arrows 25 and the longer flame is indicated by the curved arrows 26. This causes a more or less centrally located full flame in the lower portion of the combustion chamber, resulting in a much more complete combustion, and a better control of the two flames with relation to the heating element. The gas burner target of the form here described will preferably be formed of stainless steel, but other suitable material may be used as desired.

We claim:

1. A gas burner target adapted to receive the flame from the outlet end of a burner tube, said target comprising a plate having a flat portion positioned in a vertical plane at right angles to the longitudinal axis of the burner tube and of a greater length in a horizontal direction than its width in a vertical direction, said flat portion having an inclined wing at each end, one of said wings being inclined at an angle of 30 degrees and the other wing being inclined at an angle of 45 degrees outwardly and toward the burner tube with relation to the plane of the flat portion, each of said wings being flat, whereby the 45 degree wing will produce a shorter flame than the 30 degree wing.

2. A gas burner target adapted to receive the flame from the outlet end of a burner tube, said target comprising a plate having a flat intermediate portion and an inclined ear at each end, the inclination of the ear at one end of the plate being at a different angle from that of the ear at the other end.

3. A gas burner target adapted to receive the flame from the outlet end of a burner tube, said

target comprising a plate having a flat intermediate portion and an inclined ear at each end, the inclination of each of said ears being at an acute angle outwardly with relation to the plane of the intermediate portion, one of said ears being inclined at an angle of 30 degrees and the other ear being inclined at an angle of 45 degrees.

4. In combination a gas burner target, a gas burner tube having an open flame-propelling end, said target comprising a plate having a flat intermediate portion extending at right angles to the longitudinal axis of the burner tube and positioned a distance from the nozzle, said plate having an inclined ear at each end, and supporting arms on the plate connected with the burner tube, said ears being on the horizontally opposite ends of the plate and the supporting arms being connected to the plate on its vertically opposite edges.

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