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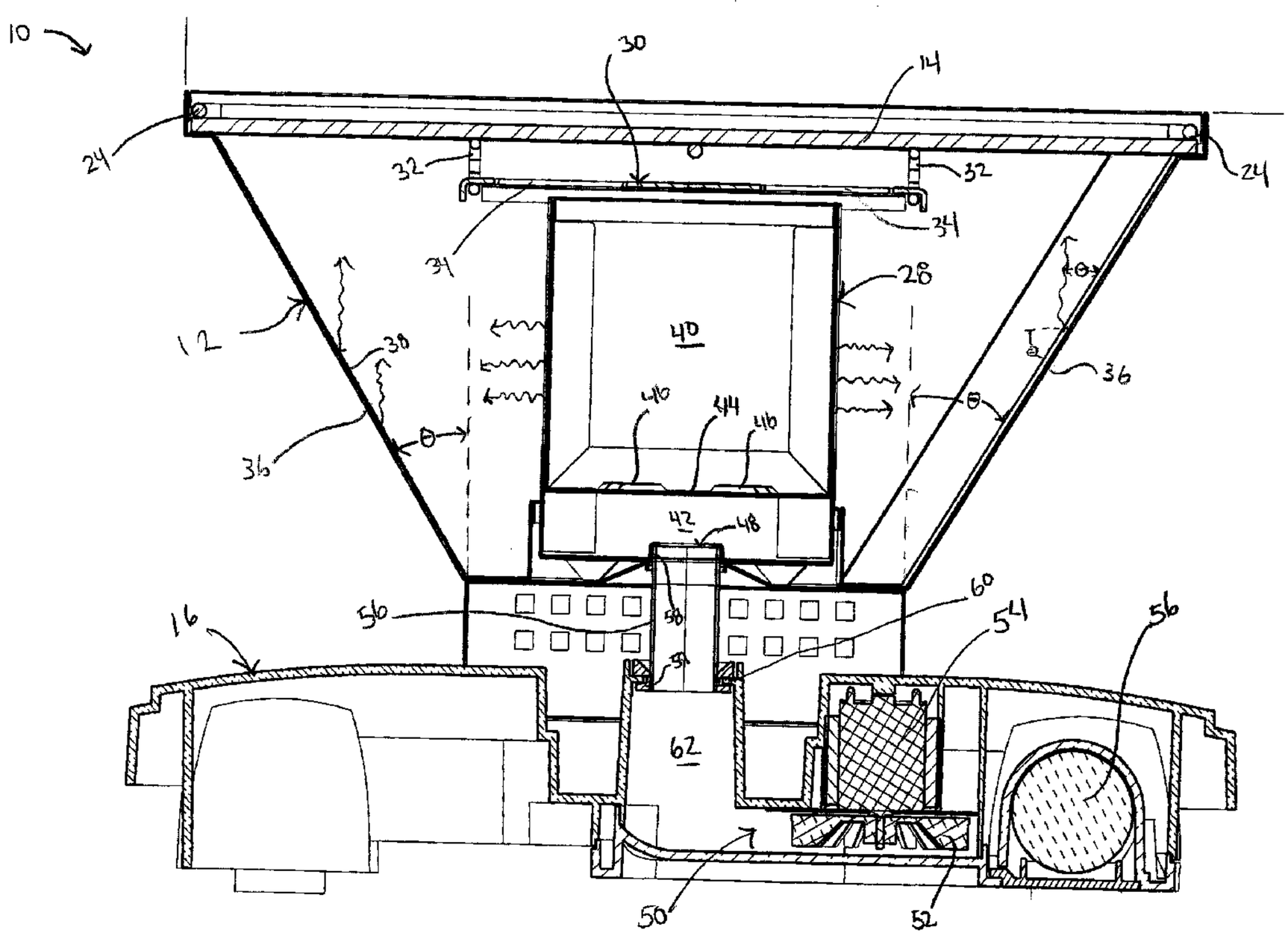
(54) Titre : BARBECUE A BOIS
(54) Title: WOOD FED BARBECUE APPARATUS



WOOD FED BARBECUE APPARATUS

FIELD OF THE INVENTION

The present invention relates generally to the field of cooking device. More particularly, it concerns a portable barbecue apparatus comprising a combustion system using wood as the main source of fuel.

BACKGROUND OF THE INVENTION

Barbecue apparatuses comprising a burner using wood as the main source of fuel are already known in the prior art. Such barbecue apparatuses typically comprise a casing having an open top for supporting a cooking grill and a burner located in the casing under the cooking grill. The burner, which is tubular, comprises a combustion chamber located over an air chamber, and a diffuser plate provided with air openings separating the combustion chamber from the air chamber. The air chamber has a forced-air intake operatively connected to a ventilation system that provides forced-air to the air chamber. In operation, pieces of wood are placed in the combustion chamber on the diffuser plate and lighted. The fan is then turned on to maintain the combustion of the wood.

Examples of such prior art barbecue devices using wood as the main source of fuel are given in the applicant's prior patent application WO9908048 and WO9907267; and in US patents No. 4,924,847 and 4,747,781.

SUMMARY OF THE INVENTION

One object of the present invention is to propose an improved barbecue apparatus, which allows a better use, and a better distribution of the heat generated by the combustion system.

In accordance with the present invention, this object is achieved with a barbecue apparatus comprising a casing with an open top for supporting a grill. The barbecue also comprises a burner mountable within the casing under the grill. The burner comprises a combustion chamber for receiving pieces of wood as the main source of fuel. The burner further comprises an air chamber located under the combustion chamber and a diffuser plate provided with air openings separating the combustion chamber from the air chamber. The air chamber has a forced-air intake operatively connected to a ventilation system comprising a fan to provide forced-air to the air chamber. The barbecue is characterized in that the casing has an inverted frusto-conical shape with slanted sidewalls having an inner surface adapted to reflect radiant energy. The sidewalls are extending at a predetermined angle (θ) with respect to a vertical line chosen so that the radiant energy emitted by the burner is reflected towards the grill. The predetermined angle (θ) is preferably around 45 °.

Other features and objects of the present invention will become more apparent from the description that follows of a preferred embodiment, having reference to the appended drawings and given as examples only as to how the invention may be put into practice.

BRIEF DESCRIPTION OF THE DRAWINGS

Figures 1 to 4 are different perspective views of a barbecue apparatus according to a preferred embodiment of the invention, showing the sequence of steps for removing the grill.

Figure 5 is a cross-sectional view in elevation of the barbecue shown in figures 1 to 4.

DESCRIPTION OF A PREFERRED EMBODIMENT

Referring to figures 1 to 5, the barbecue apparatus (10) comprises a casing (12) with an open top for supporting a grill (14). The casing is mountable on a base support (16). The apparatus also comprises a handle (18) for removing the grill (14).

The handle (18) is preferably removably connectable to the grill (14), as best shown for example in referring to figure 1. More specifically, the handle (18) comprises a fork-shaped portion (19) with a grasping means for grasping an end rod (24) of the grill (14). The grasping means preferably has the shape of a half-cylinder (26) to tightly receive the rod (24).

As shown in figures 1 to 4, when the grill has to be removed from the casing (12), for example when the burners have to be cleaned, the half-cylinder (26) of the handle (19) is connected to the end rod (24) of the grill which then can be removed.

Referring now also to figure 5, the barbecue (10) further comprises a burner (28) located inside the casing (12) under the grill (14). The burner (28) will be described in further detail hereinbelow.

The barbecue (10) also preferably comprises a heat diffusing shield (30) mountable over the burner (28) to diffuse the heat flowing directly from the burner (28) towards the grill (14). Referring to figures 4 and 5, the heat diffusing shield (30) is mounted to the grill (14) by means of brackets (32). The heat diffusing shield (30) comprises a plurality of radially extending spaced slots (34) extending from a solid central portion.

Referring now more particularly to figure 5, the casing (12) has an inverted frusto-conical shape with slanted sidewalls (36) having an inner surface (38) adapted to reflect radiant energy. The sidewalls (36) are at a predetermined

angle (θ) with respect to a vertical line chosen so that the radiant energy emitted radially by the burner (28) is reflected towards the grill (14). As shown in figure 5, the angle (θ) is preferably around 45°. The infrared radiation is shown with sinusoidal arrows in figure 5.

It is worth mentioning that although the casing (12) illustrated in the figures has a pyramidal frusto-conical shape, it could also take the shape of a circular frusto-conical shape without departing from the scope of the present invention.

The burner (28) comprises a combustion chamber (40) and an air chamber (42) located under the combustion chamber (42). A diffuser plate (44) provided with air openings (46) is separating the combustion chamber (40) from the air chamber (42). The location of the diffuser plate (44) in relation to the combustion chamber (40) is important in order to provide an even combustion.

The air chamber (42) comprises a forced-air intake (48) operatively connected to a ventilation system (50) located in the base support (16).

More specifically, the ventilation system (50) comprises a fan (52) driven by an electric motor (54), and a power supply (56) for providing power to the electric motor (54). The power supply (56) is preferably DC cells or batteries. Although not clearly illustrated, the ventilation system (50) comprises an opening for receiving air from outside. The ventilation system (50) also comprises an air intake tube (56) having an open top end (58) adapted to fit in the air intake (48) of the air chamber (42) and an open bottom end (59) adapted to be connected to an outlet end (60) of a pressurized air chamber (62) located downstream from the fan (52).

In use, pieces of wood (not illustrated) are placed on the diffuser plate (44) in the combustion chamber (40) and lighted. Then, the fan (52) is turned on, to draw the air from outside into the ventilation system (50). The fan (52) forces the air into the air intake tube (56) and then into the air chamber (42) of the burner (28)

where air under pressure is forced through the perforated diffuser plate (56) to promote combustion of the wood.

Although a preferred embodiment of the present invention has been described in detail, herein illustrated in the accompanying drawings, it is to be understood that the invention is not limited to this precise embodiment and that various changes and modifications may be affected therein without departing from the scope of spirit of the present invention.

Application number / numéro de demande: 2390427

Figures: _____

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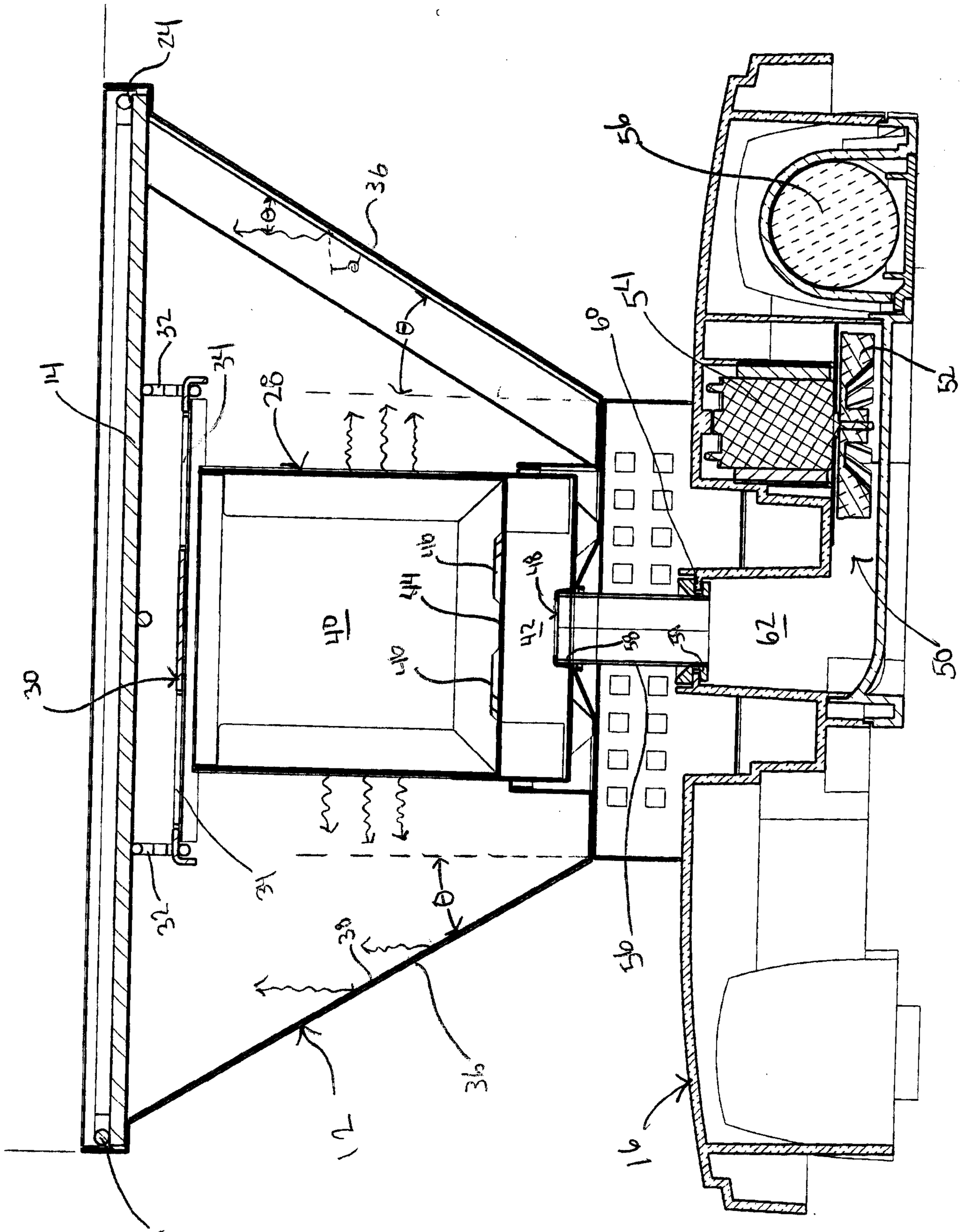
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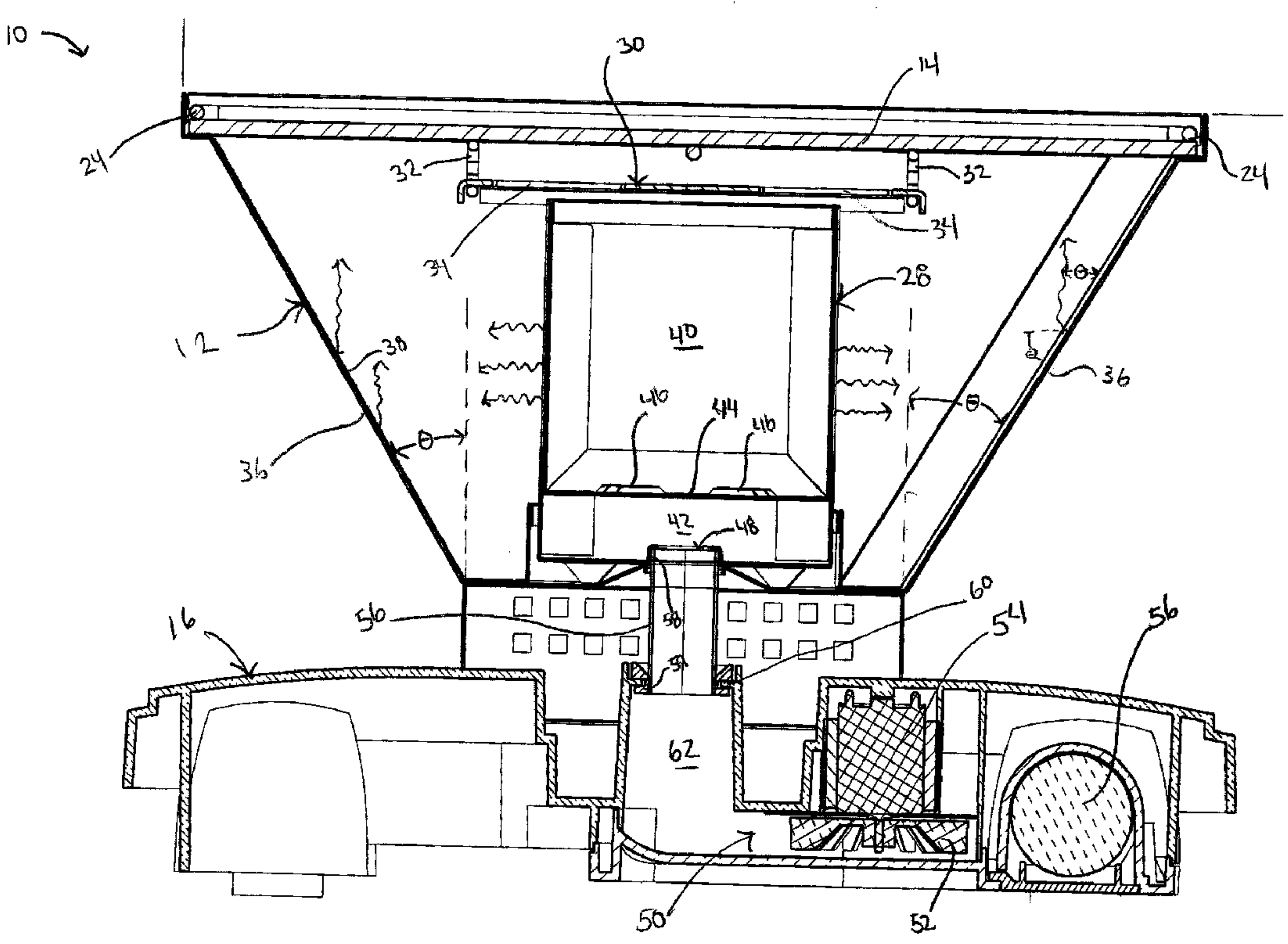
FIG.5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