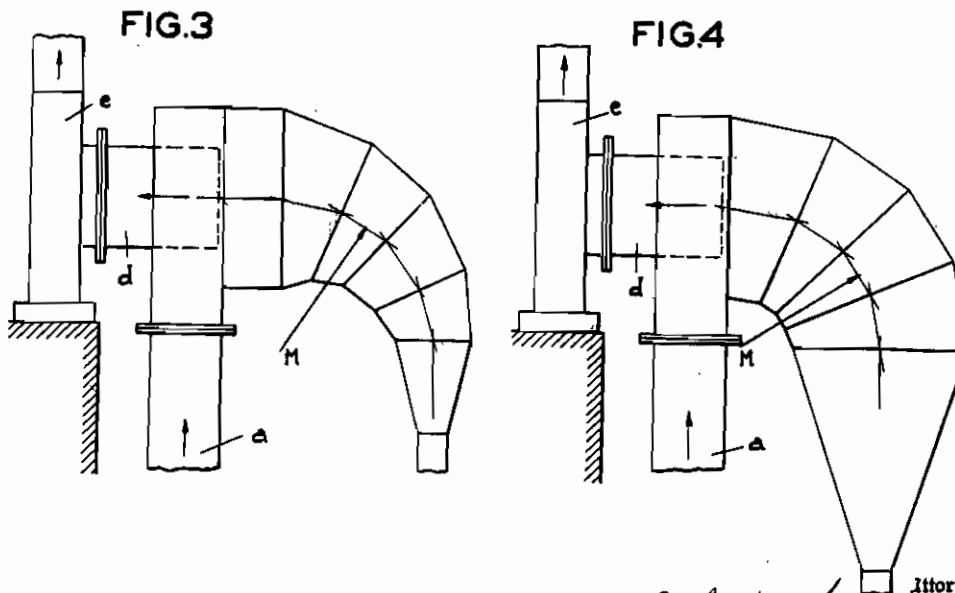
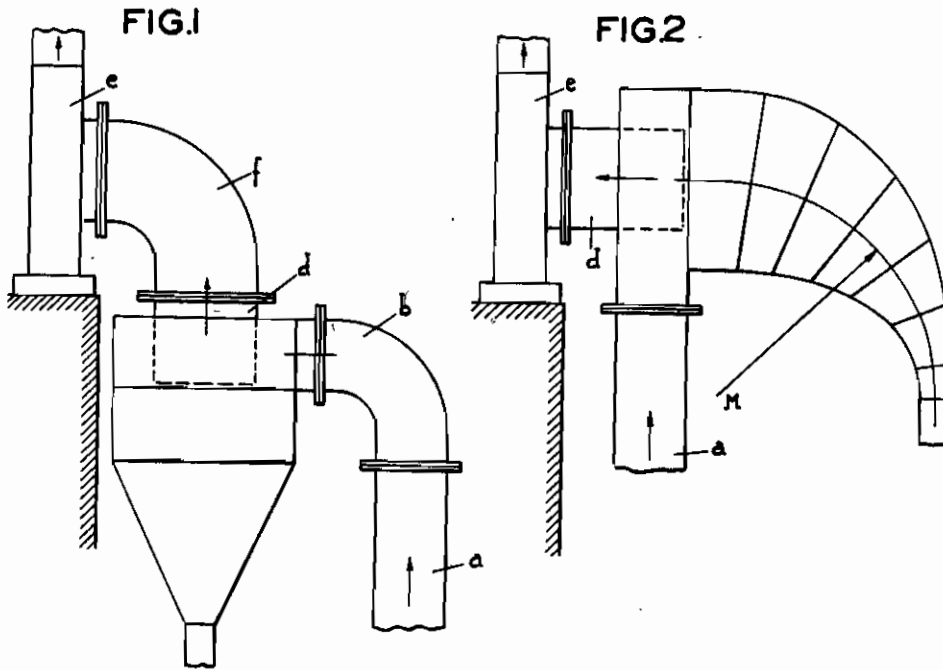


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ALIEN PROPERTY CUSTODIAN

CENTRIFUGAL DUST SEPARATORS

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When a centrifugal dust separator with a tangential inlet for the gas to be cleaned and an axial outlet for the cleaned gas (a so-called cyclone) has to be connected to a conduit for the supply of the gas to be cleaned, which is not horizontally directed, two bends in the gas-path are necessary. This is indicated in Figure I of the drawing in which it has been assumed, that the conduit *a* through which the gas to be cleaned is supplied and out of which therefore this raw gas flows, is exactly vertically directed. The gas must be conveyed to the inlet *c* of the centrifugal separator by means of a bend *b*, while the central outlet *d* of the separator must again be connected by a bend *f* with the usual suction blower *e*. The conditions are similar if the conduit for the supply of the raw gas is not exactly vertical but is more or less inclined to the vertical.

An object of the invention is to eliminate or reduce bends in the gas conduit, because these bends involve pressure losses. Another object is to reduce the resistance within the separator and in addition to increase the efficiency of the separator, that is to improve the separation. This reduction of the internal resistance and this increase in efficiency brought about by the invention are also obtained, when the conduit for the supply of the raw gas is horizontally directed.

According to the invention the vertical axis of the cyclone is curved, the axis of the separator head being set at right angles to the conduit for the supply of raw gas, even if this conduit is not horizontal.

The bend for the connection of the separator to the raw gas conduit is thus eliminated even if the latter is not horizontal, but is inclined or vertically directed. The connection of the separator to the usual suction blower with horizontal axis is then also without a bend if the direction of the raw gas conduit is exactly vertical. If the raw gas conduit is not quite vertical, but nevertheless is considerably inclined to the horizontal, the connection to the suction blower can be effected by means of a slight bend which entails very little pressure loss. Tests have shown that the internal resistance of the separator is reduced by the bending of the axis of the body adjoining the head of the separator. It has further been determined that the bending of the axis also improves the efficiency, that is the separation of dust, as compared with the usual separator with a straight

vertical axis and outlet at the bottom. But even if these two advantages were not obtained, the transfer of the bending to the separator itself would still result with a conduit for the supply of the raw gas not horizontally directed in the first mentioned advantage, namely the elimination or reduction of bends in the gas conduit.

The invention will further be described with reference to the accompanying diagrammatic drawings in which

Fig. 1 (already referred to) shows the usual arrangement of a single separator;

Figs. 2, 3 and 4 are side views of three examples embodying the invention;

Fig. 2 is a side view of a separator where the axis is bent over its full length;

Fig. 3 is a side view of a separator with a straight axis for the cylindrical head of the cyclone and a curved axis for the conical part of the separator;

Fig. 4 is a side view of a separator with a curved axis for the cylindrical head and a straight axis for the conical part.

The axis of the separator need not be curved only in one plane, but may be curved in several directions.

The production of the bent body of the separator can also be facilitated by making the individual sections not with curved but with straight axes, which are inclined one to the next as indicated in Figs. 3 and 4.

Among its other advantages the invention also permits considerable freedom in the general setting up of the cyclone. This applies particularly to its installation in a steam boiler-house. The separator can be arranged in any position in the boiler house even if the raw gas supply conduit is not exactly vertical as in the illustrated example. The space in the boiler house can thus be better utilised so that as well as a saving in space a saving in constructional cost may be effected.

The arrangement according to the invention can also be used when a plurality of these separators are to be connected to the outlet of one vertical conduit for the gas to be cleaned.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

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