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MAGNETIC FILTER

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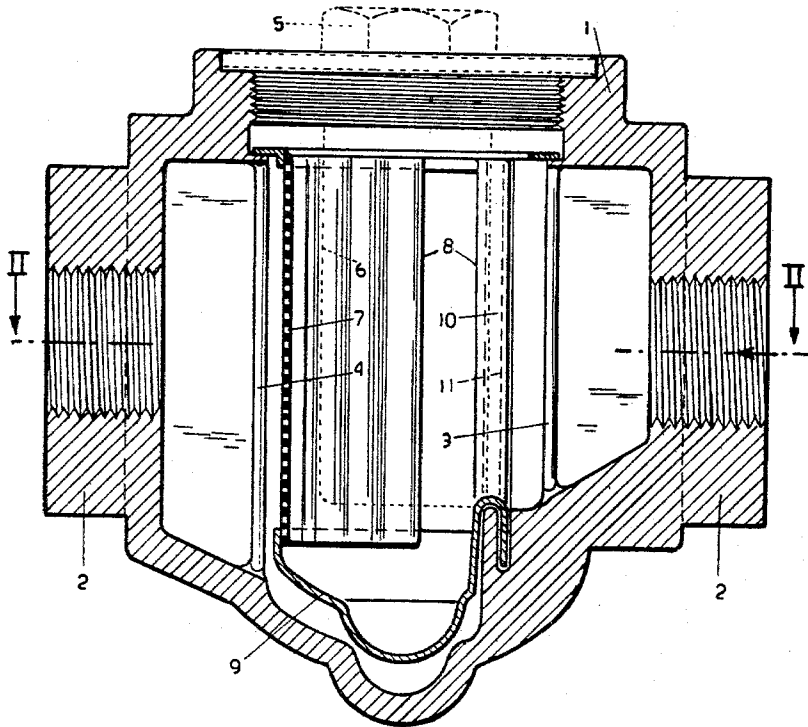


FIG. 1

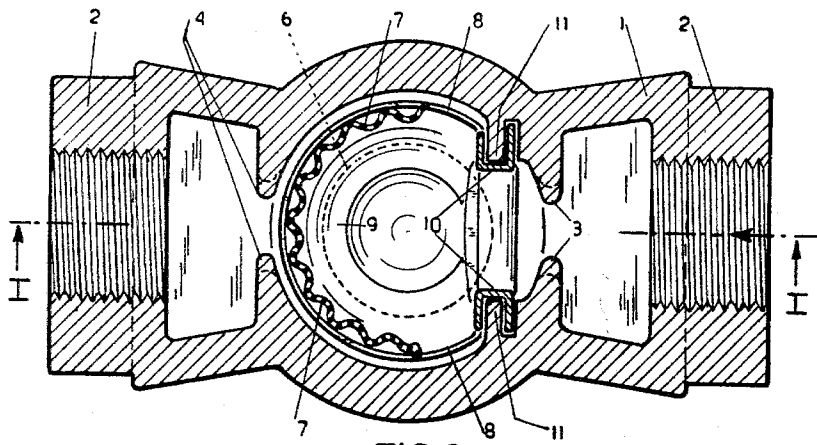


FIG. 2

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### MAGNETIC FILTER

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266,863

2 Claims. (Cl. 210—223)

This invention relates to a magnetic filter, provided with a stationary cylindrical magnetic body arranged in a casing and leaving an annular gap with respect to the circumferential wall of the casing, said wall having an inlet slot extending in longitudinal direction of the magnetic body and being disposed diametrically opposite to an outlet slot of the casing.

Magnetic filters of this kind are used for cleaning liquids in which solid impurities are suspended and in such filters particles of iron contained in the liquid are deposited on the magnetic body in the form of brushes, in which non-magnetic particles from the liquid are retained.

The invention has for its object to still improve the filtering action of a filter of this kind and to have the filter operate with only a small drop of pressure. To this end a sleeve of perforated magnetic sheet metal is arranged at the wall of the casing around the magnetic body, said sleeve being completely open opposite the inlet slot of the casing, but being closed at its lower end, and said sleeve further being provided with longitudinal corrugations and encloses the magnetic body at the side thereof facing the outlet slot only on half its circumference. With said arrangement the liquid to be cleaned can freely enter the sleeve and the wall of the sleeve functions as a guide, so that the liquid is compelled to flow along the surface of the magnetic body and the longitudinal corrugations of the sleeve will direct the liquid in the sleeve towards the magnetic body. The flow resistance of the filter will not be increased by the arrangement of the sleeve.

The invention will further be described with reference to the accompanying drawing showing an embodiment of the filter according to the invention.

In the drawing FIG. 1 is a vertical sectional view of the filter taken on line I—I of FIG. 2, which is a horizontal section taken on line II—II of FIG. 1.

The casing of the filter has a central part 1 of cylindrical shape and having a bore for accommodating the magnetic body 6. The casing has a connection 2 at either side for introducing and discharging the liquid respectively and to this end the cylindrical wall of the central part 1 of the casing is provided with vertical slots 3 and 4. The casing is closed by a cover 5 and the magnetic body 6 is suspended from the cover and may consist of discs of magnetic material separated from each other by pieces of non-magnetic material.

In the casing a sleeve 7 of perforated sheet metal is mounted and said sleeve being open opposite the inlet slot 3, so that the liquid can freely flow into the sleeve.

The perforated sleeve 7 at its upper end is supported

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with a flange on an internal collar of the casing and from said flange a frame 10 extends downwards, said frame having sides of U-shaped section embracing longitudinal ribs 11 at the inlet side of the casing. Between the longitudinal edges of the sleeve 7 and frame 10 opposed slots 8 are formed and the sleeve has a closed bottom 9 united with the lower end of frame 10.

The perforated wall of the sleeve 7 is corrugated in longitudinal direction and surrounds the magnetic body 6 only on about half the circumference of the body. With said arrangement the liquid in the filter is subjected to only a small drop of pressure. The wall of sleeve 7 is magnetically induced by the magnetic body 6, so that magnetic impurities are not only deposited on the magnetic body, but also at the inner side of the wall of the sleeve. Due to the strong radial attraction by the central magnetic body 6 also non-magnetic particles will be drawn out from the liquid flowing along the magnetic body towards the surface of the body, where they will be deposited.

What I claim is:

1. A magnetic filter comprising a casing having a cylindrical central portion, a stationary cylindrical magnet disposed coaxially in said portion having an inlet slot in its circumferential wall parallel to the longitudinal axis of the magnetic body and disposed diametrically opposite to a similar outlet slot in the casing, a sleeve of perforated magnetic sheet metal encircling only half the circumference of the magnet at the side thereof facing the outlet slot within said casing and spaced from the wall thereof, said sleeve having longitudinal corrugations and being open throughout its whole length adjacent said inlet slot, and an imperforate member closing the bottom of said sleeve.

2. A magnetic filter comprising a casing having a cylindrical central portion, a stationary cylindrical magnet disposed coaxially in said portion having an inlet slot in its circumferential wall parallel to the longitudinal axis of the magnetic body and disposed diametrically opposite to a similar outlet slot in the casing, and a sleeve of perforated magnetic sheet metal encircling only half the circumference of the magnet at the side thereof facing the outlet slot within said casing and spaced from the wall thereof, said sleeve having longitudinal corrugations and being open throughout its whole length adjacent said inlet slot.

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