

Nov. 13, 1945.

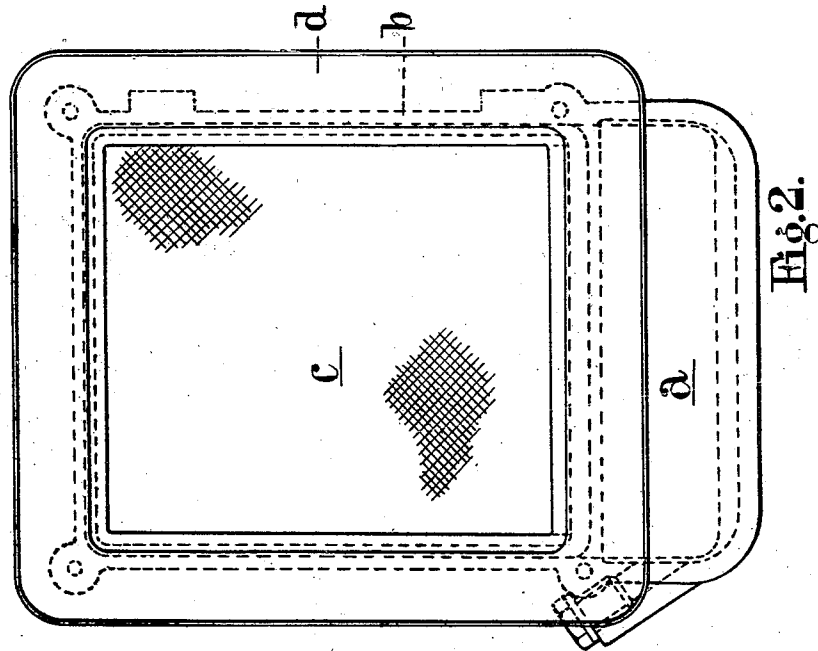
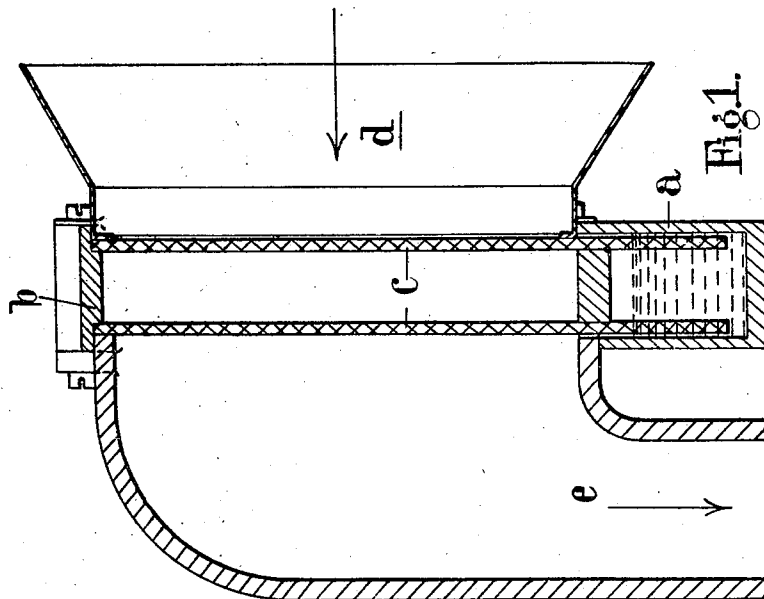
H. PEARSON

2,388,933

AIR FILTER

Filed Aug. 23, 1944

2 Sheets-Sheet 1



Inventor
H. Pearson
By *Glenn Downing* *Attys.*

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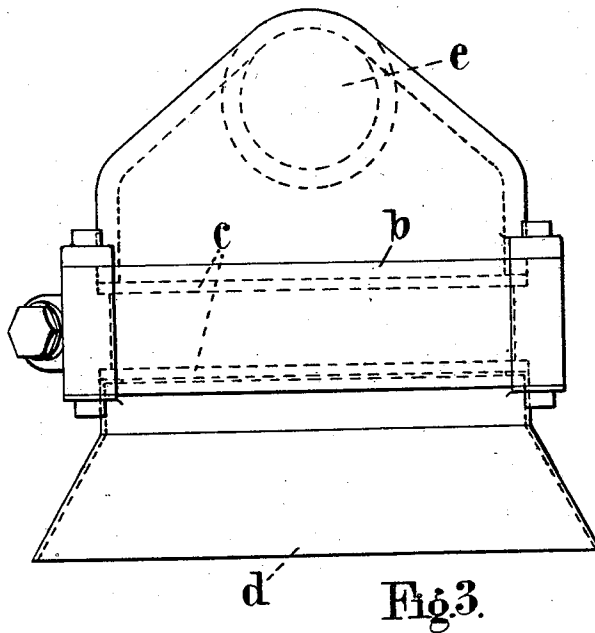
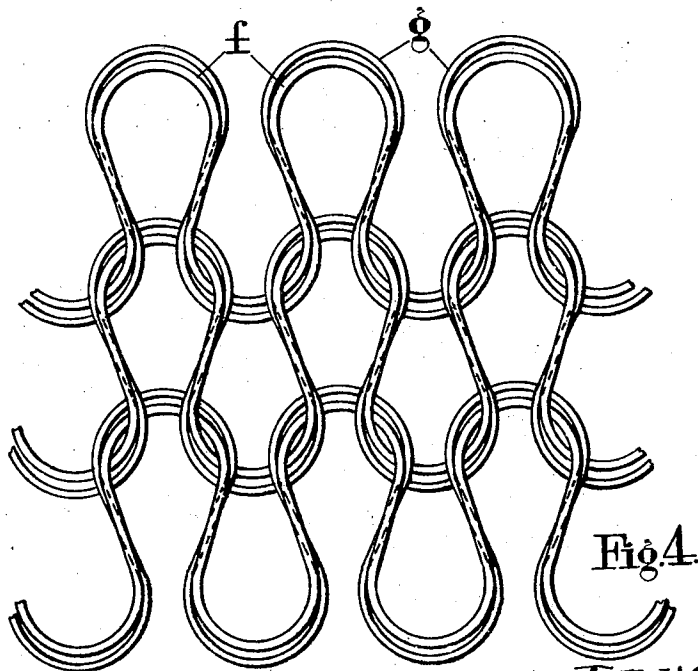
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2 Sheets-Sheet 2



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H. Pearson
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UNITED STATES PATENT OFFICE

2,388,933

AIR FILTER

Herbert Pearson, Liversedge, England

Application August 23, 1944, Serial No. 550,783
In Great Britain August 19, 1943

2 Claims. (Cl. 261-107)

This invention has for its object to provide an improved filter particularly advantageous for use for filtering air passing to the carburettors of internal combustion engines.

A filter in accordance with my invention comprises a sump or vessel filled with oil and/or a carbon inhibitor and a sheet or sheets of filtering fabric through which the air passes, produced from knitted or woven composite strands, each consisting of one or more textile threads or yarns and one or more lengths of fine metal wire, lying alongside one another (as described and claimed in my application for patent Serial No. 447,834), the textile threads or wicks attached thereto dipping into the liquid in the sump or vessel so that the textile threads are wetted by capillary attraction.

Referring to the accompanying explanatory drawings:

Figure 1 is a sectional side elevation, Figure 2 an end elevation, and Figure 3 a plan view of a filter constructed in one convenient form in accordance with this invention.

Figure 4 is an illustration of the composite fabric by which the extraction of solid particles from the air is effected.

The sump or vessel *a* contains oil and/or a carbon inhibitor and constitutes the base of a frame-like structure *b* having sheets *c* of my improved filtering fabric thereon at opposite sides so that the air being filtered which enters at *d* and leaves at *e* passes through the fabrics on its way to the engine carburettor. The filtering fabric comprises textile threads *f* which lie alongside metal wire *g*, the latter giving a strength to the composite fabric. The textile threads distribute oil by capillarity and effectively hold or absorb any solid impurities carried by the air which impinges on the threads. They also cause wetting of the metal wire which enables it to hold solid material thereon.

The bottom rows of the composite fabric dip into the oil or liquid in the sump. Or the textile threads only may dip into the oil or liquid. Or wicks or felt may be attached to each length or pad of composite fabric, such wicks dipping into the oil or liquid in the sump *a*. The felt may act

as a seal to prevent spilling of the oil from the sump.

The fabric *c* is shown in vertical sheets but it may be arranged in inclined or horizontal rows or in any other convenient way to suit requirements. It may be of straight, crinkled, corrugated or other form.

The fabric is clamped between the recessed outer edges or shoulders on the frame *b* and the air inlet funnel *d* at one side and the pipe *e* at the other side, or may be held in any other manner suitable for the particular style and shape of filter used.

What I claim is:

1. The combination with the elbowed inlet pipe end of a carburetor or the like of a frame open at opposite sides and having recesses along the edges of the openings to accommodate the pipe end at the opening at the inner side, an oil sump carried with the lower end of the frame and provided with at least one opening communicating with the interior of the frame, at least one foraminous sheet of intertwined textile and metallic threads arranged across the opening of the frame and extended through the opening into the sump, an air inlet funnel accommodated within the recessed opening at the outer side of the frame, and means for releasably clamping the parts together.

2. A viscous type air filter of the character described, comprising a frame open at the opposite sides provided with shoulders about the edges of the openings, an oil receiving sump carried with the lower side wall of the frame and provided with openings in its top communicating with the interior of the frame, sheets of filtering material composed of knitted textile threads and fine metal wire arranged against the shoulder edges of the openings of the frame and extended through the openings into the sump, a pipe connection arranged within the shouldered edges of the opening at one side and against one of the sheets, an air inlet funnel arranged within the shouldered edges of the opening at the other side of the frame and against the other sheet, and means for removably clamping the pipe connection frame, inlet funnel and sheets together.

HERBERT PEARSON.