

Feb. 11, 1930.

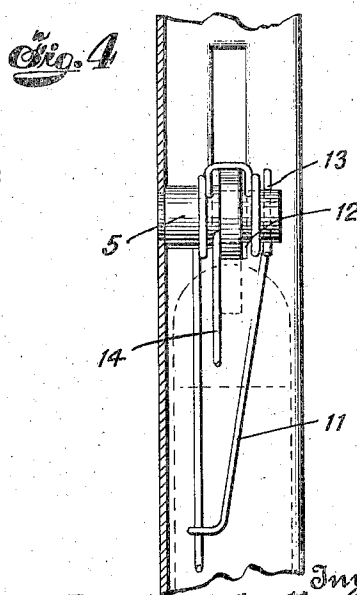
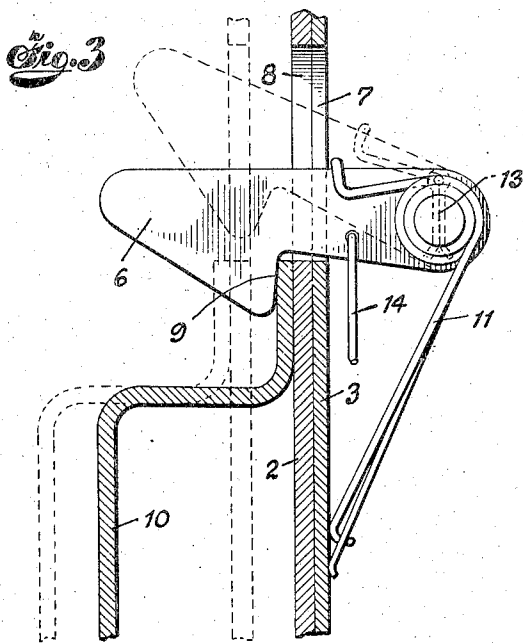
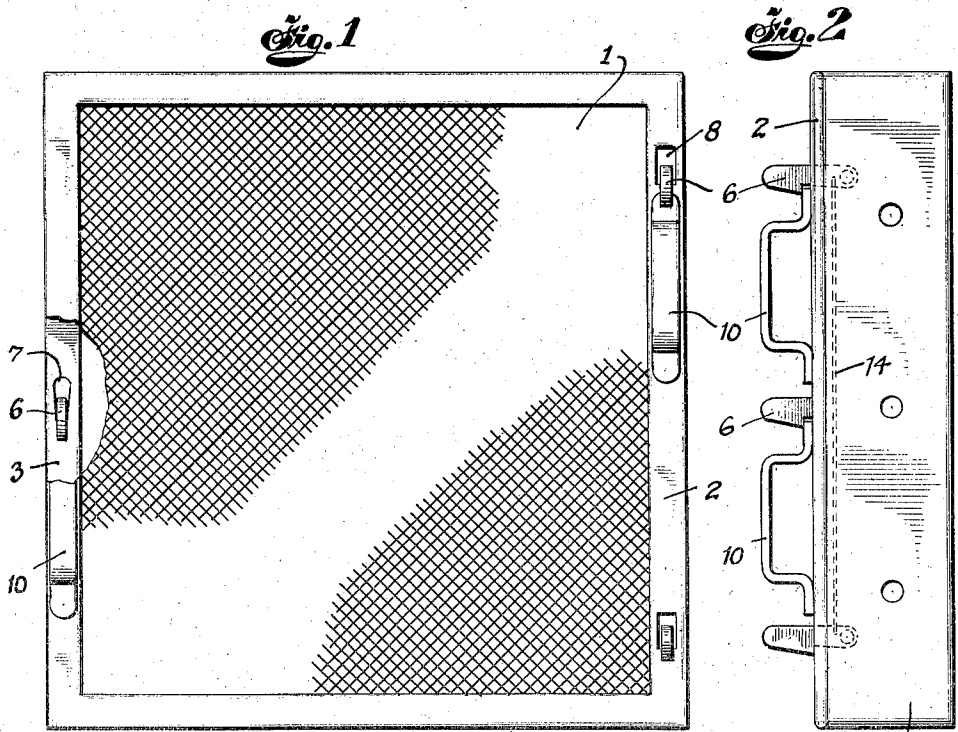
W. M. REED ET AL

1,746,283

AIR FILTER

Filed March 3, 1926

2 Sheets-Sheet 1



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Fig. 5

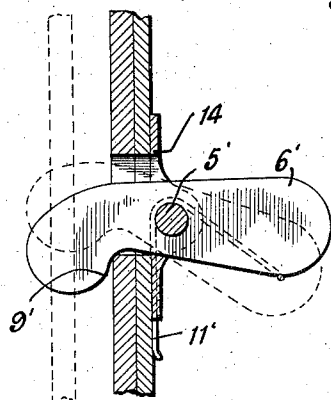


Fig. 6

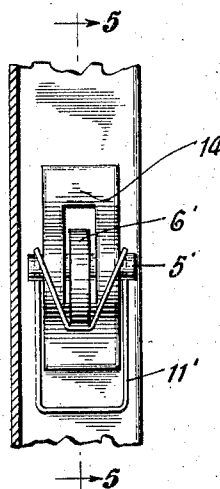


Fig. 7

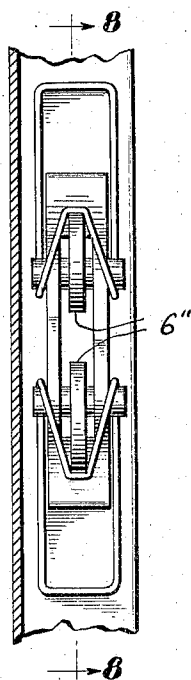
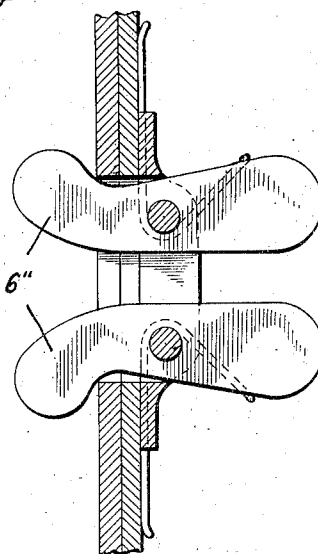


Fig. 8



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UNITED STATES PATENT OFFICE

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AIR FILTER

Application filed March 3, 1926. Serial No. 91,859.

This invention relates to air filters and pertains more particularly to fastening means for securing filter cells to a supporting framework.

In many types of air filters it is customary practice to provide a supporting framework carrying one or more cells filled with filtering media, which cells are removable from the supporting framework in order that they may be cleaned of accumulated dust and dirt from time to time. It is an object of this invention to provide a fastening means which shall hold the filter cell tightly to the supporting framework in order to minimize air leakage, and at the same time to provide a fastening which shall permit the filter cell to be easily removed and replaced.

It is a further object of the invention to provide a fastener which shall be simple in operation and inexpensive in construction.

A preferred embodiment of the invention is illustrated in the accompanying drawings, in which,

Figure 1 is a front elevation of the filter cell.

Figure 2 is a side elevation.

Figures 3 and 4 are enlarged detail views.

Figures 5 and 6 are enlarged detail views of a modified form of fastener, and

Figures 7 and 8 are enlarged detail views illustrating a second modification.

Referring to the drawings, the filter cell 1 is provided with a flange 2 which is arranged to overlay the flange 3 of the supporting framework 4. The stud 5 is provided which may be welded or otherwise secured to the supporting framework 4 and the latch or hook 6 is pivotally mounted on the stud. The flange 3 of the framework is provided with an opening 7 and the flange 2 of the filter cell is provided with a registering opening 8 through which the outer end of the latch may project. The latch 6 is provided with an offset portion 9 which may engage the front face of the flange of the filter cell, or, as shown in Figure 3, may engage the end of the handle 10 which is provided for convenience in removing and replacing the filter cells.

Wound about the stud 5 and arranged to urge the latch to a position to engage the filter cell is a spring 11 which may consist of a resilient wire arranged as shown in Figures 3 and 4. If desired, the stud 5 may be provided with an aperture 12 into which may be fitted the clip 13 to hold the fastening in assembled condition.

Any suitable number of latches may be provided as desired. Two latches, one on either side of the filter is sufficient for many purposes, although it has been found that three latches, arranged substantially as shown in Figures 1 and 2 provide a tight connection around the entire outer periphery of the cell which is particularly satisfactory. If desired, the two latches which are arranged at one side of the filter cell may be connected by a rod 14 in order that operation of either latch on this side will also operate the other latch.

The modified form shown in Figures 5 and 6 may be of similar construction having a latch 6' pivoted on a stud 5' and having a spring 11' to urge the latch to a position to hold the filter cell in place. In the modified form shown in these figures the outer end of the latch is rounded as illustrated at 9' in order that the filter cells may be removed from the frame simply by pulling on the cell without lifting the latch as a separate operation. The stud 5' may be conveniently supported by means of the bracket 14 which may be welded or otherwise secured to the framework.

The modification shown in Figures 7 and 8 is similar in construction to that shown in Figures 5 and 6 except that a pair of opposed latches 6'' is provided in place of the single latch provided in the other forms illustrated.

In the form of the invention illustrated particularly in Figures 1 and 4 in placing the filter cell within its supporting frame the filter cell is simply lifted into place and the latches under the influence of the springs 11 snap into place and hold the cell rigidly in position. In order to remove the cell the latches must be lifted and the cell may then be lifted from the frame. In the forms illustrated in Figures 5 to 8 the latches snap into

place as previously described when the cell is placed in the frame, and sufficient frictional engagement is provided to hold the cells in the desired position. When it is desired to
5 remove the cells, however, a smart pull on the cell will release the latches without lifting them separately.

It will be understood that the invention may be variously modified and embodied
10 within the scope of the subjoined claims.

We claim as our invention:

1. In an air filter, the combination of a frame, a filter cell provided with a flange having an aperture, a latch pivoted to said frame
15 and having a free end extending through said aperture, a portion of said free end overlying a portion of said flange to retain said cell in operative relation with respect to said frame.

2. In an air filter, the combination of a frame, a filter cell provided with a flange having an aperture, a stud on the frame, a spring pressed latch mounted on said stud and having a free end extending through said aper-
20 ture, a portion of said free end overlying a portion of said flange to retain said cell in operative relation with respect to said frame.

3. In an air filter, the combination of a frame having a flange provided with an aperture, a cell having a flange provided with an aperture in register with said first mentioned
25 aperture, a latch mounted on said frame and having a free end extending through both of said apertures, said free end overlying a portion of said cell adjacent to said aperture
30 in the flange thereof.

In testimony whereof, we have signed our names to this specification this 19th day of February, 1926.

40 WILLIAM M. REED.
CHESTER P. HEGAN.

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