

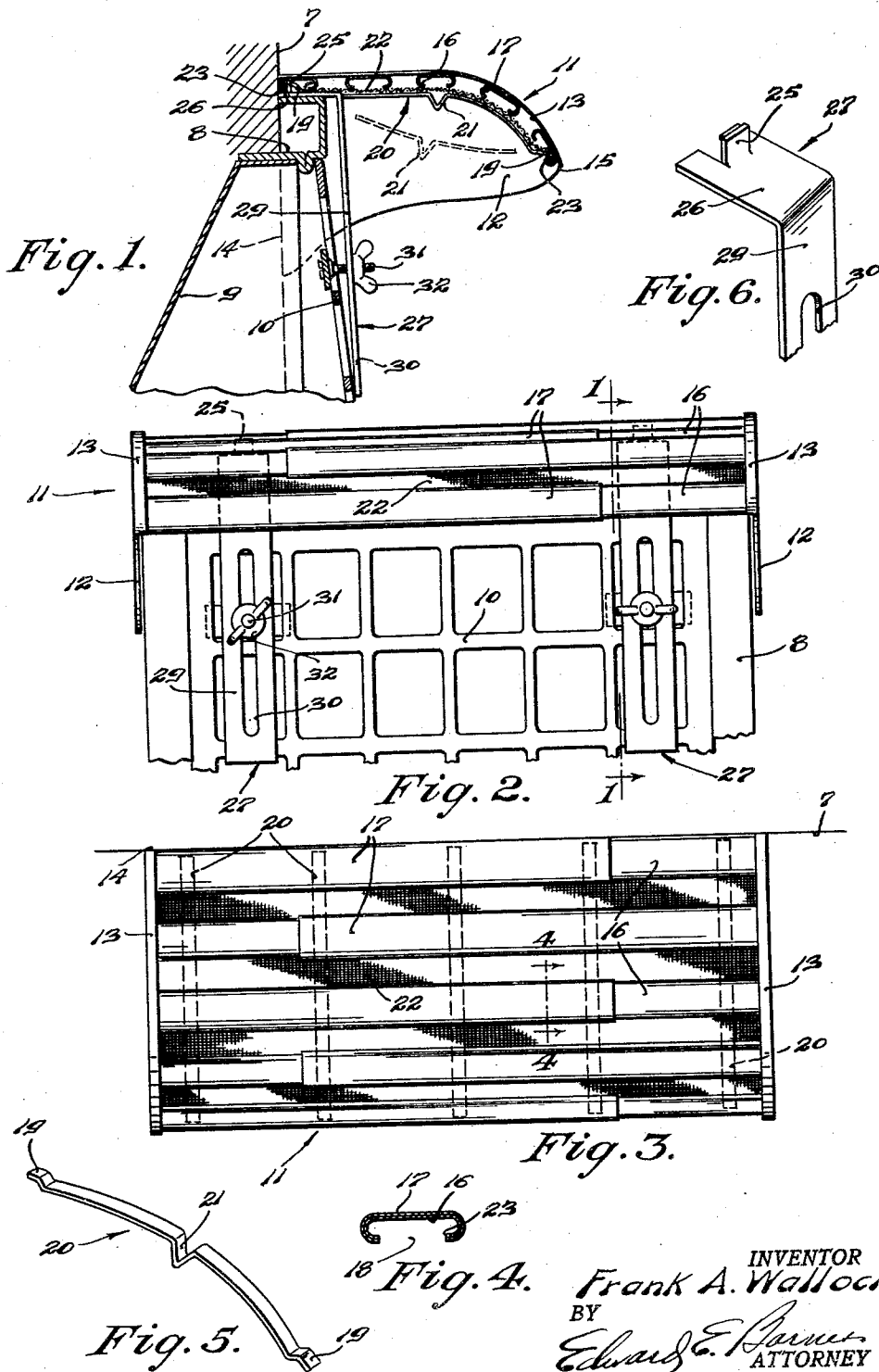
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SCREEN FILTER FOR HOT AIR REGISTERS

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SCREEN FILTER FOR HOT-AIR REGISTERS

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This invention relates to air filtering devices for heating registers, and more particularly to improved devices having increased capabilities over apparatus described and claimed in my United States Patent No. 1,640,630 issued August 30, 1927.

The object, generally stated, is the provision of screening mechanism capable of being applied above the registers of a hot-air heating plant in effecting a most efficient filtering of the discharged air for purifying the same prior to its admission to the room.

More particularly, an object of the invention is the provision of devices of this character affording a ready attachment or removal of a screen supporting frame to and from conventional installations of hot-air registers.

A further object is the provision of means for effecting a ready detachment or insertion of a screen proper to the supporting frame.

A still further object is the provision of a screen support of the character described capable of affording a longitudinal adjustment in accommodating the multiplicity of vari-sized register openings in use.

Further objects and advantages, more particularly with reference to simplicity, ornamentation, and durability of construction together with the foregoing, will become apparent in the course of the following detailed description, and throughout the claims annexed thereto, the invention consisting in the novel construction, adaptation and combination of parts hereinafter described and claimed.

In the drawing,—

Figure 1 is a transverse vertical section through 1—1 of Fig. 2, of a conventional register installation, the invention being shown applied thereto. Fig. 2 is a front elevation, and Fig. 3 a top plan view of the same, taken to an enlarged scale. Fig. 4 is a detail transverse vertical section taken substantially on line 4—4 of Fig. 3 in illustrating telescoping activity of cooperative supporting bars. Fig. 5 is a perspective view of the screen clips shown in Fig. 1, indicating the same in the clamping disposition afforded by the spring conformation. Fig. 6 is a per-

spective view of a frame bracket or frame support, parts being broken away.

Reference being had thereto, and wherein the invention is exemplified as installed to a register of, or which may be, well known construction, the numeral 7 represents the wall of a room, apertured for the insertion therein of the frame 8 of a register 9. 10 indicates the grilled face therefor.

More particularly to the present invention, I provide a screen frame 11 of a substantially arcuate configuration in transverse section, laterally spaced apart supporting end members providing plane vertically arranged outer ribs 12 terminating at upper extremities in arcuately shaped inwardly directed flange portions 13 conforming to the aforesaid transverse sectional contour. More particularly, said ribs are conformed to present a bearing edge 14 for engagement to the wall 7, the flange 13 projecting exteriorly in a substantial horizontal plane for termination in a downturned hood 15.

Said end members are respectively adapted to the secure retention of horizontal interconnecting bar members 16, 17 transversely spaced, one from the other, and aligned for telescoping sleeved engagement within aligned alternately spaced bars of the companion member.

Said bars, moreover, are advantageously conformed in a substantial hollow conformation, elongated slots 18 in the underneath face accommodating the intercession of the upturned fingers 19 of spring-metal clips 20, said clips being further conformed to provide a downturned elbow 21 medially of their length. In the crimping of a plurality of said clips to secure a screen of foraminous material 22 for engagement to the under face of the bars, the aforesaid fingers are engaged by oppositional lips 23 of extreme outer bars, affording a spring tension in the inversion of elbow 21 from a relative contraction, as shown in dotted lines, to the spread disposition, indicated by full lines in Figs. 1 and 5.

Said bar lip is further utilized in supporting the frame by a contactual engagement with lug 25, constituting a struck-up projection from the horizontal bar seating face

26 of a retaining bracket 27, said bracket being conformed to provide a supporting leg 29, vertically disposed in the provision of an elongated slot 30 for receiving the plate-supporting bolt 31, said plate being adapted for passage through apertures of the register grille, compressed thereagainst through a suitable medium such as the wing nut 32.

The invention is believed clear from the foregoing, the companion frames being adjustably regulated for register width through the telescoping activity of sleeved bars. The foraminous material is inserted and clamped through the instrumentality of the plural spring clips, ready attachment to the register-retained brackets 27 being accommodated by interposing the lip portion of the innerbar between wall 7 and the struck-up lug 25.

Numerous structural changes might, it is believed, be readily resorted to, and it is not my intention to confine myself particularly to the construction shown, except as by the scope of the hereto annexed claims.

What I claim, is:—

1. In a filter for a hot-air register, the combination with the grille of the register, and brackets arranged for detachable securement through said grille, said brackets each providing a horizontally disposed arm engageable against the room wall above the register, of a frame adapted for seating engagement over said horizontal arm and providing spaced apart end members having an arcuate configuration in end elevation, said end members providing downturned wings contactually engageable with the room wall at opposite sides of the register, each of said end members providing rigid spaced-apart horizontal rod elements arranged for telescoping engagement to aligned rods of the other of said end members, the outer and innermost rods being conformed to provide recessions therein having slots communicating from underneath sides thereto, a screen member insertable along the underneath surface of said rods, and spring clips for detachably securing said screen, said spring clips being mounted transversely of the frame in juxtaposition of said screen and having upturned end extremities engageable through the slots to said rod recessions.

2. In a filter for a hot-air register, the combination with a frame, said frame comprising arcuately conformed end members each having horizontally projecting spaced-apart rods collectively conforming to the contours thereof, the rods of one end member telescopically engaging the rods of the other end member, a filtering screen, and means for detachably engaging said filtering screen against the frame rods to conform to the contour of said rods, of brackets co-operating with wall-contacting elements of said end members for supporting said frame to project outwardly

and over the register outlet, said brackets having means for detachably engaging the same with respect to the register and providing a horizontal platform thereabove, said platform having upturned lugs arranged to secure the innermost frame rod therebetween and the room wall.

3. In a filter for a hot-air register, the combination with a grilled frame having means for adjusting the length of the same, a filtering screen, and means for detachably securing said screen with respect to the grilled frame, of means for supporting said frame over the register outlet to project outwardly therefrom, said means comprising a horizontal platform detachably engageable with the register and adapted for the seating reception of a portion of the frame thereover, said platform providing upturned lugs for securing an innermost portion of the frame therebetween and the room wall.

4. In a filter for a hot-air register, the combination with a grilled frame, a filtering screen, and means for detachably securing said screen with respect to the grilled frame, of means for supporting said frame over the register outlet to project outwardly therefrom, said means comprising a horizontal platform detachably engageable with the register and adapted for the seating reception of a portion of the frame thereover, said platform providing upturned lugs for securing an innermost portion of the frame therebetween and the room wall.

5. Structure for supporting a filtering screen for a hot-air register, comprising a frame conformed of a pair of end members having spaced apart rods projecting horizontally therefrom, the rods of one end member being aligned with and arranged for telescoping engagement with the rods of the other end member, said telescoped rods collectively presenting, in transverse vertical section, an approximate horizontal inner portion and a downturned outer portion, the innermost and outermost rods being hollow and having openings communicating thereto through the underneath faces, and a plurality of spring clips arranged transversely of said frame and having opposite ends turned upwardly for insertion through said rod openings for engagement therein, said clips being adapted to detachably support a sheet of screening material therebetween and the frame.

6. Structure for supporting a filtering screen for a hot-air register, comprising a frame conformed of a pair of end members having parallel spaced-apart horizontal rods interconnecting the same, said rods collectively presenting, in transverse vertical section, an approximate horizontal inner portion and a downturned outer portion, and a plurality of spring clips, arranged transversely of said frame for supporting a sheet

of screening material therebetween and the frame rods, said clips providing means co-operating with edge rods of the frame for detachably connecting said clips with the frame.

5 7. Structure for supporting a filtering screen for a hot-air register, comprising a frame conformed of a pair of end members having parallel spaced-apart rods interconnecting the same, and means constituting a
10 plurality of individual spring clips detachably engageable with both lateral edges of said frame for clamping a sheet of screening material therebetween and the frame.

15 8. Structure for supporting a filtering screen for a hot-air register, comprising a frame conformed of a pair of end members having parallel spaced-apart horizontal rods interconnecting the same, and a plurality of
20 spring clips arranged transversely of said frame for supporting a sheet of screening material therebetween and the frame rods, said clips providing means co-operating with edge rods of the frame for detachably connecting
25 said clips with the frame.

9. Structure for supporting a filtering screen for the ascending hot air of a circulating heating system, comprising a grilled frame, and a plurality of spring clips adapted
30 to be sprung to the approximate contour of the frame below the same for clamping a sheet of screening material therebetween and the frame, said frame providing means along both its lateral edges for detachably retaining
35 said clips.

Signed at Seattle, Washington, this 11th day of June, 1930.

FRANK A. WALLOCH.

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