March 22, 1927. 1,622,031

W. S. ELTERS

REGISTER HOOD

Filed March 29, 1926

Fig. 1

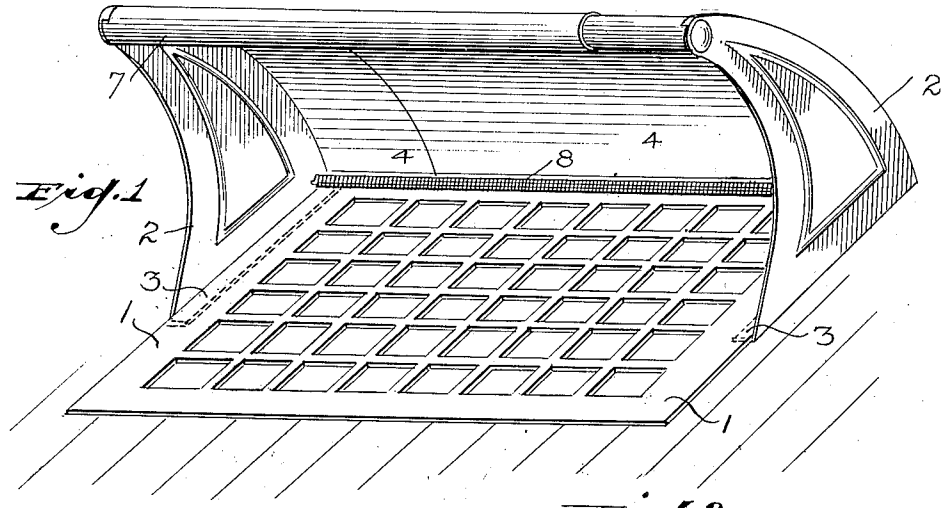


Fig. 4

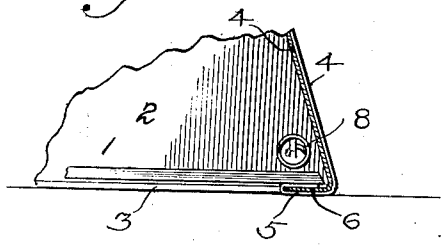


Fig. 2

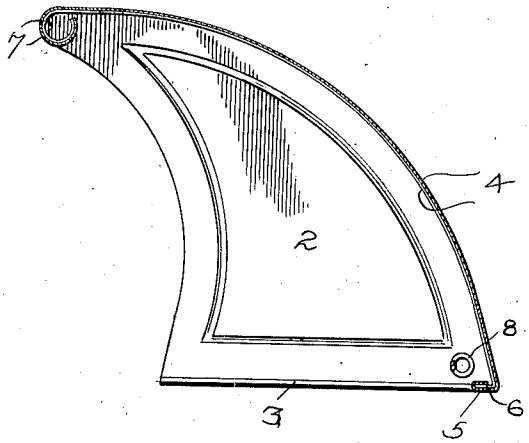
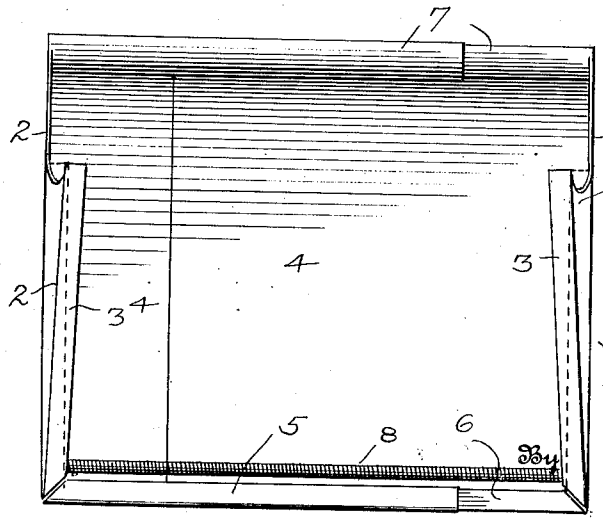


Fig. 3



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UNITED STATES PATENT OFFICE.

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REGISTER HOOD.

Application filed March 29, 1926. Serial No. 98,211.

This invention relates to heating and ventilating apparatus and more particularly to a register hood or cowl for diverting and controlling air currents to and from such register.

In the present invention there is contemplated a register hood comprising two telescopic sections arranged in overlapping slidingly adjustable relation, each embodying an end wall and a portion of the top and rear wall of the hood, the base margins of the rear and end wall being flanged inwardly in a common plane for projection beneath three margins of the engaged register plate. The rear wall marginal flange of one section is reversely bent to slidingly enclose the corresponding flange of the other section while the front marginal edges of the top walls of the respective sections are rolled into tubular form, with one such tubular margins enclosing that of the other section. The respective sections are interconnected by a spring, which tends to retract the telescopic hood, the sections of which are relatively adjustable to accommodate the hood to register plates of different sizes, the engaged plate being gripped or confined between the end walls of the respective sections. In addition to the contractile spring, the end walls of the sections are inwardly deflected in forwardly convergent relation and are sufficiently flexible to be placed under inherent spring tension by being flexed outwardly to substantially parallel relation, whereby such end walls will exert a contractile gripping influence upon the terminal margins of the engaged register plate independent of the contractile spring connecting the sections.

The object of the invention is to simplify the structure as well as the means and mode of applying such hoods or cowl to hot air or ventilating registers or the like, whereby they will not only be cheapened in construction, but will be more efficient in use, capable of being easily and quickly attached and detached, adjustable to registers of different sizes and unlikely to get out of repair.

Cowls or hoods of the present type are usually employed in residences for diffusing warm air currents from a hot air heating system. They are also used in conjunction with ventilating systems for distribution of fresh air in residences, packing houses, warehouses and the like. As usually constructed, such hoods or cowls are subject to displacement and are easily disarranged or accidentally shifted out of registry with the hot or cold air register as the case may be, thereby impairing their function and reducing the efficiency of the register. Moreover, as usually constructed, such cowls are of integral construction, so that the dealer or manufacturer must carry in stock numerous cowls of different sizes to accommodate the various sizes of registers which are not standardized. By the present construction the hood or cowl is adjustable to accommodate register plates of different sizes, thereby materially reducing the quantity of stock necessarily carried by the dealer or manufacturer, and furthermore, the hood or cowl is so engageable with the register plate that it will not be easily displaced, and will tend to hold its engagement with the register plate. Furthermore, by contracting the hoods or cowls, such hoods or cowls may be arranged in less space for storage or shipment and may be conveniently and easily nested, one within another.

While the invention is described primarily in its application to an adjustable register hood it is to be understood that it is not limited to a register hood having telescopic adjustment, but certain features of the invention are applicable to register hoods made to fit registers of particular sizes and certain claims herein made cover such features apart from the feature of telescopic adjustment.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof, and the mode of operation or their equivalents as hereinafter described and set forth in the claims.

Referring to the accompanying drawings, wherein is shown the preferred, but obviously, not necessarily the only form of embodiment of the invention, Fig. 1 is a perspective view of the adjustable hood or cowl forming the subject matter hereof, applied to a floor register. Fig. 2 is a transverse sectional view of the hood or cowl. Fig. 3 is a bottom plan view of the assembled cowl. Fig. 4 is an enlarged detail view, showing the relation of the slidingly engaged marginal flanges of the rear wall and the end wall flange with the register plate.

Like parts are indicated by similar characters of reference throughout the several views.

In the drawings, 1 indicates the register plate of a floor register. The hood or cowl forming the subject matter hereof, comprises end walls 2—2 which are inturned or flanged at their bottom margins as at 3. Such flanges 3 project in substantially right angle relation with the end walls 2—2 and extend beneath the terminal margins of the register plate 1. Fixedly connected to the end walls 2—2 are overlapping deflector sheets 4—4. The overlapping deflector sheets 4—4 are of arcuate formation extending upwardly and forwardly in overhanging relation over the register plate 1, and by their contour consitute the rear and top walls of the hood. At their rear margins, the deflector sheets 4—4 or the rear wall portion of the structure are flanged inwardly in a plane substantially parallel with the register plate 1. The inturned marginal flange 5, of one of the sections 4 is reversely bent as shown particularly in Figs. 2 and 4 to slidingly enclose the inwardly flanged margin 6 of the other of the overlapping deflector sheets 4—4. At their forward margin the deflector sheets 4 are rolled preferably downwardly and inwardly into tubular formation as shown at 7. The rolled margin of one sheet 4 is slidingly enclosed within the rolled margin 7 of the other sheet 4. These rolled tubular margins of the respective deflector sheets 4 are preferably of such relative size that one of the tubular margins is under expansive tension or the other under contractive tension when interengaged, thus affording a yielding frictional engagement, which will tend to hold the parts in their adjusted relation. Each deflector portion 4 and its interconnected end wall 2 forms a unit or section which is telescopically adjustable in relation with the other unit or section comprising the opposite end wall and other deflector sheet 4. The end walls and corresponding deflector sheets 4—4 forming the top and rear walls of the hood and cowl may be interconnected or joined in any suitable manner. The preferable method of uniting these portions is by means of a joint known to the tinning trade as a "Pittsburg seam". Obviously, however, other forms of attachment or means of uniting the end walls and deflector sheet sections together may be employed. In making such assembly, the end walls 2—2 are preferably deflected inwardly in forwardly convergent relation as shown particularly in the plan view Fig. 3. The end walls 2 which are formed from sheet metal are sufficiently flexible or yielding to allow these end walls to be sprung outwardly into substantially parallel relation. Such outward flexing of the end walls 2—2 into parallel relation subjects the walls to inherent spring tension, by which the end walls tend to grip or clamp the register plate 1, interposed therebetween. By the sliding adjustment of the section of the hood or cowl, such hood is accommodated to register plates 1 of various sizes. When adjusted to such size, however, the end walls 2—2 by their deflection to parallel relation are under such spring tension as to exert a limited degree of compressive or contractive pressure upon the end margins of the register plate 1. The hood sections are held against expansion under the reaction of such tension of the end wall 2 by the frictional engagement of the tensioned tubular marginal rolls of the sheets 4—4 as before described and by the frictional engagement of the interlocked flanges 5—6. To further resist any such expansive tendency and to hold the hood in its adjusted relation with the register plate 1, the end walls 2—2 are preferably interconnected by a helical tension spring 8. In the drawings, such spring has been shown located at the lower rear corner of the end walls 2—2 and in close relation to the inturned marginal flanges 5—6. However, this spring may be located at other points, and if so desired, an additional spring may be extended through the tubular rolled margins 7, of the deflector plates 4. When in adjusted relation with the register plate 1, the end walls 2—2 extend beyond the opposite terminal margins of the plate 1 and the flanges 3, as well as the flanges 5—6 of the rear wall extend beneath the margins of the plate 1, and so interlock the hood or cowl therewith to prevent its accidental displacement.

Cross reference is made to co-pending application, Serial No. 533,205, filed Feb. 1, 1922 for register hoods from which certain of the hereafter stated claims have been transferred and also to pending application, Serial No. D 19,960 for design for hood for floor register and co-pending applications Serial No. 744,681, filed October 20, 1924 for adjustable register hood, and Serial No. 533,204 filed Feb. 1, 1922 for register hood.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific details shown, but that the means and construction herein disclosed comprises the preferred form of sev-

eral modes of putting the invention into effect and the invention is, therefore, claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. In a hood for registers and the like, a structure including end, back and top walls but open at its front comprising two telescopically adjustable sections each including one end wall and a portion of the back and top walls, the latter being arranged in overlapping relation, the end and rear walls being inwardly flanged at their base margins for projection beneath three marginal edges of a register plate, the marginal flange of the rear wall of one section being reversely bent to slidingly enclose the marginal flange of the rear wall of the other section, the forward margins of the top walls of the respective sections being rolled to tubular form with one tubular rolled edge enclosing that of the other section, the telescopic adjustment of the sections enabling the hood to be adjusted to a register plate with the register plate overlying the inturned flanges.

2. In an adjustable hood for registers and the like, two telescopically adjustable sections each comprising overlapping slidingly engaged portions of the rear and top walls and an end wall fixedly secured to the rear and top wall portions of each section, and a spring means tending to contract the telescopically arranged sections to grip a register plate intermediate the end walls.

3. In an adjustable hood for registers and the like, two telescopically adjustable sections each comprising overlapping slidingly engaged portions of rear and top walls and an end wall fixedly secured to the rear and top wall portions of each section, the end walls being normally inwardly and forwardly converged and placed under tension by being outwardly flexed into substantial parallelism, said sections being slidingly adjustable relative to each other to accommodate the hood to register plates of different sizes, the inherent spring tension of the end walls tending to grip therebetween a register plate to which the hood has been adjusted.

4. In an adjustable hood for registers and the like, two telescopically adjustable sections each comprising overlapping slidingly engaged portions of rear and top walls and an end wall fixedly secured to the rear and top wall portions of each section, said sections being slidingly adjustable relative to each other to accommodate the hood to register plates of different sizes, and a contractile spring connecting the sections and tending to contract the telescopic hood to grip therebetween a register plate to which the hood has been adjusted.

5. In an adjustable hood for registers and the like, two telescopically adjustable sections, each comprising overlapping slidingly engaged portions of rear and top walls and an end wall fixedly secured to the rear and top wall portions of each section, inturned flat marginal flanges on the rear wall portions of the sections, one of which is reversely turned to slidingly enclose the other, and rolled tubular margins at the forward edges of the top walls of the respective sections one of which rolled tubular margins slidingly encloses that of the other section, said telescopic sections being relatively adjustable to accommodate the hood to register plates of different size, the engaged register plate being confined between the end walls of the hood which extend on opposite sides thereof.

6. In an adjustable hood for registers and the like, two telescopically adjustable sections, each comprising overlapping slidingly engaged portions of rear and top walls, and an end wall fixedly secured to the rear and top wall portions of each section, base margins on the rear and end walls being inwardly flanged for projection beneath three margins of a register plate, the sections being bodily adjustable relative to each other to accommodate the hood to register plates of different sizes, beyond the extremities of which the end walls of the hood adjustably extend with their base margins projecting therebeneath.

7. A register hood comprising relatively adjustable end walls and an intermediate overhanging deflector portion interconnected in assembled relation and means for relatively adjusting the end walls toward each other to afford clamping engagement of the hood with a register plate to prevent accidental displacement thereof.

8. A hood for registers, comprising relatively adjustable end walls and an overhanging deflector portion intermediate the end walls, the end walls having angular offsets upon their base margins one of the angularly disposed faces of which extends substantially parallel with the plane of the register plate, and the other angularly disposed face of which bears upon the terminal edge of the register plate to clamp the hood thereto, under the inherent tension of the structure.

9. A hood for registers comprising spaced end walls and a deflector portion intermediate the end walls overhanging the register, the base edge of the end walls being extended on opposite sides of the register plate and exerting a clamping action upon the opposite terminal edges of the register plate to prevent accidental disengagement.

10. A hood for registers, comprising spaced end walls, and a deflector portion intermediate the end walls overhanging the register, said end walls being tensioned and laterally

engageable with the register plate which is clamped therebetween.

11. A hood for registers, comprising spaced end walls, and a deflector portion intermediate the end walls overhanging the register, said end walls being laterally engageable with the register plate and means for adjusting the end walls to clamp the register plate therebetween.

12. A hood for registers, comprising spaced end walls and a deflector portion intermediate the end walls overhanging the register, the end walls being yieldingly movable against the inherent tension of the structure to permit its engagement with the register plate, the base edges of the end walls being offset, with one face of the offset laterally engaging the register plate and the other angularly disposed face of such offset extending substantially parallel with the register plate, the register plate being clamped between the end walls by the tension movement thereof.

13. A hood for registers comprising flexible spaced end walls and an intermediate deflector portion to overhang a register plate, with the opposite margins of which the end walls are engageable by their relative flexing movement toward each other, said flexible end walls being connected to the deflector portion and extending thence convergently forwardly and downwardly with their forward base portions spaced apart a less distance than their rearward portions, the engagement thereof with a register plate effecting a spreading of such forward base portions and effecting a gripping action on the register plate.

In testimony whereof, I have hereunto set my hand this 22nd day of February, A. D. 1926.

WILLIAM S. ELTERS.