June 19, 1956 A. D. COLE ET AL 2,750,869

VALVED AIR EXHAUST FITTINGS

Filed Jan. 22, 1953

Fig. 2

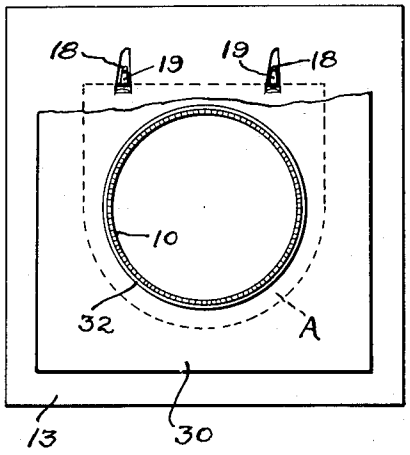


Fig. 3

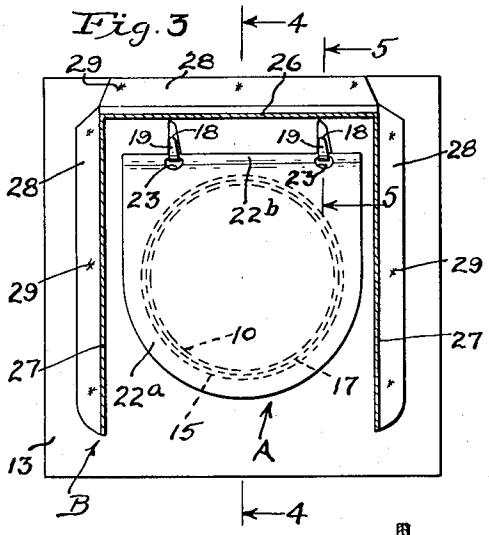


Fig. 1

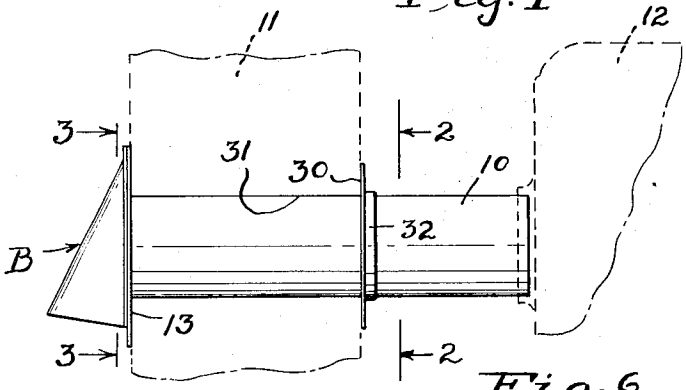


Fig. 6

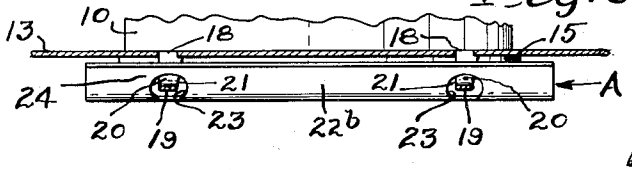


Fig. 4

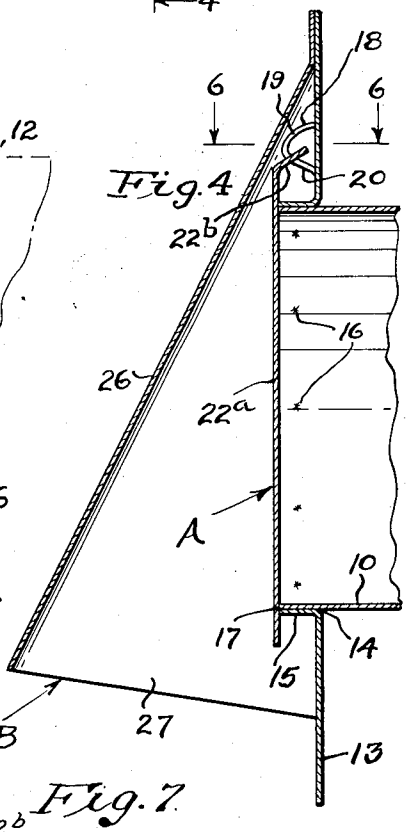


Fig. 5

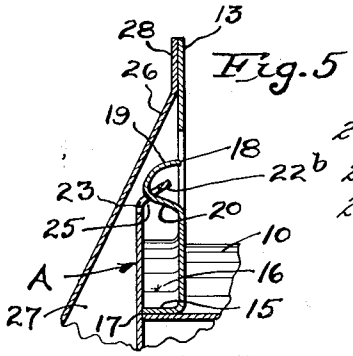
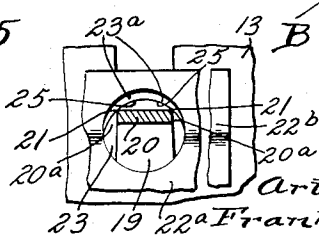


Fig. 7



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VALVED AIR EXHAUST FITTINGS

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2 Claims. (Cl. 98—119)

Our invention relates to improvements in valved air exhaust fittings particularly, though not exclusively, for association with the air outlets of household laundry driers.

An object of the invention is to provide an article of the instant nature including an air exhaust pipe adapted to extend horizontally through the wall of a building from the air outlet of an appliance therein to the exterior of the building, and including also at the outer end of said pipe, a chcek valve adapted to check back drafts through said pipe from the exterior of the building.

Another and important object of the invention is to provide a durable article of the character above indicated, of simple and inexpensive construction, which is easy to install and which is capable of effectively preventing the inflow of air therethrough from without the building to the interior thereof, and which is readily responsive and of slight impediment to the outflow of air from within the building to the outside thereof.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawing:

Fig. 1 is a side elevational view of a valved air exhaust fitting constructed in accordance with our invention, the same being shown in association with the wall of a building and an appliance illustrated fragmentarily in dotted lines.

Fig. 2 is a sectional view taken as on the line 2—2 of Fig. 1, the same being shown on a scale enlarged over the scale shown in said Fig. 1.

Fig. 3 is a sectional view on the same scale as Fig. 2, said view being taken as on the line 3—3 of Fig. 1.

Fig. 4 is a sectional view in full size scale taken as on the line 4—4 of Fig. 3.

Fig. 5 is a sectional view also in full size scale, taken as on the line 5—5 of Fig. 3.

Fig. 6 is a sectional view taken as on the line 6—6 of Fig. 4.

Fig. 7 is an elevational view, enlarged over the full size scale, showing that portion of the hinge means illustrated at the upper right-hand corner of Fig. 3, a portion of the structure being broken away to reveal structure that otherwise would be concealed.

Reference being had to the drawing, it will be seen that the illustrated embodiment of our invention includes a cylindrical exhaust pipe **10** adapted to extend through an outer wall of a building, as at **11**, and to be coupled at its inner end with an appliance, such as a clothes drier **12** from which it is desired to conduct air under pressure to the outside of the building. Fixed to the outer end of said exhaust pipe **10** is a wall plate **13** adapted to lie flush against the outer surface of the building wall **11** and cover that area of said surface adjacently surrounding said outer end of said exhaust pipe **10**. This wall plate **13** has a circular aperture **14** therein centrally thereof and it is formed with an outwardly extending flange **15** about the perimeter of said aperture **14** which provides a sleeve. The outer end portion of said exhaust pipe **10** fits snugly within said sleeve **15** and is spot welded thereto, as at **16**. Desirably the edge at the outer end of the exhaust pipe **10** is flush with the outer edge of the sleeve **15**, the said two edges of pipe and sleeve forming a valve seat **17**. However, if either of the edges of said pipe **10** or sleeve **15** is outermost, it alone will form the valve seat **17**.

Struck from the upper portion of the wall plate **13** are a pair of horizontally spaced tongues **18**. Said tongues **18** are tapered and are bent out of the plane of the wall plate **13** to form upright hooks **19**. Each tapered hook **19** has a lower supporting reach **20** upwardly biased outwardly from the wall plate **13**. The edge walls **20***a* of each reach **20** provides upper corners **21** at the upper surface of such reach, said corners converging upwardly and outwardly from said wall plate **13**.

Suspended from the hooks **19** is a check plate A having a body **22***a* which normally hangs flush against the valve seat **17**. The upper portion of said check plate A is bent out of the plane of the body **22***a* into a plane upwardly biased inwardly therefrom to form a hinge member **22***b*. A pair of horizontally spaced circular apertures **23** are punched in the check plate A, the upper portion of each aperture **23** being in the hinge member **22***b*. The spacing of said apertures **23** conforms with the spacings of the hooks **19**, one hook being received in one of said apertures and the other hook being received in the other of said apertures. The supporting reach **20** of each hook **19** is saddled by that portion of the hinge member **22***b* of said check plate A at the locality of its respective aperture **23**. The laterally opposite side wall portions **23***a* of the upper portion of each of said apertures **23** provide lower corners **25** at the lower surface of the hinge member **22***b*. These lower corners **25** of each aperture **23** converge upwardly and inwardly and normally override their respective upper corners **21** of their respective hook supporting reach **20**. However, if said relationship of parts is not precisely attained in the assembling of the check plate A on the hooks **19** of the wall plate **13**, only the one lower corner **25** along the wall at one side of each aperture **23** will ride its respective corner **21** of the supporting reach **20** of its respective hook **19**. In either of said situations, the contact between the hinge member **22***b* and the supporting reaches **20** of the hooks **19** is point contact.

The points of contact between said hinge member **22***b* and the supporting reaches **20** of said hooks **19** lie in a vertical plane, offset inwardly from the plane of the valve seat **17**, with the result that the depending body **22***a* of the check plate A will normally flushly hug said valve seat **17** and thereby preclude the entry of air into the pipe **10** from without the building. The sloping of the supporting reaches **20** of the hooks **19**, saddled by the hinge member **22***b* of the check plate A, tends to maintain said inwardly offset relationship of said points of contact. The converging of the upper corners **21** of said supporting reaches **20** away from the wall plate **13** eliminates any binding between the hinge member **22***b* and said supporting reaches **20** when the check plate A is urged to swing away from the valve seat **17**, as by pressure of air from within the exhaust pipe **10**. Thus, in the absence of air pressure within the exhaust pipe **10**, the check plate A will effectively close said pipe against the entry of air thereinto from the outside of the building, while, with the presence of air pressure within said pipe, said check plate A will freely respond to such pressure and swing away from said valve seat **17** permitting the air under pressure within the pipe to flow outwardly therefrom.

To shelter the check plate A from the elements and likewise the pivotal connection between said check plate and the wall plate **13**, a bottom-opening hood B is mounted on said wall plate. This hood B includes a front wall **26** sloping downwardly and outwardly from the upper portion of the wall plate **13** and further includes end walls **27** between said front wall **26** and said wall plate **13**, each of said walls having an attaching flange **28** thereon lying against said wall plate **13** and spot welded thereto, as at **29**.

An inside finishing plate **30** is slidably mounted on the exhaust pipe **10**, intermediately thereof, and is adapted to overlie the inner surface of the building wall **11** about the hole **31** made therein for the reception of the exhaust pipe **10**. Said finishing plate **30** has a central aperture therein and an annular flange at the perimeter of said aperture forming a sleeve **32** which fits over said pipe **10** slidably, thus allowing said plate **30** to be moved along the pipe **10** into position against the building wall.

The present device, constructed as a unit, is obviously easy to transport and easy to install, even at the hands of unskilled persons. It meets the demand for a delicately operating exhaust back draft check and the demand for low cost in such an article, all of which results from the herein disclosed construction of parts which admit of considerable tolerance in the assembly thereof.

Changes in the specific form of our invention, as herein described, may be made within the scope of what is claimed without departing from the spirit of our invention.

Having described our invention, what we claim as new and desire to protect by Letters Patent is:

1. It is an article of the character described, an exhaust pipe adapted to extend horizontally through the wall of a building from the inside to the outside thereof, an outer wall plate having an aperture therein and an annular flange about said aperture forming a sleeve, the outer end portion of said pipe being received in and secured to said sleeve, the outer edge of one of the said sleeve and pipe forming an annular valve seat, a pair of horizontally spaced tongues issuing from the upper portion of said wall plate, each tongue forming a tapered hook having a supporting reach extending upwardly and outwardly from said wall plate, a check plate including a body having a hinge member at the top thereof in the form of a flange inwardly inclined from said body, said hinge member being formed with a pair of horizontally spaced apertures therein, one aperture for each hook, said hooks being received in their respective apertures, the supporting reach of each hook being saddled by the hinge member at that portion thereof in which the aperture for such hook is formed, said hooks together with said hinge member of said check plate providing a connection between the check plate and outer wall plate swingably suspending the former from the latter, the supporting reach of each hook having edge walls providing upper corners

at the upper surface of such reach converging upwardly and outwardly from the wall plate, each hook receiving aperture having at its upper portion laterally opposite side wall portions providing lower corners at the lower surface of said hinge member converging upwardly and inwardly toward the wall plate and overriding the upper corners of its respective hook supporting reach in point contact therewith in a vertical plane offset inwardly from the plane of said valve seat, the body of said check plate being adapted normally to hang in flush contact with said valve seat preventing the influx of air into the pipe from the outer end thereof, said check plate being adapted freely to swing outwardly away from said valve seat in response to air pressure from within the pipe.

2. In an article of the character described, an exhaust pipe adapted to extend horizontally through the wall of a building from the inside to the outside thereof, an outer wall plate having an aperture therein through which said pipe opens, an annular valve seat encircling said aperture, said valve seat being disposed in a vertical plane spaced outwardly from the outer face of said wall plate, a pair of horizontally spaced hooks issuing from the upper portion of said wall plate, each hook including a tapered supporting reach extending upwardly and outwardly from said outer wall plate, the edge walls of each reach providing upwardly and outwardly converging upper corners at the upper surface of such reach, a check plate including a body and a flange-like hinge member at the top thereof upwardly and inwardly inclined therefrom, sand hinge member having a pair of apertures therein for the reception of said hooks, each aperture having laterally opposed side wall portions at the upper portion thereof providing upwardly and inwardly converging lower corners at the lower surface of the hinge member, one at least of the said lower corners provided by each aperture overriding its respective upper corner of the supporting reach of its respective hook in point contact therewith inwardly of the plane of said valve seat, the body of said check plate being adapted normally to hang in flush contact with said valve seat preventing the influx of air into the pipe from the outer end thereof, said check plate being adapted freely to swing outwardly away from said valve seat in response to air pressure existing within the pipe.

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