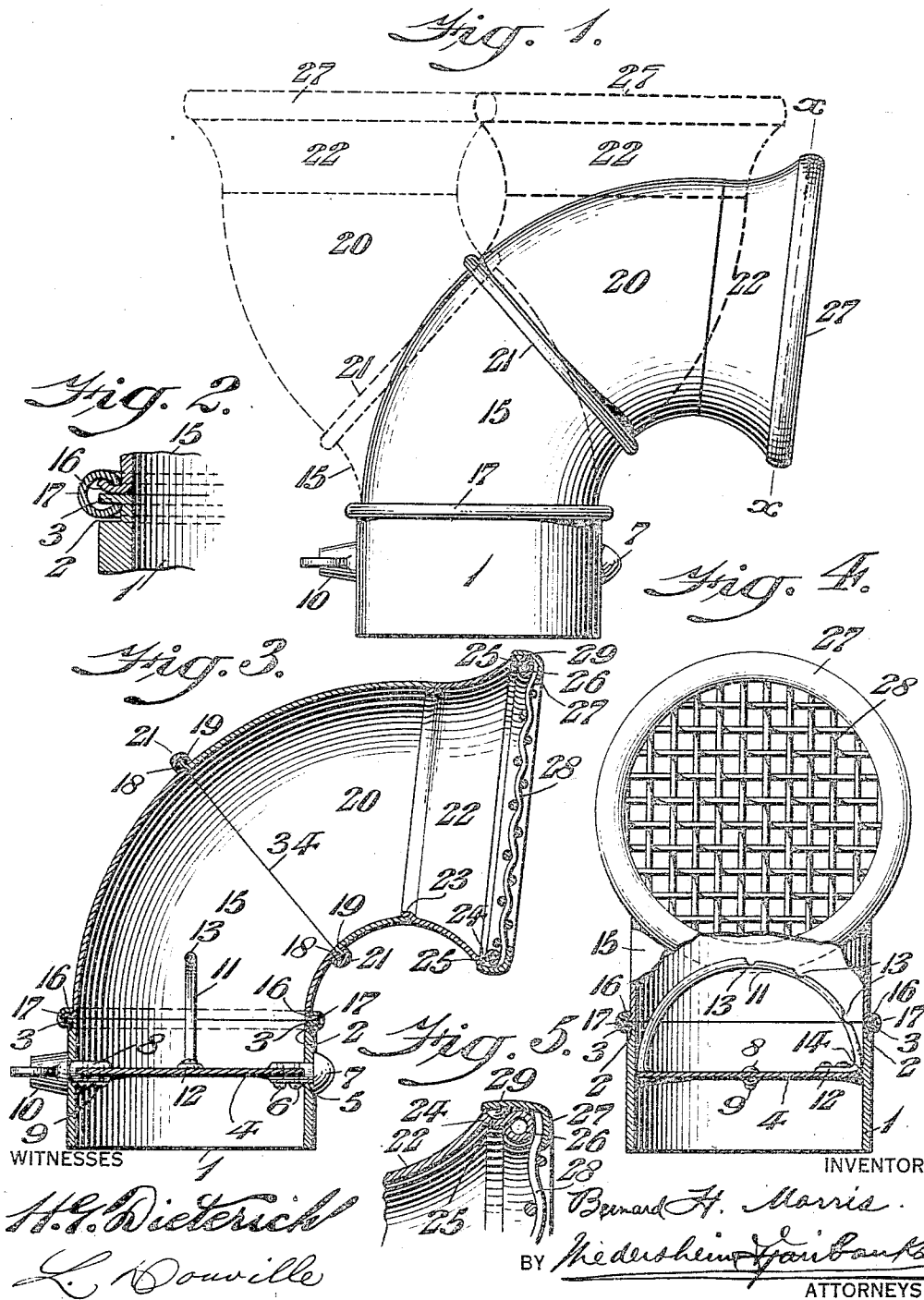


B. H. MORRIS.
 UNIVERSAL TERMINAL FOR VENTILATION PIPES.
 APPLICATION FILED FEB. 26, 1916.

1,243,438.

Patented Oct. 16, 1917.

2 SHEETS—SHEET 1.

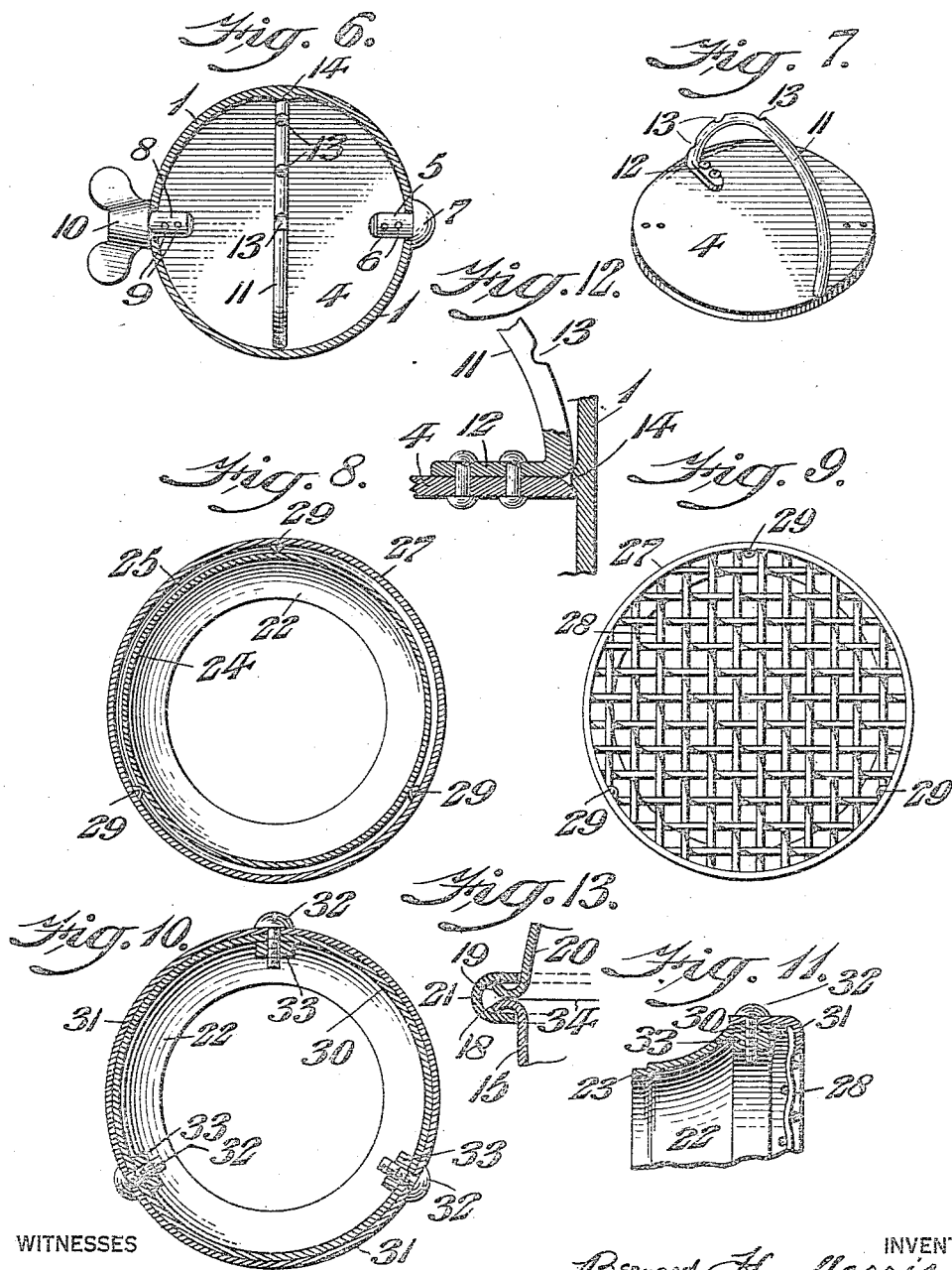


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WITNESSES

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UNIVERSAL TERMINAL FOR VENTILATION-PIPES.

1,243,438.

Specification of Letters Patent.

Patented Oct. 16, 1917.

Application filed February 26, 1916. Serial No. 80,596.

To all whom it may concern:

Be it known that I, BERNARD H. MORRIS, a citizen of the United States, residing at Newport News, in the county of Warwick, State of Virginia, have invented a new and useful Universal Terminal for Ventilation-Pipes, of which the following is a specification.

The object of my invention is to devise a novel terminal for ventilation pipes which is constructed of a plurality of curved sections which are articulated together in such a manner as to direct the air as desired.

It further consists of a novel construction and arrangement of terminal sections and a novel manner of joining them together.

It further consists of a novel construction and arrangement of a cap or ring and a novel manner of removably connecting it with respect to the end section of the terminal.

It further consists of a novel construction and arrangement of a damper and novel means for locking it in its adjusted position.

Other novel features of construction and advantage will hereinafter more clearly appear in the detailed description of my invention.

For the purpose of illustrating my invention, I have shown in the accompanying drawings, certain forms thereof which are typical of the invention and illustrate the principle thereof. It is, however, to be understood that such illustrations are typical only and that the various instrumentalities of which my invention consists can be variously arranged and organized but my invention is not limited to the precise arrangement and organization of these instrumentalities as herein set forth.

Figure 1 represents a side elevation of a universal terminal for ventilator pipes embodying my invention.

Fig. 2 represents a sectional view on an enlarged scale, showing more particularly the manner of forming the joint between juxtaposed sections.

Fig. 3 represents a sectional elevation of Fig. 1.

Fig. 4 represents a front elevation of the terminal, certain portions thereof being broken away for the sake of clearness of illustration.

Fig. 5 represents a sectional view of a portion of Fig. 1, on an enlarged scale.

Fig. 6 represents a sectional plan view of

a terminal section and a damper and its adjuncts.

Fig. 7 represents a perspective view of the damper in detached position.

Fig. 8 represents a section on line $x-x$ of Fig. 1.

Fig. 9 represents a rear elevation of the end cap or closure.

Figs. 10 and 11 represent sectional views of other embodiments of my invention, illustrating a different manner of securing a cap to an end section. Fig. 12 represents a sectional view, on an enlarged scale, of the damper and its locking means. Fig. 13 represents a sectional view, showing more clearly the manner of forming the joints between the two upper, curved, juxtaposed sections.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—

1 designates the base section, which consists of a ring or pipe, the lower end of which is adapted to be connected with the pipe of the ventilating system in any desired or conventional manner. The upper end of the base section 1 is provided with a peripheral groove 2, thereby forming a laterally extending annular flange or shoulder 3. 4 designates a damper comprising a disk, preferably made of sheet metal. The base 1 is apertured to receive a pin 5 which is split to receive the damper 4 to which it is connected by means of fastening devices 6. The pin 5 is provided with a head 7.

8 designates a split pin located diametrically opposite the pin 6 and adapted to receive the damper 4 to which it is connected by means of fastening devices 9. The portion of the pin 8 exterior of the base section 1 is provided with a grasping portion 10 of any desired contour in order to provide for the manual manipulation of the damper 4.

11 designates a bail, one end of which is fixed to the damper 4 in any desired manner and the opposite end is laterally deflected and secured to the damper 4 by means of fastening devices 12. The bail 11 is of semi-circular shape or has a portion that describes a part of a circle, as will be understood by reference to the drawing, and is provided in said portion with a plurality of notches 13 which are adapted to interlock with a lug 14 carried by the inner periphery of the base section 1 in order to lock the

damper in its adjusted position, it being understood that these notches 13 may be located at any desired point, on the bail or locking member 11. The lug 14 also serves to define the closed position of the damper 4, being adapted to engage the recess between the inwardly deflected terminal of the bail 11 and the damper 4, as will be understood from Figs. 4 and 12.

15 15 designates a curved pipe section, the lower end of which is provided with an outwardly extending flange or shoulder 16, which is juxtaposed to the flange 3 of the section 1, and the sections 1 and 15 are maintained in assembled position by means of a ring 17, which for purpose of illustration I have shown as being U-shaped in cross section. The upper end of the curved section 15 is provided with a laterally extending flange 18 and is juxtaposed to a laterally extending flange 19 of the upper curved section 20. The flanges 18 and 19 are surrounded by a ring 21, which is preferably U-shaped in cross-section. The curved section 20 has connected therewith by brazing or any other desired manner, the outer ring 22, the rear portion of which is inwardly deflected, as at 23, so that when the parts are connected, the outer surfaces of the portions 22 and 20 of the terminal will be flush with each other. The ring 22 flares outwardly and terminates in a laterally extending flange 24 which is inwardly deflected at its central portion to form an annular circumferential groove 25, and at its outer end, the ring 22 is deflected upon itself to form a bead 26 which serves as a reinforcement.

27 designates the end piece of the terminal which consists of a flanged ring, the opening of which is covered by wire mesh 28 secured thereto in any desired manner, and in practice, it is preferably soldered thereto. The flanges of the ring 27 are preferably rounded, and the rearwardly extending flange is provided with a desired number of inwardly extending lugs 29 which are adapted to be seated in the circumferential groove 25. The arrangement is such that the end cap or closure 27 may be readily removed from or assembled with respect to the terminal, it being seen that in order to secure the same in position, it is simply necessary in assembling to forcibly spring the lugs 29 over the bead 26 to position them in the groove 25. To remove the cap 27, the lugs 29 are sprung out of the groove 25.

In terminals as heretofore constructed, the sections have been joined together by a lapped joint, and if this joint corrodes, as often occurs in practice, the joint is immovable. In accordance with my present invention, I provide two opposed flanges, one at least of which is convex to the other at each joint, and the beforementioned U-shaped ring 17 or 21. The said ring serves

to exclude moisture from the opposed portions of the flanges, but if corrosion occurs between the flanges the convexity of at least one flange will permit of one section being turned on the other when a little power is applied to one of the sections.

In the embodiment seen in Figs. 10 and 11, I have shown another manner of securing the end piece to the terminal, and in this embodiment, the end portion 22 of the terminal is provided with a laterally extending flange 30 to which a flanged ring 31 is connected by means of fastening devices 32, which are illustrated as consisting of screws passing through the ring or end closure 31 and through the flange 30 and into engagement with the nuts 33 which are fixed to the inner periphery of the flange 30 in any desired manner, as for example, by soldering.

The juxtaposed ends of the sections 15 and 20 are cut at an angle to their longitudinal axes, so that a diagonally extending joint 34 is formed (see Fig. 3), whereby the opening in the end piece 27 may be presented in any desired direction, it being understood that the section 15 is rotatable on the section 1, so that by these two adjustments, the opening in the outer end of the terminal may be presented in any desired direction.

In accordance with my present invention, the terminal may be constructed from a minimum number of sections and still provide the necessary adjustment.

It will be apparent from the foregoing that the operative juxtaposed parts of my novel ventilator are composed of two of the curved sections 15 and 20, which can be readily adjusted with respect to each other or to the base section 1, as will be understood from Fig. 1, so that a great variety of adjustments is provided for either the outer member 20 or the intermediate curved member 15, and by reason of the construction of the joint between the members 15 and 1, as will be understood from Fig. 2, and the construction of the joint between the members 15 and 20, as will be understood from Fig. 13, the sections or members 15 and 20 can be readily adjusted either with respect to each other or with respect to the base member 1, the construction of the joint being such that friction will be reduced to a minimum, as will be understood from Figs. 2 and 3, it being further apparent that there is no liability of corrosion to such an extent as to prohibit or make difficult the desired adjustment of either of the sections 15 and 20.

By means of the novel construction seen in Fig. 3, the frame or ring 27 carrying the wire mesh or grating can be readily sprung into position, as will be understood from Fig. 5, and will be securely held from dislodgment under ordinary conditions but at

the same time can be forcibly removed, when desired. I preferably make the locking device comprising the arc-shaped bail 11, having the notches 13 therein, of such construction that the outer right-hand portion thereof seen in Fig. 4, is of a little less diameter or of a shorter radius than the left-hand portion thereof, as seen in said figure, so as to facilitate the ready pressing of the said right hand portion 4 past the shoulder 14 when it is desired to lock the damper in either of its intermediate adjusted positions, said damper being readily manipulated by the application of the thumb and finger to the wing nut 10, as will be apparent.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The combination of tubular sections having lateral outwardly directed flanges at their meeting ends; one of said flanges having a surface, convex in cross-section, opposed to the surface of the other flange, whereby the frictional contact between the flanges is reduced to facilitate turning of one section on the other, and an annular joining band surrounding and straddling the said flanges of the sections.

2. The combination of tubular sections having lateral outwardly-directed flanges at their meeting ends; one of said flanges being

concavo-convex in cross-section and arranged to oppose a small surface, convex in cross-section, to the surface of the other flange, whereby the frictional contact between the flanges is reduced to facilitate turning of one section on the other, and an annular joining band, of U-form in cross-section, surrounding and straddling the said flanges, the flanges and band being constructed and relatively arranged to oppose small surfaces to each other.

3. The combination of tubular sections having lateral outwardly-directed flanges at their meeting ends; one of said flanges being concavo-convex in cross-section and arranged to oppose a small surface, convex in cross-section, to the surface of the other flange, whereby the frictional contact between the flanges is reduced to facilitate turning of one section on the other, and an annular joining band of U-form in cross-section, surrounding and straddling the said flanges, the flanges and band being constructed and relatively arranged to oppose edges of one to surfaces of the other, whereby frictional contact between the flanges and band is reduced.

BERNARD H. MORRIS.

Witnesses:

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GEO. A. PARKER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."