G. C. HESTER.

STORE FRONT CONSTRUCTION.

APPLICATION FILED FEB. 21, 1914.

**1,291,511.**

Patented Jan. 14, 1919.

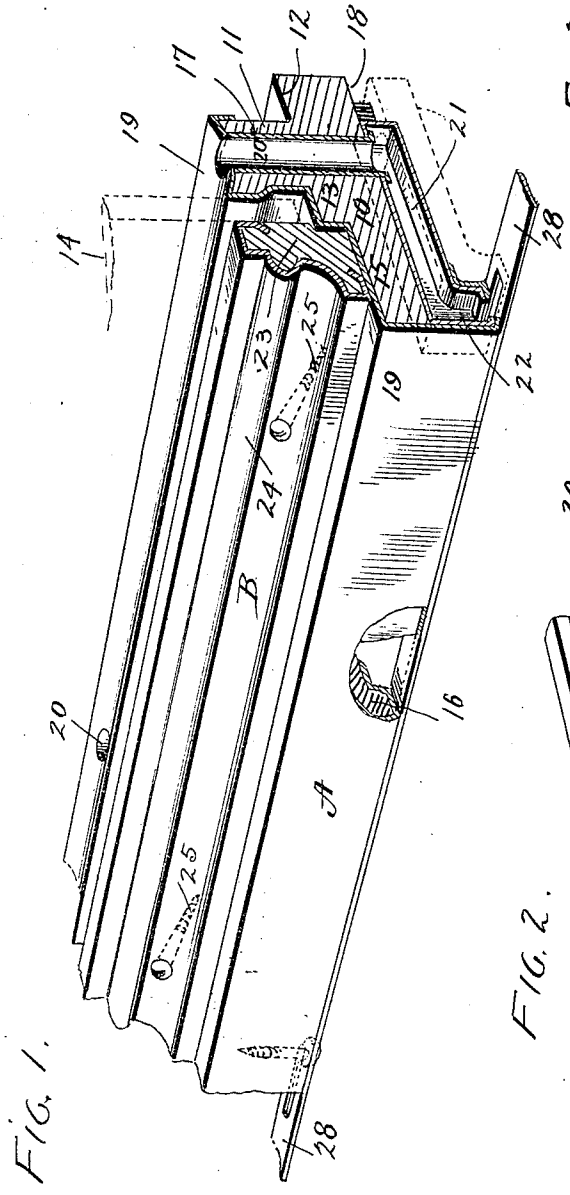


FIG. 1.

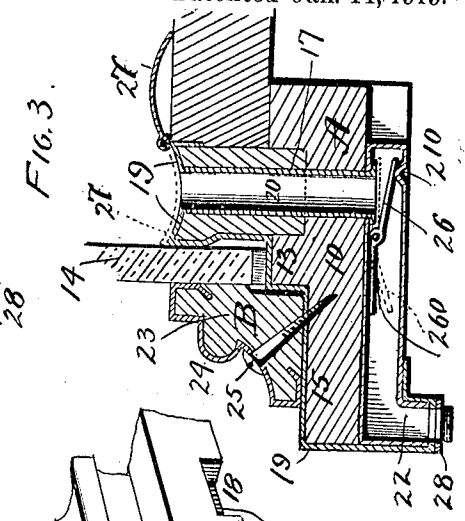


FIG. 3.

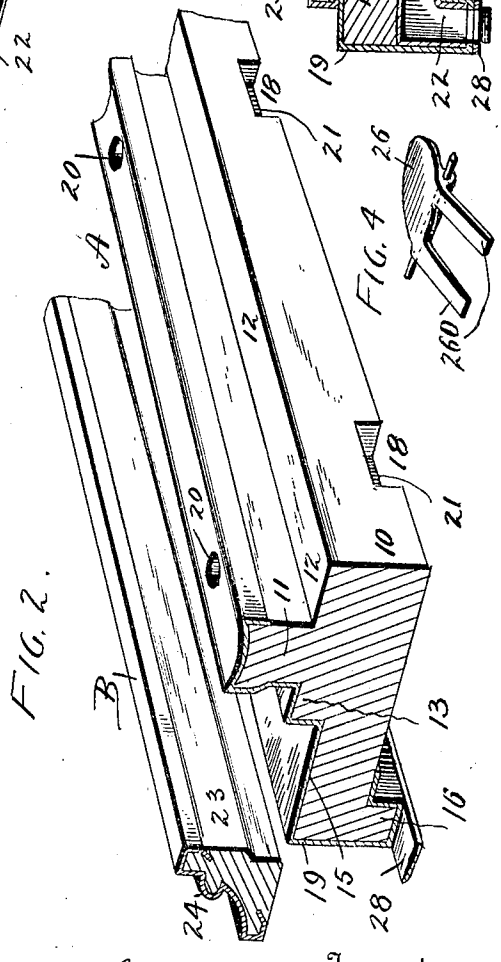


FIG. 2.



FIG. 4.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## STORE-FRONT CONSTRUCTION.

1,291,511. Specification of Letters Patent. Patented Jan. 14, 1919.

Application filed February 21, 1914. Serial No. 820,284.

*To all whom it may concern:*

Be it known that I, GEORGE C. HESTER, of Chicago, in the county of Cook, and in the State of Illinois, have invented a certain new and useful Improvement in Store-Front Construction, and do hereby declare that the following is a full, clear, and exact description thereof.

Sash of sheet metal, such, for example, as copper, is largely used for store front construction where large sheets of plate glass are used, the sheet metal being desirable because of the attractive finish to the window it presents; its inexpensiveness of manufacture and the possibility of the application of a metal surface to the glass without the intervention of putty between the contiguous surfaces of glass and sash. There are certain practical objections to sheet metal sash, such as is now used, some of which will be mentioned. The members of the sash as sold by the manufacturer and delivered to the job are mere shells of sheet metal and these members may be of considerable length. Obviously, in the handling of these shells they may be bent, or dented so that the appearance will be marred. Again, the work of installation at the job is done by carpenters and the woodwork at the points where the sash is to be mounted must be made to order, that is suited for the particular job, so that the work of installation for that reason is costly and unless it is done properly, or if it is done by unskilled and inexperienced workmen, the sash and the woodwork may not be properly adapted to each other, and hence, the mounting will be defective. Again, an all metal setting for plate glass is charged a higher rate of insurance than a setting of wood because of the greater danger of breakage. It is important, for reasons well known to those skilled in the art, to provide for the drainage of water through the sash and for ventilation. The object of my invention is to provide a store front construction which will possess all the advantages of the sheet metal finish, but without its draw backs and having provision for drainage and ventilation, and to this end my invention consists in the store front constructed substantially as hereinafter specificed and claimed.

In the accompanying drawings—

Figure 1 is a perspective view of a portion of a sash bar embodying my invention;

Fig. 2 a similar view showing the two members for supporting and clamping the glass separated from each other;

Fig. 3 is a cross section;

Fig. 4 a detail perspective view of the automatic ventilator controlling valve.

In the main, or principally, my sash comprises two members between which the margin, or edge of the plate of glass is clamped, one of which members, especially when considering the case of the bottom of the glass, supports the latter at its bottom edge and at the inner side of the glass provides a gutter to receive water of condensation, or wash water flowing down the inner side of the glass and from which gutter it is discharged through suitable passages or openings to the outside of the building, these passages or openings also serving as air passages for ventilation. Each of these members consists of a core of wood, or metal, but preferably wood (although I do not restrict myself to the broad aspect of the case to wood) and a sheet metal covering, or facing for the core which covers and conceals all the surfaces that would be exposed to view so that the appearance is that of metal construction, and so that the surfaces of the core, which otherwise water might have access to, will be protected and danger of rotting or decay of the wood be prevented from the action of the water, if wood be the core, or rusting be prevented if the core be of steel or iron. One of these members is designated A in the drawings and the other is designated B. I shall describe these members for convenience as made of cores of wood. The member A, for convenience, I shall term the sill member, and it consists of a strip 10 having intermediate its front and back edges on its upper side a vertical rib 11 of a length coextensive with the length of the strip, which, accordingly, pro-

vides at the rear side of the strip, or the inner side of the window, a ledge 12 for the reception of the ends or edges of the strips of wood forming the window floor; and toward the front side of the window provides a ledge 13 above which the edge of the plate of glass 14 is situated, considering the case of the bottom of the glass. In a plane lower than the edge of the ledge 13 and on the outside of the window, a ledge 15 is provided; and preferably on the underside of the sill member at the front is a bead or rib 16. The upper side of the rib 11 on the top of the sill is dished or grooved so that such upper surface is depressed and depressed preferably between the front and rear edges of the rib, and at intervals along the sill there are vertical holes 17 bored from the top of the rib clear through to the bottom of the sill member where they, respectively, open into slots or channels 18 which are cut in the underside of the sill and extend from front to rear thereof. A covering 19, or a shell of sheet metal, preferably, but not necessarily, copper, is applied to the top surface of the rib 11, to the front surface thereof, to the ledge 13 in front of the rib 11 passing over the top and front surfaces of said ledge, to the top surface of the ledge 15, to the front face of the sill to the bottom of the rib or bead 16 on the underside thereof, and to the rear side of said bead or rib, a continuous sheet of copper being extended over all these surfaces and one edge being carried in the form of a lip a short distance down the inner side of the rib 11 and the other edge being carried in the form of a lip a short distance on the underside of the sill from the rib or bead 16, and this copper covering, or shell is inexpensively and accurately applied to and made to conform to the surfaces of the sill by the action of drawing dies which will be readily understood, the core of the sill together with the copper being passed through the dies. Lining each vertical hole through the sill is a tube 20 of sheet metal and a sheet metal conduit, or pipe 21 is placed in each of the slots 18 in the underside of the sill, said pipe or conduit having at the front a downward extension, or prolongation 22 that passes through a hole in the bead or rib 16 on the underside of the sill so that a complete metal lined passage extends from the gutter which is formed at the top of the sill rib 11 through the sill to the bottom thereof, to the outside of the window so that water may pass freely from the gutter to the outside of the window and so that air may also pass through the sill for ventilation. The outer end of the passage thus provided being in the underside of the sill is invisible and obviously affords no opportunity for the lodgment of dust or other substances which would tend to clog up the outlet end of the opening. It will be seen that all surfaces which would be exposed to view are covered by sheet metal and that all surfaces to which water might have access are covered by sheet metal.

The member B engages the outer surface of the glass and clamps or confines the glass against the outer face of the metal covered rib 11 and said outer member B consists of a core 23 having a flat face toward the outer side of the glass and a flat face toward the outer sill ledge 15, and a covering or shell 24 of sheet metal, such as copper, which conforms to and covers the entire outer surfaces of the core and carried at one edge in the form of a lip a short distance over the side toward the glass and at the other edge a short distance over the side toward the sill, these two lips being seated in rabbets in the core and their edges carried inward into slits or kerfs in the core for the purpose of a secure union of the shell, or covering and the core. The seating of the lips in rabbets in the core is desirable, especially in the case of the side of the strip toward the glass in that a wooden surface (if the core be of wood) bears against the glass and thus the danger of breakage is diminished. The member A is secured in position and made to clamp or bind against the glass by wood screws 25 that pass from the outside downward and inward therethrough at an angle into the sill, a construction that is not only efficient, but simple and inexpensive since no nut or screw socket of metal is necessary, such as is required in some constructions. It will be seen that in the case of the member B all exposed surfaces are metal covered. Under wind pressures there is a slight rocking of a plate of glass. To allow that action to take place without breakage, I preferably provide on the side of the metal covered rib 11 toward the glass, an offset or projection at the top of said rib which forms a bearing, or fulcrum, on which the glass can rock, a space thus provided contiguous to the bottom edge of the glass permitting the unobstructed inward movement of the edge portion of the glass and outward movement being possible by reason of the inherent resiliency of the outer member B which causes it to yield under the pressure which the glass imposes and causes it to follow up the glass when the pressure is relieved, this action of the member B being possible because of the location of the securing screws 25.

If desired, the glass may be rested at its bottom edge upon wooden, or other setting blocks.

It may sometimes be desirable to close the water and air passages to prevent the inward passage of dust into the window, or for other reasons, and I provide means for doing this

automatically and also by hand. It may be done automatically by the provision of a balanced butterfly valve 26 pivoted contiguous to the lower end of each metal lined hole 20 through the sill, which, by the action of wind that would carry dust in any volume through the passage would automatically close and as soon as the wind pressure should fall, would open. The valve 26 is balanced by a tail 260 which may be bifurcated, as shown in Fig. 4, so as to interfere as little as possible with the passage of water, and also to make the area it exposes to the wind sufficiently less than the area of the underside of the valve itself as not to interfere with the action of the wind in closing the valve. The valve itself is just large enough to close the hole so that, when open, it will offer a minimum obstruction to the passage of water, and when open it is in an inclined position, as seen in Fig. 3, that will readily shed the water. It is nominally opened and left open by its own gravity supplemented by the weight of water upon its upper side. When open, it rests upon a boss or teat 210 in the bottom of the conduit 21 so as to still further diminish the obstruction to the outflow of water. Of course, I do not limit myself to any particular location of this valve; nor to any particular form of the automatic ventilator control, which it constitutes.

For closing the ventilator openings by hand, from the inside, I pivot to the inner edge of the gutter a strip 27 curved in cross section to correspond with the curvature of the gutter, which when in the position shown in dotted lines in Fig. 3, fits the gutter and tightly closes the openings, and when in the position shown in full lines, is completely out of the gutter and overlies the adjacent portion of the wood floor and thereby extends the metal protection of the wooden portion of the structure from water flowing or splashing from the window. This hinged cover is easy to open, even though the surface in contact with the gutter should tend to stick. As shown in Fig. 1, my invention embodies a construction not using either the automatic ventilator control; nor said inside hand ventilator control. For closing the passages by hand a slide 28 having slots or openings corresponding with the outlets of said passages, may be applied at the bottom of the rib or bead 16 on the underside of the sill, and by a simple sliding movement made to close or open said passage. I thus provide for controlling ventilation in the most complete and convenient manner.

It is obvious that my sash is applicable to the side jambs and top, or transom, as well as at the bottom, and identically the same construction without any change whatever may be employed at the sides and tops as well as at the bottom but if preferred, where the sash is to be used at the sides and top, the openings or passages for drainage and ventilation may be omitted; and it is also apparent that either or both of the devices for automatically closing the passages may be omitted.

The core of the sill member may be made by mill work of a single piece of wood, or other material, or if preferred the rib 11 may be made separate, a groove or channel of proper width and depth being provided in the upper side of the sill to receive it. (See Fig. 3). It will be understood that the tubes which form the linings for the water and air passages are preferably soldered to the copper gutter lining, or covering.

It will be seen that by my invention I provide as a complete article of manufacture, ready to be delivered on the job, the necessary members of the sash including the wood work to be used therewith, thus simplifying the operation of installation at the job, saving the extra cost of carpenter work and making it certain that the glass-engaging members shall be properly installed even though the workmen be unskilled, or inexperienced. Danger of injury to the sash by bending or indentation in handling, such as exists in the case of the mere shells heretofore used, is avoided, and I economize in the use of sheet metal, which, of course, in the case of copper particularly, is important because all of the sheet metal being backed and supported by a core it can be made much thinner than is possible when no core is used.

Of course, changes in construction for the embodiment of my invention may be made which will involve no departure from the principle of the invention.

Having thus described my invention what I claim is—

1. As an improvement in store front construction, a sash member comprising an inner glass engaging element having on its upper side a rib whose outer face engages the side of the glass, and having forward of such rib a support for the bottom of the glass, tube-lined openings extending downward through the rib from the top thereof, and wholly within the rib, the top being depressed to form a gutter leading to said openings, and said openings being in communication with the outside of the store front, and means for clamping the glass against said projection.

2. As an improvement in store front construction, a sash member comprising an inner glass engaging element having on its upper side a rib whose outer face engages the side of the glass, and having forward of such rib a support for the bottom of the glass, tube-lined openings extending downward through the rib from the top thereof,

and wholly within the rib, the top being depressed where the upper ends of said openings are situated, means to establish communication between said openings and the outside of the store front, and means for clamping the glass against said rib comprising a metal-covered core of yielding material, the portion of the core toward the glass being only partially covered with metal, and its uncovered surface lying in contact with the glass.

In testimony that I claim the foregoing I have hereunto set my hand.

GEORGE C. HESTER.

Witnesses:
RACHEL LADENSOHN,
O. F. GEETING.

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