

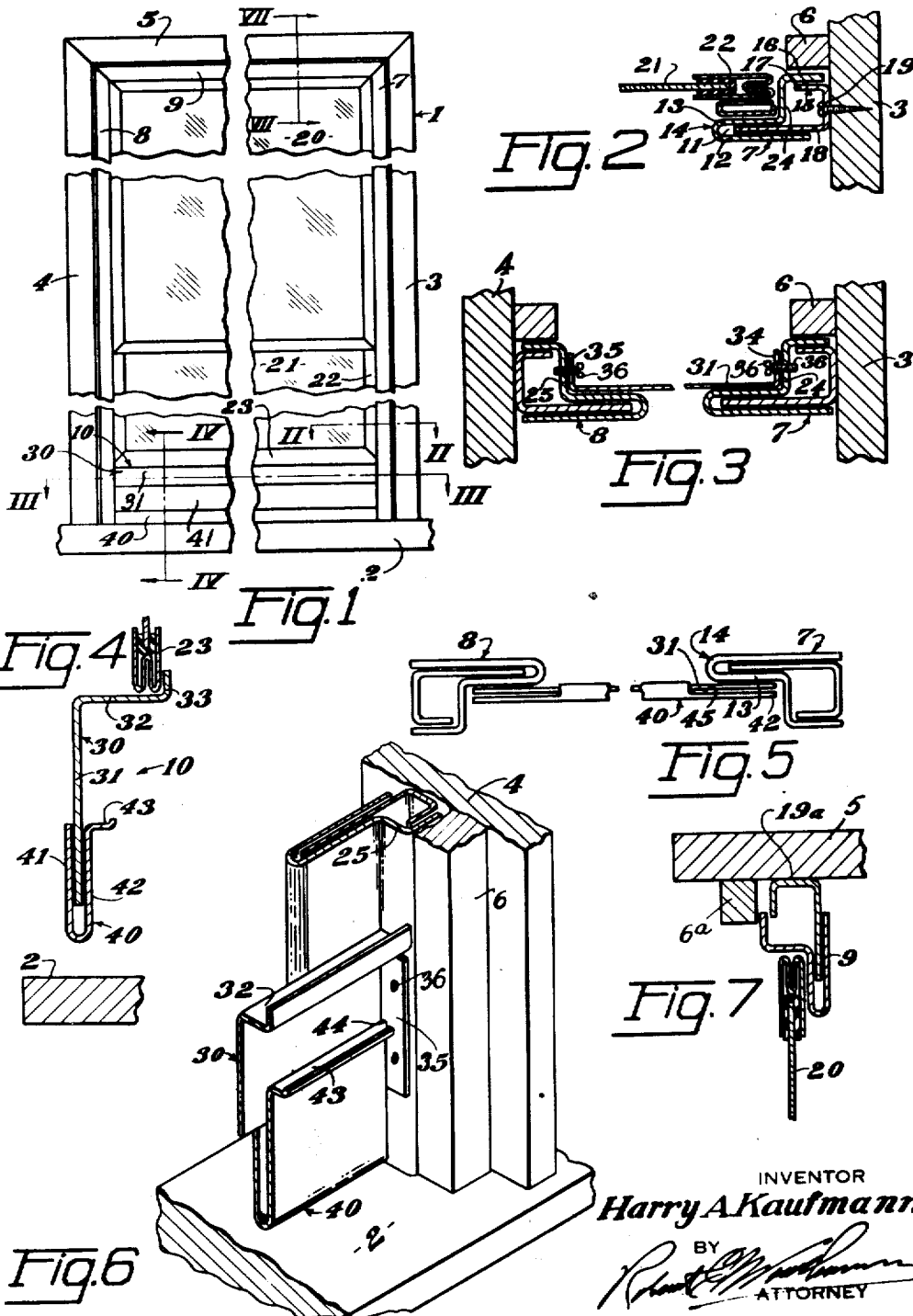
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2,435,008

STORM WINDOW VENTILATING AND CLEANOUT OPENING

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STORM WINDOW VENTILATING AND
CLEANOUT OPENING

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10 Claims. (Cl. 98—99)

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This invention relates to an improvement in storm windows and particularly provides means by which a wide range of longitudinal adjustability is made available at the time of installing the window, a ventilating and cleanout opening is provided, and which also secures other advantages.

In the construction of storm windows, particularly those made with metallic sash and mounting frames, there has frequently been encountered difficulty and inconvenience in supplying ventilation through a storm window and in providing means by which dust and dirt accumulating on the window sill between the main windows and the storm windows may be swept out of doors. While these problems have been before recognized and a number of devices suggested for solving them, they have always presented a certain amount of complexity and the proposed solutions have usually disclosed a structure involving considerable expense to fabricate or inconvenience to use.

A further problem arising in the construction of storm windows has been to provide a window which could be readily fitted to window openings in a building with a minimum of individual attention to the dimensions and shape of a particular window opening. It is well known that the window openings of most buildings, particularly those window openings supplied with wooden frames, are made to only approximate dimensions so that normally in the hanging of windows considerable adjustment must be made in each individual case. It is accordingly desirable to provide means by which adjustment may be made around the entire periphery of the window opening for providing such adjustment.

Means to this end have been disclosed in my Patent No. 2,222,273, but it has been found desirable to associate such means with ventilating and cleanout means as above outlined. Further, it has been desirable to provide substantially more vertical adjustability than is available in the structure disclosed in the above designated patent.

Accordingly, a major object of my invention is to provide storm window frame construction applicable, among other types, to wooden window frames providing a wide range of longitudinal adjustability which can be readily utilized at the time of the installation of the window.

A further object of my invention is to provide storm window construction as aforesaid providing, together with the features aforesaid, means

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for ready sill level cleanout for the space between the storm window and the main window.

A further object of my invention is to provide a storm window as aforesaid having, in addition to the features named foregoing, means for providing ventilation through the storm windows without the necessity of opening a storm window sash.

Other objects and purposes of my invention will be apparent to those persons acquainted with articles of this type upon reading of the following disclosure and examination of the accompanying drawing.

In the drawing:

Figure 1 is a broken view of my improved window applied to a building having a wooden window frame and viewed from the outside of the building.

Figure 2 is a section taken on the line II—II of Figure 1.

Figure 3 is a section taken on the line III—III of Figure 1.

Figure 4 is a section taken on the line IV—IV of Figure 1.

Figure 5 is a broken end bottom view of the side frame and bottom closing structure.

Figure 6 is an inside oblique view of the side frame and bottom closure construction taken from the inside of the window and looking at the side frame element appearing on the left hand side of Figure 1.

Figure 7 is a section taken on the line VII—VII of Figure 1.

In providing means meeting the objects and purposes aforesaid I have provided a structure involving an expansible frame of the type disclosed in my Patent No. 2,292,273 at a top and both sides of the window opening, wherein each of the said side frames extends to the bottom of the window aperture and terminates at the sill thereof. A fixed bottom closure of relatively large vertical extent and sufficient horizontal extent to constitute a sill for the lower periphery of the adjacent storm window is placed across the bottom of the storm window frame close to, but somewhat spaced from, the anticipated position of the sill of the main window with respect to the storm window frame. A movable bottom closure member is then placed in adjustable relationship to a vertical portion of the just mentioned fixed bottom closure member so that it may be adjusted vertically as needed to contact the sill itself. Thus with the vertical side frame members being made as long as the window

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aperture is reasonably expected to be, and said bottom closure members in their extended position being of sufficient vertical extent to equal the corresponding extent of said side frame members, the window frame may be placed within a window opening and with a considerable degree of freedom the said side frame members may be cut at the time and place of installation to fit that particular window opening. When such is done the said movable lower closure member will be adjusted accordingly. In this way with the adjustability provided by the lateral expansion on both sides of said frame and the vertical adjustability provided by both the top expansible frame and the bottom structure just described, the window frame may be made to fit a considerable range of window openings.

Referring now to the drawings in more detail there is shown a window frame 1 having a sill 2, side frame members 3 and 4 and a top frame member 5. Placed in the usual position outwardly of the main windows are the blind stops 6 (Fig. 3) and 6a (Fig. 7). The storm window is placed as shown immediately outwardly of the blind stop and against the window frame members defining the window aperture.

The storm window frame comprises a pair of side members 7 and 8, a top transverse member 9 and a lower transverse assembly 10, elsewhere sometimes referred to as "lower closure members."

The general construction of these frame parts and the window or screen panels associated therewith are as is disclosed in detail in my said Patent No. 2,292,273 to which reference is hereby made. However, said parts may for convenience be here briefly described as follows.

The side frame member 7 (Figure 2) comprises a piece of sheet material, such as steel, zinc or aluminum, rolled into substantially a chair shape as illustrated providing an opening 11 between the outward sheet 12 and the inward sheet 13 of the flange 14 of said frame member. Engaged with said frame member is an expansible sealing strip 15 contacting in sealing relationship the innermost sheet 16 of the frame member 12 by its inward flange 17 and engaging the outermost sheet 12 of said side frame by its flange 18, the extended end of which enters into and at least partially fills the said space 11. The bight 19 of the sealing strip 15 engages the surface of the frame member 3 and is in any convenient manner, as by screws, fastened in sealing relationship thereto. Thus the frame member 7 may move somewhat toward or away from the frame member 3 as required according to the relationship between the storm window panels and the actual dimensions of the window aperture defined by the window frame 1, without breaking the weather seal existing between said frame member 7 and the sealing strip 15.

The upper transverse frame member 9 (Figure 7) and the other vertical frame member 8 are constructed substantially the same as the vertical frame member 7 above described and are affixed to the adjacent parts of the main frame 1 in the same manner.

Window panels 20 and 21, or screen panels as the case may be, are mounted within suitable sash members, such as that indicated at 22, and are held in any convenient manner within the aperture defined by the storm window frame members above described. My said Patent No. 2,292,273 describing one completely satisfactory manner for holding these panels in operative

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position, reference is hereby made thereto for further detailing thereof.

At the bottom of said window frame there is provided a transverse member 10 comprising a fixed closure member 30 having a body part sheet 31, a substantially horizontal sill sheet 32, the inward edge of which is turned upwardly to provide a weather guard 33. This member extends the full distance across the window and has flanges 34 and 35 at each of its ends engaging the storm frame opening defining portions 24 and 25 of each frame member 7 and 8. Any suitable means, as screws 36, may be utilized to hold said flanges 34 and 35 rigidly with respect to the adjacent frame members.

The storm window sill 32 extends the full width of the window and closely abuts the aperture defining sheets 24 and 25 of the respective side frames (Figure 6).

A movable closure member 40 comprises a single sheet of material bent in substantially a U-shape to engage opposite sides of the body part sheet 31 to hold itself in any adjusted position by frictional contact therewith. Said movable member comprises an outer sheet 41, an inner sheet 42 the top of which is bent inwardly to form a ledge 43. This ledge is utilized for manual manipulation of the movable closure 40 up or down as desired. As best shown in Figure 6 said movable closure 40 extends across the window opening the full width thereof and closely abuts the flanges 34 and 35. The outer ends of the ledge 43 are preferably beveled somewhat as shown at 44 to provide ample clearance between said ledge and the screws holding the flanges against the adjacent frame elements.

Referring to Figure 5 it is seen that the body part sheet 31 of the fixed closure member 30 lies tightly against the inner sheet 13 of the flange 14 of the vertical frame member 7. Thus while the movable closure member 40 extends the full width of the storm window aperture it does so only by its inner sheet 42, its outer sheet 41 (Fig. 4) being cut off at a point closely adjacent to the end of the flange 14, as shown by the cut-out indicated at 45, in order to permit said movable closure member 40 to clear said flange.

It will be understood that wherein the above described construction has made express reference to only one side of the window, the construction so described and illustrated is repeated on the other side.

The lower sash 23 (Figure 4) sealingly engages the outer surface of the weather guard 33 to prevent the passage of moisture or air. Said weather guard being on the inward side of the sill any moisture in the region will tend to return to the outside.

In assembling and dimensioning the various parts of this storm window, the fixed closure member 30 is affixed to the respective vertical side members 7 and 8 at a substantial distance from their lowermost ends (Figure 6). This distance is equal to whatever is provided as a maximum extension of the movable member 40 while permitting it to remain in operative relationship with the fixed closure member 30. As an illustrative but not a limiting example, if the movable closure member 40 is made to have one and one-half inch of overall vertical dimension so that it can extend approximately one and one-quarter inches below the bottom edge of the sheet 31 without impairing its weather sealing engagement with said sheet 31, then the vertical frame members 7 and 8 will extend beyond the

lowermost edge of the fixed closure member 30 approximately one and one-quarter inches.

The vertical frame members 7 and 8 are dimensioned with respect to the size of the window apertures into which they are to be placed so that with the upper sealing strip 19a fully extended, as shown in Figure 7, the lowermost ends of the side frame members will fit into the largest window aperture intended to be closed by their particular size of storm window. Thus as actual installation conditions vary from this maximum size, compensation can first be made by receiving the sealing strip 19a more closely within the upper frame member 9. When the flexibility permitted by this, which in a frequent but by no means the only possible construction is approximately one-half inch, is fully utilized, then it is a simple matter for the installation workman in dealing with a still shorter window aperture merely to cut off the lower ends of the vertical frame members 7 and 8 sufficiently to enable them to contact snugly the upper surface of the window sill 2, and to move the movable closure member 40 up sufficiently to fit. Thus utilizing the illustrative but not limiting dimension mentioned above, with one-half inch of adjustment available in the top frame member 9 and one and one-quarter inch of adjustment available at the bottom, there is provided one and one-half inch of vertical adjustability for the size of the storm window frame and still leaving one-quarter of an inch of sweepout and ventilating opening available at the lower edge of the storm window closure means. Other magnitudes of adjustment may be readily provided.

Lateral adjustment by manipulation of the side sealing strip 19 and its counterpart on the other side of the window are effected as described in my above named patent.

It should be understood that the particular structure herein illustrated and described is for illustrative purposes only and is by no means limiting. For example the sealing strip 19 may without changing the hereindisclosed invention be replaced by a solid piece of wood, metal or plastic, of substantially rectangular cross-section as illustrated in my Patent No. 2,291,726, without in any way changing the scope or application of the invention hereindisclosed. Other modifications and variations will be evident to persons acquainted with articles of this type so that the interpretation of the claims should be limited only as required by the express language thereof.

I claim:

1. In storm window construction a panel receiving frame comprising: a pair of vertical side frame members and a top transverse frame member; a bottom transverse frame member having one part fixed to said side frame members and another part movably embracing a portion of said one part, the lowermost extremity of said fixed member being spaced upwardly from the lowermost extent of said side frame members.

2. In a panel receiving frame construction for a storm window associated with a main window frame and having a pair of vertical side members, a top transverse member and a bottom transverse member, the improvement in said last-named member comprising: a fixed member held at each of its ends to said vertical side members and comprising a single closure sheet in the general plane of the window and a single sill sheet substantially perpendicular to the general plane of the window; a movable part extending across the full width of the window opening and comprising a member of

substantially U-shaped cross-section slidably and sealingly embracing the lower part of said closure sheet.

3. In a panel receiving frame construction for a storm window associated with a main window frame and having a pair of vertical side members, a top transverse member and a bottom transverse member, the improvement in said last-named member comprising: a fixed member affixed at each of its ends to their respectively adjacent frame members and comprising a closure sheet held in substantially the general plane of the window, and a sill sheet held substantially perpendicular to the general plane of the window and a sealing flange extending upwardly from the inward end of the sill sheet in substantially the general plane of the window; a movable member sealingly and slidably embracing the lower part of said fixed member and selectively closing at least a part of the area defined by said side members, said fixed member and the sill of the window frame.

4. In a panel receiving frame construction for a storm window associated with a main window frame and having a pair of vertical side members, a top transverse member and a bottom transverse member, the improvement in said last-named member comprising: a fixed closure member held at each of its ends to their respectively adjacent frame members and comprising a closure sheet in substantially the general plane of the window, and a sill sheet substantially perpendicular to the general plane of the window and a sealing flange extending upwardly from the inward end of the sill sheet in substantially the general plane of the window; a movable closure member of substantially U-shaped cross-section slidably and sealingly engaging the lower part of the closure sheet of said fixed closure member and having an inward edge intumed to provide means for manual grasping of said movable closure member for manipulation thereof.

5. In window construction including a panel receiving frame wherein the frame elements have an aperture defining surface and a sealing flange extending toward the center of the window aperture, the improvement in a bottom transverse frame member comprising: a fixed closure member held at each of its ends to the respectively adjacent frame members and comprising an aperture closing sheet in substantially the general plane of the window, a sill sheet substantially perpendicular to the general plane of the window and a sealing flange extending upwardly from the inward end of the sill sheet in substantially the general plane of the window; a movable closure member of substantially U-shaped cross-section slidably and sealingly engaging the lower part of the aperture closing sheet of said fixed closure member and having an inward edge intumed to provide means for manual grasping of said movable member for manipulation thereof; said aperture closing sheet engaging the aperture defining surface of the side frame elements and lying against said sealing flange; a cut-out portion at each end of said movable closure member by which the inward arm of the U terminates near the end of said sealing flange and the outer arm of the U extends to a point closely adjacent said aperture defining surface.

6. In a panel receiving frame construction for a storm window associated with a main window frame and having a pair of vertical side members, a top transverse member and a bottom

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transverse member, the improvement in said last-named member comprising: a fixed portion held at each of its ends to said vertical side members, spaced from the lowermost ends thereof and including a closure sheet in the general plane of the window; a movable portion extending across the full width of the window opening, comprising a member of substantially U-shaped cross-section embracing the said closure sheet and extending downwardly therefrom.

7. In a storm window to be associated with a main window frame, a panel receiving frame comprising: a pair of vertical side frame members; a top transverse frame member; and a bottom transverse frame member having one part fixed to said side frame members in position such that upon assembly of the storm window with the main window frame the lowermost extremity of said bottom transverse frame member is spaced above the sill thereof, and another vertically movable part embracing a portion of the fixed member and normally extending to the sill member of said main window frame.

8. In a panel receiving frame construction for a storm window to be associated with a main window frame, a panel receiving frame comprising: a pair of vertical side frame members; a top transverse member; and a bottom transverse member comprising an upper part fixed at its ends to the side frame members in position such that when associated with the main window frame the lowermost extremity of said upper part is spaced above the sill thereof, and a lower vertically movable part embracing the lower portion of the fixed part and normally extending to said sill member of said main window frame.

9. In a panel receiving frame construction for a storm window associated with a main window frame and having a pair of vertical side members, a top transverse member and a bottom transverse member, the improvement in said last-

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named member comprising: a fixed portion held at each of its ends to said vertical side members and comprising a fixed closure member disposed in the general plane of a panel mounted in said panel receiving frame and having its lower edge disposed above the sill of the main window frame and its upper portion forming a substantially right-angularly disposed sill member for said panel; and a vertically movable portion extending across the full width of the main window frame opening and comprising a vertically movable closure member of substantially U-shaped cross-section slidably and sealingly embracing the lower portion of said fixed closure member and normally extending to the sill of the main window frame.

10. In a panel receiving frame construction for a storm window associated with a main window frame and having a pair of vertical side members, a top transverse member and a bottom transverse member, the improvement in said last-named member comprising: a fixed closure member held at each of its ends to the respectively adjacent vertical frame members and including a closure sheet in substantially the general plane of the window and having its lower edge disposed above the sill of the main window frame, a sill member for a panel mounted in said panel receiving frame extending substantially perpendicular to the closure sheet and a flange extending upwardly from at least a portion of an inward part of the sill member; and a vertically movable closure member of substantially U-shaped cross-section slidably and sealingly engaging the lower part of the closure sheet of said fixed closure member and normally extending therefrom to said main window frame sill, said vertically movable closure member having a portion extending inwardly thereof to provide means for manual grasping of said vertically movable closure member for manipulation thereof.

HARRY A. KAUFMANN.

Certificate of Correction

Patent No. 2,435,008.

January 27, 1948.

HARRY A. KAUFMANN

It is hereby certified that errors appear in the printed specification of the above numbered patent requiring correction as follows: Column 1, line 39, for the reference "Patent No. 2,222,273" read *Patent No. 2,292,273*; column 5, lines 61 and 62, claim 1, for "fixed member" read *one part*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 20th day of April, A. D. 1948.

[SEAL]

THOMAS F. MURPHY,
Assistant Commissioner of Patents.

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transverse member, the improvement in said last-named member comprising: a fixed portion held at each of its ends to said vertical side members, spaced from the lowermost ends thereof and including a closure sheet in the general plane of the window; a movable portion extending across the full width of the window opening, comprising a member of substantially U-shaped cross-section embracing the said closure sheet and extending downwardly therefrom.

7. In a storm window to be associated with a main window frame, a panel receiving frame comprising: a pair of vertical side frame members; a top transverse frame member; and a bottom transverse frame member having one part fixed to said side frame members in position such that upon assembly of the storm window with the main window frame the lowermost extremity of said bottom transverse frame member is spaced above the sill thereof, and another vertically movable part embracing a portion of the fixed member and normally extending to the sill member of said main window frame.

8. In a panel receiving frame construction for a storm window to be associated with a main window frame, a panel receiving frame comprising: a pair of vertical side frame members; a top transverse member; and a bottom transverse member comprising an upper part fixed at its ends to the side frame members in position such that when associated with the main window frame the lowermost extremity of said upper part is spaced above the sill thereof, and a lower vertically movable part embracing the lower portion of the fixed part and normally extending to said sill member of said main window frame.

9. In a panel receiving frame construction for a storm window associated with a main window frame and having a pair of vertical side members, a top transverse member and a bottom transverse member, the improvement in said last-

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named member comprising: a fixed portion held at each of its ends to said vertical side members and comprising a fixed closure member disposed in the general plane of a panel mounted in said panel receiving frame and having its lower edge disposed above the sill of the main window frame and its upper portion forming a substantially right-angularly disposed sill member for said panel; and a vertically movable portion extending across the full width of the main window frame opening and comprising a vertically movable closure member of substantially U-shaped cross-section slidably and sealingly embracing the lower portion of said fixed closure member and normally extending to the sill of the main window frame.

10. In a panel receiving frame construction for a storm window associated with a main window frame and having a pair of vertical side members, a top transverse member and a bottom transverse member, the improvement in said last-named member comprising: a fixed closure member held at each of its ends to the respectively adjacent vertical frame members and including a closure sheet in substantially the general plane of the window and having its lower edge disposed above the sill of the main window frame, a sill member for a panel mounted in said panel receiving frame extending substantially perpendicular to the closure sheet and a flange extending upwardly from at least a portion of an inward part of the sill member; and a vertically movable closure member of substantially U-shaped cross-section slidably and sealingly engaging the lower part of the closure sheet of said fixed closure member and normally extending therefrom to said main window frame sill, said vertically movable closure member having a portion extending inwardly thereof to provide means for manual grasping of said vertically movable closure member for manipulation thereof.

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