Oct. 23, 1962 E. J. BOLING 3,059,674

APPARATUS FOR GAUGING MATERIAL

Filed April 18, 1957 3 Sheets-Sheet 1

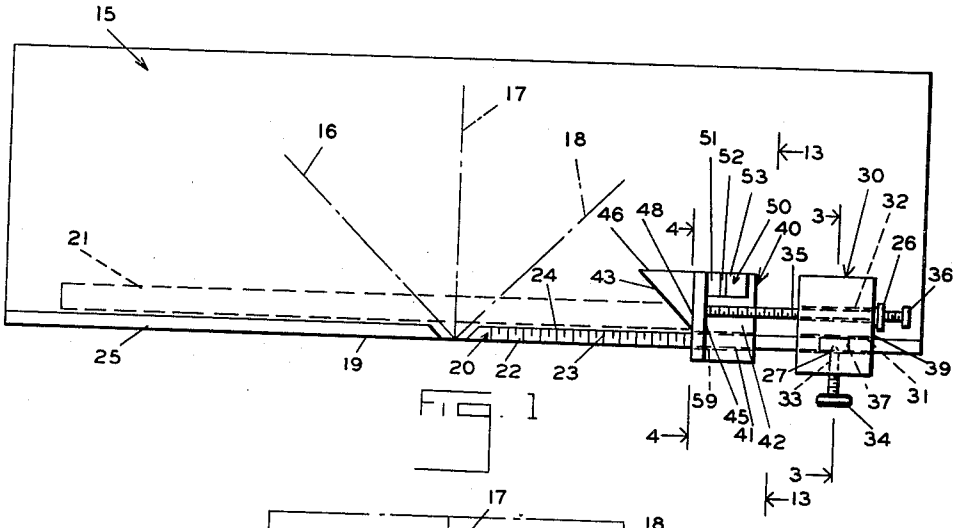



Fig. 1

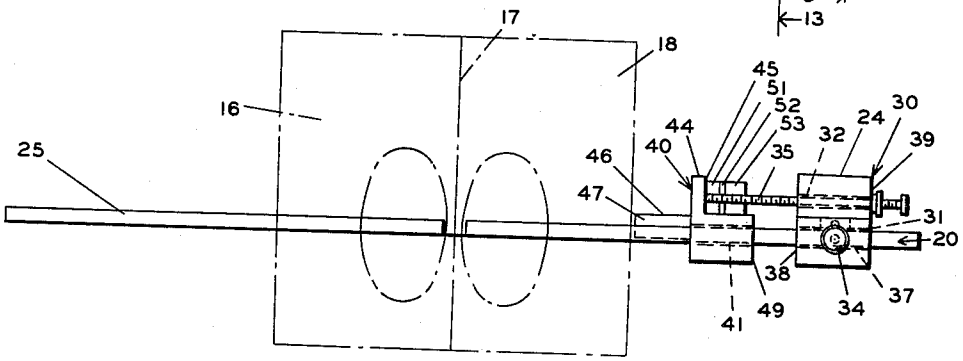



Fig. 2

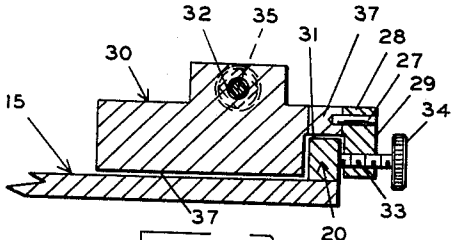



Fig. 3

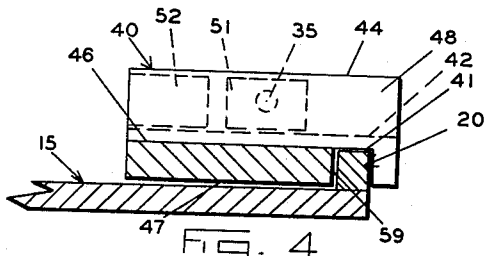



Fig. 4

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APPARATUS FOR GAUGING MATERIAL

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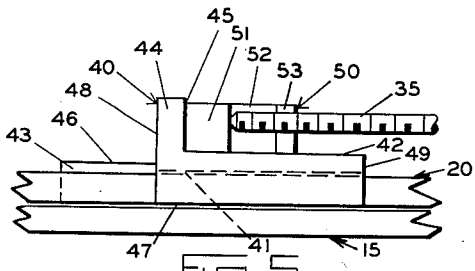



FIG. 5

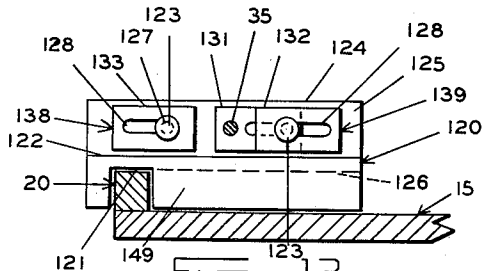



FIG. 13

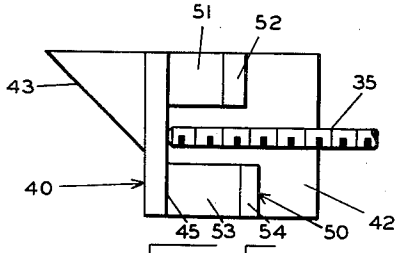



FIG. 6

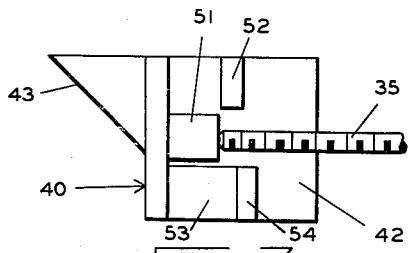



FIG. 7

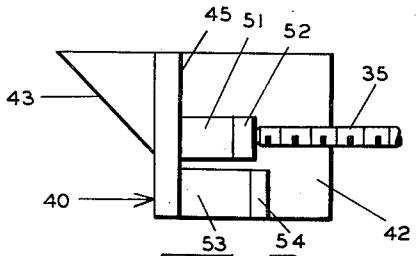



FIG. 8

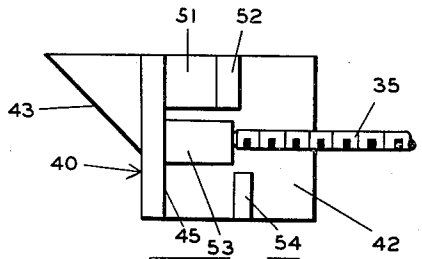



FIG. 9

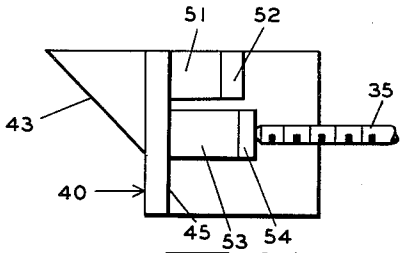



FIG. 14

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APPARATUS FOR GAUGING MATERIAL

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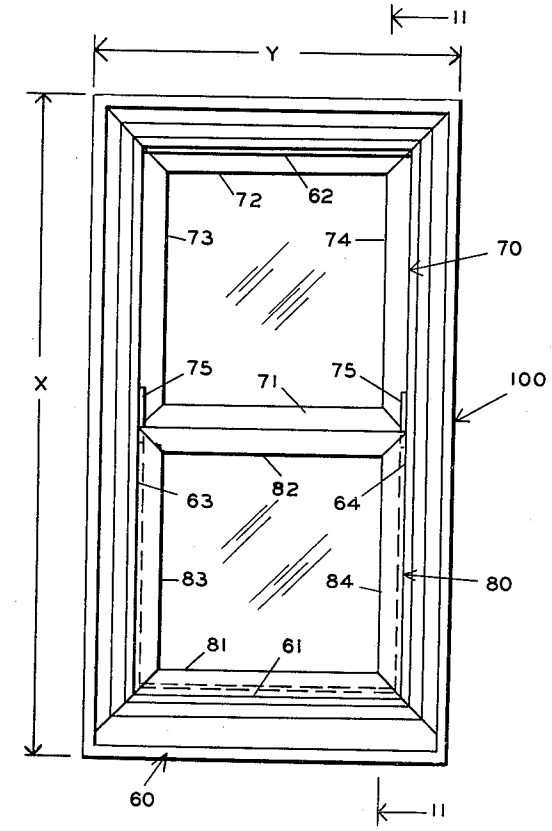



Fig. 10

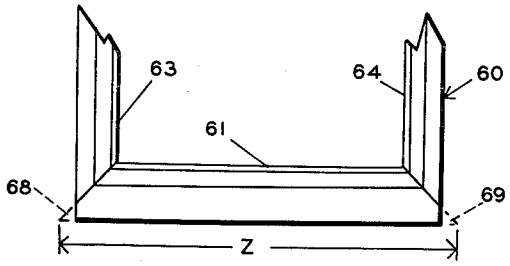



Fig. 12

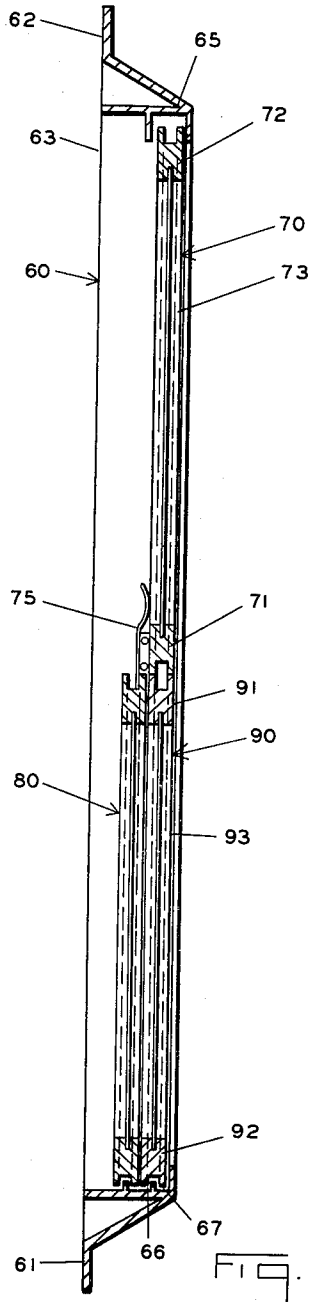



Fig. 11

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United States Patent Office 3,059,674 Patented Oct. 23, 1962



# 3,059,674
# APPARATUS FOR GAUGING MATERIAL

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Filed Apr. 18, 1957, Ser. No. 653,697
7 Claims. (Cl. 143—174)

The inventions disclosed and/or illustrated in this application relate to apparatus for the fabrication of window frames, as for example, for storm windows; to means for computing the required length of individual component members of such frames; to means for gauging and cutting framing materials to the length so computed; to means of computing unknown lengths, required for component frame members, from the given dimensions of a prime window opening; and means of gauging and cutting such members to the length so computed. My inventions are illustrated as applicable to storm windows.

It has been the general practice in the past for manufacturers of prime window frames to work from standard glass sizes. Little or no attention is given to the standardization of the resulting prime window opening to which a storm window must ultimately be fitted. The height and width dimensions of existing prime window openings tend to vary within considerable limits as a result of various framing practices, various individual standards and manufacturing practices followed by individual manufacturers of prime windows; and as a result of the type and design of the sill or lintel which is incorporated in the prime window installation in a building. There has been no appreciable standardization of the dimensions of the window openings for which storm windows are now being manufactured.

Conversely, storm windows must be produced in volume if their use is to be economically feasible. As a result it has been the common practice in the past to fabricate storm windows to standardized dimensions which represent averages of the various dimensions which occur most frequently in prime window openings. When storm windows produced by such methods are installed one of three costly procedures is followed in an effort to achieve an approximate fit between the storm window and the prime opening: (1) A storm window larger than the prime opening is planed to fit the opening, or (2) the prime opening must be shimmed or furred to the dimensions of the storm window, or (3) a storm window must be shimmed, furred or similarly fitted to the actual dimensions of the prime opening, or (4) the storm window is so designed as to have an overlapping frame. The last two methods increase costs by the use of additional material. Wide conspicuous frames are undesirable for appearances.

The planing process is so costly and inconvenient as to be impractical when applied to storm windows having metal frames, and increases installation costs and damages the storm windows. Shims or furring strips are costly and time-consuming to install, tend to multiply the problem of calking the installation to render it weather tight, and are often subject to rapid deterioration in use.

While it has heretofore been the common practice among manufacturers of storm windows to fabricate them to measurements exceeding by varying amounts the window manufacturers' standard glass sizes, the inventor herein proposes as an innovation to fabricate such storm windows according to prime window opening dimensions.

When custom fabricating a storm window to the approximate overall height and width dimensions of the prime window opening for which it is intended, it is necessary that the length of each component member of the frame for such a window be individually computed from the dimensions of the prime window opening. Such computations when accomplished by previously known methods are time consuming and subject to frequent costly errors which result in wasted materials and effort, and tend to make such custom fabricating methods uneconomical to use. No other apparatus or method known to me has heretofore provided either a means or a method whereby storm windows can be fabricated to the approximate overall dimensions of a prime opening without costly and time consuming manual computation of the length dimension of each framing component of such a window.



*Objects*

One of the objects of my invention is to provide an apparatus for computing by mechanical means the length dimensions of all frame members from given overall length and width dimensions of a prime window opening.

Another object of my invention is to provide an apparatus for gauging materials to a computed length and for accurately cutting said materials to such length.

A further object of my invention is to provide mechanical apparatus for computing various length dimensions of extruded frame members, which is equally effective and advantageous when used in the production of storm windows of a predetermined size as well as in the custom fabrication of such windows.

A further object of my invention is to provide novel and economical means for computing, gauging and cutting to length, accurately and quickly, the component members of frames having variable overall or profile dimensions.

Further objects and features of the invention will be apparent from the subjoined specification and claims when considered in connection with the attached drawings.

*Drawings*

In the drawings which disclose a preferred embodiment of my invention:

FIG. 1 is a top plan view of a computing and gauging apparatus in operating position on a work supporting surface, with a piece of framing material shown in dashed lines and with the mutually intersecting planes of operation of three cooperating cutting devices shown as dot-dash lines;

FIG. 2 is a view in side elevation of the apparatus of FIG. 1;

FIG. 3 is a sectional view of the block of FIG. 1, taken along line 3—3;

FIG. 4 is a sectional view of the material stop of FIG. 1 taken along line 4—4;

FIG. 5 is a view in side elevation of a portion of FIG. 2 here shown on an enlarged scale with other portions broken away and with a spacer block interposed between the spacing screw and the shoulder of the material stop;

FIG. 6 is a top plan view of the material stop of FIG. 5 showing several spacer blocks at rest on said stop in available position;

FIG. 7 is a view similar to FIG. 6 showing one spacer block interposed between the stop shoulder and the spacing screw;

FIG. 8 is a view similar to FIG. 6 showing two spacer blocks interposed between the spacing screw and the stop shoulder;

FIG. 9 is a view similar to FIG. 6 showing a spacer block of different proportions interposed between the spacing screw and the stop shoulder;

FIG. 10 is a plan view of an assembled storm window of conventional two-track configuration;

FIG. 11 is a sectional view of the storm window of FIG. 10 taken along the line 11—11;

FIG. 12 is a plan view of the lower portion of the

main frame of the storm window of FIG. 10 as seen at one state in the assembly process;

FIG. 13 is a sectional view taken on the line **13—13** of FIG. 1 and showing an alternative embodiment of the material stop of FIG. 5; and

FIG. 14 is a view similar to FIG. 9 showing two spacer blocks interposed between the spacing screw and the stop shoulder.

The philosophy of my invention is that the overall dimension of a window manufactured under my invention need be fairly accurate in order to fit the opening, but the differences in lengths between the interfitting and cooperating parts must be extremely accurate so that the parts may be assembled correctly. Thus the first overall dimension in width (or in length) may be measured and cut from a visual and rule or tape measurement accurate to 16ths or 32nds of an inch, but the differences between this first measurement and the width or length of cooperating parts must be determined very accurately so that visual measurement by rules or tapes is not sufficient, but extremely accurate gauge blocks accurate to thousandths of an inch should be used. Lengths of component parts in windows of mitered construction are not only controlled by the size of the window but also by the profile dimensions of the material used or the difference in the dimensions of the profiles of adjacent parts.

*Detailed Description*

Referring to the drawings for a detailed description of an embodiment of my invention illustrated, it may be seen that I have shown generally in FIG. 1, a guaging and mitering apparatus which consists of a suitable work supporting surface **15** of plane configuration; a guide bar **20** longitudinally disposed along one edge **19** of said surface **15** and rigidly secured thereto by suitable means; a suitable material feed guide **25**; a block, generally designated as **30**, slidably secured to guide bar **20**; a material stop **40**, slidably embracing guide bar **20**; and spacer blocks **50** adapted to be at times interposed between an element of block **30** and an element of stop **40**, each of which is described hereafter in detail.

A plurality of suitable cutting devices, as for instance saws (not shown), are secured to surface **15** by appropriate means so that said devices will be at times operable (either individually or in unison) within cutting planes **16**, **17** and **18** (FIGS. 1 and 2) for cutting framing materials as for example material **21** which is positioned on surface **15** for gauging and cutting purposes. Said planes **16**, **17** and **18** are mutually tangent along a line which passes through a point adjacent edge **19** of surface **15** so as to be perpendicular with the plane of said surface **15**.

Block means **30** is formed of suitable material to the general configuration illustrated in FIGS. 2 and 3, with a channel **31** longitudinally disposed in the lower face **37** of block **30** and in intercommunication with opposite faces **38** and **39** of block **30**. The cross-sectional configuration of said channel **31** (FIG. 3) is in close conformity with that of guide bar **20** and said channel **31** is of sufficient dimensions to permit block **30** to be at times slidable longitudinally of guide bar **20**. Block **30** is further formed with a threaded bore **32** extending longitudinally through said block **30** in intercommunication with opposite faces **38** and **39**, said bore **32** lying parallel with channel **31**. Another threaded bore **33** is laterally disposed in block **30** in intercommuncation between outer wall **29** of block **30** and a lateral wall of channel **31**. Setscrew **34** is of suitable size and thread to be threadably engaged in threaded bore **33** for securing block **30** to guide bar **20**. Vertically extending opening **37** is of appropriate configuration and intercommunicates with upper face **28** of block **30** and the upper wall of channel **31** to serve as the inspection port through which the calibrations **23** on guide bar **20** may be read. Pointer **27** is of suitable size and configuration and is fixedly secured



by suitable means within a lateral bore of block **30** so as to extend into opening **37** an appropriate distance.

Material stop **40** is formed to the general configuration shown in FIGS. 1, 2, 4 and 5 with channel **41** extending along its lower face **47** so as to intercommunicate with opposite vertical faces **48** and **49** of stop **40**. Channel **41** has a cross-sectional shape similar to that of channel **31** of block **30** for slidably embracing guide bar **20**. Material stop **40** is further formed with a material engaging portion **46**, projecting from forward face **48** (FIG. 1), said portion **46** having an angularly disposed stop face **43** of plane configuration which is disposed perpendicular to lower face **47** of stop **40** and which intersects one lateral wall **59** of said channel **41** so as to form an angle therewith which is the supplement of the smaller of the angles formed by the intersection of cutting plane **18**, and guide face **24** of guide bar **20**. Material stop **40** is also formed with a spacer block shelf **42** (FIG. 5) disposed adjacent to rear wall **49**, parallel with lower face **47** displaced from said face **47** a distance less than the shortest distance between the major diameter of threaded bore **32** of block **30** and lower face **37** of said block **30**. Material stop **40** is further formed with a vertically extending shoulder portion **44** having a rearwardly disposed shoulder face **45** which intersects shelf **42** so as to lie perpendicular thereto and said face **45** also lies in a plane perpendicular to the longitudinal axis of said channel **41**.

Spacing screw **35** (FIG. 1) has an appropriate diameter and thread to be threadably engaged in said threaded bore **32** of block **30** and is of sufficient length to extend through block **30** and to project therefrom a distance greater than the length of spacer shelf **42**, as measured along a line parallel with the axis of channel **41** of material stop **40**. Said screw **35** is provided with a suitable head **36** for rotating screw **35** within threaded bore **32** and a locking nut **26** for locking screw **35** in any position with respect to block **30**.

Spacer blocks generally designated as **50** (FIG. 6) comprise a plurality of gauge blocks **51**, **52**, **53** and **54** each being parallelopiped in configuration, having two common dimensions and the third dimension (hereafter called the effective width) of each said block being an appropriate dimension which is determined by the variations between the overall length dimensions of two component elements of a storm window frame as will be described in detail hereafter.

The upwardly disposed face **22** (FIG. 1) of guide bar **20** is provided with a scale **23** for indicating linear distance as measured along material guide face **24**. Scale **23** is so calibrated that a linear dimension corresponding to that of a prime window opening (such as either dimension X or Y of FIG. 10) is in register with pointer **27** of block **30** when the actual distance, measured along guide face **24**, between cutting plane **18** and material stop face **43** is equal to the longest dimension of the longest frame member which is to be cut from said dimension of a prime window opening, as for example dimension Z (FIG. 12) of member **61** which is cut from horizontal dimension Y (FIG. 10) of prime window opening **100**.

Alternatively the material stop **120** shown in the rear elevational view of FIG. 13 may be incorporated in the apparatus previously described for maintaining specific sets of gauge blocks **138** and **139** in orderly arrangement and thereby simplify and speed the operation of the apparatus. Material stop **120** is identical with material stop **40** (FIG. 4) and is formed with longitudinal channel **121**, forwardly extending material engaging portion **126**, gauge block shelf **122** perpendicular to and extending rearwardly from rearwardly disposed shoulder face **125** of vertical shoulder portion **124**. Material stop **120** (FIG. 13) differs from stop **40** (FIG. 4) in that a plurality of spacer block retaining means are provided, as for instance spacer guide rods **123**. Said rods **123** are rigidly secured to shoulder portion **124** of material stop **120** and project

rearwardly from face 125 so as to extend parallel with shelf 122 and to be spaced vertically therefrom.

Spacer blocks 131, 132 and 133 are each provided with an elongated slot 128 which extends through the effective width of said spacer block so as to be in intercommunication with both the forward and rear faces of each said spacer block 131, 132 and 133. Slots 128 are so dimensioned as to permit a rod 123 to be slidable therein. A plurality of spacer blocks such as 131 and 132 are aligned in side by side relationship along a rod 123 so as to be slidably repositioned at times, either individually or in series relationship, into the position of block 131 with opposite faces in contact engagement respectively with shoulder face 125 and with the forwardly projecting end of spacing screw 35.

Collars 127 are slidable longitudinally of rods 132 and are secured thereto by means of suitable setscrews (not shown) for retaining prearranged sets of appropriate spacer blocks such as 138 and 139 in mutual side by side relationship on shelf 122 so as to be reciprocally slidable transversely thereof.

*Operation*

The gauging and mitering apparatus described herein is used to effective advantage in custom fabricating frames for storm windows to the actual dimensions of the prime window opening in which the fabricated storm window is to be installed as well as in the production of storm windows to predetermined standardized overall dimensions. An illustrative storm window assembly of "two track" design is shown in FIGS. 10 and 11 which comprises a main frame generally designated as 60 and an upper insert window frame 70, a lower insert window frame 80 and an insert screen frame 90 each of which is slidably retained within frame 60 by suitable spring means 75 secured to main frame 60.

Individual component members of main frame 60 and insert frames 70, 80 and 90 are normally cut to the required length from extruded framing materials having the desired cross-sectional configuration. For purposes of illustration, specific cross-sectional width relationships between various framing components will be described hereinafter, based upon the specific storm window structure illustrated in FIGS. 10, 11 and 12. It is understood, however, that the described relationships will vary, depending on the type and configuration of the ultimate storm window assembly which is contemplated. In the gauging and cutting of a frame component by means of the apparatus of my invention, the vertical dimension X (FIG. 10) and the horizontal dimension Y are first obtained from the prime window opening which is to be fitted with a storm window.

Referring generally to the apparatus of FIG. 1, block 30 is slidably positioned longitudinally of guide bar 20 with pointer 27 in register with the calibration of scale 23 which indicates a linear value equal to horizontal dimension Y (FIG. 10) and block 30 is secured in such position by tightening setscrew 34 against guide bar 20. Spacing screw 35 is then threaded through threaded bore 32 of block 30 sufficiently far for the forward end of screw 35 to project beyond face 38 a distance greater than the previously described length of spacer shelf 42 of material stop 40.

Stop 40 is slidably positioned longitudinally of guide bar 20 with stop face 43 directed toward cutting plane 18 and spaced therefrom a distance (measured along face 24 of guide bar 20) equal to dimension Z (FIG. 12) of the longest horizontal frame member 61 to be cut from dimension Y (FIG. 1). Screw 35 is then rotated by means of head 36 to bring the forwardly projecting end of screw 35 into contact engagement with rear wall 45 of stop 40.

A suitable length of framing material extruded to the cross-sectional configuration shown at 61 in FIG. 11 (or to such other cross-sectional configuration as may be necessary to the structure of the ultimate storm window) is positioned on surface 15 of FIG. 1 as indicated at detail 21, so as to be in longitudinal engagement with material guide 25 and to extend through cutting plane 16.

Said material is then cut along the line of intersection of cutting plane 16. The angular leading terminal end of said material thus formed is next positioned as at 21 in contact engagement with material engaging face 43 while shoulder face 45 bears directly upon the projected end of screw 35 (FIG. 6) and said material 21 is then cut along both lines of intersection of cutting planes 16 and 18 to form a frame member 61 of main frame 60 (FIG. 10).

Material stop 40 is repositioned along guide bar 20 in the direction of cutting plane 18 a sufficient distance to allow gauge block 51 to be interposed (FIG. 7) between face 45 and screw 35 for separating said face 45 and screw 35 by a distance equal to the effective width of block 51.

Spacer block 51 is very accurately formed and has an effective width equal to twice the difference between the overall cross-sectional width of the material used in member 61, as measured in the plane of FIG. 10, and the overall cross sectional width of the material from which member 62 is to be formed.

A suitable length of appropriate material of configuration of member 62 having a terminal edge cut along the line of plane 16 is then positioned as at 21 (FIG. 1) in longitudinal engagement with guide bar 20 and with said terminal edge in engagement with face 43, face 45 of stop 40 being in engagement with one face of spacer block 51 (FIG. 7) and the opposite face of said spacer block 51 bearing upon the projecting end of screw 35. This material is then cut along the lines of cutting planes 16 and 18 to form a member 62 and to form an angular terminal edge on the remaining length of the material.

Material stop 40 is again repositioned along guide bar 20 in the direction of cutting plane 18 a distance sufficient to allow spacer block 52 to be interposed (FIG. 8) between spacer block 51 and screw 35.

Spacer block 52 (FIG. 8) has an effective width equal to the sum of twice the cross-sectional width where inserts fit of the material from which members 63 and 64 of frame 60 will be formed (as described hereafter) plus a suitable predetermined dimensional tolerance required to assure a snug but smoothly sliding fit between members 63 and 64 of assembled main frame 60 and insert frames 70, 80 and 90.

A length of material having appropriate cross-sectional configuration for forming members 71, 72, 81, 82 and 91 and 92 of insert frames 70, 80 and 90 respectively, and having a leading terminal edge cut along the line of plane 16, is then positioned as described above as at 21 with said terminal edge in engagement with face 43. Said material is then cut along the lines of cutting planes 16 and 18 to form a member 71 and to form an appropriate angular terminal edge on the remaining length of said material. Members 72, 81, 82, 91 and 92 are then formed by repeating the procedure just described.

After the horizontal members 61 and 62 (FIG. 10) of main frame 60 and horizontal members 71, 72, 81, 82, 91 and 92 of insert frames 70, 80 and 90 are cut to the required lengths as previously described, block 30 (FIG. 1) and stop 40 are repositioned along guide bar 20 to the position where pointer 27 is in register with the point on the scale 23 of guide bar 20 which indicates a linear value equal to vertical dimension X (FIG. 10) of prime window opening 100.

Spacer blocks 51 and 52 are then removed from their central position on shelf 42 shown in FIG. 8 to the position of FIG. 6 in which said blocks are aligned along and adjacent an outer edge of shelf 42. Stop 40 is then slidably repositioned along guide bar 20 a sufficient distance to permit a spacer block 53 to be interposed with opposite faces in contact engagement with face 45 and with the projecting end of screw 35 respectively.

Spacer block (FIG. 9) has an effective width equal to

three times the difference between the cross-sectional widths of materials used to form main frame members **61** and **62** plus a suitable fitting allowance. Suitable framing material is then cut in the manner previously described to the length dimension gauged by the relative positions of material stop face **43** and cutting plane **18** (FIG. 1), to form main frame members **63** and **64**.

To form vertical members **73, 74, 83, 84**, and two members **93** of insert frames **70, 80** and **90**, block **30** and stop **40** (FIG. 1) are repositioned, as previously described, along guide bar **20** to a position wherein pointer **27** is in register with the calibration of scale **23** which indicates a linear value equal to one half of vertical dimension X (FIG. 10). Stop **30** is then secured to guide bar **20** by means of setscrew **34** as previously described.

With block **30** secured in position along guide rail **20** as just described and with spacer block **53** remaining in the last described position on shelf **42**, spacer block **54** is interposed between spacer block **53** and the forwardly disposed end of spacing screw **35** as shown in FIG. 14.

Spacer block **54** has an effective width equal to one half the sum of the respective cross-sectional effective widths of the extruded materials, from which members **61** and **62** were formed as described above, less one half the difference between the cross-sectional widths of said materials of members **61** and **62** and less a suitable fitting allowance.

With block **30**, screw **35**, spacer blocks **53** and **54** and stop **40** in the relative positions last described, material of similar cross sectional configuration and dimension to that from which horizontal insert frame members **71, 72, 81, 82, 91** and **92** were formed, as previously described, is cut to the length gauged by face **43** of stop **40** to form said vertical members **73, 74, 83, 84, 93** and **94** of insert frames **70, 80** and **90**.

Insert frames **70, 80** and **90** are then assembled to the general configuration shown in FIG. 10 and the projecting triangular sections **68** and **69** (FIG. 12) are removed from main frame **60**. For instance, projection **68** is removed by positioning main frame **60** on surface **15** with a straight side aligned along guide bar **20**, with a projection **68** extending across cutting plane **17**, and by cutting off said projection **68**, along the outside line of the outer edge of adjacent member **63**. Projection **69** is similarly removed.

It is to be understood that the above described embodiments and methods of my inventions are for the purpose of illustration only, and various changes may be made therein without departing from the spirit and scope of my invention.

I claim:

1. A gauging structure comprising a calibrated guide bar; a primary block slidable along said guide bar and securable thereto; means for securing the primary block to the guide bar; a material stop for positioning material being worked on, slidable along said guide bar and having a vertically extending spacer engaging face; a spacing screw threadably engaged in a bore of said primary block and having one end projecting therefrom toward said spacer engaging face; and a plurality of spacer blocks interposed between said spacing screw and said spacer engaging face and each having its effective dimension equal to the difference in the lengths of two standard finished workpieces.

2. A gauging structure comprising a guide bar; a primary stop slidable along said guide bar and securable thereto; a material stop for positioning work material, having a material engaging face, a spacer engaging shoulder and a spacer supporting surface, and slidably embracing said guide bar; a spacing screw in threaded engagement with a bore of said primary stop and having an end projecting from said bore towards said spacer engaging shoulder; a plurality of spacer blocks each having two oppositely disposed parallel faces, said blocks being positioned upon said spacer supporting surface and interposed between said projecting end of said spacing screw and said spacer engaging face.

3. A gauging structure comprising a calibrated guide bar; a primary block slidably secured to said guide bar and having a threaded bore parallel with said guide bar; a material stop slidable longitudinally of said guide bar, having a material engaging face, a spacer engaging shoulder disposed oppositely from such face, and a spacer supporting surface adjacent to such shoulder; spacer means comprising a plurality of spacer blocks each having two parallel faces mutually perpendicular to a third side thereof, said spacer means being removably positioned on said supporting surface with one said parallel face bearing upon said shoulder; and a spacing screw threadably engaged within said threaded bore and bearing upon another of said parallel faces.

4. A gauging structure comprising a guide bar formed with at least one longitudinal guide face, said bar being calibrated in terms of linear distance as measured along said guide face; a primary block formed with a longitudinal channel in its lower face for embracing said bar, and having a threaded lateral bore communicating with a lateral outside wall of said block and with a wall of said channel and also formed with a longitudinal bore; means for releasably securing said block to said bar; a material stop formed with two mutually perpendicular plane faces, and with a material engaging face lying adjacent to both of said mutually perpendicular faces so as to be perpendicular to one of such faces and to form an acute angle with the other such face, said material stop being further formed with an upwardly projecting shoulder having a face lying in a plane perpendicular to each of said mutually perpendicular faces and disposed oppositely from said material engaging face; a spacer comprising a gauge block, such gauge block being formed with two mutually parallel plane faces, both said faces being perpendicular to a third face of said gauge block, said spacer being positioned with one said parallel face bearing upon said shoulder face; and an adjusting screw threadably engaged within said longitudinal bore and bearing upon said other parallel face.

5. A gauging structure comprising a guide bar formed with at least one longitudinal guide face, said bar being calibrated in terms of linear distance as measured along said guide face; a primary block formed with a longitudinal channel in its lower face for embracing said bar, and provided with a threaded longitudinal bore and with a threaded lateral bore communicating with a lateral outside wall of said block and with a wall of said channel, said block having means comprising a set screw threadably engaged within said lateral bore for releasably securing said block to said bar; a material stop formed with two mutually perpendicular plane faces, and with a material engaging face lying adjacent to each of said mutually perpendicular faces so as to be perpendicular to one of such faces and to form an acute angle with the other such face, said material stop being further formed with an upwardly projecting shoulder having a face lying in a plane perpendicular to each of said mutually perpendicular faces and disposed oppositely from said material engaging face; a spacer comprising a plurality of gauge blocks, each such gauge block being formed with two mutually parallel plane faces, both said faces being perpendicular to a third face of said gauge block, said spacer being positioned with one said parallel face bearing upon said shoulder face, and an adjusting screw threadably engaged within said longitudinal bore and bearing upon another said parallel face.

6. Apparatus for fabricating elements of doors and windows comprising in combination a supporting structure having a table; a cutting means in association therewith; a calibrated guide bar secured to said table; a primary block having a threaded bore slidable along said guide bar and securable thereto; means for securing said primary block to said guide bar; a material stop for posi-

tioning material being worked on accurately with respect to said cutting means, slidable along said guide bar and having a vertically extending spacer engaging face; a spacing screw threadably engaged in a bore of said primary block and having one end projecting therefrom toward said spacer engaging face; and a plurality of spacer blocks interposed between said spacing screw and said spacer engaging face and each having its effective dimension equal to the difference in the lengths of two standard finished workpieces.

7. Apparatus for cutting elements of doors and windows comprising in combination a table having a substantially horizontally disposed plane work surface formed with a plurality of saw slots each being perpendicular to the plane of said surface and disposed along straight lines within said plane, all of said lines meeting at a point lying adjacent to and centrally disposed along longitudinal one edge of said table and being at an acute angle to said longitudinal edge; a plurality of saws operable within said slots; a guide bar formed with at least one longitudinal guide face, said bar being secured to said work surface with said guide face extending parallel with said edge of the table; said bar being calibrated in terms of linear distance as measured along said guide face; a primary block formed with a longitudinal channel in its lower face for embracing said bar, and provided with a threaded longitudinal bore and with a threaded lateral bore communicating with a lateral outside wall of said block and with a wall of said channel, said block having means comprising a set screw threadably engaged within said lateral bore for releasably securing said block to said bar; a material stop formed with two mutually perpendicular plane faces, and with a material engaging face lying adjacent to each of said mutually perpendicular faces so as to be perpendicular to one of such faces



and to form an acute angle with the other such face, such angle being the equal to the acute angle between one of said saw slots and said longitudinal edge, said material stop being further formed with an upwardly projecting shoulder having a face lying in a plane perpendicular to each of said mutually perpendicular faces and disposed oppositely from said material engaging face; a spacer comprising at least one gauge block, each such gauge block being formed with two mutually parallel plane faces, both said faces being perpendicular to a third face of said gauge block, said spacer being positioned with one said parallel face bearing upon said shoulder face, and an adjusting screw threadably engaged within said longitudinal bore and bearing upon another said parallel face.

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# UNITED STATES PATENT OFFICE

# CERTIFICATE OF CORRECTION

Patent No. 3,059,674 October 23, 1962

Edgar J. Boling

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 6, line 75, after "block" insert -- 53 --; column 9, lines 17 and 18, strike out "longitudinal" and insert same after "one" in line 18, same column 9.

Signed and sealed this 26th day of March 1963.

(SEAL)
Attest:

ESTON G. JOHNSON
Attesting Officer

DAVID L. LADD
Commissioner of Patents