Sept. 23, 1958 E. P. MASCARI 2,853,161

ADJUSTABLE FRAMES

Filed July 1, 1955 2 Sheets-Sheet 1

Fig. 1.

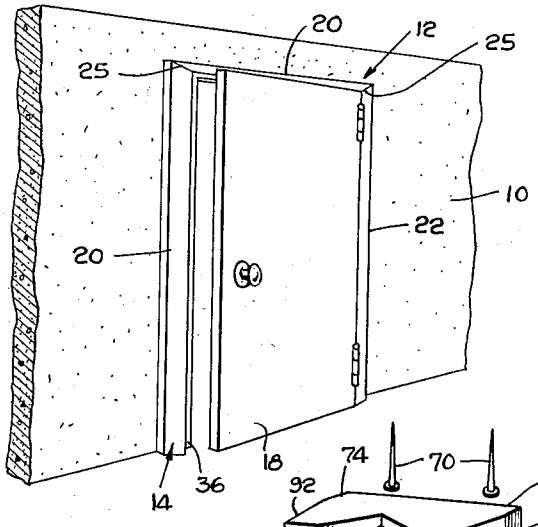
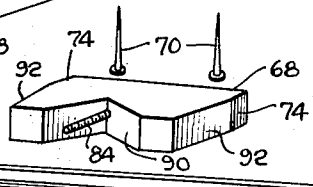


Fig. 2.



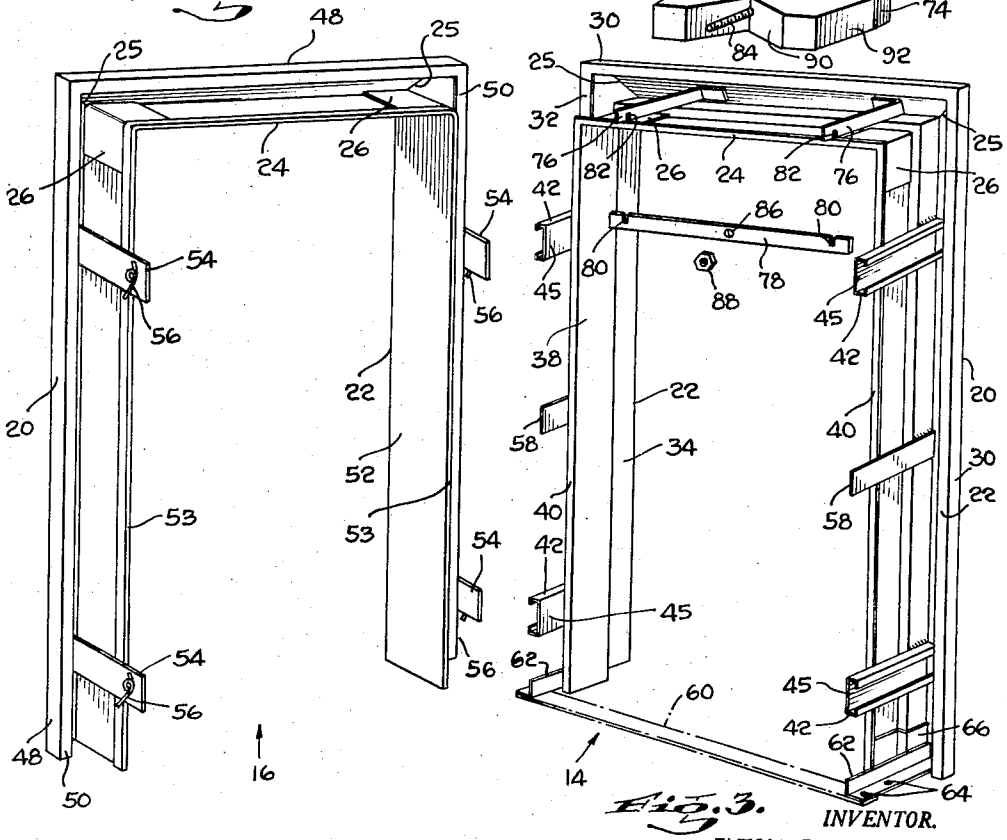


Fig. 3.

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Sept. 23, 1958 E. P. MASCARI 2,853,161

ADJUSTABLE FRAMES

Filed July 1, 1955 2 Sheets-Sheet 2

Fig. 4.

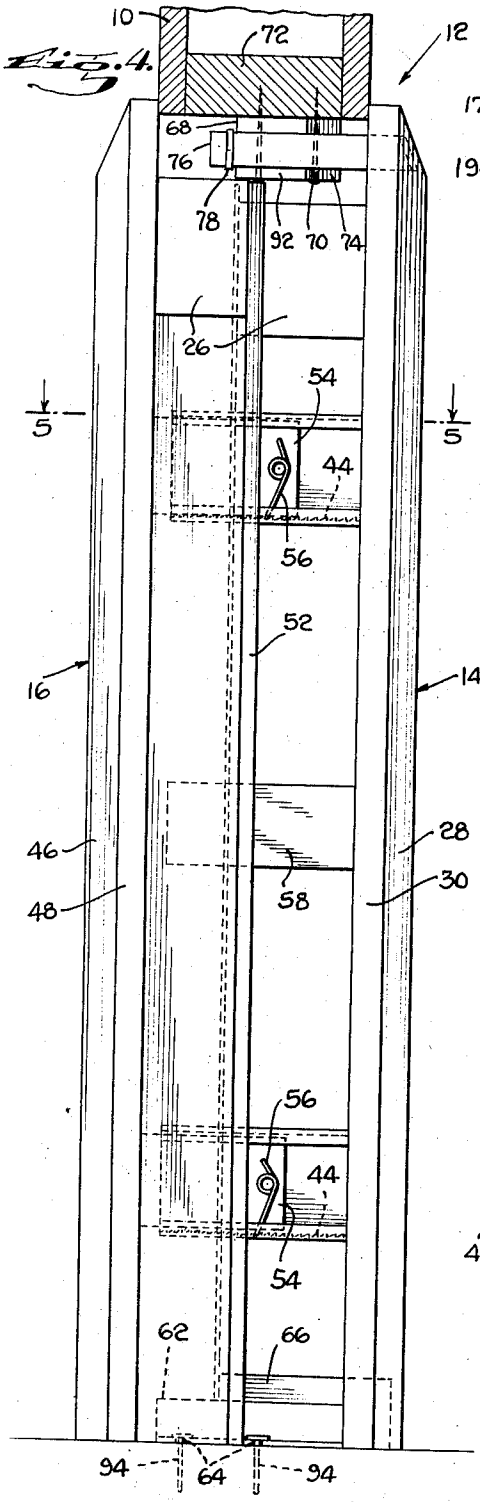


Fig. 7.

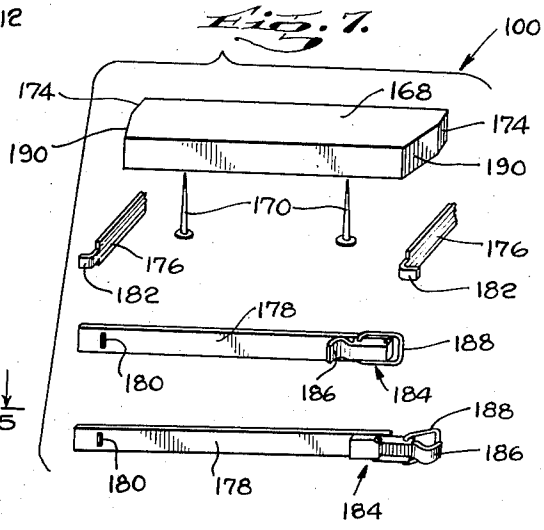


Fig. 5

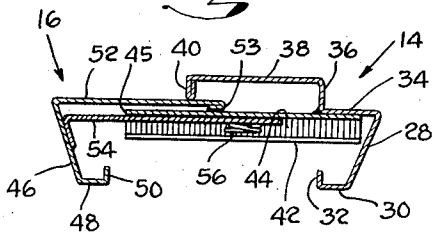
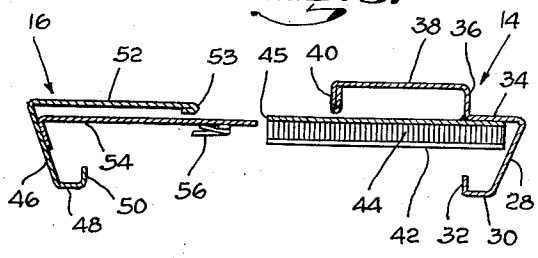


Fig. 6.



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ADJUSTABLE FRAMES

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Application July 1, 1955, Serial No. 519,535
14 Claims. (Cl. 189—46)

This invention relates to building materials and more particularly to improvements in adjustable frames or bucks employed for example, to frame door openings in buildings.

An object of the invention is to provide an adjustable frame or buck of novel construction which may be applied rapidly, easily, permanently and with a minimum of labor about an opening defined in a wall.

Another object of the invention resides in the provision of a novel adjustable frame or buck which is capable of being applied about and to frame openings defined in walls of various widths.

Still another object of the invention is to provide a composite frame of separate, relatively adjustable sections, and novel securing means operable to secure the sections together about an opening in a wall and to allow for adjustment of the same against the sides of the wall.

A resulting feature of the invention resides in the securing means which are so simple in operation as to obviate the need for and direction of a skilled artisan.

Still a further object of the invention is to provide a frame or buck composed of a plurality of relatively adjustable sections each cooperating with the other in a unique manner to provide a novel adjustable joint therebetween, and in which novel means are provided by which a selected section thereof may be secured in position about the opening and wall during their relative adjustment.

Other and further objects of my invention reside in the structures and arrangements hereinafter more fully described with reference to the accompanying drawings in which:

Fig. 1 is a front perspective view of the adjustable frame secured about an opening and to the wall in accordance with the teaching of the invention.

Fig. 2 is a perspective view of the rear section of the frame.

Fig. 3 is an expanded perspective view of the front section of the frame including a header guide block locking arrangement.

Fig. 4 is a side view of the adjustable frame.

Fig. 5 is a sectional view of Fig. 4 taken along lines 5—5, while

Fig. 6 is a view similar to Fig. 5 showing the sections of the frame separated from each other, and

Fig. 7 is an expanded view of a modified header guide block locking arrangement.

Referring now to the drawings, and in particular to Fig. 1 wherein there is disclosed a wall **10** having an opening (not numbered) defined therein framed by a completed frame generally identified by the numeral **12**. Although only the front section **14** of the completed frame **12** is shown in Fig. 1, as the description proceeds, it will be recognized that the completed frame **12** is a composite of at least two separate sections, namely a front section **14** and a rear section **16**, shown in greater detail in Figs. 2 to 6 inclusive. The door **18** which is depicted slightly ajar in Fig. 1 and hinged to the front

section **14**, has been omitted from the remaining figures of the drawing in order not to encumber the description and drawings with obvious details.

The front and rear sections **14** and **16** (Figs. 2 to 6 inclusive), are preferably formed from continuous strips of metal which are then bent to provide leg portions **20** and **22** and an intermediate header portion **24**. Generally when the metal members are bent to form the leg portions **20** and **22** and the intermediate header portion **24**, seams **25** (Figs. 1, 2 and 3) must be provided which are subsequently welded closed. Corner or seam reinforcing plates **26** are then secured to the bent corners to provide reinforcement thereat.

The front section **14** is formed with a continuous molding **28**, better seen in Figs. 4, 5 and 6. The molding **28** includes a leg **30** and an inturned marginal end **32** which is adapted to seat against its respective side of the wall **10** when positioned thereagainst as in Fig. 1. An inner door jamb surface **34** provides a guideway for the swinging of the door **18**, while a door stop surface **36** bent at an angle relative to the door jamb surface **34**, limits and stops the closing swinging movement of the door **18**. The door stop surface **36** terminates and has a portion bent relative thereto to form a strip face **38** having a relatively bent end face **40**.

Secured along the leg portions **20** and **22**, and at the back portion of the door jamb surface **34**, are a plurality of relatively spaced ratchet guide members **42** each having a plurality of one-way ratchet teeth **44**. The ratchet guide members **42** are substantially channel or C-shaped, having their backs **45** secured to the inside of the door jamb surface **34**, preferably by welding. From Figs. 3 to 6 of the drawings, it will be noted that each of the ratchet guide members **42** extends beyond the adjacent end face **40** of the front section **14**, and spaced therefrom to cooperate with adjacent portions thereof and with adjacent portions of the strip face **38** to form guideways (not numbered) therebetween.

The second or rear section **16** comprises a molding portion **46** including a wall engaging leg **48** and an inturned marginal end **50**. An elongated door jamb surface **52**, bent relative to the molding portion **46**, is adapted for movement into and to be guided in the guideways formed between the ratchet guide members **42** and adjacent portions of the end face **40** and strip face **38** of the front section **14**. Secured to the inner or back portion of the molding **46** are a plurality of spaced pawl carrying or tongue or guide members **54** corresponding in number and in relative spacing to the ratchet guide members **42**.

Referring to Figs. 2 to 6 of the drawings, it will be noted that the pawl or tongue members **54** extend beyond the edge **53** of the elongated jamb surface **52** of the rear or second section **16**. Each of the pawl or tongue members **54** are just sufficiently spaced from the back or inner face of the elongated jamb surface **52** to cooperate with adjacent portions thereof to provide guideways therebetween; each guideway being sufficient in width to accommodate and allow the back walls **45**, of corresponding ratchet guide members **42** to enter and be guided therein. This action may be seen more clearly in Fig. 5.

Each pawl or tongue member **54** carries a spring-like pawl member **56** adapted to resiliently ratchet over the one-way ratchet teeth **44** on the ratchet guide members **42** as the rear section **16** is moved relative to and guided in the guideways of the front section **14**. When the pawls **56** engage with the ratchet teeth **44** they retain the two sections **14** and **16** in their position of relative adjustment.

At times, because of the height of the leg portions **20** and **22** of the front and rear sections **14** and **16**, and the consequent elongated distance between the upper and

lower ratchet guide members **42** and tongue members **54**, it may be necessary to employ additional guide members **58** (Figs. 3 and 4). The guide members **58** cooperate with adjacent portions of the end face **40** and strip face **38** of the section **14** to form guideways in the same manner as the guideways are formed between the ratchet guide members **42** and adjacent portions of the strip face **38** and end face **40**. The additional guide members **58** may be non-ratcheting as shown or may take the form of additional ratcheting members **42** to thus provide additional support against possible buckling of the elongated jamb surface **52** as the same is guided between the ratchet guide members **42** and the end face **40** and strip face **38** of the front section **14** in a manner to be described.

Preparatory to shipping the adjustable door frame **12** from the factory to the building site to be installed about an opening defined in a wall **10**, the two sections **14** and **16** are moved relative toward each other. Such relative movement will position the tongue members **54** within the guiding confines of the channel-shaped members **42** in advance of cooperating contact between the end face **40** and the edge **53** of the elongated jamb **52**. A further continuation of movement will also position the ratchet guide members **42** within the guideways formed between the pawl or tongue member **54** and the elongated jamb **52**, while the elongated jamb **52** will be guided in the guideways formed between the ratchet guide members **42** and cooperating portions of the end face **40** and the strip face **38**. During such facing relative movement, the resilient or spring-like pawl members **56** ratchet over and engage with each successive tooth of cooperating ratchet teeth **44**.

The two sections **14** and **16** are moved relative to each other a distance just sufficient to provide a secure cooperation and engagement therebetween. They are held in cooperating engagement by the cooperation of the ratcheting spring pawls **56** and the ratchet teeth **44**. The leg portions **20** and **22** of both sections **14** and **16** are retained from lateral spreading by the addition of a securing bar **60** shown in dot-dash lines in Fig. 3. The lateral retaining bar **60** bridges a pair of heel securing plates **62** mounted at the heel portions of the legs **20** and **22** of the front section **14**. The heel securing plates **62** may be provided with a plurality of perforations **64** through which a joining bolt (not shown) may be passed to secure the retaining bar **60** and heel securing plates **62** together. Thus, when the lateral retaining bar **60** is joined to the two heel securing plates **62**, the leg portions **20** and **22** of both of the front and rear sections **14** and **16** will be retained from lateral movement during shipment of the complete frame **12**.

Each of the heel securing plates **62** is preferably welded at its rear end to a heel reinforcing plate **66** (Figs. 3 and 4). Each leg portion **20** and **22** of the front section **14** is provided with one of the heel reinforcing plates **66** which may be suitably secured thereto, as for example, by welding. The heel reinforcing plates **66** provide sufficient reinforcement at and for the heels of the leg portions **20** and **22** of the front section **14**, such that a portion of the end face **40** at the heel of the leg portions will not flex when the rear section **16** is moved into engagement and adjustment therewith.

When the complete frame **12** is received at the building site, and transported to the wall about which it is to be adjusted to frame an opening defined therein, the front and rear sections **14** and **16** are then separated from each other by lifting the spring pawls **56** from engagement with the one-way ratchet teeth **44**. The front and rear sections may then be slid relatively away from each other. The lateral retaining bar **60** bolted by way of the perforations **64** to the heel securing members **62** may then be removed.

The front section **14** of the frame **12**, is then ready to be adjusted into position about the opening defined in the wall **10**. However, before the front section **14** is placed in position about the opening in the wall **10**, a header block **68** (Figs. 3 and 4) is nailed, by nails **70**, to the under side of the header stud **72**, forming the top of the opening defined in the wall **10** (see Fig. 4). If the header block **68** is nailed accurately, that is, centrally between the ends of the header studs **72**, the lateral flat side **74** thereof will cooperate with and serve to guide a pair of spaced header block guides **76**. The guides **76** are secured at their rear ends, to the back of the molding portion **28** of the header portion **24** of the first section **14**, preferably by welding.

Once the header block **68** is properly secured to the header stud **72**, the inner facing surfaces of the header block guides **76** will ride smoothly along the lateral flat side **74** to properly guide the header portion **24** of the front section **14** as the same is slid into position about the top of the opening to be framed. While the front section **14** frames its respective side of the top of the opening in the wall **10**, as described, a locking cross bar **78** (Figs. 3 and 4), having slots **80** provided in the end thereof, is moved upwardly into cooperation with the header block guides **76** so that its slots **80** will cooperate and engage in matching engagement with similar slots **82** in the ends of the header block guides **76** (see Fig. 3).

At the same time as the slots **80** and **82** are moved into cooperative engagement, a screw or threaded member **84**, provided in the header block **68**, passes through an opening **86** defined in the locking cross-bar **78**. With the slots **80** and **82** cooperating in locking engagement and with the threaded member **84** passing through the cooperating opening **86**, the locking cross bar **78** will be held tentatively in position relative to the header block guide **76**.

A locking nut **88** is then threaded onto and along the screw-like or threaded member **84** to cause the central portion, about the opening **86** of the locking cross bar **78**, to move into the confines of a V-shaped groove **90** defined centrally in the forward portion of the header block **68**. Continued threaded movement of the nut **88** along the length of the screw-like member **84** will pull the locking member **78** sufficiently into the V-shaped groove **90** to shorten the length of the member **78** and to bend and wrap the guides **76** about and into engagement with the tapered sides **92** of the header block **68**. The more the guides **76** are wrapped about the sides **92** the more securely will the header portion **24** of the front section **14** be brought into contour tight engagement with the top portion of the wall **10**.

The above mentioned locking header block arrangement assures that the header portion **24** of the front section **14** will be pulled and securely retained in contour tight engagement with the top of the opening of the wall **10**. Additional securing means such as nails **94** are then driven through the perforations **64** provided in the heel securing plate **62** and into the floor of the opening defined in the wall **10**. With the nails **94** thus securing the heel plates **62** to the floor, the leg portions **20** and **22** of the front section **14** will be securely retained in position about the opening.

When the rear section **16** is placed about the opening, but on the opposite side of the wall **10** from the front section **14**, the protruding pawl carrying or tongue members **54** are each moved forward until they fit within the corresponding guide channels provided in the ratchet guide members **42**. Continued movement will position the elongated jamb **52** within the guideways defined in the front section **14** between the ratchet guide members **42** and the additional guide members **58**, and the cooperating portions of the end face **40** and strip face **38**. At the same time, the ratchet guide members **42** move into the guideways defined in the rear section **16** between the guide members **54** and the elongated jamb **52**.

During such forward adjustment or forward movement of the rear section **16** toward the already secured front section **14**, the spring-like pawls **56** will be caused to ratchet resiliently over the corresponding one-way ratchet

teeth 44 until the leg portions 20 and 22 and the header portion 24 of the rear section 16 come into contour abutting relationship with its respective opposite side of the wall 10. The resulting ratcheting engagement between the pawls 56 and the ratchet teeth 44 serves to secure the rear section 16, against its respective side of the wall and in cooperating engagement with the front section 14 to form a composite adjusted frame 12.

It will be obvious that the degree of adjustment of the rear section 16 relative to the previously secured front section 14, will of course depend upon the width of the wall 10. However, once the rear section is moved into contour engagement with its respective side of the wall, the cooperating pawl 56 and one-way ratchet teeth 44 will prevent any relative movement of the rear section.

Referring now to Fig. 7, the numeral 100 generally identifies a second embodiment of a header locking arrangement which may be employed instead of that previously described to secure the header portion of the front section 14 against or relative to the header stud 72 of the opening to be framed. In this modified embodiment the header block 168 is accurately nailed, by way of nails 170, to the header stud 72 centrally intermediate the ends thereof. With the header block 168 thus secured to the stud 72, the front section 14, having the header block guides 176 secured to the back portion of the molding 28 thereof, is slid toward its respective side of the wall 10 so that the inner facing surfaces of the guides 176 will ride along the lateral flat sides 174 of the block 178, to guide the front section 14 accurately between the sides of the opening in the wall 10.

Once the front section 14 is positioned with its header portion 24 against the top of the opening in the wall 10, a locking cross bar 178 having an opening 180 at one end thereof, is angularly moved about one of the header block guides 176. It is maneuvered relative to the guide 176 such that a bent finger 182 on the end of the header block guide is passed into and through the opening 180 to securely retain the end of the cross bar 178 relative to the block guide. The opposite end of the locking cross bar 178 is provided with a pivotable trunk-type lock 184. The trunk-type lock 184 has a finger actuated extension 186 which is pivoted about a pivot (not shown). On the finger extension 186 there is carried a pivotable loop 188 which is adapted to swing over and engage behind the finger 182 of the opposite block guide 176.

From the above, it should be obvious, that when the opening 180 in one end of the cross bar 178 is so maneuvered as to fit over one of the fingers 182 of one of the guides 176, the finger actuated extension 186 at the other end of the cross bar may be pivoted to elongate the distance between the opening 180 and the pivotable loop 188. When the opening 180 and the pivotable loop 188 are so engaged about their respective fingers 182, the extension 186 may then be operated to move to its closed position such as is shown in Fig. 7. As a result, the distance between the opening 180 and the loop 188 is shortened to pull the two guides 176 toward each other to wrap the same about and into engagement with the tapered sides 190 of the header block 168.

As the guides 176 are wrapped about the tapered sides 190 of the block 168, the header portion 24 of the front section 14 is then pulled into contour engagement with its respective side of the wall 10 to securely retain the front section thereagainst. Subsequent nailing of the heel-securing plates 62 into engagement with the floor about the opening of the wall 10 is carried out in the same manner as previously described.

While there have been shown and described and pointed out the fundamental novel features of the invention as applied to several preferred embodiments thereof, it will be understood that various omissions and substitutions and changes in the form and details of the devices illustrated and in their operations may be made by those skilled in the art, without departing from the spirit of the invention. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.

I claim:

1. In a frame adjustable to various wall widths, at least two metallic frame sections movable relative to each other to form a complete frame, a guide member on one of said sectons to form a guideway with a portion thereof, a guide member on the other of said sections to form a guideway with a portion thereof to guide said first mentioned guide member therein while said portion of said other of said sections is guided in said guideway formed on said one of said sections, said guide means on said one section having an opening to guidingly receive said guide means on said other section, and cooperable securing means on said sections to secure said frame sections in their adjustment relative to each other.

2. In a frame adjustable to various wall widths, at least two metallic frame sections, one of said sections having a guide member cooperating with a portion thereof to form a guideway therebetween, the other of said sections having a guide member, a jamb on said other section cooperating with said second mentioned guide member to form a guideway therebetween, said jamb being elongated and adapted to be guided in said guideway of said one section while said guide member of said one section is guided in said guideway of said other section, said guide means on said one section having a groove in which said guide means on said other section is received, and means on said one section cooperating with said jamb to form a joint therebetween.

3. In a frame adjustable to various wall widths, a first metallic frame section including an elongated jamb and a guide member cooperating with said jamb to form a guideway therebetween, a second metallic frame section including a jamb, a door stop surface, a face and an end face, and a guide member on said second section having means defining a guideway to receive said guide member of said first section and cooperating with said end face to form a guideway therebetween to guide said elongated jamb for adjustment therein, said end face cooperating with said elongated jamb and movable therealong to form a joint between said two sections while said first section is adjusted in width relative to said second section and said guide member on said second section is adjusted in said guideway of said first section and receives therein the guide member of said first section.

4. In a frame for adjustably framing a wall opening in which there is a header defining a portion of the opening, first and second sections movable relative to each other for adjustment to the width of the wall, a header block adapted to be secured to the header, and means on said first section of said frame cooperable with said header block to secure said first section to the header and about its respective side of the wall.

5. In a frame as in claim 4, said means including spaced guides cooperable with said header block to be guided thereby and to guide said first section into position about said opening, and lock means cooperable with said guides to secure the same to the header.

6. In a frame as in claim 5, said spaced guides having slots defined therein, said lock means having slots cooperable with said slots in said guides, threaded means in said header block, an opening defined in said lock means and cooperating with said threaded means to accommodate the same therein, and a nut threadable along said threaded means and against said lock means to secure the lock means, spaced guides and said first section to the header block and header.

7. In a frame as in claim 5, said spaced guides having outwardly directed fingers, said lock means having an opening defined in one end thereof and cooperable with one of said fingers to accommodate the same therein, the other end of said lock means having a pivotable loop means to accommodate therein a finger on another of

said spaced guides, said pivotable loop means being operable to move its lop and shorten the distance between the loop and the opening at said one end of said lock means to secure said lock means, spaced guides and said first section to the header.

8. A frame as in claim 4, guide means on said first section cooperating with a portion thereof to form a guideway therebetween, guide means on said second section cooperating with a portion thereof to form a guideway therebetween, said portion on said second section being adjustable in said guideway of said first section and said guide means on said first section being adjustable in said guideway of said second section, and means on said first and second sections to secure the same in their adjustment and about their respective sides of the wall.

9. In a metallic frame adjustable to various wall widths, two metallic sections, one of said sections including a guide member forming a guideway with a portion of said section, said guide member having ratchet means thereon of a groove defined therein, the other of said sections being adjustable relative to said one section and including a ratcheting member forming a guideway with a portion of said other section and movable with said other section relative to said one section and into the groove of said guide member thereof, said portions of each of said sections being movable in the guideways of the other sections, and ratcheting means on said ratcheting member engageable with said ratchet means on said guide member to secure said sections in adjustment.

10. In a frame as in claim 9, said guide member having one-way ratchet teeth, said ratcheting member having a spring pawl thereon for ratcheting engagement in one direction with said ratchet teeth.

11. In a frame as in claim 10, said guide member extending beyond said guideway formed on said one section, and said ratcheting member extending beyond said guideway formed on said other section.

12. A frame for adjustably framing a wall opening in which there is a header defining a portion of the opening, said frame comprising first and second sections movable relative to each other for adjustment to the width of the wall, a header block adapted to be secured to the header, means on said first section cooperable with said header block to secure said first section to said header block and header and about its respective side of the wall, at least one of said sections having a guide member cooperating with a portion thereof to form a guideway therebetween, at least the other of said sections having a pawl member, a jamb on the other of said sections cooperating with said pawl member to form a guideway therebetween, said jamb being elongated and adapted to be guided in said first mentioned guideway while said guide member is guided in said second mentioned guideway, means on said one of said sections cooperable with said jamb to form an adjustable joint therebetween, ratchet teeth on said guide member, and a resilient pawl on said pawl member movable into adjustable cooperating engagement with said ratchet teeth to lock said sections in their adjusted widths.

13. A frame as in claim 12, said guide member having groove means to guide said pawl member therein and relative to said ratchet teeth, said guide member extending beyond said respective guideway, and said pawl member extending beyond its respective guideway.

14. A frame for framing openings in walls of various widths comprising, in combination, first and second metallic sections movable against opposite sides of the wall and adjustable relative to each other to form a complete frame, each of said sections having a pair of legs and a head, a header block to be secured to the header portion of said opening, means on said head of said first section cooperable with said header block to secure the first section to the header block and header portion of said opening, perforate heel securing means on the heel portion of each of said legs of said first section to be nailed through said perforations to the foot of said opening, one-way ratchet means on one of said sections, and pawl means on the other of said sections adjustable relative to said ratchet in accordance with the relative adjustment of said sections and engageable with said ratchet means in one direction to lock said sections in adjustment to form said complete frame.

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