No. 851,300. PATENTED APR. 23, 1907.

M. M. MOEN.

ADJUSTABLE DOOR FRAME.

APPLICATION FILED OCT. 6, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

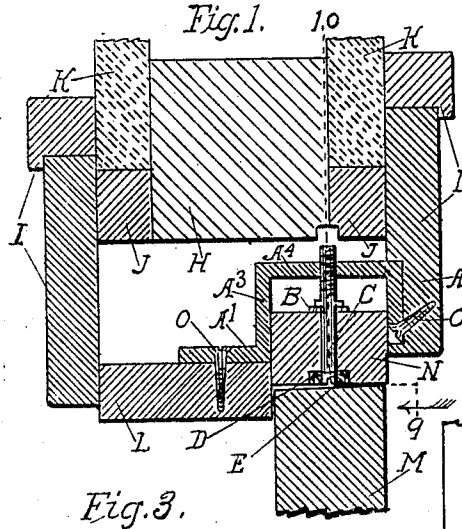


Fig. 2.

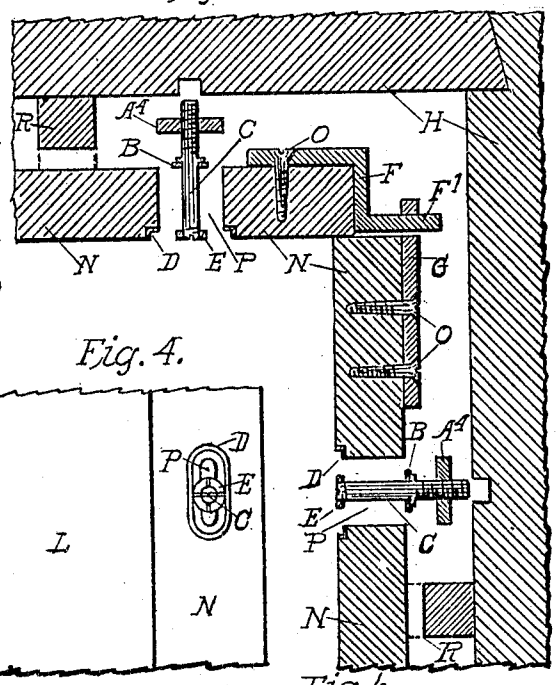


Fig. 3.

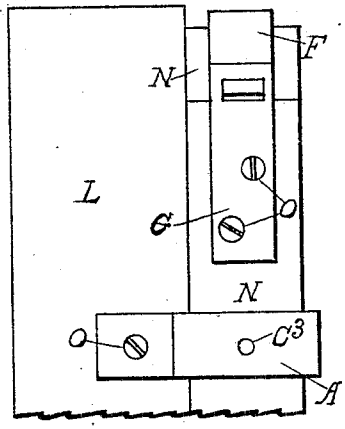


Fig. 4.

Fig. 5.

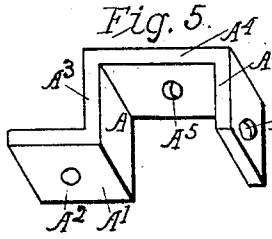


Fig. 6.

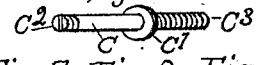


Fig. 7. Fig. 8. Fig. 9.

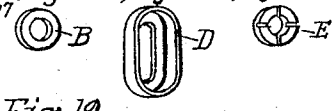


Fig. 10.

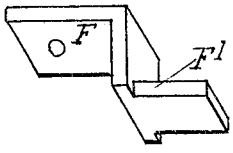


Fig. 11.

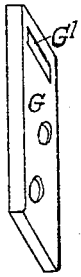


Fig. 12.

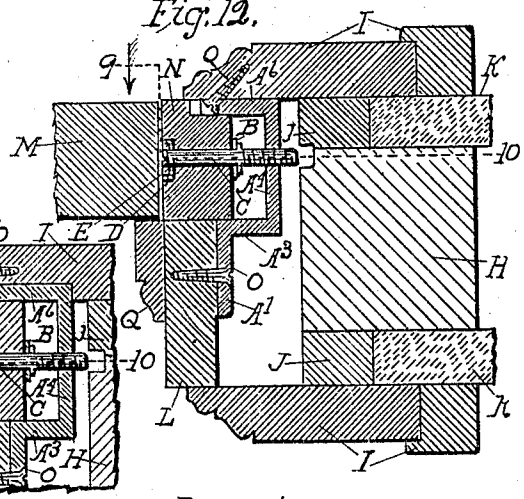
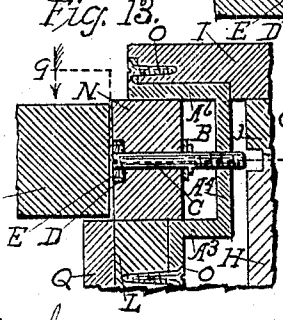


Fig. 13.



Witnesses.

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George C. Selund.

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THE NORRIS PETERS CO., WASHINGTON, D. C.

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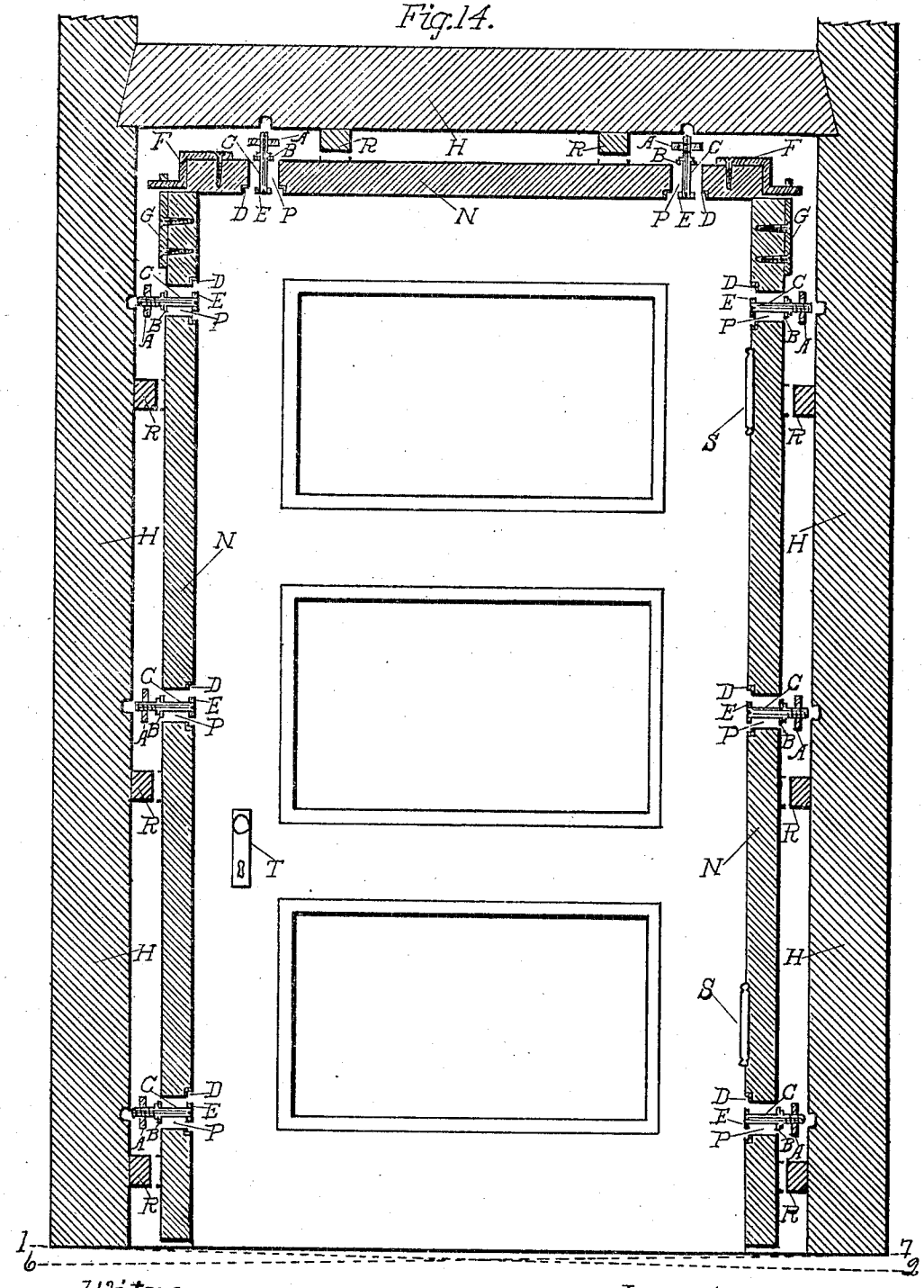
M. M. MOEN.

ADJUSTABLE DOOR FRAME.

APPLICATION FILED OCT. 6, 1905.

2 SHEETS—SHEET 2.

Fig. 14.



Witnesses.
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UNITED STATES PATENT OFFICE.

MARCUS M. MOEN, OF LA CROSSE, WISCONSIN.

ADJUSTABLE DOOR-FRAME.

No. 851,300. Specification of Letters Patent. Patented April 23, 1907.

Application filed October 6, 1905. Serial No. 281,683.

To all whom it may concern:

Be it known that I, MARCUS M. MOEN, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented a new and useful Adjustable Door-Frame, of which the following is a specification.

My invention relates to improvements in frames for doors used in buildings and other structures, and generally in frames for doors wherever used; and the objects of my improvement are, first, to provide a door frame that can be adjusted to the varying size of the door as it swells and shrinks from atmospheric or other causes; second, to provide a door frame in which the door can be either raised or lowered, as is often necessary on account of the settling of the jambs or on account of the settling of the door sill or the floor, said raising or lowering of the door to be accomplished without moving or changing the position of the hinges or butts in either the jambs in the frame or in the door; third, to provide a door frame in which the head jamb can be adjusted to the top of the door when settling in the frame occurs, or when the door is raised or lowered on account of the causes, and for the reasons above enumerated; and fourth, to provide a door frame that for various reasons hereinafter shown and explained will greatly lessen the work of fitting and hanging the door, when first so fitted and hung into a frame.

The invention by which I attain these objects consists essentially in a new and novel construction of an adjustable door frame in which the jambs, both in the sides and in the head, are made in two parts, one of the parts being placed in a fixed and stationary position, and the other part (the part to which the door is hung) being arranged in a movable and adjustable position, by a new, novel, and thoroughly practical method of construction, and connected with and adjustably attached to the fixed and stationary part of the jamb by a new, novel, and thoroughly practical operative mechanism of adjusting means, as hereinafter fully described and illustrated.

While the invention is herein described as an adjustable door frame (as being applied to a door) it is, of course, understood that the frame is equally applicable and adaptable to windows, sash, and transoms hung on hinges or butts fastened to an adjustable part of a jamb in a frame of this kind.

To facilitate the further description of the invention, stationary jamb, whenever hereinafter used, will mean the stationary or fixed part of the jamb in the frame; and, adjustable jamb, whenever hereinafter used will mean the movable and adjustable part of the jamb in the frame.

It will be noticed that the adjustable jamb is of a width equal to the width of the rabbet for the door as door frames are generally constructed; and that the adjustable jamb may be arranged to set back from the face of the stationary jamb sufficiently to form the rabbet for the door, or that it may be arranged to set forward approximately flush with the face of the stationary jamb, and a stop moulding applied to the stationary jamb to form the rabbet for the door, all of which will be hereinafter fully described and clearly illustrated in the accompanying drawings, in which—

Figure 1 is a detailed section through a plastered wood partition as ordinarily constructed around an opening to receive a door frame, together with sections of an adjustable door frame, casings, and part of a door. The figure shows in transverse section the two parts of the jamb in an adjustable door frame, together with sections of an operative mechanism connecting said two parts, and the manner of securing the edge of a casing adjoining the adjustable jamb. Fig. 2 is a section, vertical in a plane through the line 9—10 in Figs. 1 and 12, at an upper corner of an adjustable door frame showing the manner of joining the adjustable jamb in the sides to the adjustable jamb in the head of a frame, together with sections of the appliances used in joining said adjustable jambs. The figure further shows elongated openings in the adjustable jamb in both the side and the head of the frame through which actuating screws of the operative mechanism are passed. Fig. 3 is an elevation of an upper or top portion of the rear side of the jambs in an adjustable door frame showing the operative mechanism in position. Fig. 4 is an elevation of a portion of the face side of the jambs in an adjustable door frame as it appears directly opposite an operative mechanism on the rear. Fig. 5 is a view of a bracket in the operative mechanism of an adjustable door frame that is a guiding means for the adjustable jamb, a support and retaining means for the edge of the casing adjoining the adjustable jamb, and that has a

threaded hole engaging an actuating screw. Fig. 6 is a view of an actuating screw having a collar, and both of whose ends are threaded, one of said ends having a slot enabling it to be turned with a screw driver. Fig. 7 is a view of a common washer. Fig. 8 is a view of a rimmed elongated washer. Fig. 9 is a view of a round nut or removable screw head engaged on the slotted end of the actuating screw, said nut itself having two slots at right angles to each other enabling it to be turned with a common screw driver. Fig. 10 is a view of a supporting bracket, at the ends of the adjustable jamb in the head of an adjustable door frame, with an extended arm sliding in a rectangular opening of a plate described under Fig. 11. Fig. 11 is a view of a plate, at the upper end of the adjustable jamb in the sides of an adjustable door frame, with a rectangular opening through which the extended arm of the supporting bracket described under Fig. 10 slides. Fig. 12 is another section through a plastered wood partition essentially the same as Fig. 1, but showing the stationary jamb in the adjustable door frame as having a stop moulding to form the rabbet for the door; further showing a different pattern of casing and the necessary variations in the bracket described under Fig. 5 and the adjustable jamb, to enable this or a similar pattern of casing to be used in connection with this kind of an adjustable door frame. Fig. 13 is a partial section through a plastered wood partition the same as Fig. 1, but with still another variation in the bracket described under Fig. 5; Fig. 14 is a section through the line 9—10 in Fig's 1 and 12 of a complete adjustable door frame showing the different complete sets of operative mechanisms both in the sides and in the head of the frame. In the fig. a door is represented in elevation as being fitted and hung into the frame in order to illustrate the application of an adjustable door frame of this kind to conditions some of which nearly always and others very often are to be contended with in either or both the door or the frame as door frames usually are constructed, but which in a frame of this kind are easily overcome, as will be hereinafter fully explained.

As herein previously described the adjustable door frame in this instance is placed in and used in connection with a plastered wood partition, but it is understood that the frame is equally adaptable for use in walls of other material such as, brick, stone, concrete, terra-cotta, etc. and further that it is as well adaptable for structures other than buildings such as, railroad coaches, etc. as it is for buildings.

Similar letters of reference are used in all the above described views to indicate similar or identical parts.

A wall timber H, a ground J, and plaster K constitute the partition in which the adjustable door frame is placed.

The reference letter L designates the stationary jamb and N the adjustable jamb (in either or both of the sides and in the head of the adjustable door frame) throughout the drawings and in this specification.

M is a door, I are casings, R is a blocking for the stationary jamb, Q is a stop moulding, S are hinges or butts, and T is a lock.

The stationary jamb L in the frame is fastened to the wall timber H in any well known manner, usually by means of blocks R. The casings I are fastened to the wall or partition and to the stationary jamb L in the frame by any well known method, and the edge of the casing I adjoining the adjustable jamb N in the frame is fastened and held in position by means hereinafter fully described.

The adjustable jamb N is preferably set back from the face of the stationary jamb L (see Fig. 1) sufficiently to always leave a rabbet for a door M, and is slidably movable in the bracket A (see Figs. 1 and 12), and between the stationary jamb L and a casing I, both horizontally and vertically by means of the operative mechanism hereinafter described.

For moving or changing the position of the adjustable jamb N (in either or both of the sides or in the head of an adjustable door frame of this kind) for the purpose of increasing or decreasing the size of the opening for the door, or for the purpose of changing the shape or outline of the opening for the door, or for the general purpose of adjusting the opening for the door in the frame to fit the door, I employ an operative mechanism consisting of the following several parts: A bracket A (see Fig. 5) with its base plate A—1 having a hole A—2, its upwardly-extending arm A—3, its forwardly-extending arm A—4 having a threaded hole A—5 engaging an actuating screw, and its downwardly extending arm A—6 having a hole or slot A—7; (in Fig. 13 the arm A—6 is returned around the edge of a casing I.) an actuating screw C (see Fig. 6) with a collar C—1, a threaded and slotted end C—2, and a threaded end C—3 engaged in the threaded hole A—5 of the bracket A; a common washer B (see Fig. 7) resting against the collar C—1 on the actuating screw C; a rimmed washer D (see Fig. 8) fitted around an elongated opening P in the face side of the adjustable jambs N; a round slotted nut or removable screw head E (see Fig. 9) fitted to turn on the inside of the rim of the washer D, and engaged on the slotted and threaded end C—2 of the actuating screw C. A screw O (or screws O) in the hole A—2 (or holes A—2) of the base plate A—1 holds the bracket A to the stationary jamb L, and another

screw O in the hole or slot A—7 of the downwardly extending arm A—6 holds the edge of a casing I adjoining the adjustable jamb N in its proper position.

In connection with the above operative mechanism I employ a plate G (see Fig. 11) and a supporting bracket F (see Fig. 10) to secure and maintain the adjustable jambs N, at the upper corners of the frame, in their operative position.

The adjustable jambs N are provided with elongated openings P (see Fig's. 2 and 14) through which the end C—2 of the actuating screws C is passed. It is readily seen that the adjustable jambs N are held firmly in place on the actuating screws C between the washer B, resting against the collar C—1, and the rimmed washer D in the face of the said adjustable jambs, by applying the removable screw head E to the end C—2 of the said actuating screws C; and that the said adjustable jambs N may be moved across the edge of the stationary jambs L, either toward or away from the arm A—4 of the brackets A by turning the actuating screws C together with their removable heads E. To thus move or adjust the adjustable jambs N, I slightly loosen the removable heads E, turning them until one of their slots coincide with the slot in the actuating screws C, and then turning the said screws together with and at the same time as their respective heads. When the adjustable jambs N have been moved or adjusted to their required position the removable heads E are again tightened on the end C—2 of the actuating screws C.

The elongated openings P in the adjustable jambs N through which the actuating screws C pass, permit of a movement in the said adjustable jambs, vertical to the said actuating screws, which in an adjustable door frame is very essential, as will be shown and explained further on.

At the upper end and on the rear side of the adjustable jamb N in the sides of the frame (see Fig's. 2 and 3), I fasten by means of screws O, plates G having a rectangular opening G—1 through which an extended arm F—1 of supporting brackets F passes; said supporting brackets F being fastened to the ends of the adjustable jamb N in the head of the frame by other screws O. The adjustable jamb N in the sides of the frame being left short at the lower end, not resting on the door sill or floor, in order that it may be lowered, and as it is not intended that the actuating screws C in the operative mechanisms shall longitudinally carry and support the said adjustable jamb in the sides, it devolves on the plate G in its engagement on the supporting bracket F, to carry the said adjustable jamb in sides through the adjustable jamb in the head which is rectilinearly supported by the actuating screws in the operative mechanisms in the head of the frame, all of which is readily seen by reference to Fig's. 2 and 14 of the drawings.

It is readily seen that the adjustable jamb N in the sides of the frame may be raised and lowered by turning the actuating screws C in the adjustable jamb N in the head of the frame. To thus raise or lower the adjustable jamb N in the sides of the frame I loosen the removable heads E on the actuating screws C in the said adjustable jamb in the sides, and after operating the actuating screws C in the adjustable jamb N in the head of the frame as hereinbefore described, the said heads E on the said actuating screws C in the said adjustable jamb N in the sides of the frame are again tightened.

The combination of the plate G and bracket F (an appliance by which the adjustable jamb N in the sides of the frame is joined to and supported by the adjustable jamb N in the head of the frame), at the upper corners of the frame, is so arranged that by turning the actuating screws C in the adjustable jamb in either side of the frame as far into the arm A—4 of the bracket A as the collar C on the said actuating screws permits, the extended arm F—1 of the supporting bracket F will slip out of the rectangular opening G—1 in the plate G, if the adjustable jamb N in the head of the frame is moved as far in the opposite direction as the elongated openings P in the said adjustable jamb in the head permit. This arrangement enables me to remove from the frame the adjustable jambs N at any time either before or after the frame has been permanently located and cased up.

It is readily seen that the arrangement by which the adjustable jambs N in an adjustable door frame are movable and adjustable both horizontally and vertically, in connection with an operative mechanism permitting the removal of the said adjustable jambs from the frame either before or after it has been permanently located and cased up, not only insures absolute and perfect adjustment to the door, but that it also insures a thoroughly practical and absolutely reliable and substantial method of securing the edge of a casing I adjoining the adjustable jamb N, as will be seen by the following manner of procedure in putting an adjustable door frame of this kind into place in a wall or partition and applying the casings thereto: The entire operative mechanism together with all its attachments and connections is completely independent of any and all the frame work in the walls, being simply attached to and connected with the jambs in the frame; it follows, that an adjustable door frame of this kind can be made ready and put together complete in every way before it is placed in a wall or partition and fastened thereto in the same manner and by the same means as the common door frames in general use. When

this kind of an adjustable door frame has thus been placed and fastened, the casings I are fastened to the wall or partition and to the stationary jambs in the frame by any of the methods generally known and in common use, the adjustable jambs N are then removed out of the frame and the edge of the casings I adjoining the said adjustable jambs is fastened by screws O in the hole or slot A—7 of the arm A—6 of the bracket A.

If casings I of the pattern (or similar to the pattern) shown in Fig. 1 are used, they are gouged out in the proper places to receive the arm A—6 of the brackets A before being fastened to the wall, but if casings I of the pattern (or similar to the pattern) shown in Fig. 12 are used, the brackets A are of a slightly modified shape and the adjustable jambs N are rabbeted in the proper places to receive the arm A—6 of the said brackets A, all of which is plainly shown.

While the adjustable jambs N are removed out of the frame, the hinges or butts may be fitted and fastened to the door, and also to which ever one of the adjustable jambs in the side it is required that the door shall be hung to; thus saving considerable labor, as is clearly evident.

If a bracket A of the modified shape shown in Fig. 13, is used, the adjustable jambs need not be removed from the frame in order to fasten the edge of the casing I adjoining the said adjustable jambs.

In an adjustable door frame of this kind, the door need only be fitted to an approximate size as the frame's adjustable jambs may be adjusted perfectly to the door after it has been hung into the frame; thus, a further saving in the labor of fitting and hanging the door is gained.

The adjustable door frame in Fig. 13 has three sets of operative mechanisms in either side and two in the head; this frame also has its adjustable jambs N joined and secured, at both of its upper corners, by the plate G and supporting bracket F. It is understood, however, that the number of operative mechanisms in either side and in the head of an adjustable door frame of this kind should be varied in accordance with the size of the frame: In a frame 3′ 0″ x 7′ 0″ it is advisable to use four in each side and two in the head of such operative mechanisms.

It is understood that an adjustable door frame involving the essential principles of this invention may be constructed, first, with adjustable jamb N in both sides and in the head of the frame; second, with adjustable jamb N in only the side of the frame to which the door is hung, as at 5, (Fig. 13) (the opposite side of the frame having a stationary jamb only; that is, the stationary jamb L and the adjustable jamb N being made in one piece) and with adjustable jamb N in the head; and third, with adjustable jamb N in only the side of the frame opposite the side to which the door is hung, as at 4, (Fig. 13) (the side of the frame to which the door is hung having a stationary jamb of one piece only) and with adjustable jamb N in the head.

I prefer the first mode of construction, as in an adjustable door frame with adjustable jamb in both sides and in the head, perfect adjustment to the door on all sides and also the working engagement of the lock bolt in the said door and the door strike in the jamb is at all times insured, as is clearly evident, and as will be further explained.

In an adjustable door frame of the second mode of construction with adjustable jamb in only the side of the frame to which the door is hung and in the head, if the jambs in the side to which the door is hung, as at 5, settles to a line 1—2 the adjustable jamb N in this side may, of course, be raised until the bottom of the said door is at its previous level, which raising will insure the working engagement of the lock bolt in a lock T in the door and the door strike in the jamb, but by so raising the said adjustable jamb a crevice will be left between the bottom of the door and the line 1—2. If on the other hand the said adjustable jamb is left in its settled position and the door refitted at the bottom to the line 1—2 and the adjustable jamb N in the head at 3 dropped the proper distance to take up the crevice caused by the settling of the jambs in the side of the frame to which the door is hung, the lock bolt in a lock T in the door and the door strike in the jamb will not be in working engagement.

In an adjustable door frame of the second mode of construction with adjustable jamb in only the side to which the door is hung and in the head a slightly modified construction in the upper corner of the frame adjoining the side having only a stationary jamb, as at 3, is required as is shown by the dotted line X (Fig. 13): A corner on the end and on the face side of the adjustable jamb N in the head of the frame at 3, is cut away so that the face of the said adjustable jamb in the head may be dropped below the end of the jamb in the side; the plate G and the supporting bracket F at this corner are dispensed with in this construction of an adjustable door frame.

In an adjustable door frame of the first mode of construction with adjustable jamb N in both sides and in the head, if the jambs in the side to which the door is hung, as at 5, settles to a line 1—2 the bottom of the door is refitted to the said line 1—2 and the adjustable jamb in the opposite side, as at 4, dropped a distance equal to the settling of the jambs in the said side at 5, which insures the proper adjustment of the adjustable jamb in the head and also the working engagement of the lock bolt in a lock T in the door and the door strike in the jamb.

In an adjustable door frame of the third mode of construction with adjustable jamb in only the side opposite the side to which the door is hung and in the head, if the jambs in the said side of the frame opposite the side to which the door is hung, as at 4, settles to a line 6—7 the adjustable jamb N in this side may, of course, be raised to its previous position, thus insuring the working engagement of the lock bolt in a lock T in the door and the door strike in the jamb, but there will be a crevice between the bottom of the door and the said line 6—7, which in an adjustable door frame of this mode of construction there is no way of overcoming, the jamb to which the door is hung being stationary.

In an adjustable door frame of the third mode of construction with adjustable jamb in only the side opposite the side to which the door is hung and in the head, the plate G and the supporting bracket F are dispensed with in the upper corner adjoining the stationary jamb to which the door is hung.

In an adjustable door frame of the first mode of construction with adjustable jamb in both sides and in the head, if the jambs in the side opposite the side to which the door is hung, as at 4, settles to a line 6—7 the said door is refitted to the said line 6—7 and the adjustable jamb N to which the door is hung, as at 5, dropped a distance equal to the settling of the jambs in the said side at 4, which insures the adjustment of the frame to the door on all sides and also the working engagement of the lock bolt in a lock T in the door and the door strike in the jamb.

The illustrations above given show sufficiently clearly that an adjustable door frame of the first mode of construction with adjustable jamb in both sides and in the head of the frame is preferable to either of the other two modes of construction; and while it is evident there are numerous other illustrations that could be given and reasons cited to show that an adjustable door frame of the said first mode of construction is preferable, the illustrations given and reasons cited are deemed sufficient for my present invention.

Having thus described my invention, what I claim is—

1. The combination in an adjustable door frame of jambs made in two parts, one part L stationary, and the other part N movable and adjustable, the said adjustable part or jamb being not only movably and adjustably arranged to slide on the edge of the said stationary part or jamb across said edge and at rightangles to the face of the said stationary jamb, but also movably and adjustably arranged to slide on the said edge of the said stationary jamb longitudinally and parallel to the face of the said stationary jamb, all arranged in a manner to permit the door to be raised and lowered in the frame, and to permit of changing the size and outline of the opening for the door in the frame, not only in width, but also in height, all substantially as and for the purposes set forth.

2. The combination in an adjustable door frame of jambs made in two parts, one part L stationary, and the other part N movable and adjustable, the said adjustable part or jamb being not only movably and adjustably arranged to slide on the edge of the said stationary part or jamb across said edge and rightangles to the face of the said stationary jamb, but also movably and adjustably arranged to slide on the said edge of the said stationary jamb longitudinally and parallel to the face of the said stationary jamb, all arranged in a manner to permit the door to be raised and lowered in the frame, and to permit of changing the size and outline of the opening for the door in the frame, not only in width, but also in height, and an operative mechanism of adjusting means for so moving and adjusting and otherwise manipulating the said adjustable jambs in the frame as described, all substantially as and for the purposes set forth.

3. The combination in an adjustable door frame of jambs made in two parts, one part L stationary, and the other part N movable and adjustable, the said adjustable part or jamb being not only movably and adjustably arranged to slide on the edge of the said stationary part or jamb across said edge and at rightangles to the face of the said stationary jamb, but also movably and adjustably arranged to slide on the said edge of the said stationary jamb longitudinally and parallel to the face of the said stationary jamb, all arranged in a manner to permit the door to be raised and lowered in the frame, and to permit of changing the size and outline of the opening for the door in the frame, not only in width, but also in height, and an operative mechanism of adjusting means for so moving and adjusting and otherwise manipulating the said adjustable jambs in the frame as described, the said operative mechanism having a bracket A (secured to the said stationary jamb) whose parallel arms A—3 and A—6 form a guiding means to the said adjustable jamb, and whose arm A—6 also forms a supporting and retaining means for the edge of a casing I adjoining the said adjustable jamb in the frame, all substantially as and for the purposes set forth.

4. The combination in an adjustable door frame of jambs made in two parts, one part L stationary, and the other part N movable and adjustable, the said movable and adjustable part or jamb being not only movably and adjustably arranged to slide on the edge of the said stationary part or jamb across said edge and at rightangles to the face of the said stationary jamb, but also movably and adjustably arranged to slide on the said edge of the said stationary jamb longitudinally

and parallel to the face of the said stationary jamb, all arranged in a manner to permit the door to be raised and lowered in the frame, and to permit of changing the size and outline of the opening for the door in the frame, not only in width, but also in height, and an operative mechanism of adjusting means for so moving and adjusting and otherwise manipulating the said adjustable jambs in the frame as described, in which operative mechanism the said adjusting means consists essentially of an actuating screw C whose threaded end C—3 is engaged in a threaded hole A—5 of a bracket A, and whose slotted and threaded end C—2 passes through an elongated opening P in the adjustable jamb, said adjustable jamb being held on the said actuating screw between a washer B (resting against a collar C—1 on the said actuating screw) and a removable head E (said removable head turning in a rimmed washer D, in the face of the said adjustable jamb) engaged on the said end C—2 of the actuating screw, all substantially as and for the purposes set forth.

5. The combination in an adjustable door frame of jambs made in two parts, one part L stationary, and the other part N movable and adjustable, the said adjustable part or jamb being not only movably and adjustably arranged to slide on the edge of the said stationary jamb across said edge and at right-angles to the face of the said stationary jamb, but also movably and adjustably arranged to slide on the said edge of the said stationary jamb longitudinally and parallel to the face of the said stationary jamb, all arranged in a manner to permit the door to be raised and lowered in the frame, and to permit of changing the size and outline of the opening for the door in the frame, not only in width, but also in height, and an operative mechanism of adjusting means for so moving and adjusting and otherwise manipulating the said adjustable jambs in the frame as described, and an appliance consisting of a plate G and supporting bracket F, in the upper corners of the frame, that in addition to being so arranged that the adjustable jambs in the sides and head are operatively joined, the adjustable jamb in the head carries and supports the adjustable jamb in the sides, all of which is arranged so that the adjustable jambs may at any time be removed from the frame, substantially as and for the purposes set forth.

MARCUS M. MOEN.

Witnesses:
AUGUST J. WEIGEL,
GEORGE O. SELUND.