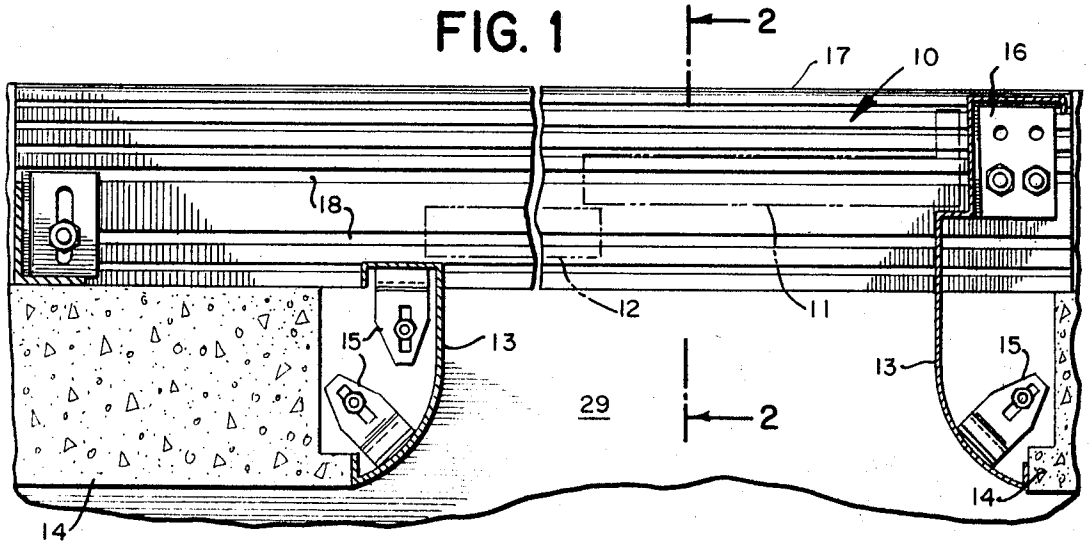
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FIG. 1



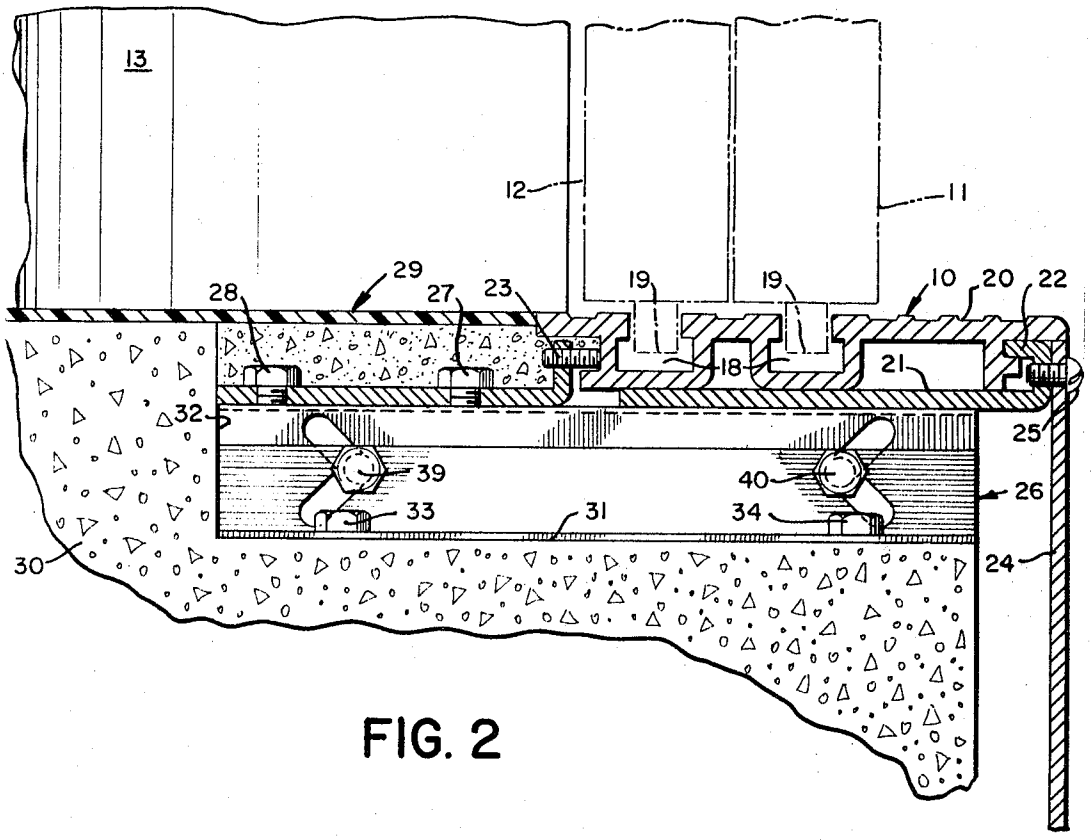


FIG. 2

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FIG. 3

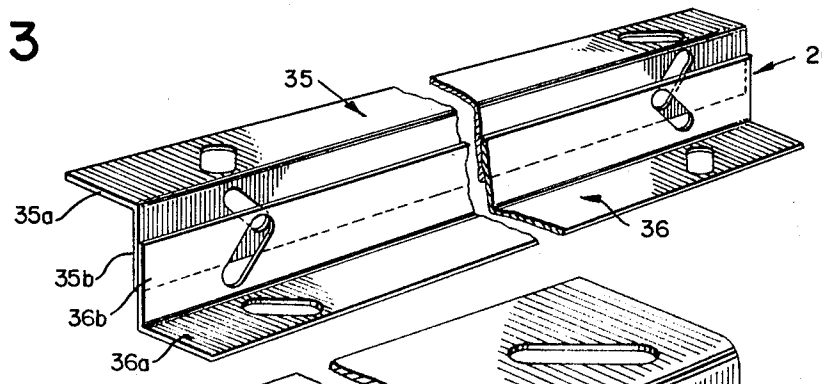


FIG. 4

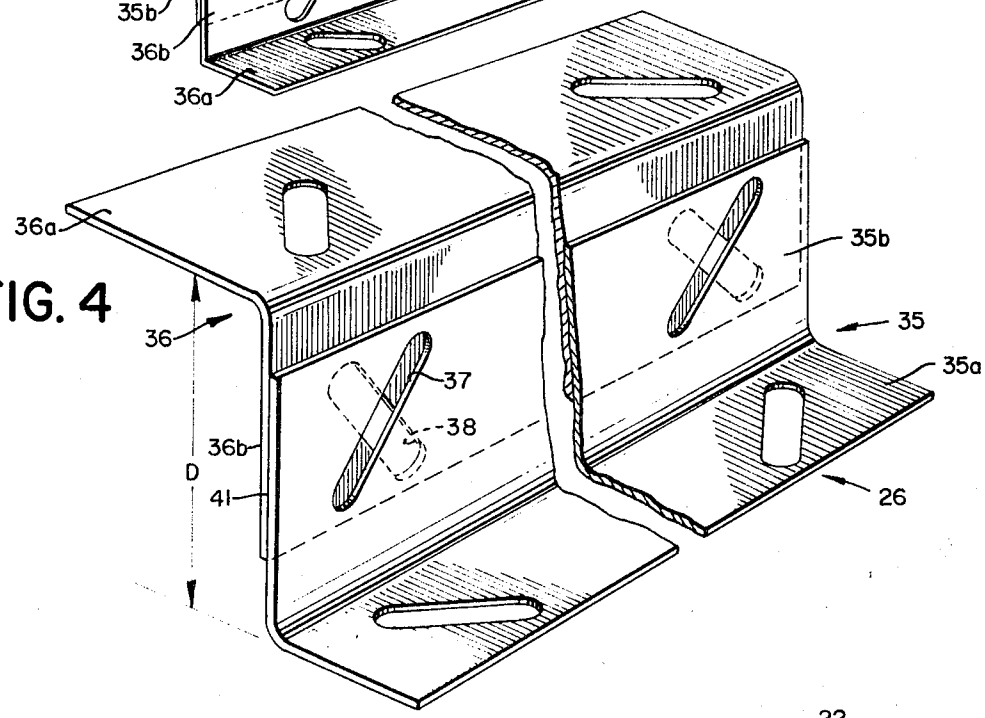
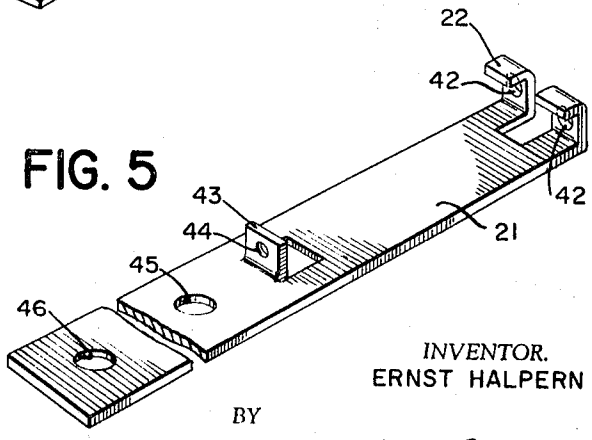


FIG. 5



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FIG. 6

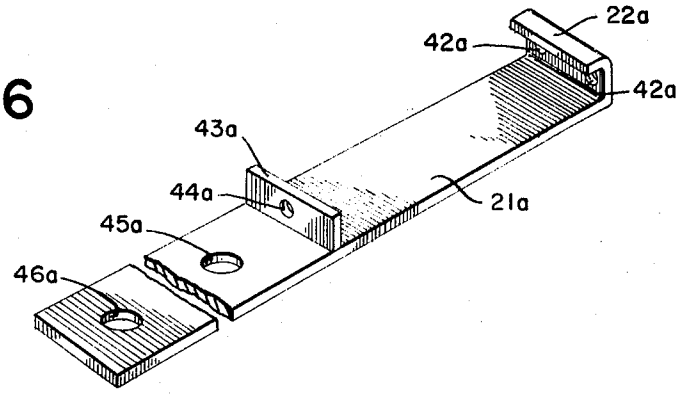


FIG. 7a

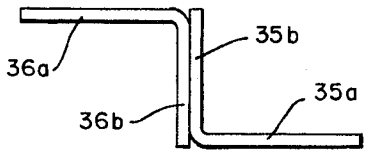


FIG. 7b

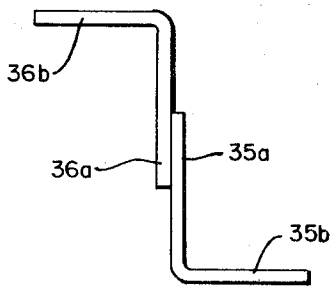


FIG. 7c

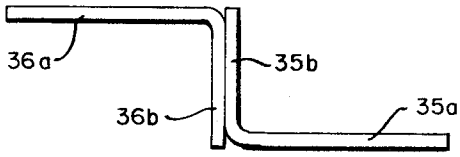
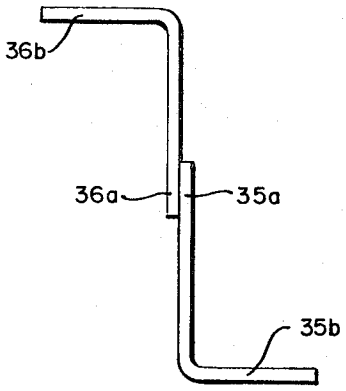


FIG. 7d



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3,431,690

ADJUSTABLE SUPPORT

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Filed May 4, 1966, Ser. No. 547,612
U.S. Cl. 52—204 3 Claims
Int. Cl. E04d 15/06

ABSTRACT OF THE DISCLOSURE

An adjustable sill support is formed from two angle shaped members provided with slots which are oppositely inclined with respect to the longitudinal axis of the angle support member. A bracket, fixed to the adjustable support, includes means to retain the sill.

This invention relates generally to an adjustable support for relatively elongate members which are to be applied to a base.

In order to describe the invention, it will be described in connection with the art of door sills and rails and particularly in relation to elevator door sills. However, this description is for illustrative purposes only.

When applying door sills to elevator doors, it is desriable that they be fully alignable and adjustable with respect to the doors in order to assure smooth operation of the doors through the prevention of jamming. Heretofore, adjustments in the level and alignment of the sill were not possible without resorting to complex means which were costly and difficult to construct, and yet were not adaptable to the numerous different situations encountered in building constructions.

It is therefore an object of the present invention to provide means for aligning and leveling the sill to accommodate different building constructions.

Another object of the present invention is to provide a sill in combination with an integral support which is constructed so that it can be adjusted for the depth of the recess in the building floor beneath the sill.

Still another object of the present invention is to provide means which utilizes only two pairs of adjustable members for aligning and leveling the sill in all different building constructions.

Yet another object of the present invention is to provide a sill which while utilizing only two pairs of adjustable members may be adjustable to accommodate the entire range of variations found in presently existing building conditions.

A further object of the present invention is to provide an adjustable sill of simple and inexpensive construction.

A still further object of the present invention is to provide means for assembling the sill and support in a simplified manner, and for integral construction of the assembly parts.

Other objects and advantages appear in greater detail in the following description and specification taken in conjunction with the accompanying drawings in which—

FIGURE 1 is a top view of the sill in relation to the elevator doors and the entrance to the elevator shaft.

FIGURE 2 is a cross-sectional view of the sill, showing the manner in which it is assembled to the adjustable support.

FIGURE 3 shows a possible configuration for the adjustable support for the sill.

FIGURE 4 shows another possible embodiment of the adjustable support as well as the principle upon which the construction of the support is based.

FIGURE 5 shows the construction of the bracket which

fastens the sill to the adjustable support, and maintains the sill in proper alignment with respect to the doors.

FIGURE 6 shows an alternate construction of the bracket of FIGURE 5.

FIGURES 7*a*, *b*, *c* and *d* show the manner in which each of the two pairs of adjustable supports shown in FIGURES 3 and 4 may be combined to accommodate the various ranges of sizes in building construction.

An adjustable sill support which is immobile during opening and closing of the door comprises two angle shaped members provided with slots which are inclined with respect to the longitudinal axis of the angle support members. The angle members enable the support to be vertically adjusted. The sill support includes a bracket for holding the sill and retaining it aligned with respect to the doors.

Referring to the drawings, FIGURE 1 shows a sill **10** in relation to the elevator shaft doors **11** and **12**. The doors **11** and **12** of a two-speed door system are provided with a frame **13** which is supported by the building wall **14**. Brackets **15** assure that the frame is properly located with respect to the wall and floor, and bracket **16** provides a firm footing for the frame. The edge of the sill **17** faces the interior of the elevator shaft.

The cross-section of the sill **10** and the method used to support it, are shown in FIGURE 2. The sill contains T-slots **18** for the purpose of guiding doors **11** and **12** through means of guide **19** fixed to the bottom of the doors. By riding within slots **18**, this guide **19** assures that the doors remain vertically upright in all positions. Additional grooves, ridges, or other non-slip treatment **20** provide a non-slippage surface for persons entering or leaving the elevator.

The sill **10** is firmly held and located through means of the sill bracket **21**. The bracket **21** has a tongue **22** residing within a slot associated with sill **10**. The sill is located between this tongue and a set screw **23** bearing against another slot integrally shaped with the sill. The set screw **23** is held by a bent-up section of bracket **21** which contains threaded holes for supporting facia plates **24** by means of screws **25**.

In accordance with the present invention, an adjustable support **26** supports the sill bracket which is held in place by fasteners **27** and **28**. The adjustable support permits the bracket and hence the sill to be leveled so that the sill is flush with the surface of the floor **29** while the support rests on the concrete base **30**. In addition to providing for the leveling of the sill, the adjustable support **26** also compensates for the depth between the bottom **31** of the concrete recess **32** and the sill bracket. The adjustable support is fixed to the bottom of the concrete recess by means of fasteners **33** and **34**. One or more of such adjustable supports may be employed along the length of the sill to hold the latter in place. The length of the sill, on the other hand, is determined essentially by the combined width of the doors used to close the entrance to the elevator shaft. It is desirable that support **26** be adjustable because of the wide variation of the depth of the concrete recess that is encountered in different buildings.

The constructional details of the adjustable support **26** of this invention are shown in FIGURES 3 and 4. The support consists essentially of two angle members **35** and **36** provided with angle legs **35***a* and **35***b* and **36***a* and **36***b*. The angle contains a series of slots which allow the angles to be combined in a varying manner. Thus slot **37** in angle **35** mates with slot **38** in angle **36**. FIGURE 4 shows that by moving angle **36** in relation to angle **35**, the depth D is adjustable from the point where the left ends of slots **37** and **38** coincide to where their right ends coincide. Accordingly, the variation in D is equal to the projected

height. The depth D corresponds to the distance between the bottom of sill bracket **21** and the bottom **31** of the concrete recess. To fix the position of angle **35** with respect to angle **36**, the two angles are assembled with bolts **39** and **40** passing through the slots as shown in FIGURE 2. To hold the angles together, these bolts **39** and **40** pass through both of the slots forming an X. The same variation in depth D may be obtained by making the slots parallel with the angle edges **41**, rather than inclining them as shown in FIGURE 4. However, by inclining the slots in the manner shown, it is possible for the adjustable support to sustain a greater sill load for a given set of bolts **39** and **40**. Furthermore, by inclining the slots in the particular manner shown, correct assembly of the angles is assured, since the angles cannot be combined and fastened together in any other than the proper way.

The inclination of the slots also provides the feature which allows the angles to be adjusted in relation to one another in the lateral or horizontal direction. This lateral direction is perpendicular to that shown in depth D. The inclination of the slots, moreover, provides freedom of motion in angular directions. Accordingly, the angles may be tilted and oriented with respect to one another at different angles for purposes of aligning and leveling the sill. The inclination of the slots, therefore, provides adjustability features in the vertical, horizontal, and angular directions.

FIGURE 3 when taken in relation to FIGURES 4 and 7, shows that with angles of different sizes and unequal legs, it is possible to obtain variations in depth D over and beyond that allowable by the projected height of the slots. The principle involved in fastening together the angles of FIGURE 3 is identical to that described for FIGURE 4.

In accordance with the present invention, each of the two pairs of angles may be combined to provide variations in depth so that it is only necessary to produce and stock two such pairs to accommodate depth ranges which satisfy the variations in all present building conditions. FIGURE 7 shows an example of how the two pairs of angles may be combined to provide variations in depth within the range from 1″ to 5½″. Of course if building conditions or other conditions change, the range may be increased or decreased by simply changing the size of the legs **35***a*, **35***b*, **36***a* and **36***b*.

In accordance with the present invention, as shown in FIGURE 7*a* each of the angles **35** and **36** are provided with legs of unequal size. The illustrative size of the legs are disclosed in the drawing itself, as are the extreme dimensions when the angles are combined as shown in FIGURES 7*a* and 7*b*. It will be understood, however, that the range of adjustment may be virtually infinite. Within the extreme, that is, the angle may be adjusted as desired between various depths from 1″ to 2″. In FIGURE 7*c* angles are provided each having legs of 2″ and 3¼″. The variations of adjustment in the extreme are shown in FIGURE 7*d*. This construction of angles may be adjusted to a variation of depths between 2″ and 5½″.

The detailed construction of the sill bracket **21** is shown in FIGURES 2 and 6. One end of the bracket is shaped into a pair of tongues **22** which contain holes **42** for admitting screws **25**. The latter screws support the facia plates **24**. The bent-up section **43** contains a hole **44** for holding the screw **23** that serves to align the sill in the lateral direction. Holes **45** and **46** in the bracket allow fasteners **27** and **28** respectively to pass through and fix the bracket to the adjustable support **26**. The bracket is entirely of integral construction and may be manufactured of wrought, formed or extruded metal.

This invention therefore provides a new, novel, efficient and completely adjustable integral support particularly adapted for aligning and levelling a sill and rail.

I claim:

1. An adjustable support for door sills or the like including an adjustable pair of angle supports having oppositely angled slots therein, adjustable fastening means disposed in said slots to hold said angle supports in the desired relative position with respect to each other, a bracket fixed to the upper angle of said pair of angle supports, said bracket having a tongue on one end engaged with a forward longitudinal slot on the sill and a struck-up tongue spaced rearwardly from said first tongue, and locking means on said struck-up tongue engaging a rearward longitudinal slot on the sill to lock said sill to said bracket.

2. The support of claim **1** wherein said adjustable fastening means comprises a bolt fastener disposed in said oppositely angled slots.

3. The support of claim **2** wherein said locking means is a set screw threaded in said struck-up tongue to engage said rearward longitudinal slot on the sill.

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KENNETH DOWNEY, *Primary Examiner.*

U.S. Cl. X.R.

49—425, 452; 16—94