Jan. 24, 1928. **1,656,996**

R. ANDERSON

WINDOW CLEANING APPARATUS

Filed Feb. 9, 1926 3 Sheets-Sheet 1

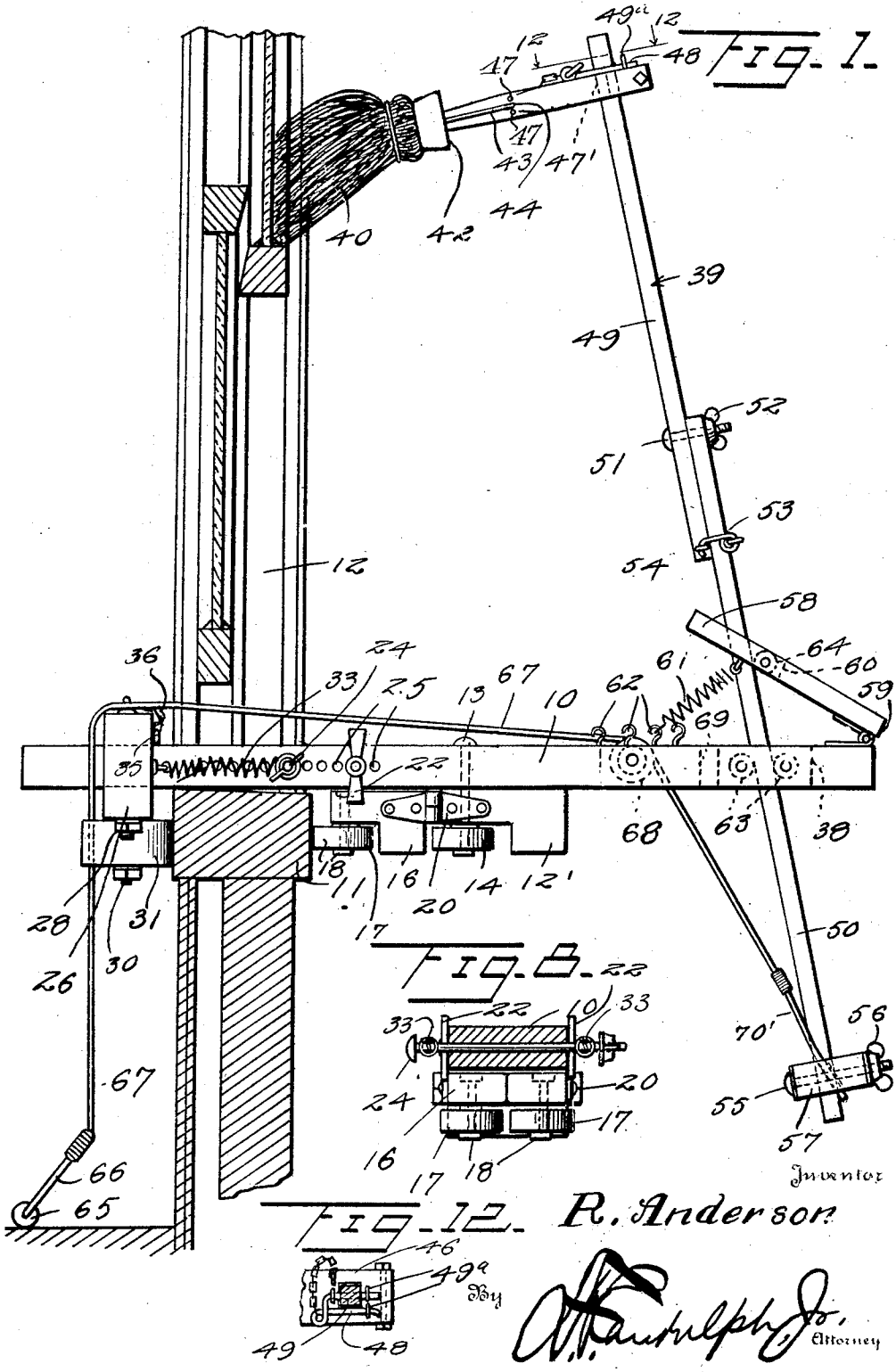


FIG. 1.

FIG. 8.

FIG. 12.

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Fig. 2.

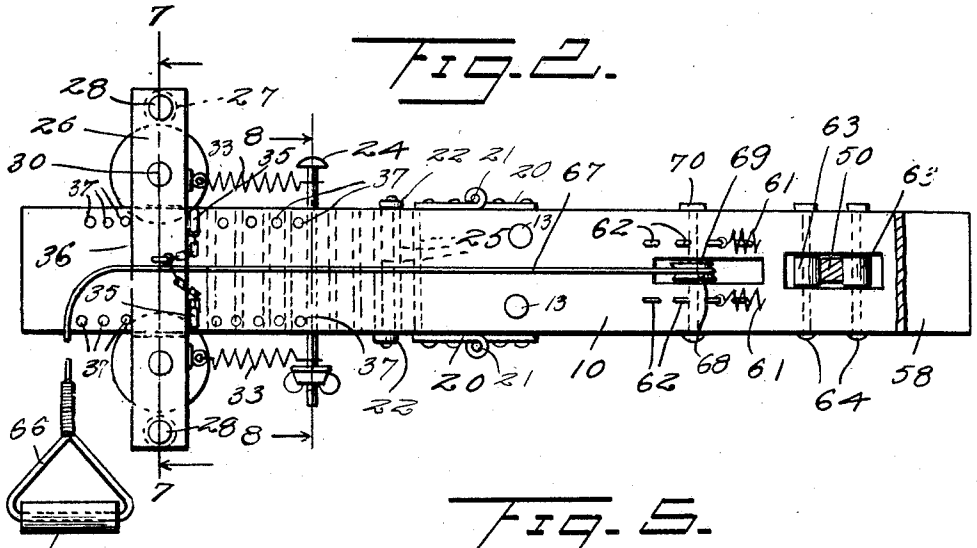


Fig. 5.

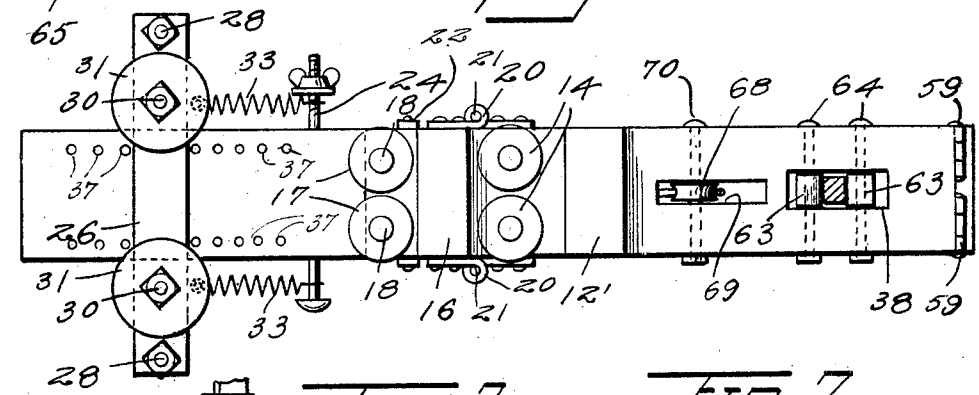


Fig. 3.

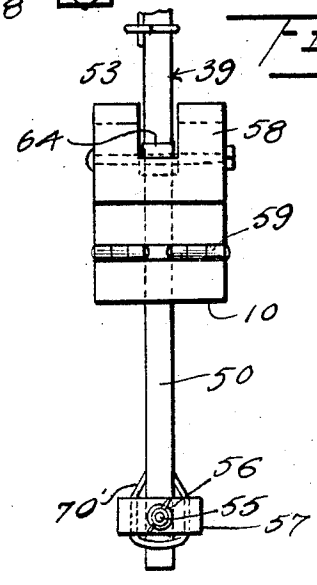
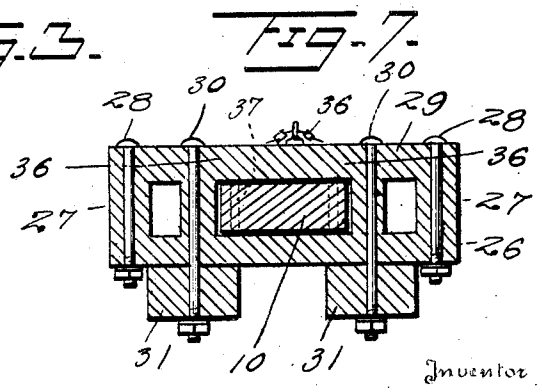


Fig. 7.



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Fig. 4.

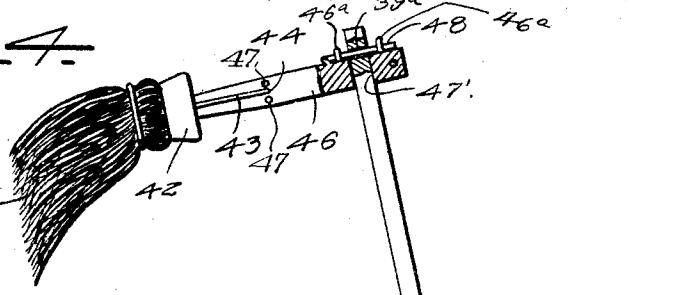
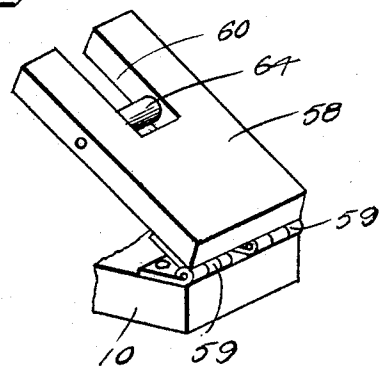
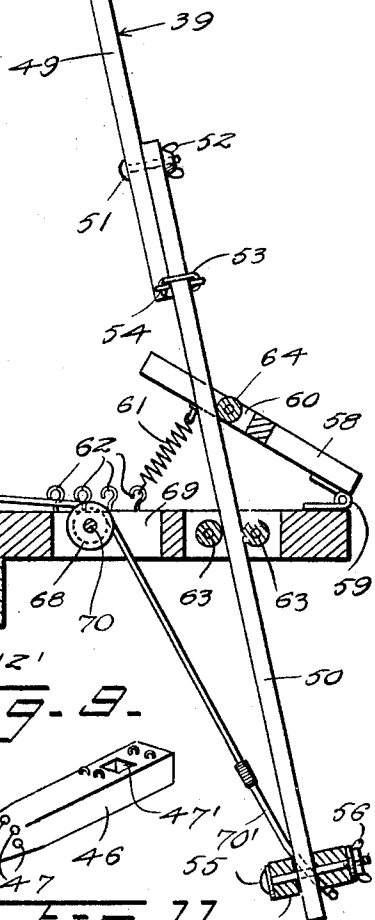


Fig. 6.





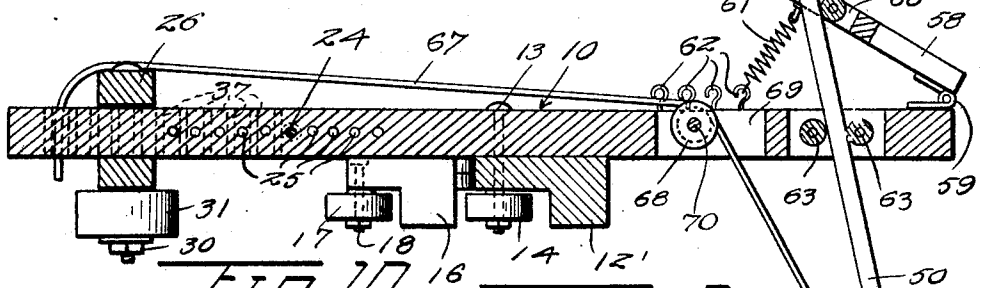


Fig. 10.

Fig. 9.

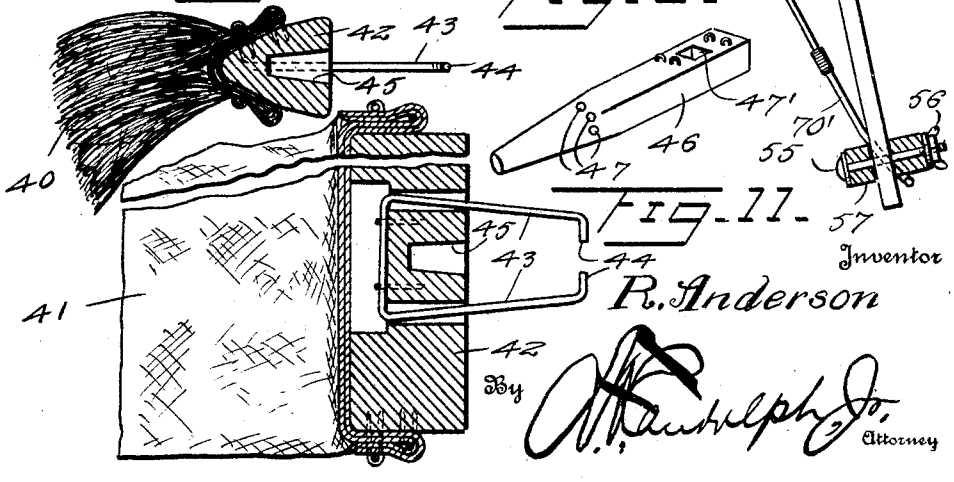


Fig. 11.

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UNITED STATES PATENT OFFICE.

RANDOLPH ANDERSON, OF ST. LOUIS, MISSOURI.

WINDOW-CLEANING APPARATUS.

Application filed February 9, 1926. Serial No. 87,114.

This invention relates to a cleaning apparatus particularly adapted for use in connection with windows.

It is primarily aimed to provide a machine which is adaptable to practically all windows and which may be operated from the interior of the building, even when the cleaner proper engages the outer surface of the window panel or panels.

Another object is to provide a novel construction wherein the apparatus is adjustable according to the size of different window sills.

A further object is to provide a construction wherein the cleaning device will be urged into engagement with the panel or panels.

Still further it is aimed to provide a novel construction having interchangeable cleaner heads such for instance as a washer and a wiper, together with novel means for connecting the same to a staff or the like.

Various additional objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings illustrating an operative embodiment.

In said drawing:—

Figure 1 is a view illustrating the invention in side elevation and as applied in operative position to a window, the latter and a fragment of the building where it is located being shown in vertical section;

Figure 2 is a plan view of the apparatus;

Figure 3 is a front elevation of the apparatus;

Figure 4 is a central vertical longitudinal sectional view through the apparatus;

Figure 5 is an inverted plan view of the apparatus;

Figure 6 is a perspective view particularly showing the under structure or means engaged by the brush staff;

Figures 7 and 8 are respectively detail sectional views taken on line 7—7 and 8—8 of Figure 2,

Figure 9 is a view in perspective of the brush supporting arm,

Figure 10 is a transverse sectional view of the cleaner,

Figure 11 is a longitudinal sectional view of the wiper, and

Figure 12 is a detail sectional view on a plane indicated by the line 12—12 of Figure 1.

Referring specifically to the drawings, a stock, bar or bracket is shown as at 10, being for instance of wood, or wood reinforced or otherwise, and adapted for transverse disposition across and to rest on the sill 11 of a window generally shown at 12. This stock 10 is adapted to be fastened to the window sill in any suitable manner and has a cleat 12′ secured thereto in any suitable manner including bolts 13 and which has a cutaway portion in which a plurality of rollers 14 are provided and journaled on said bolts 13, and are adapted to engage the outer side of the window sill 11. To provide for a narrow window sill such as shown in the drawings, supplemental cleat sections 16 are provided to be used in conjunction therewith, said cleats having rollers 17 thereon to function similarly to the rollers 14 and journaled on vertical bolts or the like 18. The sections 16 and cleat 12′ are joined by hinges 20 fastened to their outer ends and which hinges are provided with vertical pintles 21. The sections 16 may thus be swung outwardly from in front of the cleat 12′ and so as to aline with the ends of the cleat, thus when a smaller window is not accommodated, serving as an extended bearing for the cleat 12′ in order to rigidify the structure. When the sections 16 occupy a position in front of the cleat 12′ and under the stock or bracket 10, such sections are secured in that position by means of suitable latches 22 carried by the stock.

Disposed transversely of the bracket 10 is bolt or rod 24 which may be passed selectively through any of a plurality of openings 25 in said bracket, according to the adjustment desired for the parts. A handle is provided at 26 having grips 27 at each end reinforced by means of bolts 28 passed through the end portions of the handle. Bolts 30 also reinforce the handle 26 adjacent the bracket 10 and also form journals for rollers 31 adapted also for engagement with the inner side of the window sill 11 in order that the cleat 12′ or cleat sections 16 jointly with the rollers 31 may secure the bracket in place. To the latter end, relatively strong contractile coil springs 33 are connected to the handle and at their other ends to the rod or bolt 24. The movement of the handle 26 under the impulse of springs 33 may be limited as by means of pins or keys 35 engaging in one each of se-

ries of openings 37 disposed vertically in the bracket. The pins 35 may be fastened to the bracket against accidental loss as by chains 36.

Adjacent to the outer end of bracket 10 a slot 38 is provided therethrough and a staff 39 is vertically and loosely movable therein. This staff at its upper end carries any suitable tool or implement for use in connection with the washing, cleaning or polishing of a window as for instance a brush or mop 40 and a wiper as of chamois at 41. These instruments 40 and 41 have a back 42 from which spring fingers 43 extend having inturned lugs or terminals 44. The backs 42 also have sockets 45 adapted to detachably receive the end of an arm 46 with the lugs 44 detachably clipping into any selected openings or notches 47 provided in a row around the arm 46 so as to enable the implements 40 and 41 to be placed at any desired position on the arm 46. The engaging end of arm 46 and the socket 45 are preferably tapered as shown. The upper end of the staff 39 is preferably square and removably extends through a square socket in arm 46, as at 47', and held against accidental detachment by means of a U-shaped latch member 48 engaging through staples 46^a on arm 46 and an opening 39^a in staff 39.

The staff 39 is preferably made in two sections 49 and 50 so that both sections may be used when an extended staff is needed or the section 50 may be removed when a shorter staff is needed. These sections may be detachably held together by means of a bolt as at 51 having a thumb nut 52 and by a hook bail 53 pivotally connected to upper section 49. Lower section 49 has an eyelet as at 54 to receive said bail 53. Secured adjacent to the lower end of section 50 and held thereto by means of a bolt 55 and thumb nut 56 is a weight member 57, said weight member tending at all times to hold staff 39 in an upright position.

At the outer end of bracket 10 a plate 58 is mounted being hinged thereto by a pair of hinges 59. Plate 58 has a slot 60 therethrough which the staff 39 passes.

Contractile coil springs 61 are fastened to plate 58 and normally tend to swing said plate downwardly and the upper end of the staff inwardly into engagement with the window being cleaned. In the slot 38, rollers 63 are provided between which the staff 39 passes, and a roller 64 is also provided in slot 60 to engage staff 39, these rollers serving to guide said staff during its operation by the instrumentalities to be hereinafter described.

In order to operate the staff, a handle or grip is provided at 65, being journaled on one end of a loop 66 formed on a flexible cord or cable 67 which passes over a guide pulley 68 journaled in slot 69 on a bolt 70 secured through bracket 10, and the other end of the cable 67 has a loop as at 70' that engages in weight member 57.

In operation, the implements 40 and 41 or any others are interchangeably used, that at 40 being used for washing and cleaning a window panel while that at 41 is principally used for wiping and drying the window panel subsequent to use of the implement 40. When a long staff 39 is desired both sections 49 and 50 are used but when a short one is preferred, section 50 is detached and the bolt 55 applied to opening 54 and the cable 67 and weight 57 appropriately connected. The operator stands within the building and engages manually either of the rollers or grips 27 with a view to steadying the device and the staff and implement is located outside of the window and the implement 40 or 41 held in contact with the panel by the action of the springs 61. The hand of the operator not engaging the grip 27 engages the element or grip 65 moving it to and fro, thereby vertically or substantially vertically reciprocating the staff and cleaning element. The upward movement of course is against the tendency of weight member 57 to hold the staff in its lowermost position, and hence when the grip 65 is released, the weight member will return the staff and implement to said lowermost position. Incidental to this vertical reciprocation, the operator may move the bracket 10 longitudinally with respect to the window sill so that the entire surface of the panel or panels may be effectively cleaned.

Various changes may be resorted to provided they fall within the spirit and scope of the invention as claimed.

What is claimed is:—

1. An apparatus of the class described comprising means to secure the same to a window sill including means to engage one side of the window sill, a cleat to engage the other side of the window sill, and a supplemental cleat in sections displaceable relatively thereto to extend the same and adapted for disposition in advance thereof according to the size of the window sill.

2. A device of the class described having a bracket, attaching means therefor engageable with a window sill comprising means to engage one side of the window sill, a cleat to engage the other side of the window sill, a cleat in sections in front thereof, and the second mentioned cleat being adapted for movement of its sections into line with the first mentioned cleat to extend the same.

3. A device of the class described having a bracket, attaching means therefor engageable with a window sill comprising means to engage one side of the window sill, a cleat to engage the other side of the window sill, a cleat in sections in front thereof, the second mentioned cleat being adapted for

movement of its sections into line with the first mentioned cleat to extend the same, the sections being hinged to the end of the first mentioned cleat.

4. A device of the class described having a bracket, attaching means therefor engageable with a window sill comprising means to engage one side of the window sill, a cleat to engage the other side of the window sill, a cleat in sections in front thereof, the second mentioned cleat being adapted for movement of its sections into line with the first mentioned cleat to extend the same, the sections being hinged to the end of the first mentioned cleat, rollers carried by the first mentioned cleat and said sections, and means to secure the sections in place in front of the first mentioned cleat.

5. A device of the class described having a bracket, a sill-engaging cleat thereon, a handle movable along the bracket and having means to coact with the cleat in securing the bracket in place, grips carried by the handle, and means to secure the handle in adjusted position.

6. A device of the class described having a bracket, a sill-engaging cleat thereon, a handle movable along the bracket and having means to coact with the cleat in securing the bracket in place, grips carried by the handle, and means to urge the handle toward the cleat.

7. A device of the class described having a bracket, a sill-engaging cleat thereon, a handle movable along the bracket and having means to coact with the cleat in securing the bracket in place, grips carried by the handle and means to urge the handle toward the cleat comprising contractile springs, and means adjustably disposed on the bracket to which said springs are connected.

8. A window cleaning apparatus of the class described comprising a bracket having a slot, an implement-carrying staff extending through said slot, a plate hingedly connected to said bracket, and engaging said staff above the bracket, yielding means engaging said plate to urge the implement into operative position, said staff being weighted to urge it to a lowered position, and a draw means to operate the staff counter to the weight and guide means for the draw means on the bracket.

9. A window cleaning apparatus of the class described comprising a bracket having a slot, an implement-carrying staff extending through said slot, a spring actuated plate hingedly connected to said bracket and engaging said staff above the bracket to urge the implement into operative position, said staff being weighted to urge it to a lowered position, a draw means to operate the staff counter to the weight and guide means for the draw means on the bracket.

10. A window cleaning apparatus of the class described comprising a bracket having a slot, an implement-carrying staff extending through said slot, a spring actuated plate hingedly secured to the bracket, said plate being slotted to receive said staff and engage the same above the bracket, the plate being adapted to urge the staff and implement into operative position, a weight on said staff urging it to a lowered position, a draw means to operate the staff counter to said weight, guide means for the draw means on the bracket, a cleat on the bracket to engage the window sill, a handle on the bracket slidable relatively thereto, and means carried by the handle to coact with the cleat in engaging the window sill.

In testimony whereof I affix my signature.

RANDOLPH ANDERSON.