

[54] **LADDER PUSH-OUT APPARATUS**

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[58] Field of Search.....182/214, 108, 109, 111, 20

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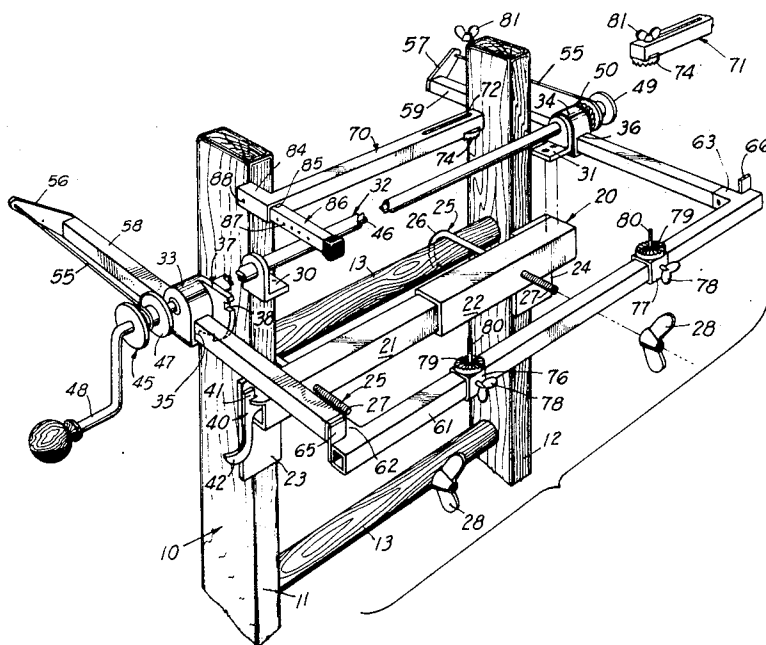
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[57] **ABSTRACT**

A push-out apparatus adapted to be attached to a

ladder for moving the ladder to a selected adjusted position relative to a surface against which the ladder is supported. The push-out apparatus includes a ladder attachment assembly having releasable connecting means for securing the assembly in a set position on the ladder and for permitting ready removal of the assembly from the ladder. The push-out apparatus includes push-out means supported on the attachment assembly for movement relative thereto and having extending abutment means detailed for contacting the supporting surface against which the ladder is operating. Manual control adjusting means is operatively connected between the push-out means and the ladder attachment assembly whereby the abutment means can be moved to a selected one of a number of set positions relative to the attached assembly. The abutment stop means includes a pair of laterally spaced and laterally adjustable bumper elements detailed for contacting the surface of a building at a number of laterally spaced positions thereon. The abutment stop means is removably connected to the ladder attachment assembly and can be removed therefrom for ready attachment to a second support assembly which can be secured to the ladder in order that the abutment stop means can be used on the ladder without the use of the push-out means.

10 Claims, 5 Drawing Figures



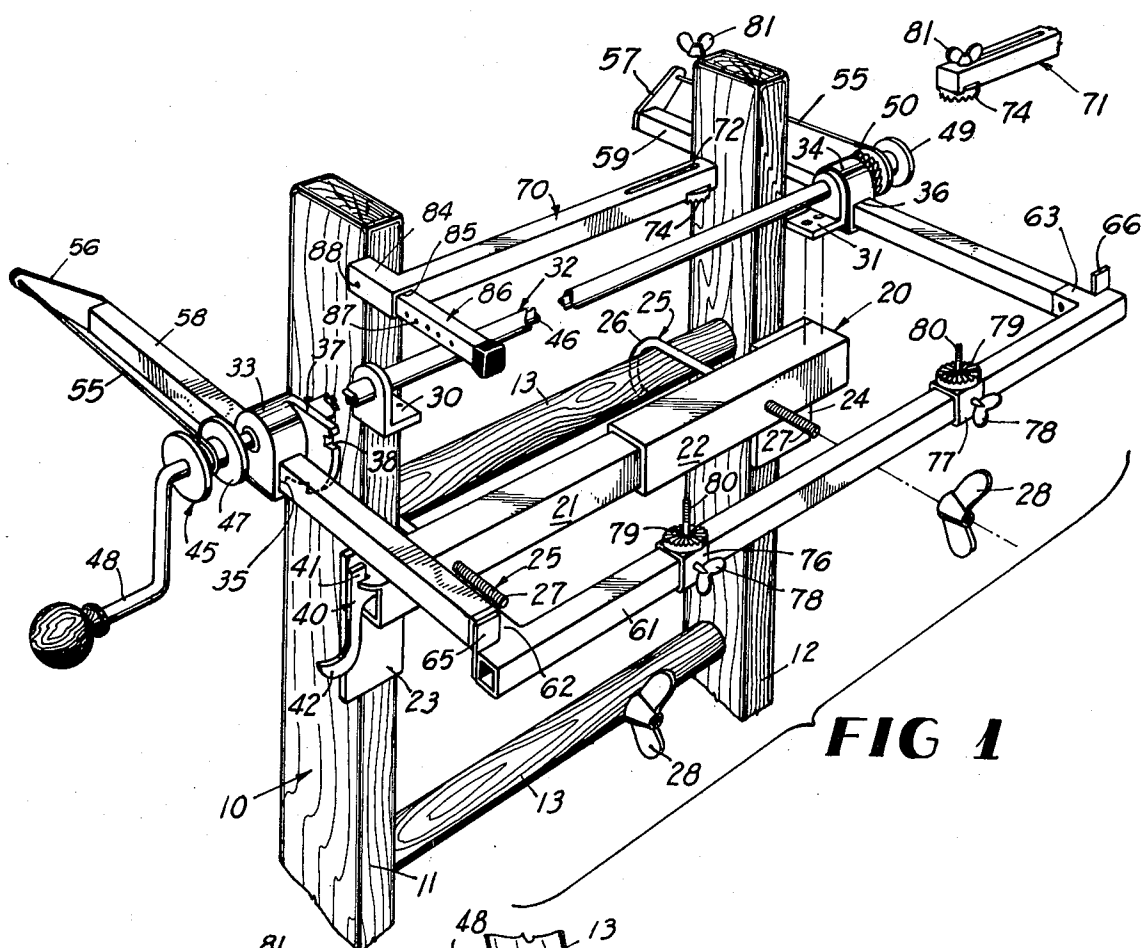


FIG 1

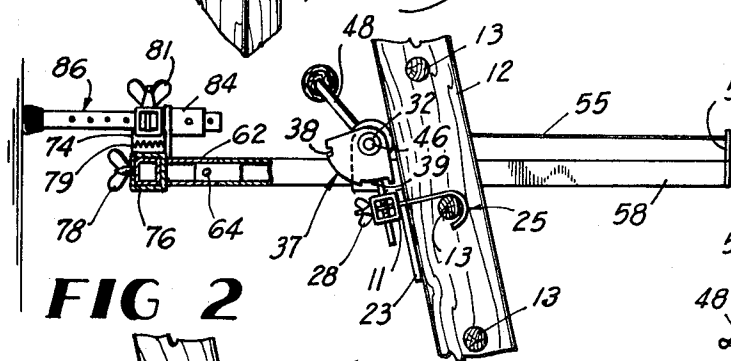


FIG 2

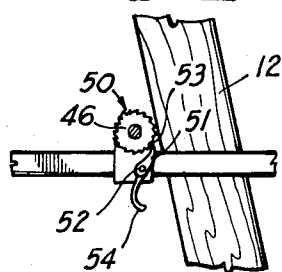


FIG 3

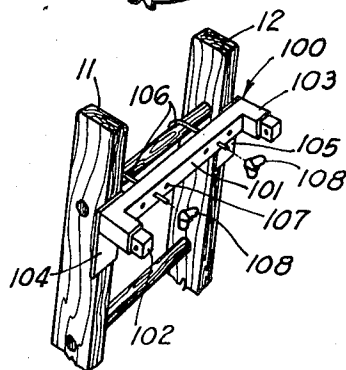


FIG 4

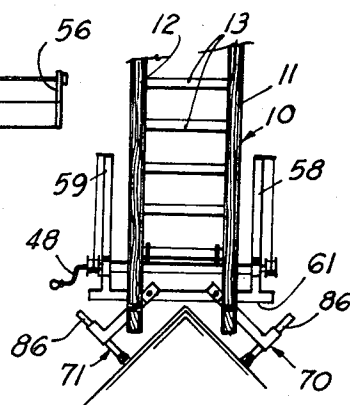


FIG 5

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LADDER PUSH-OUT APPARATUS**BACKGROUND OF THE INVENTION**

This invention relates to the building construction and finishing industry wherein a number of tasks or jobs required in the finishing of building, such as painting, requires the use of a ladder to reach a desired location relative to a building surface. More particularly, this invention includes an attachment which can be attached and removed from a ladder and which is operable for moving a ladder away from a building supporting surface whereby an operator positioned on the ladder can reach a location, such as an overhanging eave of a house.

There have been many attempts made to provide ladder push-out devices which will allow a ladder to be pushed away from a supporting wall surface. The prior art ladder push-out devices were extremely complex in construction, uneconomical to manufacture and unreliable in performance. Also, the ladder push-out devices were difficult to attach and remove from a ladder.

In positioning a ladder relative to a building construction in which a job is being performed, often times it is necessary to locate the ladder relative to an open space such as a window or doorway. The prior art ladder push-out devices did not include means which will allow adjustment of the surface contact means whereby the ladder push-out could be located adjacent an opening such as a window or doorway.

At still other times, it is necessary to position a ladder relative to a corner structure of a building and to allow the ladder to be pushed out away from the building to perform required tasks. The prior art devices did not provide effective means for positioning a ladder push-out device relative to a corner of a building structure and then provide effective push-out means for the ladder.

In still other types of operations performed by a ladder, it is often necessary to locate the ladder relative to an opening such as a window or doorway and not provide push-out means for pushing the ladder away from the building. The prior art devices utilized for supporting a ladder against a building surface do not provide an effective means for allowing the ladder supporting means to be adjusted through a dimension sufficient to span an open doorway or window.

SUMMARY OF THE INVENTION

The above stated disadvantages of the prior art have been overcome by the present invention which basically includes a ladder attachment assembly including releasable mounting means for securing the assembly in a set position on a ladder and for permitting ready removal of the assembly from the ladder. A ladder push-out means is supported on the attachment assembly and includes abutment stop means adapted to contact a supporting surface of a building against which a ladder is operated. Control means is operatively connected between the attachment assembly and the ladder push-out means whereby the push-out means can be adjusted relative to the attachment assembly to move a ladder to a displaced position away from the supporting surface of a building. The adjustment control means includes selectively settable and releasable stop means which will hold the abutment stop means in a selective set position and will allow the stop to be

released to permit the ladder to return to the supporting building surface.

An important feature of the present invention includes the provision of a pair of bumper elements mounted on the abutment stop means and wherein the bumper elements can be moved to a number of laterally spaced adjusted positions in order to span an open doorway or window in a building side wall, to permit the ladder to be located at any desired location relative thereto. The bumper elements are pivotally supported on the abutment stop means whereby they can be angularly adjusted relative to the abutment stop means to allow the abutment stop means to support a ladder in a desired set position relative to a corner of a building structure.

Another important feature of the present invention resides in the releasable latch means operatively associated with the abutment stop means for holding the abutment stop means in an extended operable position arranged substantially at right angles relative to the longitudinal axis of the ladder and for releasing the abutment stop means to allow the abutment stop means to move to a retracted inoperable position arranged substantially parallel to the longitudinal axis of the ladder.

A second embodiment of the ladder supporting apparatus includes an attachment assembly adapted to be releasably connected to a ladder wherein the abutment stop means utilized in the ladder push-out can be removed therefrom and mounted on the second embodiment of the attachment assembly and be used for spanning openings in a building side wall without having to use the structure or the ladder push-out mechanism.

It is therefore a primary object of the present invention to provide a push-out apparatus which can be positioned in abutting engagement with a supporting surface and effectively move a ladder to a desired position displaced relative to the supporting surface.

Another object of this invention is to provide a ladder push-out apparatus which can be readily attached or removed from a supporting ladder.

A further object of this invention is to provide a ladder push-out apparatus including means which will permit the ladder to be positioned adjacent an opening in a supporting side wall.

A still further object of this invention is to provide a ladder push-out apparatus which includes means for supporting a ladder relative to a corner of a building.

Still another object of this invention is to provide a manually operated adjusting means which is effective for moving a ladder push-out device to a selected set position.

Yet another object of this invention is to provide a manually operated ladder push-out mechanism detailed for releasably holding the ladder push-out device in a selected set position.

Another object of this invention is to provide a ladder push-out apparatus which can be moved from an operable supporting position to an inoperable supporting position.

A further object of this invention is to provide a ladder push-out apparatus which includes releasable latching means for latching the push-out device in either an operable position or an inoperable position.

A still further object of this invention is to provide a ladder push-out apparatus having latching means for holding the push-out apparatus in an operable position and permitting relative motion between the push-out apparatus and the releasable latch means.

Yet another object of this invention is to provide an attachment assembly which can be readily removed or attached to a supporting ladder and detailed for receiving abutment stop means for supporting a ladder adjacent an opening in a building.

An additional object of this invention is to provide a ladder push-out apparatus which is simple in construction and assembly, economical to manufacture and reliable in performance.

These and other objects and advantages in the details of construction will become apparent upon reading the accompanying description of the illustrative embodiments with reference to the attached drawings wherein the like reference numerals have been used to refer to like parts throughout the several figures, and wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded perspective view of the ladder push-out apparatus of the present invention, shown attached to a fragmentary portion of a ladder, with certain parts being broken away for purpose of clarity;

FIG. 2 is a vertical sectional view taken longitudinally through the center of a ladder showing the ladder push-out apparatus mounted thereon in an assembled and operable position;

FIG. 3 is an enlarged vertical sectional view showing the winch releasable latch means;

FIG. 4 is a perspective view of a modification of a ladder attachment assembly, drawn on a reduced scale; and

FIG. 5 is a schematic view illustrating the relationship of a ladder and the push-out apparatus supported adjacent a building corner.

DESCRIPTION OF THE ILLUSTRATIVE EMBODIMENTS

Referring now to the drawings, the present invention will be described with reference to a conventional ladder represented generally by the reference numeral 10. Ladder 10 includes a pair of parallel arranged leg members 11, 12. Leg members 11, 12 are secured in a laterally spaced relationship by a plurality of vertically spaced ladder rungs 13. One embodiment of the present invention is illustrated in FIGS. 1-3 and 5 and includes a ladder push-out apparatus having a ladder attachment assembly 20 and abutment means 60. The function of the ladder attachment means 20 is to provide a means for attaching the push-out apparatus to a supporting ladder. The function of the abutment means 60 is to provide means for contacting the surface of a building in which a ladder is operated to allow the ladder to be moved to a selected distance away from the supporting building surface.

A second embodiment of the present invention is shown in FIG. 4 and includes a second ladder attachment assembly 100. The function of the ladder attachment 100 is to provide a means for readily receiving the abutment means 60 of the embodiment shown in FIG. 1 whereby the abutment stop means can be utilized without the push-out apparatus in order that the

ladder can be positioned adjacent an opening in a building surface, with the abutment stop means adjusted to span the opening.

As shown in FIGS. 1 and 2, the ladder attachment assembly 20 includes two elongated tubular members 21, 22. The elongated tubular member 21 is detailed to be received within member 22 for adjustment relative thereto. An outer extended end of each of the tubular members 21, 22 is provided with a ladder abutment plate 23, 24, respectively. The ladder attachment assembly 20 is secured to a supporting ladder by a pair of J-shaped connecting bolts 25. Each of the J-shaped bolts 25 includes a curved or formed end portion 26 detailed for receiving the rung 13 of the ladder. J-shaped bolt 25 includes an elongated shank portion having a threaded extended end 27. The threaded extended end 27 is detailed to be threadably received within complementary threads of a wing nut adjusting means 28. In attaching the frame assembly 20 to a supporting ladder, the J-shaped bolts 25 are positioned to allow the curved portion 26 to receive the ladder rung 13. After the curved portion 26 has been inserted around the ladder rung 13, the tubular sections 21, 22 are adjusted laterally until the contact plates 23, 24 are in abutting engagement with the legs 11, 12 of a supporting ladder. After the tubular sections 21, 22 have been moved to a desired adjusting position, the wing nuts 28 are securely tightened on threaded shank portion 27 whereby the J-shaped bolts 25 will securely clamp the attachment assembly 22 in place on a supporting ladder.

As shown in FIG. 1, the ladder attachment assembly 20 includes a pair of upstanding angle support members 30, 31. The angle support members 30, 31 are secured to the upper surface of extended ends of tubular sections 21, 22, respectively, by conventional means such as welding (not shown). The angle members 30, 31 are detailed to present a vertically oriented surface having aligned openings extending therethrough for receiving an elongated tubular sleeve member 32. The elongated tubular sleeve member 32 is rotatably mounted within support members 30, 31 having opposite ends extending outwardly on opposite lateral sides of brackets 30, 31 and are fixed by conventional means such as welding to collar support members 33, 34. Each of the collar support members 33, 34 are fixed to sleeve 32 whereby rotary movement of sleeve 32 will effect a corresponding rotary movement of the collar elements 33, 34. Each of the collar elements 33, 34 are provided with sleeve means having a rectangular opening 35, 36, respectively, extending therethrough. The axis of sleeve openings 35, 36 is spaced slightly below the axis of sleeve 32 and is arranged to extend at substantially right angles thereto. The axis of sleeve opening 35 is arranged parallel to axis of sleeve opening 36.

As shown in FIGS. 1 and 2, the collar support member 33 is provided with a radial extending plate member 37. Plate member 37 is detailed to provide an arcuate surface portion having a pair of angular spaced notches 38, 39 formed therein. Notches 38, 39 are operatively associated with a releasable latch member 40. The releasable latch member 40 is pivotally supported by conventional means (not shown) within an extended end of tubular element 21. Releasable latch 20 includes an upwardly extending latching surface 41

detailed in location to be received within either of the notches 38, 39 to latch collar member 33 in an angular set position. Latch member 40 includes a curved and outwardly extending lower end 42 which is adapted to be moved by an operator to effect a disengagement of latching surface 41 from within either of the slots 38, 39. The releasable latch 30 is urged to an upwardly latched position, as shown in FIG. 2, by conventional spring means (not shown). A downwardly pivotal movement of the latch member 40 will effect a disengagement of the latching surface 41 from within notches 38, 39 allowing collar 33, sleeve 32 and collar 34 to rotate relative to angle support brackets 30, 31.

As shown in FIG. 1 and 2, the attachment assembly 20 includes a rotatably operable winch control means 45. The operable winch control means 45 is supported by means of a shaft 46. Shaft 46 is detailed in dimension to be rotatably supported by sleeve 32 and including opposite ends extending outwardly on opposite lateral sides of collars 33, 34. A first end of shaft 46 adjacent collar 33 is provided with a winch spool member 47. The winch spool member 47 is fixed to shaft 46 whereby rotation of shaft 46 will effect a corresponding angular movement of winch spool 47. An extended end of shaft 46 adjacent spool 47 is formed to provide a rotary crank member 48. The rotary crank member 48 is operable to effect a rotary movement of shaft 46 and spool 47. An opposite end of shaft 46 adjacent collar 34 is provided with a winch spool means 49. The winch spool means 49 is fixed to shaft 46 whereby angular movement of shaft 46 will effect a corresponding angular movement of winch 49.

As shown in FIG. 1 and 3, the winch spool means 49 is provided with a ratchet plate means 50. The ratchet plate means 50 is fixed to one lateral surface of winch spool 49 whereby rotary movement of spool 49 will effect a corresponding rotary movement of ratchet 50. As shown in FIG. 3, the ratchet plate member 50 is operatively associated with a pivotally mounted latching dog 51. Latching dog 51 is pivoted at 52 and includes a first latching end 53 operatively associated with ratchet 50 for holding the ratchet 50 in an angular set position. Dog 51 is provided with a second operable end 54 for allowing manual movement of dog 51 about axis 52 to thereby disengage the latching surface 53 from ratchet 50. The operative association of latching dog 51 relative to ratchet 50 is detailed to permit a counterclockwise rotation of the ratchet 50, as shown in FIG. 53, and to prevent a clockwise direction of rotation.

As shown in FIGS. 1 and 2, each of the winch spool means 47, 49 are operatively associated with a flexible cable means 55. The flexible cable means 55 is connected at one end to the winch means 47, 49 whereby rotary movement of the winch will effect a winding of the cable 55 thereabout to reduce the effective length thereof, when the winch spools are driven in a clockwise direction, as shown in FIG. 1. The extended outer ends of cable 55 are connected to a connecting tab portion 56, 57. The connecting tab portions 56, 57 are fixed to a left extended end of a pair of elongated leg members 58, 59, respectively. The elongated leg members 58, 59 are detailed in dimensions to be slidably received within sleeve opening 35, 36 formed within collars 33, 34, respectively.

As shown in FIG. 1, a forward or right extended end of each of the legs 58, 59 are detailed for releasable connection with the abutment means 60. The abutment means 60 includes an elongated bar 61 having a pair of angular extended socket members 62, 63. The socket members 62, 63 are detailed to be aligned with the forward extended end of legs 58, 59 and include a socket portion permitting the legs 58, 59 to be inserted therein and connected thereto by conventional bolt connecting means 64, as shown in FIG. 2. The opposite ends of elongated bar 61 extends laterally outward a slight distance on each side of the socket receiving member 62, 63, as shown in FIG. 1, with the lateral extensions being provided with upstanding limit stop members 65, 66.

As shown in FIG. 1 and 2, the abutment means 60 includes a pair of bumper elements 70, 71. Each of the bumper elements 70, 71 includes a first end having an elongated slot 72 extending therethrough. Slidably supported on the underside of the bumper elements 70, 71 adjacent slot 72 is a locking ring member 74. The locking rings 74 are provided with a notch detailed to be complementary to bumper elements 70, 71 to permit longitudinal adjustment of a locking ring 74 relative to slot 72. The locking rings 70 also include opening extending therethrough for receiving a connecting stud 80.

Bumper elements 70, 71 are supported on the elongated bar 61 by means of a pair of collars 76, 77. Each of the collars 76, 77 is provided with an opening for slidably receiving the elongated bar 61. The collars 76, 77 are secured in an adjusted position along the length of bar 61 by means of a conventional wing set screw means 78. An upper surface of collars 76, 77 are provided with a locking ring member 79. The locking ring 79 includes a pivotally mounted stud member 80 adapted to extend upwardly through openings in the locking rings 74 and through the slots 72 of the bumper elements 70, 71. The pivoted stud 80 is provided with a threaded shank portion adapted to adjustably receive conventional wing nuts 81 for securely clamping the locking rings 74 relative to locking rings 79. The locking ring members 74, 79 are provided with complementary serrated surfaces detailed for holding the locking ring 74 in an angular set position when clamped to the ring member 79.

The bumper elements 70, 71 can be angularly adjusted relative to the elongated bar 61 by loosening wing nuts 81 a sufficient distance to allow movement of locking ring 74 relative to locking ring 79. After the wing nuts 81 have been adjusted to allow relative movement of the ring members 74, 79, the bumper elements 70, 71 can be moved to a desired angular position and secured in the set position by again tightening wing nut 81 on threaded shank member 80 to securely clamp ring 74 to the surface of ring 79.

As shown in FIGS. 1 and 5, an extended end of the bumper element 70, 71 opposite from locking ring 74 is provided with an angularly extending sleeve 84. Sleeves 84 are fixed to bumper elements 70, 71 in substantially right angles thereto and are provided with an elongated opening 85. Openings 85 are detailed for slidably receiving a bumper bar member 86. The bumper bar 86 includes a series of spaced openings 87 adapted to cooperate with a locking pin 88 for holding the bumper bars 86 in a selected set position therein.

OPERATION

In utilizing the push-out apparatus of the present invention on a ladder 10, the attachment assembly 20 is first connected to the rungs 13 of the ladder 10 by inserting the J-shaped bolts 25 around the rungs of the ladder and securely tightening wing nuts 28 as described herein above. After the attachment assembly 20 is securely clamped on the ladder, the abutment means 60 is connected to the attachment assembly 20 by inserting extended ends of legs 58, 59 within the socket receiving member 62, 63 and inserting a conventional connecting pin 64. With the ladder push-out apparatus properly assembled on a supporting ladder, the push-out means including legs 58, 59 are moved to an operable position by rotating collars 32, 33 to a set position wherein the releasably latching lever 40 can engage notch portion 39 to maintain the abutment means 60 in an angular set position relative to the longitudinal axis of ladder 10.

With the abutment means 60 supported in an extended operable position, the ladder is moved into position adjacent a supporting surface allowing the bumper bars 86 to contact the surface of a supporting wall. With the bumper bars 86 contacting the supporting wall, a ladder can be pushed outwardly away from the wall by rotating the crank 48 in a clockwise direction as shown in FIG. 1. A rotation of crank 48 in a clockwise direction will rotate winch spools 47, 49 to thereby wind flexible cable 55 thereabout to reduce the effective length of the cable. As the effective length of cable 55 is reduced by the winch means 47, 49 the elongated legs 58, 59 will be advanced through the tubular sleeve openings 35, 36. Movement of legs 58, 59 outwardly through openings 35, 36 will increase the effective distance between the ladder 10 and the abutment means 60 thereby pushing the ladder 10 outwardly away from a supporting wall.

As the winch means including spools 47, 48 are rotated to displace the ladder 10 outwardly from the wall supporting surface, the ratchet 50 will cam over the latching dog 51. After the ladder has reached the desired location, the operator can release rotary crank 48 allowing ratchet 50 to be moved a slight distance in a clockwise direction as shown in FIG. 3 to engage latching dog 51 and hold the ladder in an outwardly displaced position.

The ladder push-out means can be released from an advanced pushing position and allowed to be returned to any desired position relative to the supporting wall by rotating ratchet 50 a slight distance counter-clockwise and removing the latching dog 51 from the ratchet, thereby allowing the ratchet 50 to freely rotate in a clockwise direction as shown in FIG. 3. During a free rotation of the ratchet 50 in a clockwise direction, as shown in FIG. 3, the winch spool means 47, 48 will allow flexible cable 55 to unwind to permit the leg members 58, 59 to advance to a desired set position.

During a ladder push-out operation, the leg members 58, 59 and abutment means 60 will be held against the surface of the wall and during a push-out movement of the ladder a slight angular movement of the collars 33, 34 will be effected about the axis of sleeve 32. In order to accommodate the limited relative movement between collars 33, 34 and their supporting axis, the notch 39 is slightly elongated to permit the required relative movement.

During operation of the ladder push-out apparatus of the present invention, the releasable latch means 40 will cooperate with the notch 39 to maintain the push-out apparatus in an extended operable position should the ladder be moved away from the wall supporting surface. Latch member 40 is operable for disengagement from the notch 39 to allow the push-out apparatus to be pivoted about the axis of sleeve 32 whereby the push-out apparatus can be rotated to an inoperable retracted position, in substantially parallel alignment with the longitudinal axis of ladder 10. The push-out apparatus is maintained in the retracted inoperable position by means of the latching notch 38.

In moving the bumper elements 70, 71 to a laterally set position to span an opening such as a window or doorway in a supporting wall, the set screw member 78 is adjusted to permit sleeves 76, 77 to be moved along the elongated bar 61 to a desired set position. After the sleeves 76, 77 have been moved to a desired position, the wing nut means 78 is again adjusted to securely clamp the sleeves 76, 77 to the elongated bar 61.

Should the ladder push-out apparatus be used adjacent the corner of a building, as shown in FIG. 5, the bumper elements 71, are angularly adjusted about pivoted shank members 80 and secured in a selected set position by the wing nut members 81, as described herein above. When the bumper elements 70, 71 are rotated to an angular position in longitudinal alignment with elongated bar 61, the limit stop members 65, 66 will provide additional strength for maintaining the bumper elements 70, 71 in their longitudinally aligned position.

As shown in FIG. 4, a modified form of ladder attachment means 100 is provided. The modified attachment means 100 is provided to allow the abutment means 60 including adjustable wall contacting bumper elements 70, 71 to be supported on a ladder without using the push-out apparatus.

The modified attachment assembly 100 includes an elongated bar member 101 having connected to opposite ends thereof a pair of angularly extending mounting stud members 102, 103. The stud members 102, 103 are detailed to extend in a coplanar relationship and arranged substantially parallel relative to each other. Mounting studs 102, 103 are detailed in lateral spacing and dimensions to readily receive socket members 62, 63 of the elongated bar member 61. The elongated bar 101 is provided with a pair of plate members 104 which are fixed to opposite ends of bar 101 on a side opposite from mounting studs 102, 103. The plates 104, 105 are detailed for abutting engagement with ladder legs 11, 12. The attachment assembly 100 is secured in a set position on a ladder by a pair of conventional J-shaped mounting bolts 106. The J-shaped mounting bolts 106 are similar to the above described J-shaped mounting bolts 25 and are inserted through selected ones of a series of openings 107 provided in the elongated bar 101. The J-shaped bolts are secured in a clamp position relative to bar 101 by means of conventional wing nuts 108.

In operation, the attachment frame assembly 101 is secured to a supporting ladder as described above and the elongated bar 61 including bumper elements 70, 71 are secured in position on the mounting studs 102, 103 whereby the ladder 10 can be located relative to a

building opening allowing the bumper element 70, 71 to span the opening.

It now becomes apparent that the above described illustrative embodiments are capable of obtaining the above stated objects and advantages. It is obvious that those skilled in the art may make modifications in details of construction without departing from the spirit of the invention which is to be limited only by the scope of the appended claims.

What is claimed is:

1. A push-out apparatus adapted to be supported on a ladder for moving said ladder to a selected adjusted position relative to a supporting surface comprising, in combination, a ladder attachment assembly, said assembly including releasable mounting means for securing said assembly in a set position on said ladder and for permitting ready removal of said assembly from said ladder and ladder push-out means supported on said attachment assembly, said push-out means including abutment means adapted to contact a supporting surface against which a ladder is operating, said abutment means including support means movably mounted on said attachment assembly and wherein controlled adjustment means is operatively associated with said abutment means and operable for advancing said abutment means to a selected one of a number of set positions relative to said attachment assembly, said abutment means including at least two bumper elements adapted to contact said supporting surface against which a ladder is operating and said bumper elements being supported on said abutment means for movement to a selected one of a number of laterally spaced positions whereby said bumper elements will contact said supporting surface at selected adjusted positions said abutment means including an elongated supporting bar and each of said bumper elements including a sleeve element slidably received on said elongated bar and having locking means for locking said sleeve in a desired set position along the length of said bar, said adjustable sleeves each including a pivotal supporting axis for connecting said sleeves to said bumper elements, whereby said bumper elements can be pivotally adjusted relative to said elongated bar and including means for locking said bumper elements in an angular set position, and wherein said elongated bar includes limit stop means for stopping and maintaining said bumper elements in a limit set position relative to said elongated bar.

2. A push-out apparatus as described in claim 1 further characterized in that said control adjustment means includes a rotatable hand operated crank member detailed for effecting movement of said abutment means to a desired set position.

3. A push-out apparatus as described in claim 5 further characterized in that said abutment means includes at least one elongated leg member with said attachment assembly including a sleeve means detailed for slidably receiving said elongated leg member, said control adjustment means includes means for advancing said leg member through said sleeve support means to said selected set positions and wherein said adjustment means includes ratchet controlled locking means for holding said leg member in a set position relative to said sleeve support means.

4. A push-out apparatus as described in claim 3 further characterized in that said abutment means includes at least two elongated leg supporting members and wherein said attachment assembly includes at least two supporting sleeves detailed for slidably receiving said two leg support members.

5. A push-out apparatus as described in claim 4 further characterized in that said control adjustment means includes a rotatably mounted winch means supported on said attachment assembly and including a flexible line means operatively connected to said abutment means leg support members whereby rotary movement of said winch means will reduce the effective length of said flexible element to advance said supporting legs through said sleeve members.

6. A push-out apparatus as described in claim 5 further characterized in that said releasable ratchet locking means is detailed for maintaining said supporting leg in a set position relative to said sleeves and wherein said releasable ratchet means includes means for releasing said supporting leg from a set position to allow the legs to be freely slidable relative to said sleeve elements.

7. A push-out apparatus adapted to be supported on a ladder for moving said ladder to a selected position relative to supporting surface comprising in combination, a ladder attachment assembly including releasable mounting means for securing said assembly in a set position on a ladder, said mounting means including hook means for engaging a selected rung of the ladder, ladder push-out means supported on said assembly and including abutment means adapted to contact a supporting surface, said abutment means including support means movably mounted on said attachment assembly, controlled adjustment means mounted on said assembly and operable for advancing said abutment means to a selected position, said push-out means being pivotally mounted on said assembly for movement between an extended position wherein said abutment means is supported in angular relationship relative to the longitudinal axis of the ladder and a retracted inoperable position wherein said abutment means is disposed substantially parallel to said axis, and releasable latching means for maintaining said push-out means in either said extended or retracted position, said latching means including a lost motion connecting means for permitting limited relative movement between said attachment assembly and said abutment means when the latter is in extended position.

8. A push-out apparatus as in claim 7 wherein the means for advancing said abutment means includes a winch mounted on said attachment assembly and a cable attached to said support means and wound around said winch.

9. A push-out apparatus as described in claim 7 further characterized in that said ladder attachment assembly includes adjusting means which will permit lateral adjustment of said attachment assembly to a number of laterally selected positions relative to a supporting ladder.

10. A ladder supporting apparatus as described in claim 7 further characterized in that said attachment assembly includes a pair of extending leg support means and wherein said abutment means includes a pair of socket receiving means detailed for receiving

said leg support means whereby said abutment means
can be removably attached to said attachment as-
sembly.

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