Dec. 30, 1969 A. E. NAMECHE ETAL 3,486,580

LADDER AND SUPPORT BRACKET THEREFOR

Filed June 11, 1968 3 Sheets-Sheet 1

Fig. 1

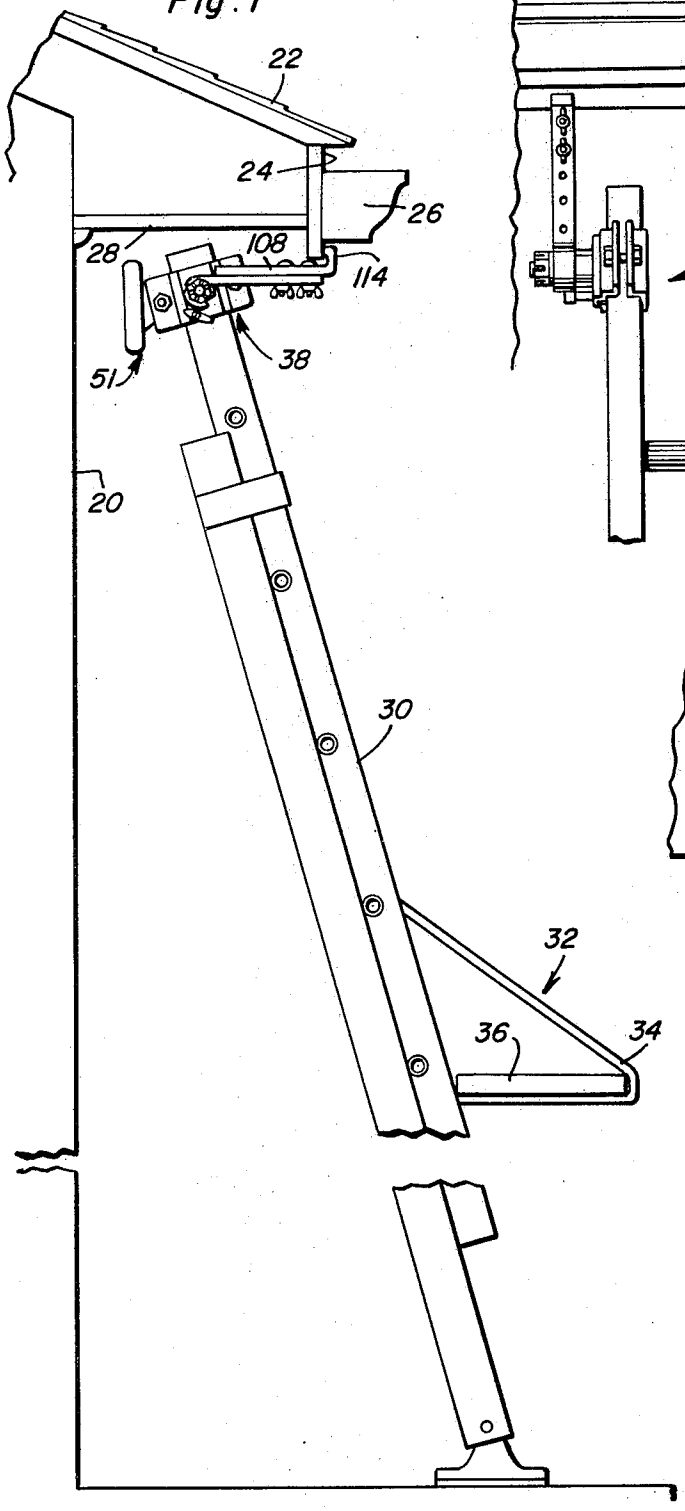


Fig. 3

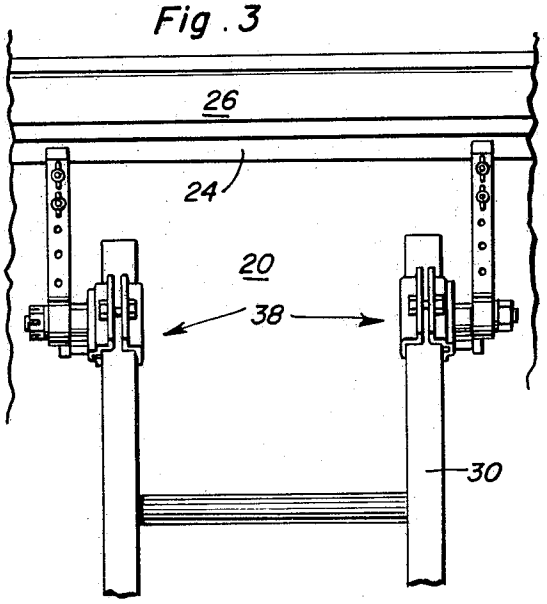
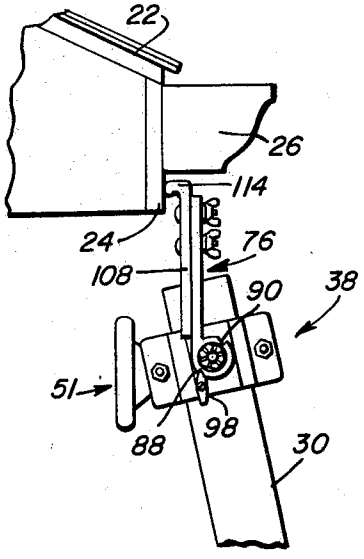


Fig. 2



Alfred E. Nameche
Walter F. Norton
INVENTORS

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Dec. 30, 1969 A. E. NAMECHE ETAL 3,486,580

LADDER AND SUPPORT BRACKET THEREFOR

Filed June 11, 1968 3 Sheets-Sheet 2

Fig. 4

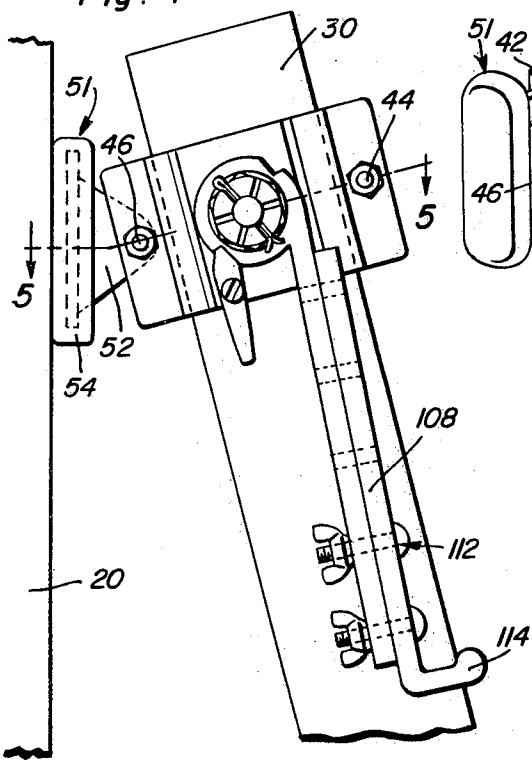


Fig. 6

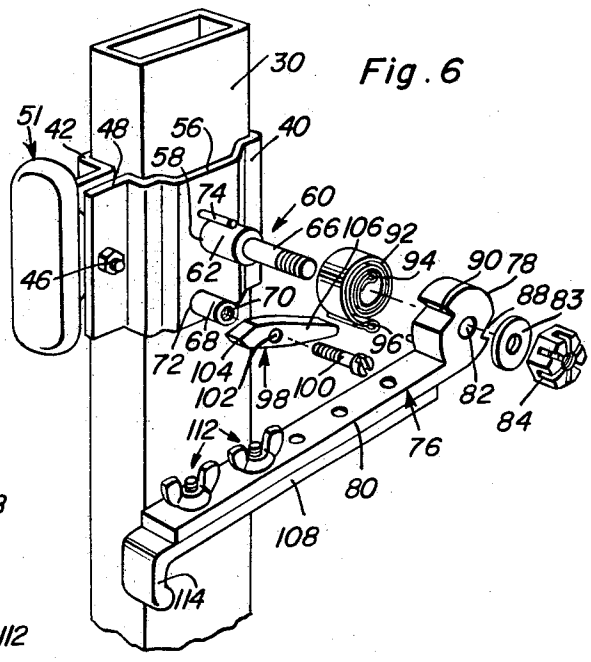
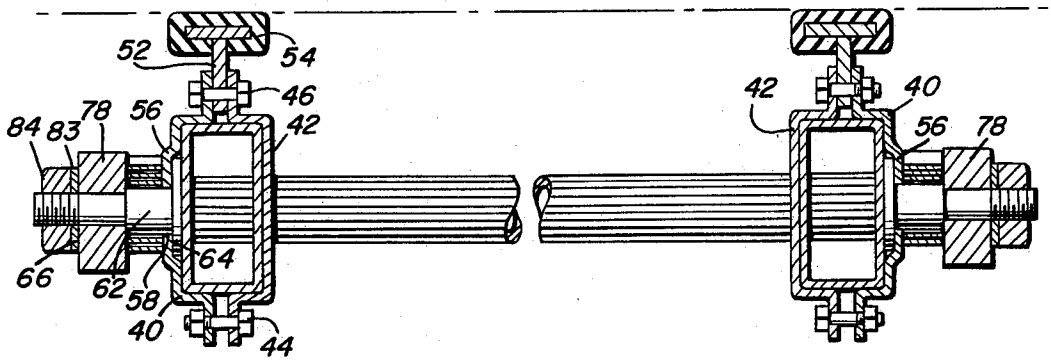


Fig. 5



Alfred E. Nameche
Walter F. Norton
INVENTORS

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Dec. 30, 1969 A. E. NAMECHE ETAL 3,486,580

LADDER AND SUPPORT BRACKET THEREFOR

Filed June 11, 1968 3 Sheets-Sheet 3

Fig. 7

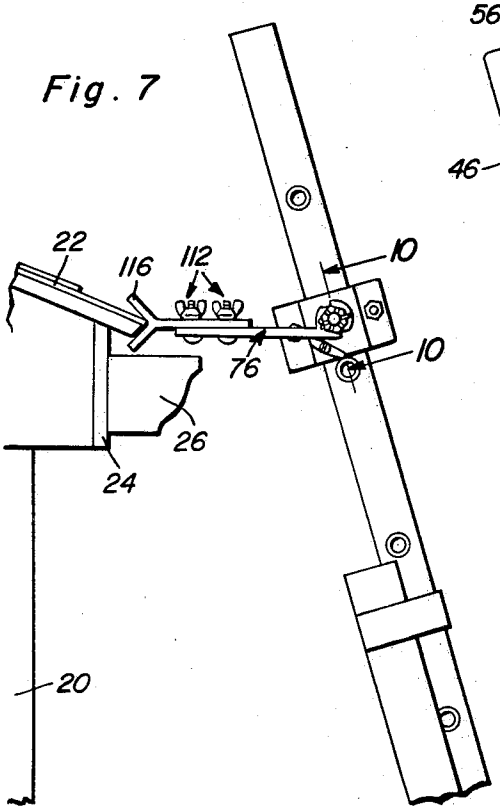


Fig. 9

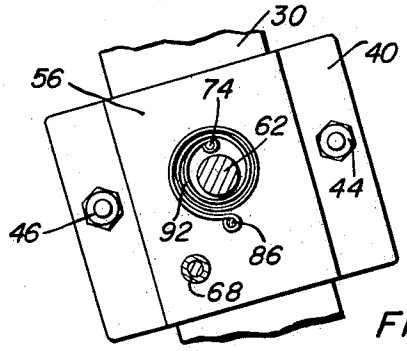


Fig. 10

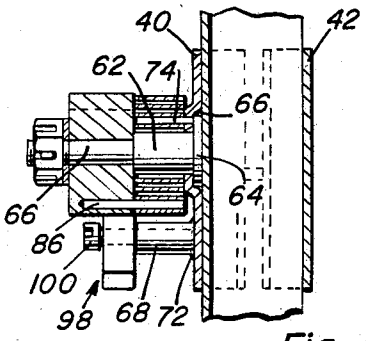


Fig. 11

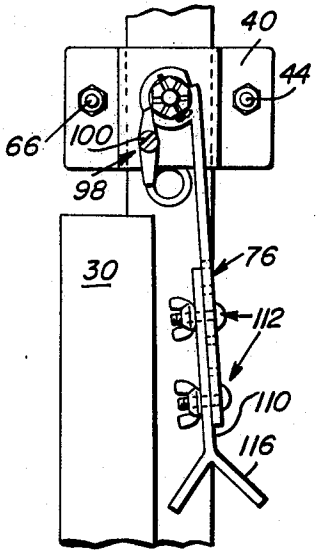
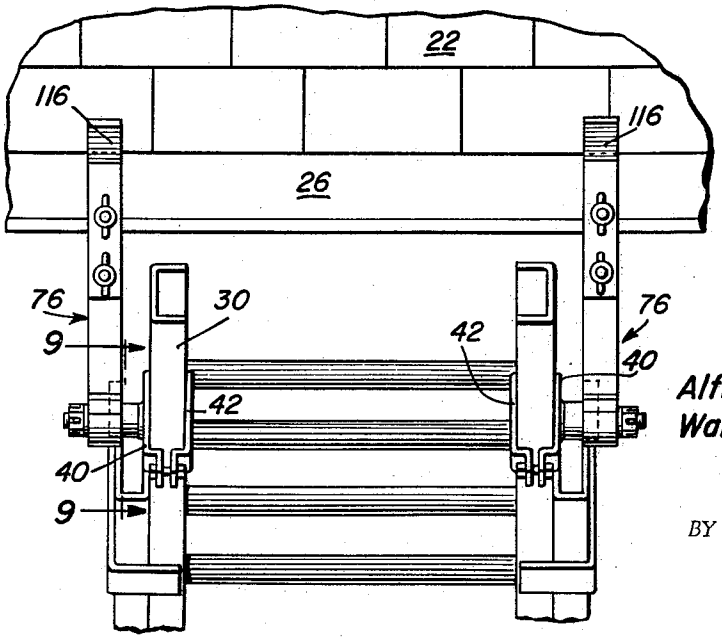


Fig. 8



Alfred E. Nameche
Walter F. Norton
INVENTORS

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

United States Patent Office 3,486,580 Patented Dec. 30, 1969

3,486,580

LADDER AND SUPPORT BRACKET THEREFOR

Alfred E. Nameche, 666 W. Spring 45801, and Walter Norton, 2343 Shawnee Blvd. 45805, both of Lima, Ohio

Filed June 11, 1968, Ser. No. 736,042
Int. Cl. E06c 7/08, 7/48
U.S. Cl. 182—214 15 Claims

ABSTRACT OF THE DISCLOSURE

A bracket to support the upper end of a ladder from a building where the ladder is suspended from the roof edge or facing board, thus preventing the ladder having to be set against guttering, siding, or other frangible elements of a building.

The present invention relates to a bracket that is adapted to support the upper end of a ladder, that is normally leaned against a building for support from a part of the building that will not sustain damage as a result of the weight. There is a provision on the bracket for adapting the building engaging portion of the bracket to suit the portion of the building engaged by the bracket.

An object of the present invention is to provide a bracket that can be attached to a ladder for supporting the ladder against a building.

A further object of the present invention is to provide a bracket to support a ladder from a part of the building that will not be damaged by the ladder or its weight.

A further object of the present invention is to provide a bracket for a ladder that will allow the ladder to be supported from the roof edge or the facing board of a building so as to not damage guttering, siding or other frangible elements of a building.

A further object of the present invention is to provide an adjustable bracket for attachment to a ladder so that the ladder can be supported by a suitable portion of the bracket from the roof edge or the facing board of a building to prevent damage to the gutter, siding or other frangible elements of a building.

A still further object of the present invention is to provide an adjustable bracket for attachment to a ladder with portions to be selectively employed: to engage the roof edge of a building or the facing board of a building to avoid damage to the guttering, siding or other frangible elements of the building or to lean against surfaces capable of supporting the weight of the ladder.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 shows the subject invention installed on a ladder and supported from the facing board of a building.

FIGURE 2 is a side view of the bracket and ladder in their initial position.

FIGURE 3 is a front view of FIGURE 2.

FIGURE 4 is a side view similar to FIGURE 1 showing the bumper portion of the bracket engaging a vertical surface of a building.

FIGURE 5 is a sectional view along the line 5—5 of FIGURE 4.

FIGURE 6 is an exploded perspective view of the latch mechanism of the device.

FIGURE 7 is a view similar to FIGURES 1 and 4 showing a modified portion of the bracket adapted to engage the roof edge of the building.

FIGURE 8 is a top plan view of FIGURE 7.

FIGURE 9 is a sectional view of the attachment portion of the bracket and the spring installed thereon.

FIGURE 10 is a sectional view taken along the line 10—10 in FIGURE 7.

FIGURE 11 is a side view of the bracket with the roof edge engaging portion held in the inoperative position.

Referring now to the drawings the numeral **20** designates the wall of a building with a roof **22**, facing board **24** and the gutter **26** attached thereto and a soffitt **28**. A conventional ladder **30** is shown supporting a scaffold structure **32** comprising a support **34** and a plank **36**. The ladder is shown supported by a bracket generally designated at **38** supported from the facing board **24**. By supporting the ladder in such a fashion there is no danger of cracking or denting the new siding materials, such as aluminum or vinyl. Further, the ladder does not have to be supported by leaning against the guttering and thereby crushing it. The bracket **38** will be described as a single unit, it being understood that they are usable in pairs, with each pair being identical mirror images of each other. The bracket **38** is clamped to the ladder by two generally U-shaped plates **40** and **42** held together on the ladder by bolts **44** and **46**, passing through holes in flanges **48** and **50** on the plates **40** and **42**, respectively. Pivotally held between the flanges **48** and **50** by bolt **46** is a bumper **51** which is intended to be used against vertical surfaces that can support the weight of the ladder without damage. The bumper **51** comprises a metal foot **52** with a resilient pad **54** attached thereto.

Plate **40**, which is orientated on the outside of the rail of the ladder has an offset portion **56** upon which is mounted the lever arm mechanism of the bracket. Extending through a hole **58** centrally disposed in the offset portion **56** is a shoulder bolt **60**. The bolt **60** has a main shank **62** with a diameter slightly smaller than the hole **58** and a head **64** larger than the hole **58**, and an elongated section **66** of reduced diameter and threads on the end thereof. The bolt **60** is meant to be inserted through the hole **58** so that the head **64** abuts the offset portion **56** of the plate. The bolt is then spot welded as at **66** to the portion **56** to provide a secure mounting for the lever arm mechanism. A cylindrical stud **68** with an internally threaded opening **70** is also attached to the offset portion of the plate. The stud **68** is mounted below and slightly offset from bolt **60** by welding, as at **72**. The length of stud **68** and the shank **62** of bolt **60** that projects beyond the surface of offset portion **56** of the plate are substantially the same for reasons to be set forth hereinafter. A pin **74** is secured to portion **56** of the plate in close proximity to bolt **60** for reasons to be set forth hereinafter.

A lever arm **76** with a cylindrical base portion **78** and an arm portion **80** attached thereto is meant to be journalled on bolt **60**. Base portion **78** has a cylindrical opening **82** therethrough of slightly larger diameter than section **66** of bolt **60** so that the arm **76** will be rotatably mounted on section **66** and abut against shank **62** of the bolt **60**. The washer **83** and nut **84** retain the arm **76** in the aforementioned position on bolt **60**. Attached to the back side of base **78** is a pin **86** which is similar to pin **74**. There are two detents **88** and **90** cut into the circumference of base portion **78**. The detent **88** is cut counterclockwise approximately 60° from the point where arm **80** is tangent to base **78**. The detent **90** is cut approximately 180° from detent **88**.

Torsion coil spring **92** has an inner diameter slightly larger than the shank **62** of bolt **60** and is meant to slide over shank **62** and be anchored onto pin **74** by loop **94**. The outer loop **96** of spring **92** is engaged by pin **86** on lever **76** thereby imparting counterclockwise rotation of arm **76** when the spring **92** is resisted.

Pawl **98** is pivotally mounted on stud **68** with screw **100** passing through aperture **102** of the pawl and engaging the threads of the stud. The pawl has a pointed end **104**, which because of the placement of stud **68** engages the detents **88** and **90** of lever **76** and prevents rotation of the arm. The pawl has an elongated tapered end **106** to provide leverage to disengage the pointed end **104** from the detents. The detent **88** is located so that when it is engaged by the pawl the lever **76** will extend beyond the ladder in a plane substantially parallel thereto as shown in FIGURE 2. The detent **90** is located so that when it is engaged by the pawl the lever **76** will extend back down onto the ladder in a plane substantially parallel thereto thereby placing it in an inoperative position so that the bumper section **51** can be used or the ladder stored away, see FIGURES 4 and 11, respectively.

Extension arms **108** and **110** are provided with spaced apertures with similarly spaced apertures on the lever **76** so that either arm **108** or **110** can be bolted to the lever **76** by means of bolts **112**. The arm **108** is provided with an upstanding leg portion **114** that is designed to engage the facing board **24** or other vertical surface of the building when there is danger of damaging a gutter or siding. FIGURES 2 and 3 show the bracket installed on the ladder and detent **88** engaged by the pawl **98**. This extends levers **76** and attached arm **108** beyond the end of the ladder with leg **114** engaging the facing. The ladder is then lifted upwardly and inwardly which causes leg **114** to firmly engage the facing board and suspend the ladder therefrom as illustarted in FIGURE 1. This position of the ladder permits the worker to have easy access to work on the facing, siding, windows, etc. Also the plurality of spaced apertures on lever **76** and arm **108** permit an adjustment of the ladder's suspension from the facing to accommodate different sized overhangs. The spring **92** keeps the lever **76** and arm **108** firmly in contact with the facing board to prevent disengagement thereof.

The arm **110** has a Y-shaped end **116** which is designed to engage the edge of a roof or other projection on a building. When arm **110** is to be used, pawl **98** is disengaged and lever **76** and arm **110** attached thereto are allowed to rotate counterclockwise until they engage the pawl and its supporting lug **68**. This holds the arm in a substantially perpendicular position to the ladder. The Y-shape end **116** is then engaged on the building and the ladder set on the ground with the bracket assuming the position shown in FIGURE 7.

The invention as just described shows how the bracket permits support of a ladder from substantially any portion of a building that is convenient or necessary by use of the arms **108** or **110**, or the bumper **51**. The selective positioning of the ladder allows more versatility in the use of the ladder as well as scaffolds as shown in FIGURE 1.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A bracket for a ladder comprising: clamp means to secure the bracket to a ladder, a lever pivotally mounted on said clamp means, resilient means urging said lever to rotate about its pivot point, stop means to resist said resilient means and maintain said lever in an inoperative position, and means to hold the lever in a building engaging position, said clamp means comprising: opposed plates drawn together by bolts to clamp the ladder therebetween, and wall engaging bumper means pivotally supported on one of said bolts.

2. A bracket for a ladder comprising: clamp means to secure the bracket to a ladder, a lever pivotally mounted on said clamp means, resilient means urging said lever to rotate about its pivot point, stop means to resist said resilient means and maintain said lever in an inoperative position, and means to hold the lever in a building engaging position, said resilient means being a torsion coil spring reacting between the clamp means and the lever, said lever comprising a cylindrical base portion for said pivotal mounting on said clamp means and an arm portion attached and tangent to said cylindrical base portion.

3. The device as set forth in claim **2** wherein said stop means comprises: a pawl pivoted on said clamp means and a cooperating detent on the circumference of said cylindrical base portion.

4. The device as set forth in claim **3** wherein said means to hold the lever in a building engaging position comprises: a second detent on the circumference of said cylindrical base portion.

5. The device of claim **4** wherein the two detents are in substantially diametrically opposed relation to each other on the cylindrical base portion so as to enable a selective maintenance of the lever in either of two diametrically opposed orientations.

6. The device of claim **2** including an elongated bolt fixed to said clamp means and projecting laterally outward therefrom, said bolt including an enlarged diameter inner shank portion and a reduced diameter outer shank portion, said coil spring being received about the inner shank portion, said cylindrical base portion being received about said outer shank portion immediately outward of the coil spring, retainer means affixed to the extreme outer end portion of the bolt for the retention of the coil spring and the cylindrical base portion thereon, means fixing one end of said coil spring to the clamp means adjacent the bolt, and means fixing the second end of said coil spring to said cylindrical base portion laterally of said bolt whereby the reactant force of said spring will effect a rotation of the cylindrical base portion, and hence the lever, about the bolt.

7. The device of claim **6** wherein said stop means comprises a pawl pivotally mounted on said clamp means in radial alignment with and in outwardly spaced relation from said cylindrical base portion, said cylindrical base portion including a cooperating portion thereon for selective cooperation with the pawl upon a swinging movement of the pawl into engagement therewith, said pawl being selectively moved between a position engaging the cylindrical base portion and a second position remote and disengaged therefrom.

8. The device as set forth in claim **5** wherein said arm portion has attachment means for attaching a further arm with a perpendicular leg portion thereto.

9. The device as set forth in claim **8** wherein said attachment means is adjustable.

10. The device as set forth in claim **5** wherein said arm portion has attachment means for attaching a further arm with a Y-shaped end portion remote from said attachment means.

11. The device of claim **10** wherein said attachment means is adjustable.

12. A bracket for a ladder, said bracket including clamp means for securing the bracket to a ladder, a lever, said lever including a base portion and an arm portion affixed to and projecting outwardly from said base portion, means pivotally mounting said base portion on said clamp means for a pivotal swinging of the corresponding arm portion, resilient means engaged between the clamp means and the lever for biasing said lever in a rotational path about the means pivotally mounting the base portion of the lever, and cooperating stop means on said clamp means and the lever for selectively maintaining said lever in an inoperative position and in a building engaging position against the biasing force of the resilient means.

13. The device of claim **12** wherein said base portion is substantially cylindrical, and said stop means includes a pawl pivotally mounted on said clamp means and pawl engaging portions on the cylindrical base portion with

which the pawl can be selectively engaged, said resilient means maintaining the engagement between the pawl and the pawl engaging portions on the cylindrical base portion.

14. The device of claim **13** including a selectively extensible attachment mounted on said arm portion and terminating in a building engaging configured outer end.

15. In combination with a ladder, including a forward building facing side and an opposed outwardly directed side, a pair of support brackets, each bracket including clamp means mounting the bracket on the upper portion of the ladder, an elongated lever pivotally engaged with said clamp means for movement between a first downwardly directed position along and adjacent the opposed side of the ladder and a second forwardly extending position projecting beyond the forward side of the ladder, means resiliently urging said lever from the first position to the second position, and stop means for selectively maintaining said lever in the first position, the second position, and a third intermediate position wherein the lever is upwardly directed longitudinally along the ladder, said lever being movable against the urging force, free of

the stop means, between the second and first positions, said stop means being manually releasable for enabling a movement of the lever between the first and second positions, and building engaging means on the outer end of said lever.

References Cited

UNITED STATES PATENTS

2,419,065	4/1947	Fowler	182—107
2,500,086	3/1950	Mintus	182—214
3,072,218	1/1963	Peters	182—214
3,115,211	12/1963	Ostrander	182—214

FOREIGN PATENTS

862,456	3/1961	Great Britain.

REINALDO P. MACHADO, Primary Examiner

U.S. Cl. X.R.

182—111