United States Patent [19]

Krueger

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[54] **TOOL FOR HANGING SIDING OR THE LIKE**

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[52] **U.S. Cl.**..... **269/102;** 52/DIG. 1; 269/321 W

[51] **Int. Cl.**[2]..... **B23Q 3/02**

[58] **Field of Search**..... 269/91, 94, 102, 1, 321 F, 269/321 S, 321 W; 52/DIG. 1; 29/464

[56] **References Cited**

UNITED STATES PATENTS

93,241	8/1869	Staples	269/102
94,557	9/1869	Brigham	269/102
1,393,718	10/1921	Taylor	269/94
2,408,586	10/1946	Spievak	269/94
2,742,065	4/1956	Wetzler	269/94
3,124,347	3/1964	Haddad	269/91
3,490,152	1/1970	Printz	269/321 S

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[57] **ABSTRACT**

A tool for hanging horizontal siding or the like on a wall is disclosed. The tool includes a spike which is driven through a tool head and pivotally depending arm to secure the head to the wall. The board is then slid upwardly between the wall and tool arm. When the board is properly located, an abbreviated hook on the arm engages the board bottom and holds the board in place. After the board is permanently secured in position, the tool is removed by rotating the arm perpendicularly outwardly away from the wall.

3 Claims, 9 Drawing Figures

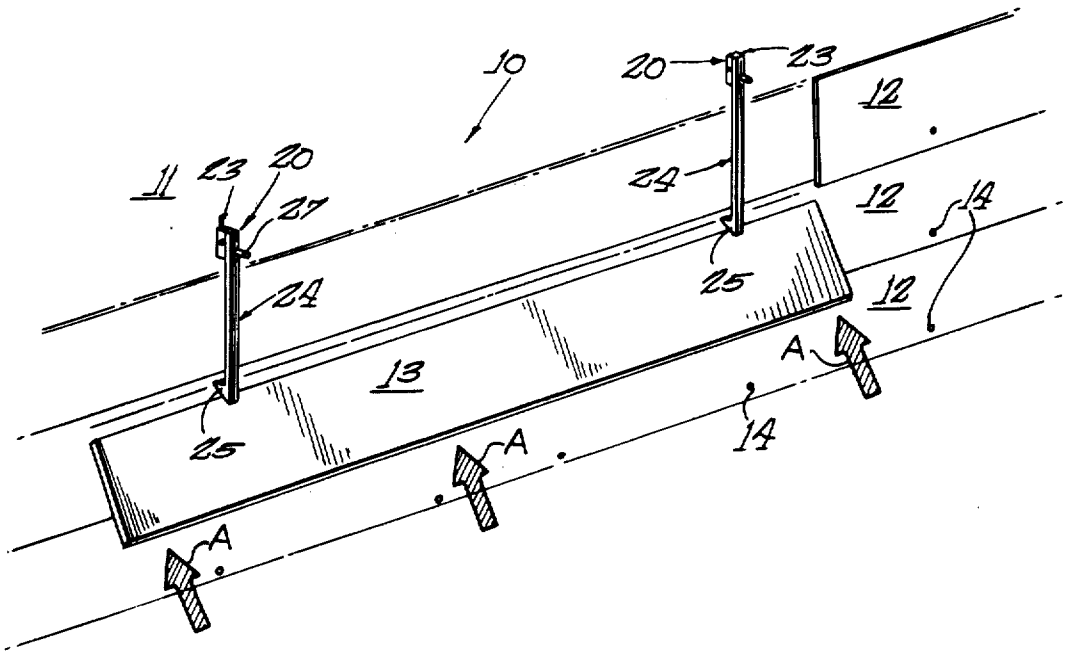


Fig. 1.

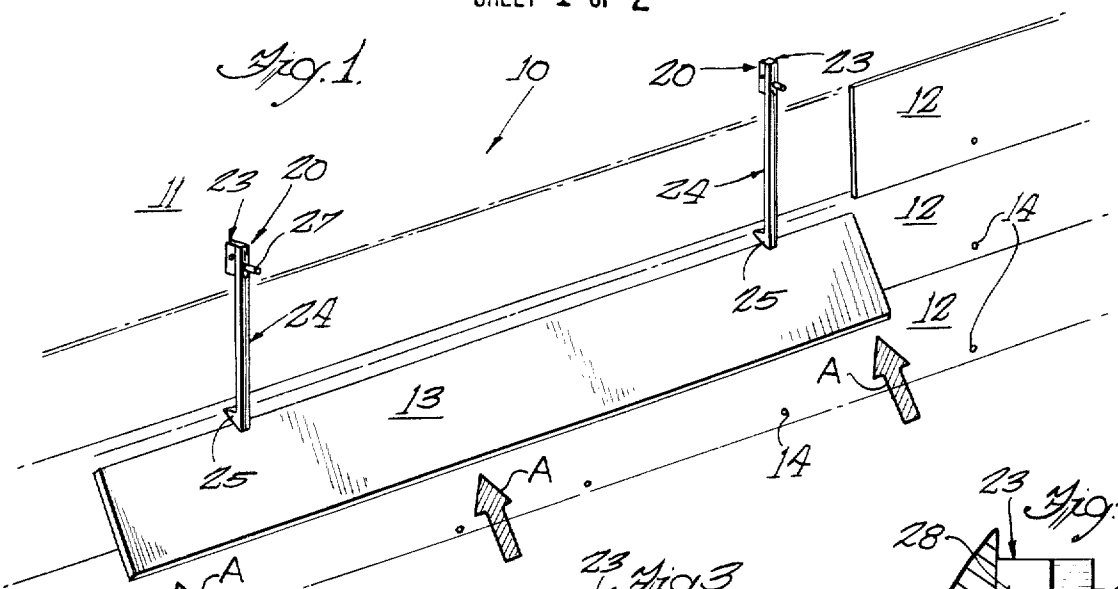


Fig. 2.

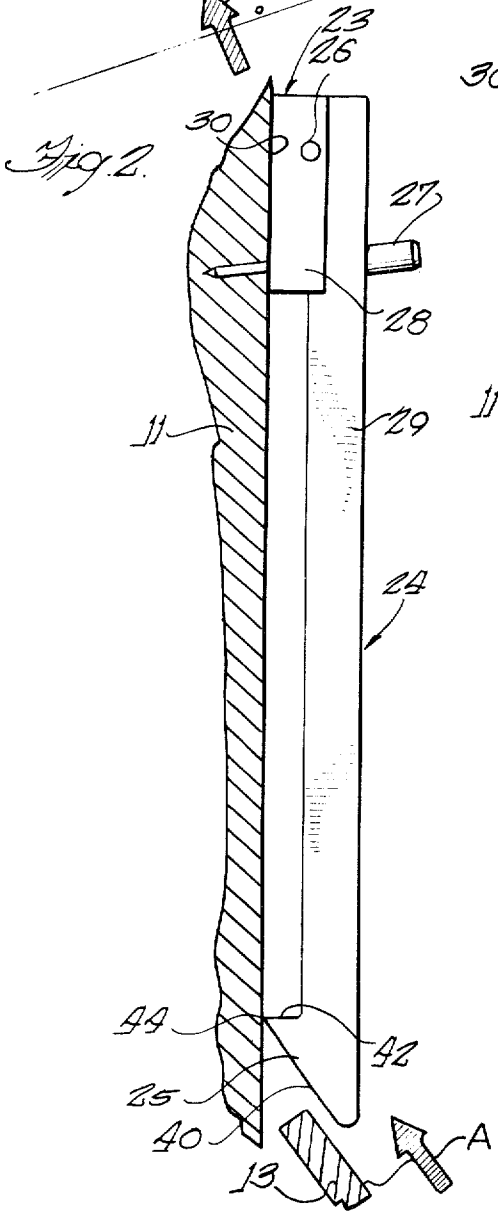


Fig. 3.

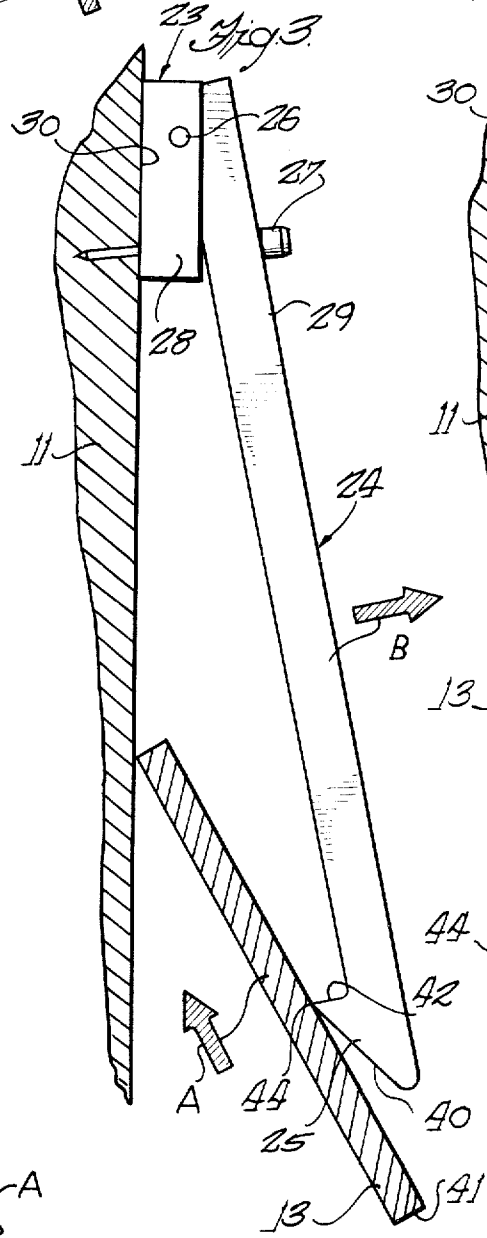


Fig. 4.

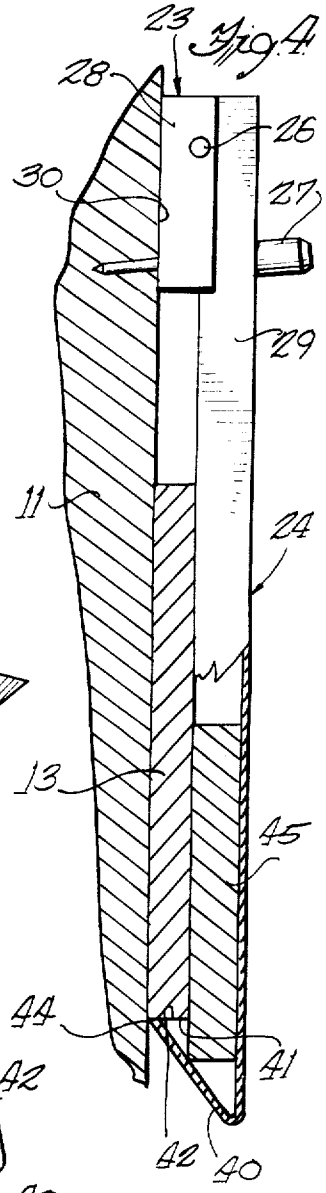


Fig. 5.

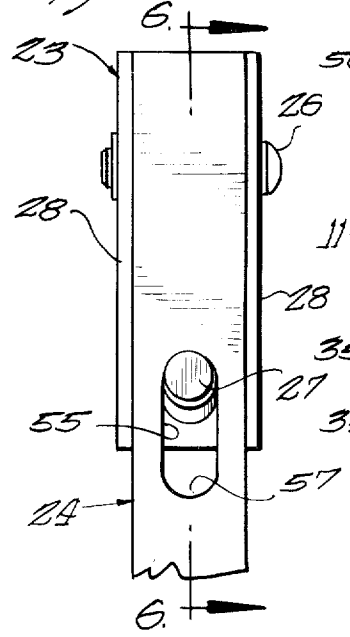


Fig. 6.

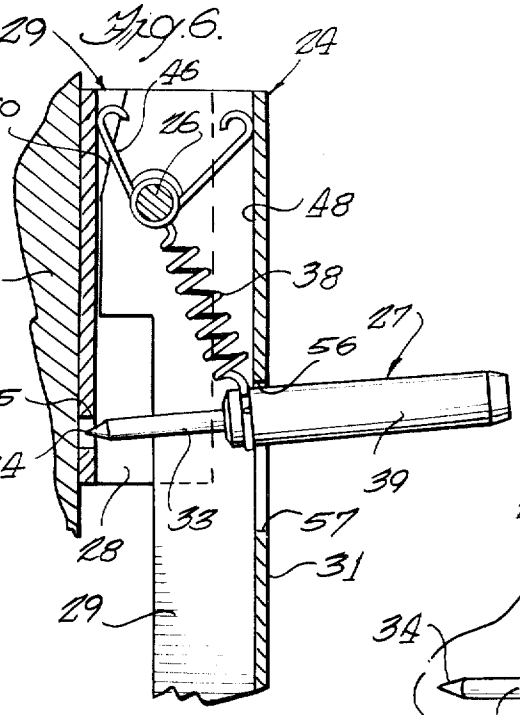


Fig. 9.

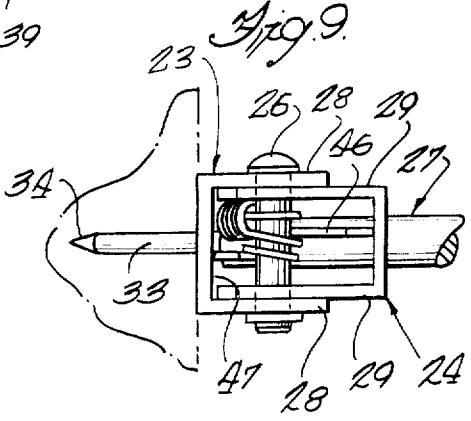


Fig. 7.

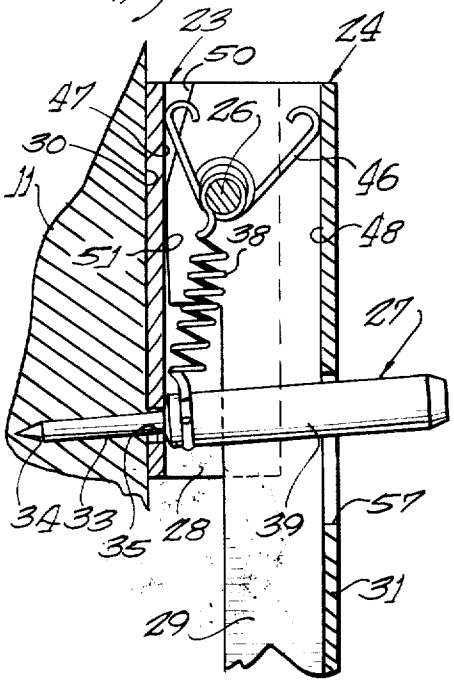
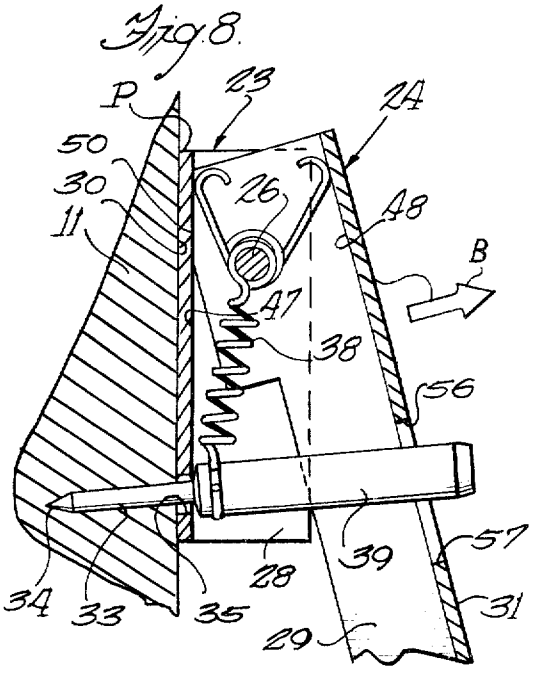


Fig. 8.



TOOL FOR HANGING SIDING OR THE LIKE

BACKGROUND OF THE INVENTION

This invention relates generally to tools, and more particularly concerns a hanger-type tool for temporarily holding building siding or the like in a predetermined position for permanent attachment to an underlying wall structure.

The problem of temporarily holding large horizontal building siding boards or like objects in position against a vertical wall has been a difficult one for professional and amateur construction workers alike. Often, these boards are large, heavy, and cumbersome, yet they must be raised and accurately pre-positioned against an underlying wall surface before they can be nailed or otherwise permanently secured in place on the wall. Often, two workers are required to perform this operation: one worker holds the board while another attaches it to the wall. If the task is attempted by one person, he must accurately pre-position the board, and then free his hands to permanently secure the board in place. Such actions are awkward.

It is accordingly the general object of this invention to provide a tool which will assist in pre-positioning a siding board or like object against a vertical wall surface for subsequent permanent attachment.

It is a more specific object of the invention to provide an inexpensive, rugged tool which can be rapidly but temporarily attached to a wall in a predetermined location to hold a siding board against the wall surface while the board is being permanently nailed in place. A related object is to provide such a tool which can be quickly and easily removed from the wall when the siding board has been permanently secured.

Another object of the invention is to provide such a tool which can be used repeatedly without damaging either the tool or the wall itself. A related object is to provide such a tool which carries its own device for securing the tool; the securing device need not be replaced even after repeated tool usage.

Other objects and advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings. Throughout the description, like reference numerals refer to like parts.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an overall or general perspective view of a typical wall to which siding boards are being attached, and showing the hanger tools being used during the board emplacement and attachment work;

FIG. **2** is an elevational view showing a typical wall surface (in sectional aspect) and the novel hanger tool attached thereto;

FIG. **3** is an elevational view similar to FIG. **2** showing the tool as it appears when a siding board is being moved into place against the wall;

FIG. **4** is an elevational view similar to FIGS. **2** and **3** showing the wall and tool as they appear when the siding board is located in its attachment position against the wall, the novel hanger tool being partially broken away to show in section one embodiment of internal tool arm construction;

FIG. **5** is an elevational view showing in further detail the tool head and associated parts;

FIG. **6** is a sectional view taken substantially in the plane of line **6—6** in FIG. **5** showing in further detail the tool head with a tool spike positioned for partial insertion into an abutting wall;

FIG. **7** is a sectional view similar to FIG. **6** taken substantially in the plane of line **6—6** in FIG. **5** showing the tool head as it appears when part of the tool spike has been driven into the wall;

FIG. **8** is a sectional view similar to FIGS. **6** and **7** taken substantially in the plane of line **6—6** in FIG. **5** showing the tool head as it appears when the arm has been rotated away from the wall; and

FIG. **9** is a top plan view showing in yet further detail the head of the tool.

DETAILED DESCRIPTION

While the invention will be described in connection with a preferred embodiment and procedure, it will be understood that it is not intended to limit the invention to this embodiment or procedure. On the contrary, it is intended to cover all alternatives, modifications and equivalents as may be included within the spirit and scope of the invention.

Turning first to FIG. **1**, there is shown a typical structure such as a house **10** having a vertical wall **11** to which siding boards **12** and **13** are being attached. Presently, it is common practice to attach these boards **12** and **13** to the wall **11** by nails **14** or other known securing devices located at appropriate spots on the board and wall.

In accordance with the invention, one or more novel tools **20** are provided for positioning a siding board **13** or like workpiece in the location illustrated in phantom lines against a wall **11**. To this end, as shown especially in FIGS. **1–4**, the tool **20** comprises a mounting head **23** adapted to be secured against the wall **11**, an arm **24** and means such as an abbreviated hook or step **25** for retaining the workpiece **13** against the wall **11**. To secure the head **23** of the tool **20** to the wall **11**, a spike **27** extends through both the head **23** and the arm **24**. A pivot pin **26** interconnects the head **23** and arm **24** to permit the arm **24** to rotate about the head **23** in a direction perpendicular to the face of the wall **11**, as can be envisioned from reference to FIGS. **2–4**. In the embodiment illustrated particularly in FIG. **5**, flanges **28** formed on the head **23** cover arm flanges **29**. It will be understood, however, that the tool could be modified to permit the arm flanges **29** to extend over the outside of or cover the head flanges **28**.

In carrying out various method aspects of the invention, the tool **20** is used in a straightforward manner. To this end, a convenient lateral or horizontal position on the wall is selected for the tool **20**, and then the tool is moved vertically up or down to position the step **25** at the spot where it is desired to locate the bottom of the board **13**. Next, the tool **20** is mounted on the wall **11**. To accomplish this, the tool head **23** is provided with an external face **30** adapted to abut the wall **11**; in the illustrated embodiment, this face **30** is spaced apart from an elongated main portion **31** of the arm **24**, as illustrated in FIGS. **6–9** inclusive. To temporarily secure the head **23** to the wall **11**, the spike **27** is provided with a reduced diameter portion **33** which terminates in a point **34** permitting the spike **27** to be driven part way into the wall. A small hole **35** formed in the external face **30** accommodates passage of the spike reduced diameter portion **33**, but surrounding head structure abuttively halts motion of the spike **27** as the spike is pounded or otherwise forced toward and into the wall.

To retain the spike **27** in its illustrated location partially within but extending through the tool head **23** and arm **24**, a resilient interconnector **38** is secured at one end about an expanded head **39** of the pin **27**, and its other end is secured about the transverse tool pivot pin **26**.

After the tool **20** is emplaced upon the wall **11**, the siding sheet or board **13** is slide into place, as can be envisioned from sequential reference to FIGS. **2–4**. As the siding member **13** is slid upwardly along the wall **11** in the direction indicated by the arrows A in FIGS. **2** and **3** into supported engagement with the tool, the arm **23** is urged to pivot rotatably outwardly in a direction perpendicularly away from the wall **11**, as indicated by the arrow B in FIG. **3**. This motion is caused by board engagement with guide surfaces **40** on the arm bottom which are here planar and are oriented diagonally to the arm **24**.

As the bottom **41** of the board **13** passes the tool arm board support device **25**, the arm **24** and board **13** itself are rotated back toward the wall **11** to permit the tool **20** to supportively engage the board **13** as illustrated in FIG. **4**.

To properly support the board **13**, as illustrated in FIG. **4**, the board support or workpiece retaining device **25** includes one or two planar surfaces **42** which extend from the arm **24** in the direction in which the wall-abutting external head face **30** is spaced apart from the arm **24**, and which engage the bottom **41** of the workpiece **13**. Together with the arm **24**, these supportive surfaces **42** assume the configuration of an attenuated or partial hook. As can be envisioned from FIG. **4**, the surfaces **42** can slide into or out of engagement with the workpiece bottom **41** by pure pivotal motion of the arm **24** relative to the head **23** and wall **11**, since no protrusions extend above the planar surfaces **42**.

To space the arm **24** apart from the **11** sufficiently to accommodate the workpiece **13**, the workpiece support **25** is provided with a tip or tips **44** adapted to abut the wall **11**. It is a feature of the invention that this tip **44** lies in the extended plane of the head external face **30** when the arm is closed or normally oriented against the wall **11**, as illustrated in FIG. **4**.

It is another feature of the invention that the arm **24** is positively biased or urged toward the wall **11** to retain the workpiece **13** in position. To this end, a biasing device — here, a spring **46** shown in FIGS. **6–9** inclusive — is functionally interposed between an internal face **47** of the mounting head **23** and an opposite face **48** of the arm **24**. To permanently locate and secure the spring **46** in position, the spring is here wrapped around the connecting pin **26**.

In accordance with a further aspect of the invention, the arm **24** is permitted to swing resiliently outwardly to a predetermined limited angular or rotational position, as illustrated in FIG. **3**. To this end, the arm **24** is provided with a swing stop abutment **50** which engages the internal head face **47** to limit the outward pivoting motion of the arm **24** relative to the head **23**. In the illustrated embodiment, this arm abutment surface **50** is conveniently formed at an angle of substantially **14.5°** to the major surfaces of the arm **24**, thereby limiting arm pivoting motion to that amount. It will be understood that other angular arm motion limits could be provided, if desired. It will also be understood that if the arm flanges **29** were provided outside the head flanges **28**, illustrated in FIG. **9**, the abutment surface would be provided on the head, and the abutment surface would be provided on the arm.

Since the wall may be covered with insulation or other soft-surfaced material, the workpiece support surface tips **24** are prevented from being compressively urged into the wall **11** with excessive force. This is accomplished by providing the upper portion of the arm **24** with a regular stop abutment surface **51**. Normally, the regular arm abutment stop surface **51** is forced into engagement with the head internal surface **47** by the arm biasing spring **46** to limit inward pivoting motion of the arm **24** relative to the head **23**. Again, it will be understood that if the head **23** were to be modified so that its flanges **28** fit over the arm flanges **29**, this regular stop abutment would be provided on the head **23**, and the abutment stop surface would be provided on the arm **24**.

After the workpiece or board **13** has been located, as indicated in FIG. **4**, minor fine adjustments of the workpiece position **13** relative to the wall **11** can be made. This is accomplished by temporarily pivoting the tool **20** or **21** about the spike **27** in a plane parallel to the wall **11** to slightly raise or lower the supported siding board **13** and thereby make final adjustment of the siding board position on the wall. The board is then nailed or otherwise secured in place on the wall **11** by the siding installer.

After the workpiece **13** has been firmly secured to the wall **11**, the tool **20** is removed. This is accomplished by rotating the arm **24** about the pivot pin **26** on the head **23** to move the arm perpendicularly away from the wall **11** to the predetermined maximum angular position shown in FIG. **3**. As described above, such motion forces the arm stop abutment **50** into engagement with the head internal surface **51**. Continued rotative pressure is applied to the arm **24** by the tool manipulator; this force, exerted in the direction indicated by the arrow B in FIG. **8**, causes the tool to rotate about a second pivot point P in a direction perpendicularly away from the wall and extract the spike **27** from the wall **11** to remove the tool head **23** from its secure position on the wall. After removal, the tool can be repositioned at another location on the wall for receiving and temporarily supporting a subsequent workpiece for emplacement on the wall.

To assist in positioning the spike **27**, and moving the tool parts, when necessary, around the spike, the arm **24** is provided with an elongated slot **55**, as shown in FIG. **5**. One slot end **56** is located, as shown in FIG. **6**, to assist in orienting the spike **27** for initial insertion into the wall **11**. The slot **55** is extended to provide clearance at a second slot end **57** which is located to permit the arm **24** and head **23** to be rotated, as described above, away from the wall **11** during tool removal without engaging the spike head **39**. This construction eliminates bending forces which might otherwise be applied to the spike **27** and damage it during extraction. Further, the slot **55** acts together with the spring **38** and the face hole **35** to retain the spike **27** in a position extending through the head **23** and arm **24**, yet permits the spike **27** to move from a rest or normal position through limited translational and rotative positions to the various locations illustrated, and thereby allow the novel tool **20** to function as described.

The invention is claimed as follows;

1. A tool for positioning a siding board or like workpiece against a wall, comprising a mounting head, an arm pivotally depending from the head, biasing means functionally interposed between said mounting head and said arm to resiliently urge the arm toward the wall, a spike extending through the head and the arm and adapted to secure the head to the wall, spike retaining means for retaining said spike in its position extending through said head and arm, the retaining means including means permitting limited translational motion of the spike relative to the head and arm between predetermined limits, and permitting pivotal motion of the spike relative to the head and arm between predetermined limits, resilient means for urging the spike toward a rest position of pre-defined translational and pivotal location relative to said head and arm, and workpiece retaining means on the arm for retaining the workpiece against the wall.

2. A tool for positioning a siding board or like workpiece against a wall, comprising a mounting head adapted to be spiked against the wall, an arm pivotally depending from the head, a planar workpiece-supportive surface extending from the arm in a direction toward the wall; the tool, when secured against the wall, having its arm spaced from the wall sufficiently to accommodate the workpiece between the arm and the wall for retaining the workpiece against the wall, biasing means interconnecting the mounting head and the arm for biasing the arm toward the wall, a spike extending through the head for spiking the tool to the wall, pivot pin means pivotally interconnecting the mounting head and the arm, resilient interconnector means interconnecting the spike to the pivot pin means for retaining the spike partially within the head, one of said mounting head and arm members being provided with an internal face, and the other of said members being provided with a swing stop abutment pivotable into engagement with said internal face to limit outward pivoting motion of the arm relative to the head as the arm and head are pivoted about a pivot point on the head and wall to remove the tool from the wall, the arm being formed with a bi-ended slot, one slot end being located to position the spike for forcible partial insertion into the wall, and the other slot end being located to provide clearance between the spike and the tool arm and head as the arm and head are pivoted about a point on the wall to pivotally remove the tool from the wall and simultaneously translatably extract the spike by linear motion from the wall.

3. A tool according to claim 2 wherein said biasing means includes locator means connected to the pivot pin means for functionally interposing the biasing means between said head and said arm.

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