Aug. 30, 1955 N. NORDONE 2,716,576

SECTIONAL SCAFFOLD FRAME BRACE LOCKS

Filed June 16, 1954

Fig. 1.

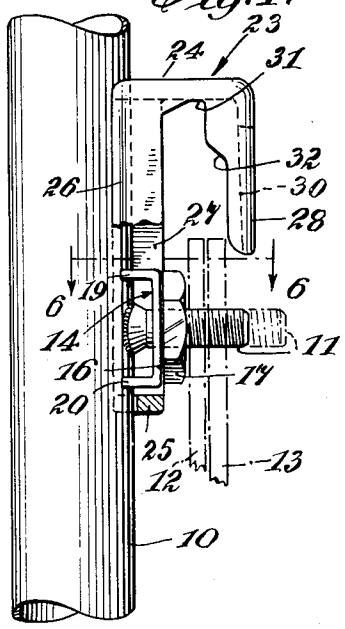


Fig. 2.

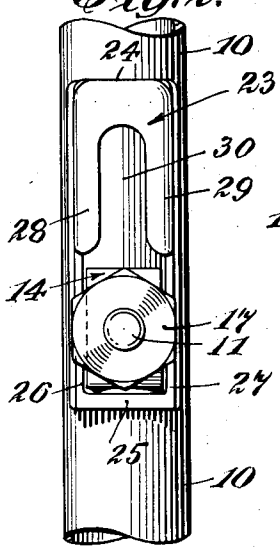


Fig. 3.

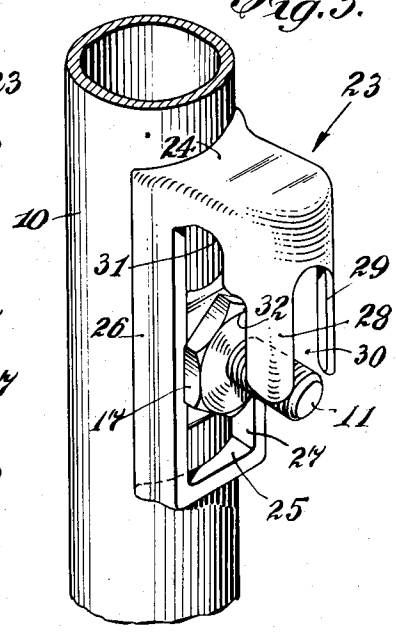


Fig. 4.

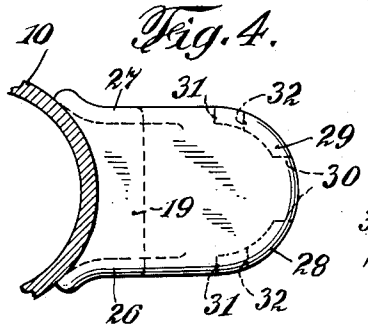


Fig. 5.

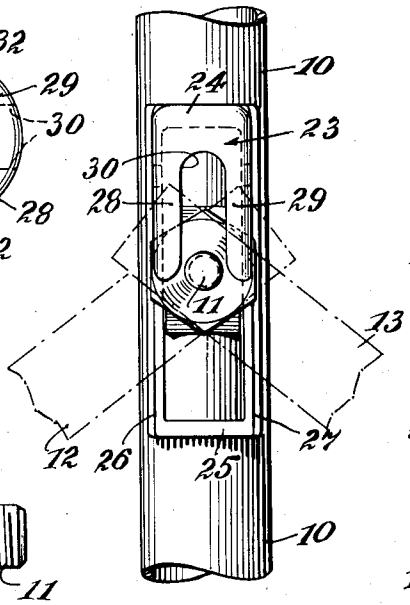


Fig. 7.

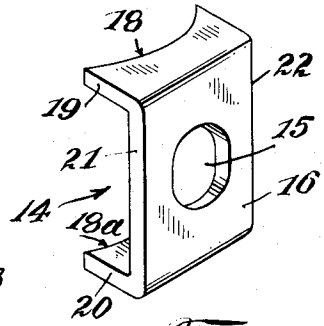


Fig. 6.

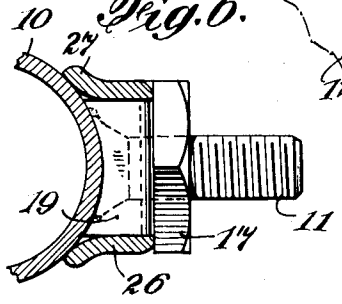
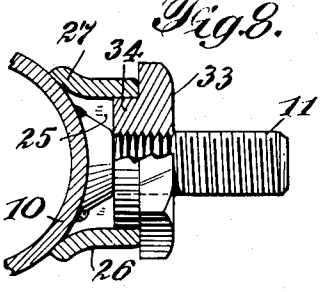


Fig. 8.



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SECTIONAL SCAFFOLD FRAME BRACE LOCKS

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2 Claims. (Cl. 304—40)

This invention relates to sectional scaffold frame brace locks, and more particularly to a lock having a member slidable along the upright of a scaffold to securely lock one or more braces by its own gravity, or to conveniently release the same by simply sliding it upwardly along the periphery of the upright.

The invention provides a substantially automatic lock which may be readily applied and easily unlocked to remove one or more braces from a stud in the scaffold upright.

My novel brace lock consists of a guide member permitting vertical reciprocating movement only of the locking device which has a forked portion to surround the stud carrying the brace or braces on a scaffold upright, and a nut to hold the guide member and the locking device on the stud.

Some preferred embodiments of my invention and its many features and advantages will be further described in connection with the accompanying drawing, and the invention will be finally pointed out in the appended claims.

In the drawing:

Fig. 1 is a side view of a scaffold upright with the novel brace lock of my invention partly broken away;

Fig. 2 is a front view of the brace lock;

Fig. 3 is a perspective view of the lock before the braces have been suspended on the stud;

Fig. 4 is a top view of Figs. 1 and 2;

Fig. 5 is a view similar to that shown in Fig. 2, with two diagonal braces shown in dotted lines supported by the stud and locked by my novel brace lock;

Fig. 6 is a section taken on line **6—6** in Fig. 1, as viewed in the direction of arrows;

Fig. 7 is a perspective view of the guide member for the slidable lock; and

Fig. 8 is a view, partly in section, of a shouldered nut replacing the guide member shown in Fig. 7.

Similar characters of reference indicate corresponding parts throughout the various views illustrated in the drawing.

Referring now in more detail to the illustrated embodiments and more particularly to Fig. 1, there is shown a tubular upright **10** of a sectional scaffold having welded or otherwise securely attached thereto a threaded bolt or stud **11**. Braces **12, 13** are shown in dotted lines on bolt **11**. A U-shaped guide member **14** having an opening **15** in its base **16** for the passage of bolt **11** is held against the upright **10** by a nut **17**. The concavities **18** and **18***a* in the two legs **19, 20** of the U-shaped member **14** have a curvature such as to adhere to the periphery of upright **10**, and when nut **17** is drawn tight, the vertical sides **21, 22** of member **14** guide the corresponding walls of locking member **23** for vertically reciprocating movement along the upright **10**.

Lock **23** is best shown in Fig. 3 wherein it may be seen that it consists of a frame-like portion having sides **24, 25, 26, 27** and a forked portion having two legs **28, 29**

surrounding a vertical slot **30** for stud **11**. Walls **24** and **25** are concave with a curvature corresponding to that of the periphery of upright **10** and the whole frame-like portion of lock **23** is held against upright **10** by nut **17**. U-shaped member **14** permits vertically reciprocating movement of lock **23** only. Lock **23** further comprises one or two inverted step like cutouts **31, 32** wherein the braces **12, 13** may fit when such braces are suspended on stem **11**.

As seen in Fig. 2, the lifting of lock **23** permits the suspension of the braces on bolt or stem **11**, and when lock **23** is released, it slides along sides **21, 22** of guide member **14** by its own gravity to lock the structure and to prevent removal of any brace until the lock is actually lifted by the operator back into the position shown in Fig. 2. When locked, the inner brace **12** is not actually engaged by the wall of cutout **31**, but brace **13** is firmly held by the wall of cutout **32** and thus also prevents brace **12** from any movement except pivoting around bolt **11**. When only one brace is held by stem **11**, lock **23** slides down farther and the wall of cutout **31** comes into contact therewith to prevent it from sliding off the bolt **11**. The slot **30** is so proportioned that it will permit the downward movement of lock **23** sufficiently to permit firm engagement of brace **12** by cutout **31** or the engagement of the outer brace **13** by cutout **32**.

In Fig. 8, a special nut **33** is shown which is a substitute for nut **17** and the U-shaped member **14** at the same time. As shown, nut **33** has an annular shoulder **34** with a diameter substantially equal but somewhat less than the distance between sides **26** and **27** in lock **23**. When nut **33** is drawn tight on theraded bolt **11**, walls **26, 27** slide along shoulder **34** while the hexagonal cap of nut **33** retains the lock **23** against upright **10**. Nut **33** and shoulder **34** may also be two separate pieces.

The width of lock **23** is preferably somewhat less than the diameter of upright **10** so that it may not interfere with handling and stacking operations. The bottom of lock **23**, which is preferably cast of a proper malleable steel, may be thickened to provide more weight for better balance of the lock. It may also be necessary to increase the dimensions of the walls having cutouts **31** and **32** for greater durability of the locking device.

The operation of my brace lock is as follows:

As seen in Fig. 2, the locking member **23** is lifted sufficiently to permit the suspension of braces **12, 13** on stud **11**. When lock **23** is released, it slides along sides **21, 22** of U-member **14** or along the shoulder **34** of nut **33** until the upper wall of cutout **32** contacts the outer brace **13** and the whole structure is locked automatically. If only one brace is to be locked, then the upper wall of cutout **31** comes into contact with brace **12** and the whole structure remains locked until member **23** is again sufficiently lifted to permit removal of the brace from stud **11**.

The locking device of my invention has many advantages over the conventional brace locks in that it may be easily installed without any special tools or welding equipment. It is reliable, will last practically indefinitely and will more firmly hold the brace or braces on a stem than any other device except a wing nut.

While it is believed that the above description of my invention is sufficiently to enable a person skilled in the art to practice the same, I wish it to be understood that various changes and modifications may be made within the spirit and scope of the invention as defined in the appended claims.

I claim:

1. In an automatic lock for detachably securing one or more braces to the upright of a sectional scaffold, in combination: a threaded stem anchored in the upright at one end thereof, a guide member on said stem adjacent the upright, said guide member having two vertical walls

parallel with the axis of the upright, a nut on said stem for retaining said guide member against the upright, and a brace locking member having a frame mounted for vertically reciprocating movement along said vertical walls of said guide member with said nut extending over the lateral portions of said frame for retaining the same on said guide member and adjacent the upright, said brace locking member further including a forked portion spaced from said frame and integral therewith at the upper extremity thereof, said forked portion having an open slot in the lower extremity thereof for reception of the other end of said stem on downward movement of said brace locking member by gravity thereof, said brace locking member having at least one inverted step like cutout between said frame and said forked portion thereof for reception of one or more braces supported by said stem between said nut and said forked portion of said brace locking member, said frame being of a length in excess of the length of said guide member whereby to expose said other end of said stem on upward movement thereof together with said forked portion to permit insertion of one or more braces onto said stem or removal of braces therefrom.

2. In an automatic brace lock for detachably securing one or more braces to the upright of a sectional scaffold, in combiantion: a threaded stem anchored in the upright at one end thereof, a brace locking member having a frame with a closed slot laterally limited by two vertical walls, said frame having a wall adjacent to and of a contour corresponding to the peripheral contour of the upright, said brace locking member further including a forked portion spaced from said frame and integral therewith at the upper extremity thereof, said forked portion having an open slot in the lower extremity thereof for reception of the other end of said stem on downward movement of said brace locking member by gravity thereof, said brace locking member having at least one inverted step like cutout between said frame and said forked portion for reception of one or more braces therein, said closed slot in said frame being of a length sufficient to expose said other end of said stem on upward movement of said brace locking member, and a nut on said stem having a sleeve fitting into said closed slot in said frame and extending over said vertical walls for slidably retaining said frame against said upright, whereby said brace locking member automatically locks by gravity one or more braces supported by said stem between said nut and said forked portion, said braces being removable on upward movement of said brace locking member along the upright exposing said other end of said stem.

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