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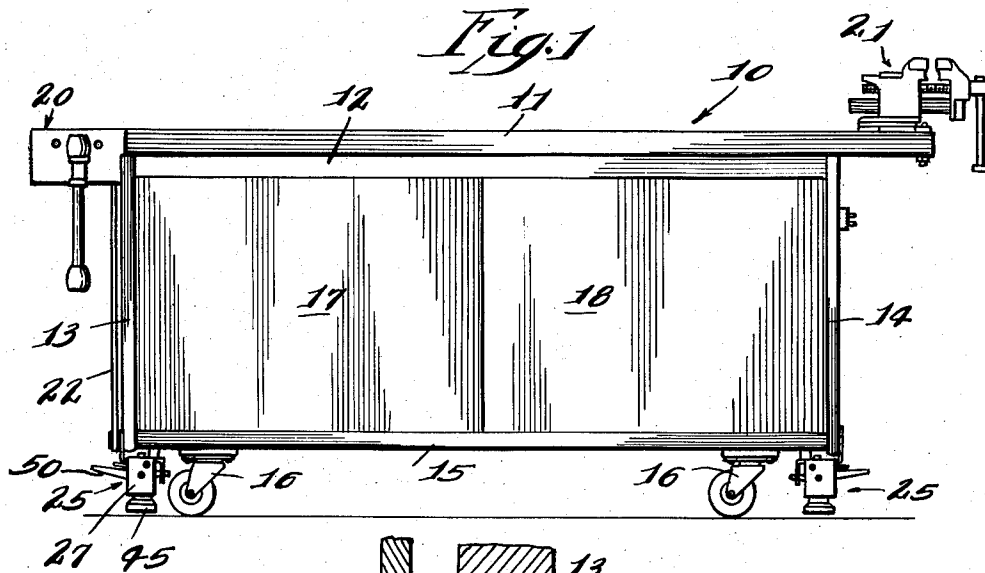
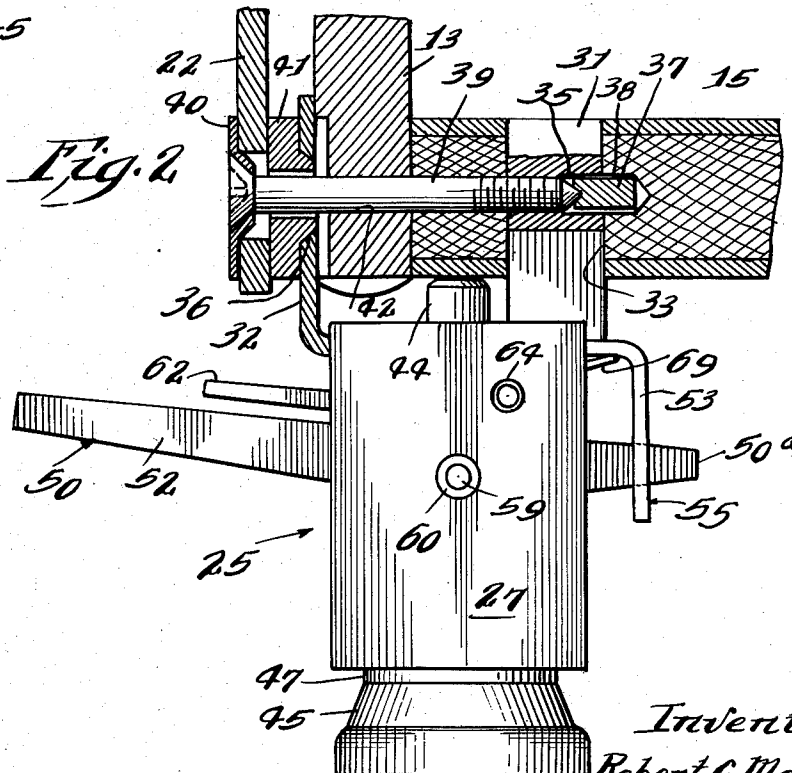
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CRAFTWORK BENCH FLOOR LOCK

Filed Jan. 16, 1958

2 Sheets-Sheet 1



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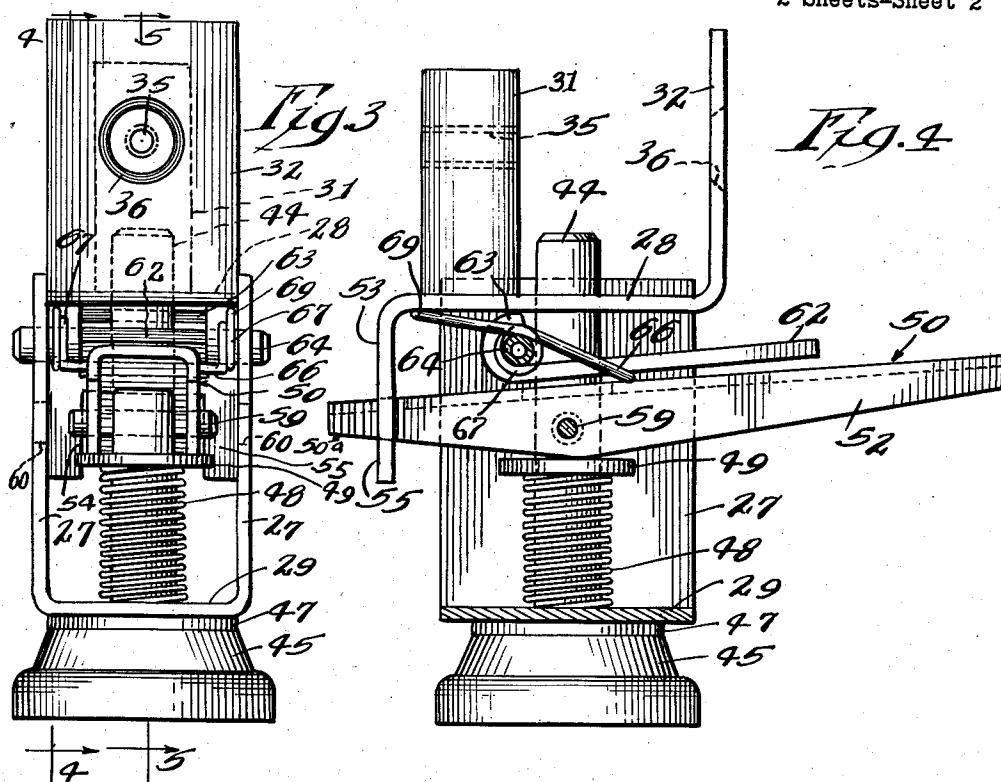
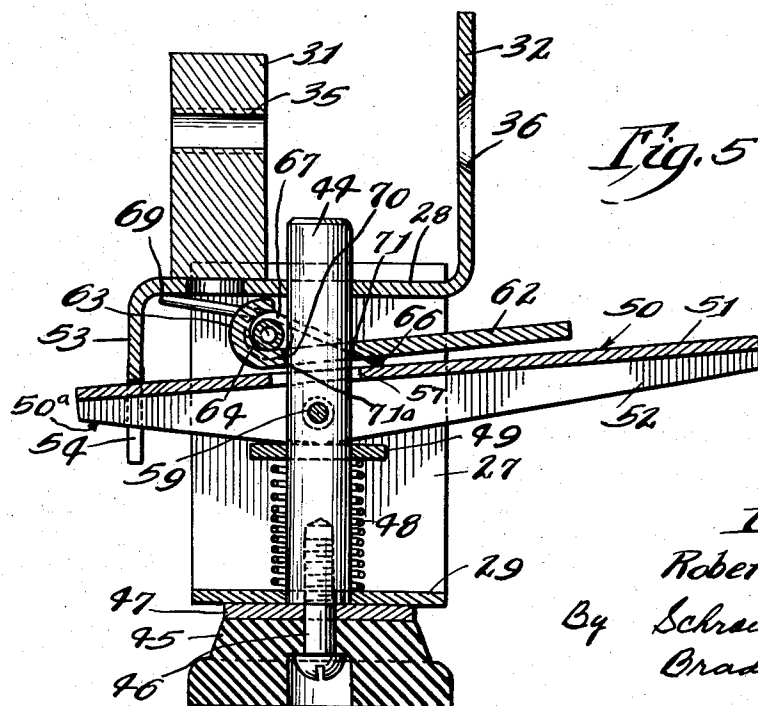
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CRAFTWORK BENCH FLOOR LOCK

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5 Claims. (Cl. 280—43.24)

This invention relates to a floor lock for a work bench on casters, or the like, for locking the bench to the floor against movement on the casters.

It is a general object of the invention to provide a new and improved floor lock of the type described.

Another object is to provide a new and improved floor lock of the type described which forms an integral part of the bench structure or the like on which it is mounted.

A further object is to provide a new and improved work bench or the like on casters, having a floor lock forming an integral part of the bench structure.

A more specific object is to provide a new and improved floor lock including a lock frame, a locking foot on the frame depressible to a floor engaging position, an actuating lever on the frame for depressing the lock foot, and locking means on the frame for retaining the foot in locking position, releasable to permit spring return of the foot to a retracted position.

Other objects and advantages will become readily apparent from the following detailed description taken in connection with the accompanying drawings, in which:

Fig. 1 is a side elevational view of a craftwork bench embodying the principles of the present invention;

Fig. 2 is an enlarged fragmentary elevational view of the lower left hand corner of the bench illustrated in Fig. 1, partly in section;

Fig. 3 is a left end elevational view of the floor lock illustrated in Fig. 2;

Fig. 4 is a sectional view taken substantially at the line 4—4 of Fig. 3; and

Fig. 5 is a sectional view taken substantially along the line 5—5 of Fig. 3.

While an illustrative embodiment of the invention is shown in the drawings and will be described in detail herein, the invention is susceptible of embodiment in many different forms, and it should be understood that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment illustrated. The scope of the invention will be pointed out in the appended claims.

Referring now to the drawings for a more detailed description, as illustrated, the invention is embodied in a craftwork bench generally designated 10 intended principally for use in schools though its utility is not limited to such places. The bench illustrated includes a top panel 11 which provides a substantially flat table-like work surface, horizontally disposed table top supporting beams such as that shown at 12, one positioned as illustrated and another along the opposite side of the bench, end panels 13 and 14 which function as columns to support the beams 12 and the top panel 11, a bottom shelf panel 15 which functions as a beam supporting the end panels 13 and 14, and swivel casters 16 or the like supporting the bottom shelf to permit movement of the bench on the floor. Normally, the bench illustrated will include a rear panel (not visible) and front sliding doors 17 and 18 so as to provide a substantially closed

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cabinet like structure beneath the top panel which may include shelves, drawers, or the like disposed above the bottom shelf 15 for the storage of tools and materials. The bench may be provided with a wood vise 20 and a metal vise 21, and a tool board 22 may be provided adjacent and parallel to the end panel 13 if desired.

In order to retain the bench against movement on the casters during use, it includes a plurality of floor locks 25 preferably four in number positioned respectively adjacent the four bottom corners of the bench. The locks are all identical in construction except for their disposition on the bench, and only one will be described in detail.

As illustrated, each lock includes a rigid lock frame comprised of spaced parallel side walls 27 and spaced parallel top and bottom walls 28 and 29 which form a hollow box like configuration. As illustrated, the side walls 27 and the bottom wall 29 are comprised of a single piece of metal bent into a U-shaped bracket, and the top wall comprises a separate piece of metal welded or otherwise suitably secured to the side walls 27 adjacent their top edges.

The lock frame includes means for attaching the frame to the panel 10 including an upstanding cylindrical metal post 31 on the top wall 28 and an upwardly directed metal flange 32 extending from one end of the top wall 28. In attaching the frame to the panel, the post 31 is receivable in a cylindrical recess 33 in the bottom shelf 15 and the flange 32 extends upwardly alongside the end panel 13. For the purpose of attaching the floor lock to the bench and for securing the end panel 13 to the bottom shelf 15, the post 31 is formed with a threaded cross-bore 35 and the flange 32 is formed with an aligned beveled hole 36. The frame is attached to the panel by means including a dowel pin 37 which is driven through the bore 35 in the post 31 into a recess 38 in the bottom shelf 15. A metal screw 39 is passed through a countersunk washer 40, an opening in the tool board 22, a washer 41, the hole 36 in the flange 32, and a bore 42 in the end panel, into the bottom shelf 15 and is threaded into the bore 35 in the post 31. On tightening the screw 39 the end panel 13 is securely fastened to the bottom shelf 15 and the lock frame is rigidly attached to the bench structure.

The locking mechanism includes a movable locking foot in the form of a rod 44 vertically slidable through the top and bottom walls 28 and 29 of the lock frame and having a locking shoe 45 of a suitable frictional material such as rubber secured to the lower end of the rod as by a screw 46 and a washer 47. The rod and the shoe are biased upwardly to a retracted position by means of a coiled compression spring 48 encircling the lower portion of the rod and bearing against the bottom wall 29 and against a washer 49 which abuts an actuating lever 50 pinned to the rod 44 for depressing the rod and the locking shoe. When the rod is depressed and the shoe engages the floor the washer 47, abutting the lower end of the rod, receives the force by the rod and distributes the load uniformly over the shoe 45, which otherwise would go directly to the floor through the head of the screw 46 by reason of the flexibility of the shoe.

The actuating lever 50 comprises a channel shaped member having a central web portion 51 and depending side flanges 52. At one end, the lever is pivoted on the lock frame by means including a depending yoke-like flange 53 extending from an end of the top wall 28 and having a centrally disposed, downwardly opening rectangular recess 54 bounded on the sides by legs 55 depending from flange 53. The recess 54 receives end portion 50a of the lever 50 with the legs 55 straddling the lever so that the central web 51 bears against the bottom edge of flange 53 to pivot thereabout. A loose fit of the lever

in the recess 54 permits longitudinal movement of the lever end relative to the flange on pivoting. The central portion of the web 51 is provided with an opening 57 through which the rod 44 projects, and the depending side flanges 52 on the lever are pivotally connected to the rod 44 as by a pin 59 to depress the rod and the locking shoe on pivotal movement of the lever. Aligned openings 60 in the side walls 27 permit insertion of the pivot pin 59 during assembly of the apparatus. The opposite end portion of the actuating lever extends outwardly from the locking frame so as to be accessible for depression by human foot to depress the locking shoe to a floor engaging position.

The rod 44 and the locking shoe are locked in depressed positions by means of a locking lever having a substantially flat end portion 62 and a hooked end portion 63 embracing a pivot pin 64 supported at opposite ends in the side walls 27. The lever end 62 is biased upwardly by a locking spring having a U-shaped midportion 66 disposed beneath the locking lever, and leg portions each wound once around the pivot pin 64 as at 67 and bearing at the ends against the under surface of the top wall 28 as at 69, so that the locking lever is constantly urged upwardly. The locking lever is formed with an opening 70 through which the rod 44 passes to permit pivotal movement of the lever downwardly from the position illustrated in the drawings. The locking spring normally biases the locking lever upwardly to the position illustrated wherein an edge around the opening 70 engages the rod 44 as at 71 and 71a and bites into the rod to retain the rod and the locking shoe in the positions to which they are moved. The locking lever, by yielding downwardly, will permit movement of the rod 44 and the locking shoe to a depressed floor engaging position by means of the actuating lever 50. To release the rod 44 for return to the retracted position by means of spring 48, the locking lever is depressed from the position illustrated to relieve the locking engagement at 71 and 71a.

In operation, the work bench 10 may be moved about on the casters 16 as desired. When the bench is to be used, it normally is desirable to utilize the floor locks 25 for retaining the bench against movement on the casters while working. One or more of the bench locks may be utilized to hold the bench by depressing the appropriate actuating levers 50. Each actuating lever may be depressed by foot to force the locking shoe 45 downwardly into engagement with the floor, and after the shoe engages the floor, further depression of the lever 51 will act to compress the yieldable material of the locking shoe. The pivoted actuating lever, acting against the flange 53, provides a mechanical advantage enabling depression of the locking shoe firmly against the floor to positively lock the bench against accidental movement while working. The locking lever acts automatically to retain the rod 44 in the depressed position until such time as the accessible end portion 62 may be depressed by foot, permitting spring return of the rod.

While the bench 10 has been described as a craftwork bench, and the floor locks have been described in connection with such a bench, it will be understood that the floor locks will have utility in other benches and in constructions other than benches, such as table, industrial trucks, carriers and the like, and the references herein to a work bench are not intended as a limitation.

I claim:

1. A floor lock for a bench on casters or the like, comprising, a rigid boxlike frame having spaced top and bottom walls, means on the frame for attaching the frame to a lower portion of a bench, a rod slidable in the top and bottom walls having a floor engaging locking shoe thereon, a spring urging the rod upwardly, means limiting upward movement of the rod in a retracted position, a flange depending from the top wall, a downwardly opening recess in the flange, an actuating lever having one

end loosely positioned in said recess and bearing against the underside of said flange in the recess to pivot thereabout while permitting longitudinal movement of the lever on pivoting, a pin pivotally connecting an intermediate portion of said lever to said rod to depress the rod, said lever having an opposite end portion accessible for depression by human foot, and means movably mounted on the frame for locking the rod in a depressed position, releasable to permit spring return of the rod.

2. In a work bench or the like having upstanding supporting columns, a horizontally disposed supporting beam extending between and abutting the columns to support the latter, and casters supporting the beam to permit movement of the bench on a floor, a floor lock, comprising, a rigid lock frame, an upstanding post on the frame receivable in a recess in said beam, a flange on the frame extending upwardly alongside a column, a screw passing through the flange and the column and into the beam and the post for securing the column to the beam and for securing the frame to the bench, a locking foot on the frame depressible to a floor engaging position, a spring urging the foot upwardly, and means on the frame for depressing the foot.

3. In a work bench or the like having upright end panels, a bottom shelf having opposite ends abutting the end panels to support the latter, and casters supporting the bottom shelf to permit movement of the bench on a floor, a floor lock, comprising, a rigid boxlike lock frame having top and bottom walls, an upstanding post on the top wall receivable in a recess in said bottom shelf, a flange extending upwardly from one end of the top wall alongside an end panel, a screw passing through the flange and the end panel, into the bottom shelf and threaded in the post for securing the end panel to the bottom shelf and for securing the lock frame to the bench, a rod slidable in the top and bottom walls having a floor engaging shoe thereon, a spring urging the rod and shoe upwardly, an actuating lever having one end loosely pivoted on the frame to permit longitudinal movement of the lever on pivoting, a midportion pivotally connected to the rod to depress the rod and shoe, and an opposite end portion accessible for depression by human foot, and means on the frame for locking the rod and shoe in a depressed position, releasable to permit spring return of the rod and shoe.

4. A floor lock for a bench or the like, comprising, a lock frame attachable to a lower portion of a bench, a rod slidable upwardly and downwardly on the frame and having a floor engaging locking shoe thereon, a spring urging the rod and shoe upwardly, an actuating lever having one end pivotable and slidable on the frame to permit longitudinal movement of the lever on pivoting, an intermediate portion pivotally connected to the rod to depress the rod and shoe, and an opposite end portion accessible for depression by human foot, a locking lever having one end pivoted on the frame at one side of the rod and the opposite end overlying the actuating lever at the opposite side of the rod, terminating short of the accessible end of the actuating lever and also being accessible for depression by human foot, spring means urging the locking lever upwardly, and said locking lever having a recess therein through which said rod passes and an edge immediately adjacent the rod and engageable therewith when the rod is depressed and released to thereby bind and lock the rod in depressed position, the locking lever being depressible to release the rod for spring return.

5. A floor lock for a bench or the like, comprising, a lock frame attachable to a lower portion of a bench, a rod slidable upwardly and downwardly on the frame and having a floor engaging locking shoe thereon, a spring urging the rod and shoe upwardly, means limiting upward movement of the foot in a retracted position, a downwardly extending flange on the frame, an actuating lever having an intermediate portion pivotally connected

to the rod to depress the rod and shoe, one end loosely pivotally and slidably engaging the underside of said flange to react thereagainst and permit longitudinal movement of the lever on pivoting, and an opposite end portion accessible for depression by human foot, and means on the frame separate from the actuating lever for locking the rod in a depressed position, releasable to permit spring return of the rod and shoe to a retracted position.

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