March 22, 1927. C. E. LINDEN ET AL 1,622,159

SAFETY LOCKING DEVICE FOR THE SHIFTING MECHANISM OF METAL PLANERS

Filed June 18, 1923

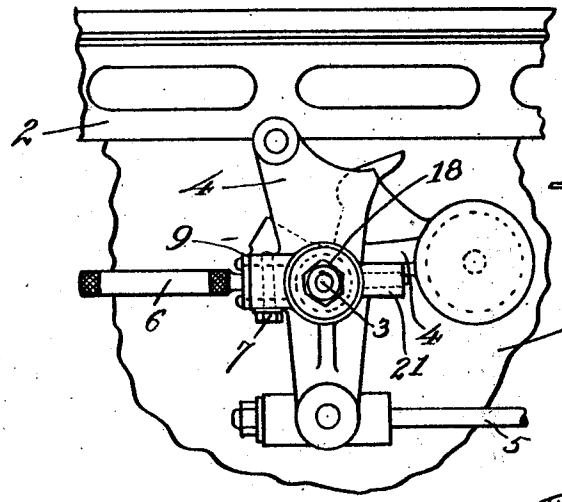


Fig. 1.

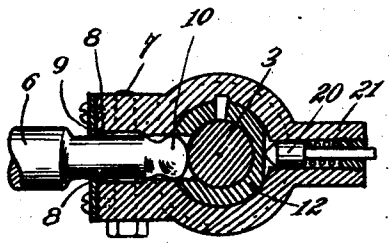


Fig. 2.

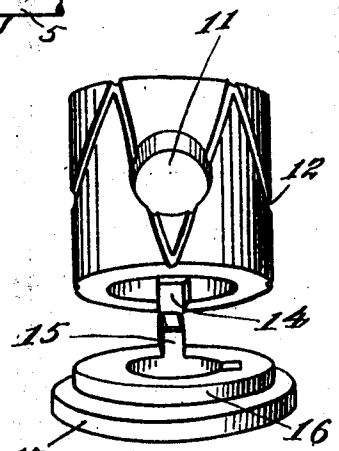


Fig. 3.

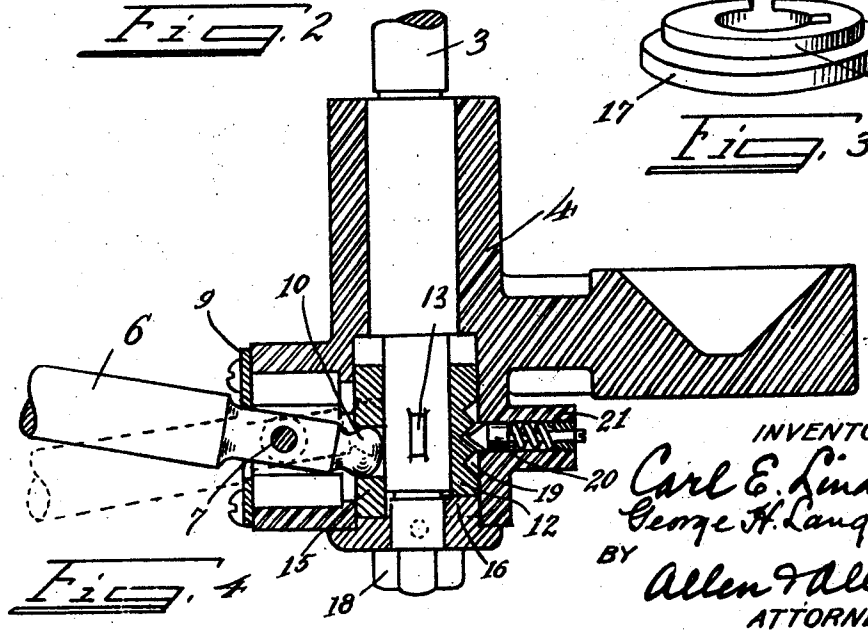


Fig. 4.

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UNITED STATES PATENT OFFICE.

CARL E. LINDEN AND GEORGE H. LANGEN, OF CINCINNATI, OHIO, ASSIGNORS TO THE CINCINNATI PLANER COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

SAFETY LOCKING DEVICE FOR THE SHIFTING MECHANISM OF METAL PLANERS.

Application filed June 18, 1923. Serial No. 646,143.

The object of our invention is to provide a locking device for tumbler handles for the shifting mechanism for metal planers and machine tools which if left unlocked will become locked even if accidentally struck by the workman in arranging the work on the planer table.

It may happen that even if a lock is provided to prevent accidental starting of the machine, if the handle has been left unlocked it may be accidentally shifted to start the machine and serious damage or injury result. It is our aim, therefore, to arrange the parts so that the handle, unless intentionally shifted, will be thrown into locked position by any unintentional pressure against it.

This end is accomplished by the certain novel construction and arrangement of parts to be hereinfter more particularly pointed out and claimed in the description and claims that follow.

In the drawings:

Figure 1 is a front elevation of the tumbler assembly for the planer.

Figure 2 is a vertical transverse section taken through the handle connection.

Figure 3 is a perspective view of the sliding bushing and locking washer.

Figure 4 is a central horizontal section of the device.

A portion of the side frame of the planer is shown at 1 and a portion of the planer table at 2. Mounted to rock on a fixed stud 3 projecting from the side frame of the planer is the shifting tumbler 4, the upper end of which is in position to be struck by the front and rear dogs fixed to the reciprocating table and to rock the tumbler to actuate the connecting rod 5 which connects with the belt shifters for the cutting and return belts, for driving and returning the planer bed.

For starting the planer a handle 6 is provided. This handle is pivoted on a stud 7, in a cored-out portion in the front of the tumbler hub, with bearing plates 8, 8, above and below through which the fulcrum stud passes. A cover plate 9 is also employed for the hub recess with an oblong opening through which the handle passes.

The inner end of the handle is provided with a rounded head 10 which engages a circular recess 11 in a sliding bushing or sleeve 12, secured by a key 13 to the tumbler so as to oscillate with the tumbler but adapted to slide lengthwise therein. This bushing is provided with a slot 14 adapted to engage, when the bushing is shifted, a tongue 15 projecting from the rear face of a lock washer 16 which is keyed or pinned to the outer end of the fixed stud 3 upon which the tumbler is mounted.

The washer has a flange 17 to engage over the outer end of the tumbler and the tumbler is secured by the nut 18 on the threaded end of the stud 3.

The normal active position of the handle 6 is shown by the dotted lines in Figure 4 with the head of the handle holding the bushing free from the lock washer, and in this position tne handle can be raised to shift the belts and start the machine. To lock the handle so that it cannot be raised, the handle is pushed inwardly and this shifts the bushing so that it becomes locked to the washer.

In order to hold the bushing in either position notches 19 are cut in the outer surface in proper position and these notches are engaged by a spring plunger 20 seated in a boss 21 on the tumbler hub.

While we have illustrated our safety lock as applied to belt shifting mechanism for a planer it is, of course, obvious that the construction can be applied to other constructions of starting devices.

As the handle projects laterally from the tumbler it is obvious that if the handle should be left unlocked and accidental pressure brought to bear thereon, say by workmen in setting up the work on the machine, the effect will be to shift the handle inwardly and thus lock the tumbler to the fixed stud.

It is also obvious that inasmuch as the sliding bushing is keyed to the tumbler, the handle cannot be moved to locking position except when the tumbler is in idle position, as in any other position the tongue on the locking washer cannot engage the bushing.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:—

1. In a safety locking device of the character specified, a tumbler, and a handle for

manually operating the same, with means controlled by the handle for locking the tumbler against movement when the handle is moved in other than a tumbler operating direction.

2. In a safety locking device of the character specified, a tumbler, and a handle for manually operating the same, with means controlled by the handle for locking the tumbler against movement when the handle is moved in other than a tumbler operating direction, said means being operative only when the tumbler is in idle position.

3. In a safety locking device of the character specified, a pivoted tumbler, with a handle secured thereto for operating same, a pivot for the handle to permit angular movement thereof and a shiftable member secured to the tumbler to rock therewith, with connection therefor with the handle, and a fixed member with which the shiftable member engages to lock the tumbler from oscillation upon an angular movement of the handle.

4. In a safety device of the character specified, the combination with the planer frame and a fixed stud projecting therefrom, of a tumbler pivoted on the stud, a handle secured to the tumbler pivoted thereon to permit angular movement thereof, a shiftable member secured to the tumbler to rock therewith, with connection therefor with the handle, and a fixed member on the stud to be engaged by said shiftable member to lock the tumbler from movement.

5. In a safety device of the character specified, the combination with the planer frame and a fixed stud projecting therefrom, of a tumbler pivoted on the stud, a handle secured to the tumbler pivoted thereon to permit angular movement thereof, a sliding bushing for the tumbler keyed thereto, with the handle in engagement therewith and a plate fixed on the tumbler stud having a tongue to engage said bushing, when shifted by the handle to lock the tumbler against movement.

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