

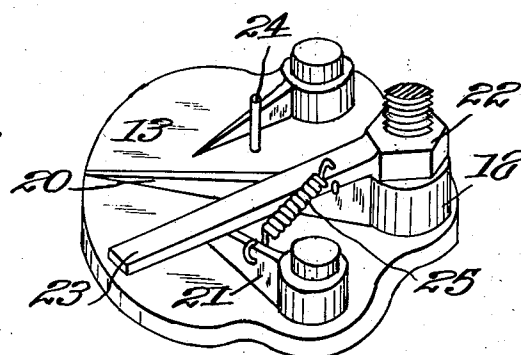
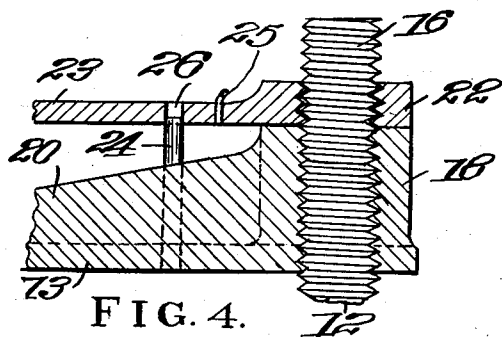
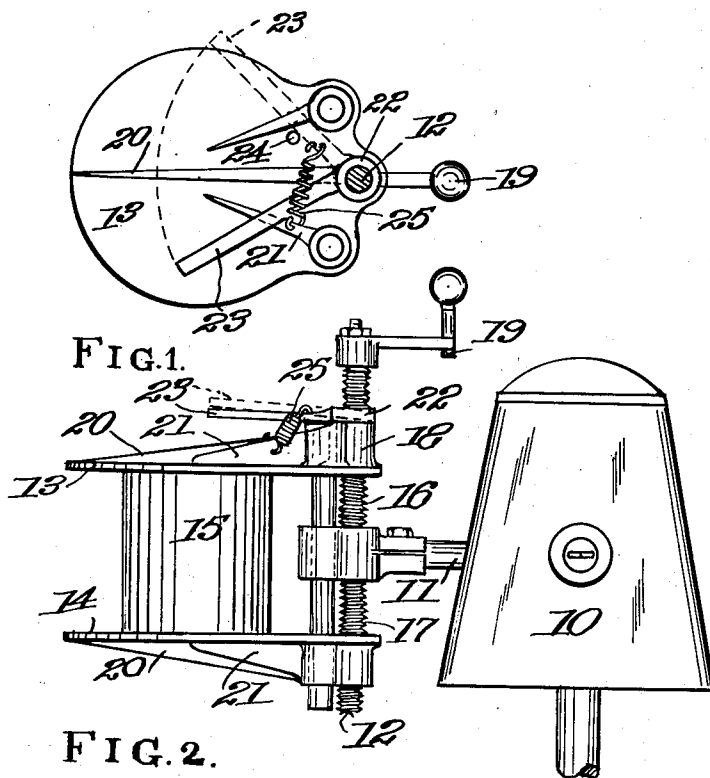
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SAFETY LOCK FOR THE CLAMPS OF MIXING-MACHINES

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SAFETY LOCK FOR THE CLAMPS OF
MIXING MACHINES

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This invention relates to means for fastening cans containing paint or other materials requiring mixing, in a mixing machine in such manner that the can will not loosen and be released or ejected during the mixing operation.

It is especially aimed to provide means whereby the can cannot become loosened or released as aforesaid through vibration in a vibrating type of mixing machine.

A further object is to provide means to accomplish the end mentioned which coacts with the operating screw of a clamp type of can holder.

Still further an aim is to provide a nut and pin in association with such screw, the nut being capable of tilting movement with respect to the screw and pin to control locking of the screw and release thereof for usual operation.

Various additional objects and advantages will become apparent from a consideration of the description following taken in connection with the accompanying drawings.

In said drawings:

Fig. 1 is a view in plan showing parts of a mixing-machine equipped with my improvements;

Fig. 2 is a view in side elevation of the parts of Fig. 1 together with the vibrating shaker head of a mixing-machine;

Fig. 3 is an enlarged perspective view of the locking and immediately adjacent parts; and

Fig. 4 is a fragmentary vertical sectional view through a modified form taken centrally of the locking arm and nut.

Referring specifically to the drawings, wherein like reference characters designate like or similar parts, 10 designates a shaker head of a vibrating type of mixing machine. From this head, an arm 14 extends laterally and therein is journaled a rotatable operating screw shaft 12 for a pair of clamping plates 13 and 14 which clamp a can 15 rigidly to the shaker head. Such can is of the type which usually contains paint or any equivalent material which can be advantageously and rapidly mixed while in the can, and while thus secured in place to the shaker-head 10. The said plates 13 and 14 are movable away from or toward each other, according to the direction of turning of the screw 12, and to this end said screw 12 has oppositely threaded portions at 16 and 17, the former for instance being left-hand and the latter right-hand. The plates 13 and 14 are respectively threaded onto said screw portions 16 and 17, the former by reason of a boss 18. Screw 12 has an operating crank 19 secured thereto. The plates 13 and 14 have reinforcing ribs 20 and 21, the latter being outwardly of the former and

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usually of less height and length. The construction described is to be taken as conventional and as but one example of a vibrating or any other type of shaker or mixer to facilitate the description of my invention and which latter is not limited to any particular type.

In carrying out the invention, a nut 22 is threaded on the left-hand threads at 16. This nut has a laterally extending locking arm or handle 23, and the nut in unlocked position rests on or loosely contacts the upper surface of said boss 18, in the position which is suggested in dotted lines in Fig. 1. Arm 23 coacts with a detent in the form of a pin 24 rigidly secured to and rising from the plate 13. The nut and arm 22—23 are capable of being tilted with respect to the longitudinal axis of the screw 12 through raising according to the dotted line illustration in Fig. 2 in order to occupy horizontal positions on opposite sides of said pin 24. To this end, and as well shown in Fig. 4, the bore of the nut is enlarged with respect to the screw-threads 16 so that the fit is a loose one. In said dotted line or loose position of Fig. 1 as the nut is held restrained or against tightening, the screw 12 is free for normal operation to separate or close the plates 13 and 14 in order to release or clamp a can 15 in place for mixing through vibration of the head 10. However, when the plates 13 and 14 clamp a can 15, such plates are locked or secured in that position by first raising or tilting the arm 23 and nut 22 to the position suggested in dotted lines in Fig. 2, and then pulled from the dotted line position as in Fig. 1 in the path of the dotted arc and lowered to the full line position in Figs. 1, 2 and 3, thus passing over the top of pin 24, the nut binding on and being tightened against the boss 18, and thus the can will be held securely clamped in the mixing machine against danger of loosening or ejection.

A contractile coil spring 25 may optionally be connected to the arm 23 and also to one of the ribs 21 of the clamping plate 13 and is tensioned when the arm 23 is held by pin 24 in the dotted line position of Fig. 1 in order to pull the nut and handle to the full line or locked position shown in Fig. 1, after raising or disengagement with pin 24, and which pull may be sufficient to lock the nut, although it is preferred to give the arm 23 and nut a final tightening, that is, by giving the crank arm 19 an extra turn before pulling arm 23 to locking position.

If desired, and as shown in Fig. 4, the arm or handle 23 may have an opening 26 therein which will in the unlocked position of the handle receive

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the upper end of pin 24, the nut and handle being tiltable as described in the preceding form to enable engagement and disengagement of the handle at such opening 26 with such pin 24.

Various changes may be resorted to, provided they fall within the spirit and scope of the following claims.

I claim as my invention:

1. In combination with can-holder means of a shaker having relatively movable plates and an operating screw therefor, a nut threaded on said screw in position to bind against one of said plates, a detent means on the said one plate, means on the nut disposable behind the detent means in the unlocked position with the detent thus positively intercepting and preventing threading movement of the nut to locked position, and the bore of said nut having clearance at its threads permitting rocking of the nut axially with respect to the screw to and from positions in positive detention and disengagement with said detent means.

2. In combination with can-holder means of a shaker having relatively movable plates and an operating screw therefor, a nut threaded on said screw in position to bind against one of said plates, a detent means rising from the said one plate, means on the nut disposable behind the detent means in the unlocked position with the detent thus positively intercepting and preventing threading movement of the nut to locked position, the bore of said nut having clearance at its threads permitting rocking of the nut axially with respect to the screw to and from positions in positive detention and disengagement with said detent means, and a spring connected to the nut and plate tensioned through movement to disengaged positions so as to be contractile in said binding position.

3. In combination with can holding means of a shaker having relatively movable plates and an oppositely threaded screw respectively connected thereto, a nut threaded on the left-hand threads of said screw in position to bind against the adjacent plate, a detent means rising from the adjacent plate, means on the nut engageable with the detent means in the unlocked position with the detent thus positively intercepting and preventing threading movement of the nut to locked position, and the bore of said nut having clearance at its threads permitting rocking of the nut axially with respect to the left-hand screw threads to and from positions in positive detention and disengagement with said detent means.

4. In combination with can holding means of a shaker having relatively movable plates and an operating screw therefor, a boss on one of the plates through which said screw extends, a nut threaded on said screw in position to bind

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against said boss, a detent pin on said one plate, an arm extending from said nut engageable with the pin in the unlocked position with the detent thus positively intercepting and preventing threading movement of the nut to locked position, and the bore of said nut having clearance at its threads permitting rocking of the nut axially with respect to the screw to and from positions in positive detention and disengagement of said arm with said pin.

5. In combination with can holding means of a shaker having relatively movable plates and an operating screw therefor, a boss on one of the plates through which said screw extends, a nut threaded on said screw in position to bind against said boss, a detent pin on said one plate, an arm extending from said nut engageable with the pin in the released position with the detent thus positively intercepting and preventing threading movement of the nut to locked position, the bore of said nut having clearance at its threads permitting rocking of the nut axially with respect to the screw to and from positions in positive detention and disengagement of said arm with said pin, and a spring connected to said one plate and to said arm tensioned through the movement of the arm to released position.

6. The combination according to claim 4, wherein said arm has an opening to receive said pin in the released position.

7. In a structure of the character described having a movable plate and an operating screw therefor, a nut threaded on the screw in position to bind against said plate, a detent pin on said plate, an arm extending from said nut having a hole engageable with the pin in released position, the bore of said nut having clearance at its threads permitting rocking of the nut axially with respect to the screw to and from positions in positive detention and disengagement with said pin, and a spring connected to the movable plate and to the nut arranged for detention through movement of the plate to released position so as to be contractile in the binding position.

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