June 3, 1952 E. F. CRANE 2,599,434

REMOVABLE HANDLE

Filed April 11, 1949

Fig. 1.

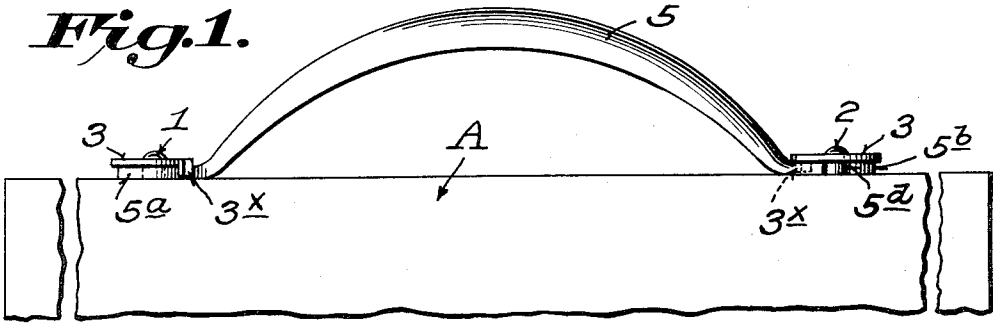


Fig. 2.

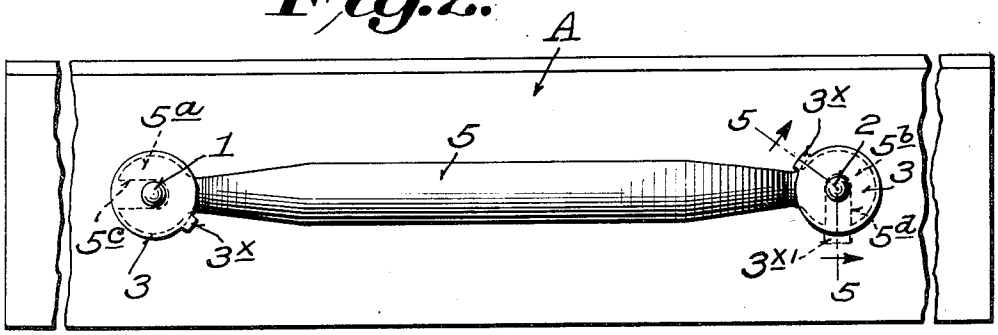


Fig. 3.

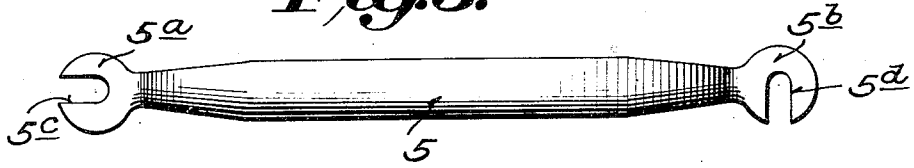


Fig. 4.

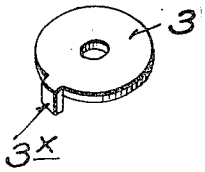
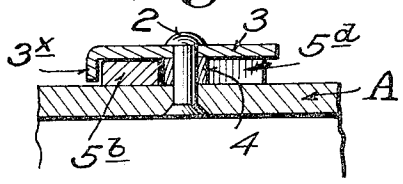


Fig. 5.



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REMOVABLE HANDLE

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4 Claims. (Cl. 16—114)

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This invention is a novel improvement in removable handles for boxes, kits, cases, or the like, and the principal object thereof is to provide a removable handle having simple, novel and efficient means for attaching same to the box and for locking same in position thereon.

Other minor objects of the invention will be hereinafter set forth.

I will explain the invention with reference to the accompanying drawing which illustrates one practical embodiment thereof to enable others familiar with the art to adopt and use the same; and will summarize in the claims the novel features of construction and novel combinations of parts, for which protection is desired.

In said drawings:

Figure 1 is a side elevation of a box or kit, showing my removable handle applied thereto.

Fig. 2 is a top plan view thereof.

Fig. 3 is a top plan view of the handle, detached.

Fig. 4 is a perspective view of one of the washers, detached.

Fig. 5 is an enlarged section on the line 5—5, Fig. 2.

As shown in Figs. 1 and 2, the box or kit A is provided on its upper face with a pair of spaced pins 1 and 2, having heads which are spaced from the top of the box or kit; and upon the pins 1 and 2 are washers 3 which are held in spaced relation to the top of the box or kit A by means of spacing collars 4 (Fig. 5) which hold the upper faces of the washers 3 in contact with the heads of the pins so that the ends of the handle can be inserted between the washers 3 and the top of the box or kit A.

If desired, the washer 3 on pin 1 may be stationary, but the washer 3 on pin 2 is rotatable.

As shown in Fig. 3, the handle 5 is of generally arched shape, and is provided with a flat extension 5*a* at one end and a corresponding flat extension 5*b* at the other end, which extensions are disposed in the plane of the top of the box or kit A. Extension 5*a* is provided with a slot 5*c* extending inwardly from its outer end in alignment with the axis of the handle, slot 5*c* being adapted to receive the collar 4 on pin 1 when the extension 5*a* is inserted between the washer 3 of pin 1 and the top of the box or kit A. The extension 5*b* at the opposite end of the handle 5 is provided with a slot 5*d* extending laterally inwardly from one side thereof, the slot 5*d* being thus disposed at right angles to, or normal to, the axis of the slot 5*c*, and the slot 5*d* being adapted to receive the collar 4 on the

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pin 2 when the extension 5*b* is inserted between the collar 3 of the pin 2 and the top of the box or kit A. In inserting the handle 5 the slotted end 5*c* of the handle would first be inserted so as to straddle the pin 1, the axis of the handle being initially offset from the axis of the pins 1 and 2, and then the slotted end 5*d* of the handle 5 would be shifted to straddle the pin 2, in which position the axis of the handle would coincide with the axis of the end of the box or kit A as shown in Fig. 2.

Means are provided to prevent removal of the slot end 5*d* from the pin 2, said means comprising a depending lip 3*x* at the periphery of the washer 3 on pin 2, which washer as previously stated is rotatable on the pin 2.

When inserting the end 5*b* of handle 5 under the collar 3 on pin 2, it is necessary that the lip 3*x* would first be rotated on the pin 2 into the position indicated in dotted lines 3*xl* (Fig. 2) so that the lip would not prevent the lateral movement of the end 5*b* of the handle 5 to engage the slot 5*d* with the pin 2.

When, however, positioned as shown in Fig. 2, the lip 3*x* of washer 3 would be rotated into the position indicated in full lines in Fig. 2 or into some position which would engage the side of the extension 5*b* opposite from the side containing the slot 5*d*. The lip 3*x* in such position, by engagement with the side of the extension 5*b* opposite from the slot 5*d*, will obviously prevent the extension 5*b* from being shifted laterally off the pin 2 so as to permit withdrawal of the slot 5*d* from the pin 2 until the washer 3 had been again revolved to bring the lip 3*x* into the position 3*xl* at the opposite side of extension 5*b*, and opposite opening of lateral slot, 5*d*, in 5*b*, indicated in dotted lines in Fig. 2.

I do not limit my invention to the exact form shown in the drawing, for obviously changes may be made therein within the scope of the claims.

I claim:

1. In combination with a box having spaced pins on one face thereof provided with heads spaced from said face; a handle bar having extensions at its ends contacting the face of the box, one extension having a slot extending inwardly from its outer end along the axis of the handle and receiving one of the pins when the extension is inserted between the related head and the box face, the other extension having a slot extending inwardly from one side thereof and normal to said axis and receiving the other pin when the extension is inserted between the

related head and the box face; and means for preventing withdrawal of the latter mentioned extension when the other pin is engaged in the slot, said means comprising a washer rotatably mounted on the other pin overlying the extension and having a downturned lip adapted in locked position to contact the side of the related extension opposite from the slotted side.

2. In combination with a box having spaced pins on one face thereof provided with heads spaced from said face; washers on said pins; means on said pins maintaining the washers in contact with the heads; a handle bar having extensions at its ends contacting the face of the box, one extension having a slot extending inwardly from its outer end along the axis of the handle, and receiving one of the pins when the extension is inserted between the related washer and the box face, the other extension having a slot extending inwardly from one side thereof and normal to said axis and receiving the other pin when the extension is inserted between the related washer and the box face; and means for preventing withdrawal of the latter mentioned extension when the other pin is engaged in the slot; the washer on the other pin being rotatable and of diameter slightly larger than the extension, and said means comprising a downturned peripheral lip on the washer of said other pin adapted in locked position to contact the side of the related extension opposite from the slotted side.

3. In combination with a box having spaced pins on one face thereof provided with heads spaced from said face; washers on said pins; spacers on said pins maintaining the washers

in contact with the heads; an arcuate handle bar having extensions at its ends contacting the face of the box, one extension having a slot extending inwardly from its outer end along the axis of the handle and receiving one of the pins when the extension is inserted between the related washer and the box face, the other extension having a slot extending inwardly from one side thereof and normal to said axis and receiving the other pin when the extension is inserted between the related washer and the box face; and means for preventing withdrawal of the latter mentioned extension when the other pin is engaged in the slot.

4. In a combination as set forth in claim 3, the washer on the other pin being rotatable and of diameter slightly larger than the extension, and said means comprising a downturned peripheral lip on the washer of said other pin adapted in locked position to contact the side of the related extension opposite from the slotted side.

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