Aug. 17, 1948. A. TRUNINGER 2,447,290

DOOR LATCH

Filed Oct. 16, 1945

Fig. 1

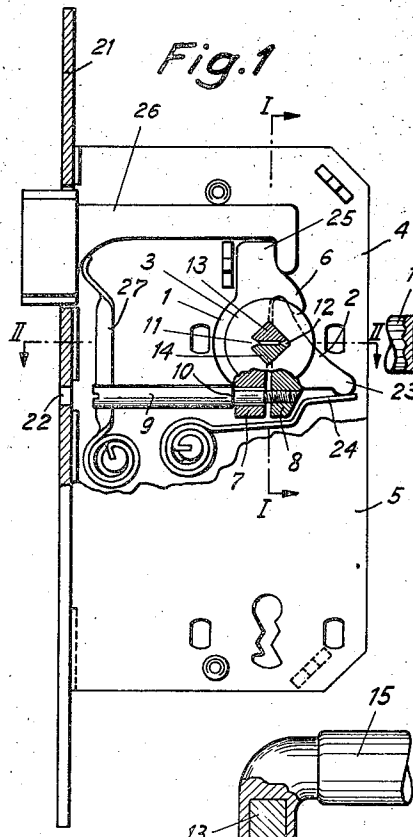


Fig. 2

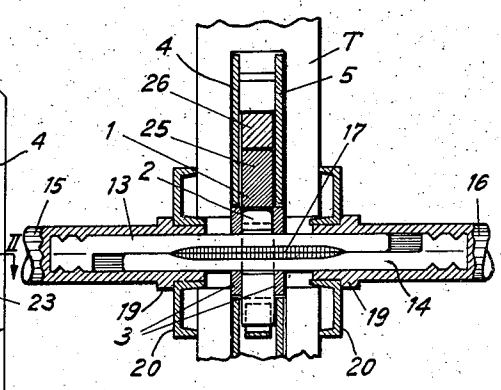


Fig. 4

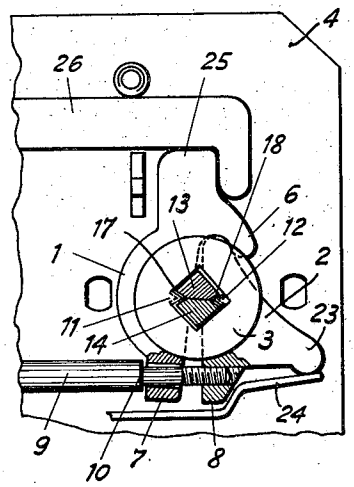
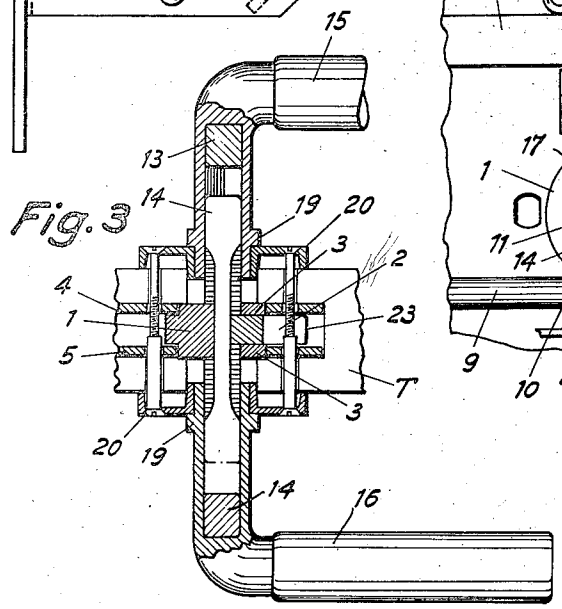


Fig. 3



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2,447,290

DOOR LATCH

Alfred Truninger, Kreuzlingen, Switzerland

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1 Claim. (Cl. 292—336.5)

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My present invention relates to a door latch, and more particularly to a door latch of the type wherein two opposite handles are locked relative to each other and to the intermediate door.

It is an object of my invention to provide a door latch of this type which can be used for doors of varying thickness.

It is another object of my invention to provide a door latch in which the mounting is effected in a secure way and without employment of projecting parts, such as pins, which are apt to cause injury.

It is a further object of my invention to provide a door latch of this type which can be mounted on the door without danger that fasteners, like pins, will force the handles of the latch out of place or will otherwise cause damage or deformation to the handle portions.

Still another object of my invention consists in the provision of a door latch which can easily be secured to the door without the use of complicated tools other than an ordinary screw driver and which can be removed for repairing with similar ease.

With the above objects in view, my present invention mainly consists in a door latch which comprises in combination a roll back including two cooperating roll back members forming between themselves a passage having a substantially rectangular cross section, a wedge-shaped serrated projection provided on each of the cooperating roll back members so as to project into the above mentioned passage, an adjusting screw engaging the cooperating roll back members in such a manner as to move the same toward and from each other when turned so as to adjust the size of the passage formed between the two cooperating roll back members, two door handles, two spindle members each secured to one of the door handles and forming together a split spindle having a substantially rectangular cross section so as to fit into the passage formed by the cooperating roll back members, the two spindle members being provided with serrated cut-out grooves into which the wedge-shaped serrated projections provided on the cooperating roll back members fit so that the serrations on the wedge-shaped projections provided on the cooperating roll back members firmly engage the serrations on the cut-out grooves when the cooperating roll back members are moved toward each other by the adjusting screw.

The novel features which I consider as characteristic for my invention are set forth in particular in the appended claim. The invention

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itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

Fig. 1 is a side view of the latch, partly in section and with the side wall partly removed, illustrating the latch in the locked position;

Fig. 2 is a vertical section on lines I—I of Fig. 1, illustrating the latch fitted to a door;

Fig. 3 is a horizontal section on line II—II of Fig. 1 again showing the latch fitted to a door; and

Fig. 4 is a fragmentary view on an enlarged scale similar to the view shown in Fig. 1, but showing the latch in its unlocked position.

With reference to the drawings, it will be seen that 1 and 2 refer to cooperating roll back portions of which portion 2 is formed so as to fit with part of its circumference behind a projecting finger 6 of the portion 1. Retaining discs 3 are provided on portion 1 so as to position portion 2 movably between side plates 5 and 6 of the frame. Both roll back portions have oppositely disposed apertured lower extensions 7 and 8. Extension 8 is provided with an internal thread. A screw 9 rests against the extension 7 with a shoulder 10 formed by its reduced forward end. The screw is adapted to freely turn in extension 7 and thread into extension 8.

The two roll back portions are furthermore provided with complementary recesses in their adjacent faces. The two recesses together form a substantially rectangular passage in which complementary spindle portions 13 and 14 may be placed. Spindle portion 13 is fixedly connected with the shank of a handle 15, and spindle portion 14 is similarly secured to a handle 16. The two spindle portions have a triangular cross section and are adapted to abut against each other with one of their sides. The abutting faces of the spindle portions thus form a diagonal connection of two opposite corners of a substantially rectangular configuration which conforms with the outline of the passage defined by the roll back portions. The corners of these diagonal faces are cut away so as to form grooves 17 and 18 into which wedge-formed projections 11 and 12 of the roll back portions protrude. The sloping surfaces of the wedges 11 and 12 and likewise the falls of the grooves 17 and 18 are finely serrated so as to provide interfitting ridges and indentations.

The handle portions 15 and 16 are provided

with shoulders 19 which abut against retaining rings 20 when the handles are put in place.

From the description given, it will be understood that the two cooperating roll back members can be moved toward each other for locking the device by screwing set screw 9 which is accessible for this purpose through a hole 22 of the front plate 21. Relative movement of the roll back portions towards each other forces the wedges provided on them into the notches 17 and 18 and brings the serrations of the wedge and groove walls into engagement. The spindle portions 13 and 14 are thus locked against each other and the handles secured to them are fixed against longitudinal displacement.

In order to unlock the device, it is only necessary to turn screw 9 reversely which will move roll back portions 1 and 2 away from each other and will thus free wedges 11 and 12 from grooves 17 and 18 with its consequent disengagement of the serrations and release of the spindle portions 13 and 14.

To hold the roll back portions in association when unlocked, portion 1 is provided with a head piece 25 against which the correspondingly shaped front end of an arm 26 bears. The arm is brought into engagement by a spring 27 which bears against its rear end. Roll back portion 2 likewise has a projecting nose 23 against which the spring 24 acts. Thus, the two portions of the roll back are prevented from complete disengagement.

The operation of the device will now be manifest. The latch is fitted to the door with the roll back portions 1 and 2 in unlocked position. In this condition, the handles 15 and 16 with their spindle portions 13 and 14 can be inserted into the rectangular passage and can be adjusted relatively to each other until their shoulders 19 lie flush with the retaining rings 20. The screw is then tightened and the handles are thus firmly fixed in position without the use of any tools except an ordinary screw driver. Damage to the handles is impossible since it is not necessary to employ special fasteners like pins or keys. It will also be noted that all parts employed in the locking action are hidden from view and no projecting elements are used which may cause injury to the hands. It will furthermore be appreciated that the fine serrations of the wedges and spindle portions permit a firm locking and also an extremely quick release for further adjustment. Thus, the handles can easily be adapted to the particular size of the door, the adjustability being within a range of about 5/8". Finally, accidental disengagement is entirely impossible in view of the locking action of the serrations.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of locking devices, differing from the types described above.

While I have illustrated and described the invention as embodied in door latches, I do not intend to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of my invention.

Without further analysis, the foregoing will so fully reveal the gist of my invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention, and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claim.

What I claim as new and desire to secure by Letters Patent is:

In a door latch in combination a roll back including two cooperating roll back members forming between themselves a passage having a substantially rectangular cross section; a wedge-shaped serrated projection provided on each of said cooperating roll back members so as to project into said passage; an adjusting screw engaging said cooperating roll back members in such a manner as to move the same toward and from each other when turned so as to adjust the size of said passage formed between said two cooperating roll back members; two door handles; two spindle members each secured to one of said door handles and forming together a split spindle having a substantially rectangular cross section so as to fit into said passage formed by said cooperating roll back members, said two spindle members being provided with serrated cut-out grooves into which said wedge-shaped serrated projections provided on said cooperating roll back members fit so that the serrations on said wedge-shaped projections provided on said cooperating roll back members firmly engage the serrations on said cut-out grooves when said cooperating roll back members are moved toward each other by said adjusting screw.

ALFRED TRUNINGER.

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