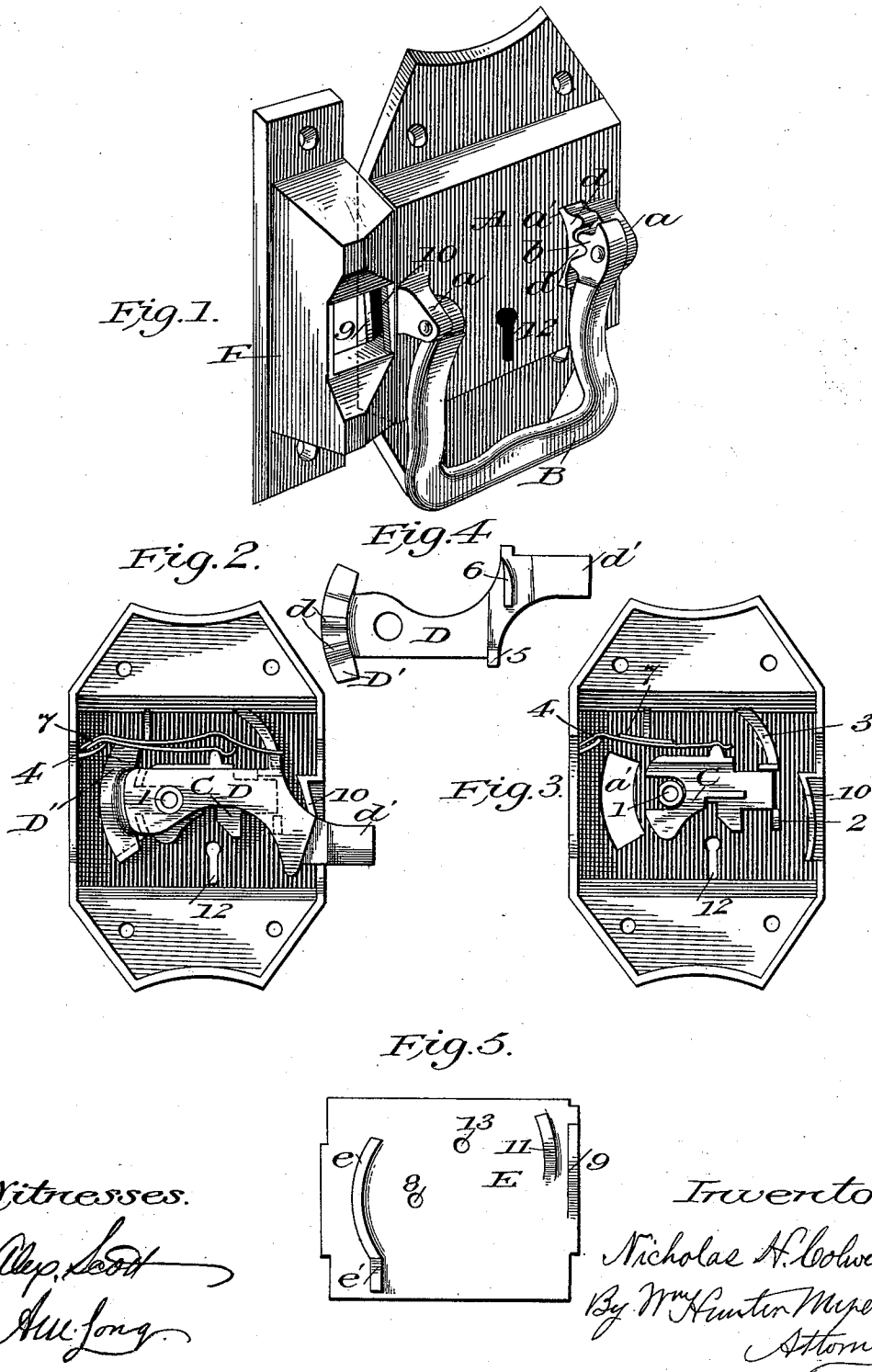


N. H. COLWELL.
COMBINED LATCH AND LOCK.

Patented Feb. 19, 1895.



UNITED STATES PATENT OFFICE.

NICHOLAS H. COLWELL, OF KENTON, OHIO.

COMBINED LATCH AND LOCK.

SPECIFICATION forming part of Letters Patent No. 534,496, dated February 19, 1895.

Application filed October 29, 1894. Serial No. 527,319. (No model.)

To all whom it may concern:

Be it known that I, NICHOLAS H. COLWELL, a citizen of the United States, residing at Kenton, in the county of Hardin and State of Ohio, have invented certain new and useful Improvements in a Combined Latch and Lock, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to an improved combined latch and lock suitable for use on refrigerators and other kindred articles.

The objects of my invention are to provide for the easy operation of the latch by means of a drop-handle; to so construct the latch-operating parts as that the size of the opening in the casing through which the latch is operated may be reduced to the minimum; and to so construct and arrange a cogged-plate on the latch as that said plate may serve to at all times close the opening in the casing.

The invention will first be described in connection with the accompanying drawings, and then pointed out in the claims.

25 Figure 1 is a perspective view of a combined latch and lock constructed in accordance with my invention. Fig. 2 is a rear elevation of the same with the back-plate and keeper removed. Fig. 3 is a view similar to Fig. 2, but having the latch removed and a portion of its operating-spring broken away. Fig. 4 is a front elevation of the latch. Fig. 5 is a plan view of the back-plate.

Referring to the drawings, A represents the casing, provided on its front side with two lugs *a*, on which is pivoted a drop-handle B, on one of the pivoted ends of which are formed forwardly-projecting cogs *b*, which register with a segmental slot or opening *a'* cut in the front of the casing. On the inner side of the casing is a rearwardly-projecting interiorly screw-threaded stud 1, over which is placed the slotted rear end of a sliding locking-dog C, the forward end of which slides between a stud 2 and a curved rib 3 cast with the casing, a leaf-spring 4 serving to prevent accidental displacement of the dog in a well-known manner.

50 D is the latch, pivoted near its rear end on the stud 1. This latch has projecting from its front face, at its rear end, a transversely-arranged segmental tail-plate D', the chord of

which is of greater length than the chord of the slot *a'* in the casing; and on the front side of this tail-plate are formed cogs *d*, which project through said segmental slot *a'*, and are engaged by the cogs *b* on the drop-handle B. By forming the tail-plate on the front side of the latch and projecting its cogs through the segmental slot *a'* in the casing, the tail-plate serves to close said opening. A lug 5 on the latch, which bears on the rib 3 in the casing, and another longer lug 5, which bears on the casing itself, serves to hold the latch out of frictional engagement with the dog, the lug 6 being also adapted to be engaged by the dog to lock the latch. The latch is automatically thrown to its normal position by means, preferably, of a leaf-spring 7, as shown in Fig. 2.

E is the back-plate, which is secured to the casing by means of a screw passed through a hole 8 and taking into the interiorly screw-threaded stud 1. On the front side of this plate, near the rear end, is a segmental flange *e*, adapted to bear on the tail-plate D', to prevent the latch from binding on its pivot-stud while being operated by the handle; and a straight prolongation *e'* of this flange, which is of less height than the flange, serves to overlie the inner edges of the springs 4 and 7 to hold the springs in place. At the forward end of the plate, on the front side, is an inclined web 9, which forces the nose *d'* of the latch forward in its descent in the keeper F, so as to cause the door to fit more snugly, there being also an oppositely-inclined web 10 formed on the inner side of the casing, to cause the nose of the latch to gradually move backward as it is raised, thereby insuring easy operation. If desired, there may be an additional inclined web 11 on the plate E, against which the latch also bears, and which serves the same purpose as the web 9. These inclines on the plate and casing are, however, well known in combined latches and locks of this kind, and therefore I make no claim to them in this application.

The latch can be locked by means of a key inserted through a keyhole 12 and engaging with the dog, a hole 13 in the back-plate receiving the end of the key.

It will be observed that by my construction the nose of the latch normally rests within the lower portion of the keeper; that though

the latch is pivoted near its rear end, it can be easily operated by reason of the cogs on the tail-plate projecting through the slot in the casing and being engaged by the cogs on the handle, this construction illustrating the well-known principle in philosophy that the nearer the weight to the fulcrum of the lever the more effective the power applied; that by shaping the tail-plate so as to conform to the arc of the circle through which the pivoted end of the latch moves in operation, I am enabled to form the slot in the casing of a correspondingly segmental shape, and thereby reduce its size to the minimum; and that by projecting the segmental tail-plate from the front side of the latch and making the chord of the segment of greater length than the length of the chord of the slot in the casing, I am enabled to utilize said plate as a means for closing said slot from the inner side, both while the latch is in operation and while at rest.

While I have illustrated and described the plate D' as formed on the pivoted or tail end of the latch, thus causing the nose of the latch to engage with the lower portion of the keeper, it will be evident to the manufacturer, should it be desirable to have the latch engage with the upper portion of the keeper, that said plate may, without departing from the spirit of my invention, be placed on the latch forward of the pivot of the latter, in which event, of course, the slot in the casing and the cogs on the handle would have to be changed accordingly.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a combined latch and lock, a casing provided with projecting lugs on its face-plate

and having a slot in said plate adjacent to one of said lugs, a drop-handle pivoted to said lugs and having cogs in register with the slot in the casing, and a latch having a transverse cogged plate formed on its front side, said latch being pivoted near one end in the casing in such manner that the cogs on the plate project through the slot in the casing and engage with the cogs on the drop-handle, whereby the cogs on the plate and drop-handle are brought together near the fulcrum of the latter, and whereby also the plate serves to at all times close the slot in the casing from the inner side.

2. In a combined latch and lock, a casing provided with projecting lugs on its face-plate and having a segmental slot in said plate adjacent to one of said lugs, a drop-handle pivoted to said lugs and having cogs in register with the slot in the casing, and a latch having a segmental cogged plate formed on its front side, the chord of said segmental plate being longer than the chord of the segmental slot in the casing, said latch being pivoted near one end in the casing in such manner that the cogs on the plate project through the slot in the casing and engage with the cogs on the drop-handle, whereby the size of the slot in the casing is reduced to the minimum, the cogs on the plate and drop-handle are brought together near the fulcrum of the latter, and the plate serves to at all times close the slot in the casing from the inner side.

In testimony whereof I affix my signature in presence of two witnesses.

NICHOLAS H. COLWELL.

Witnesses:

H. C. PRICE,
C. V. PALLISTER.