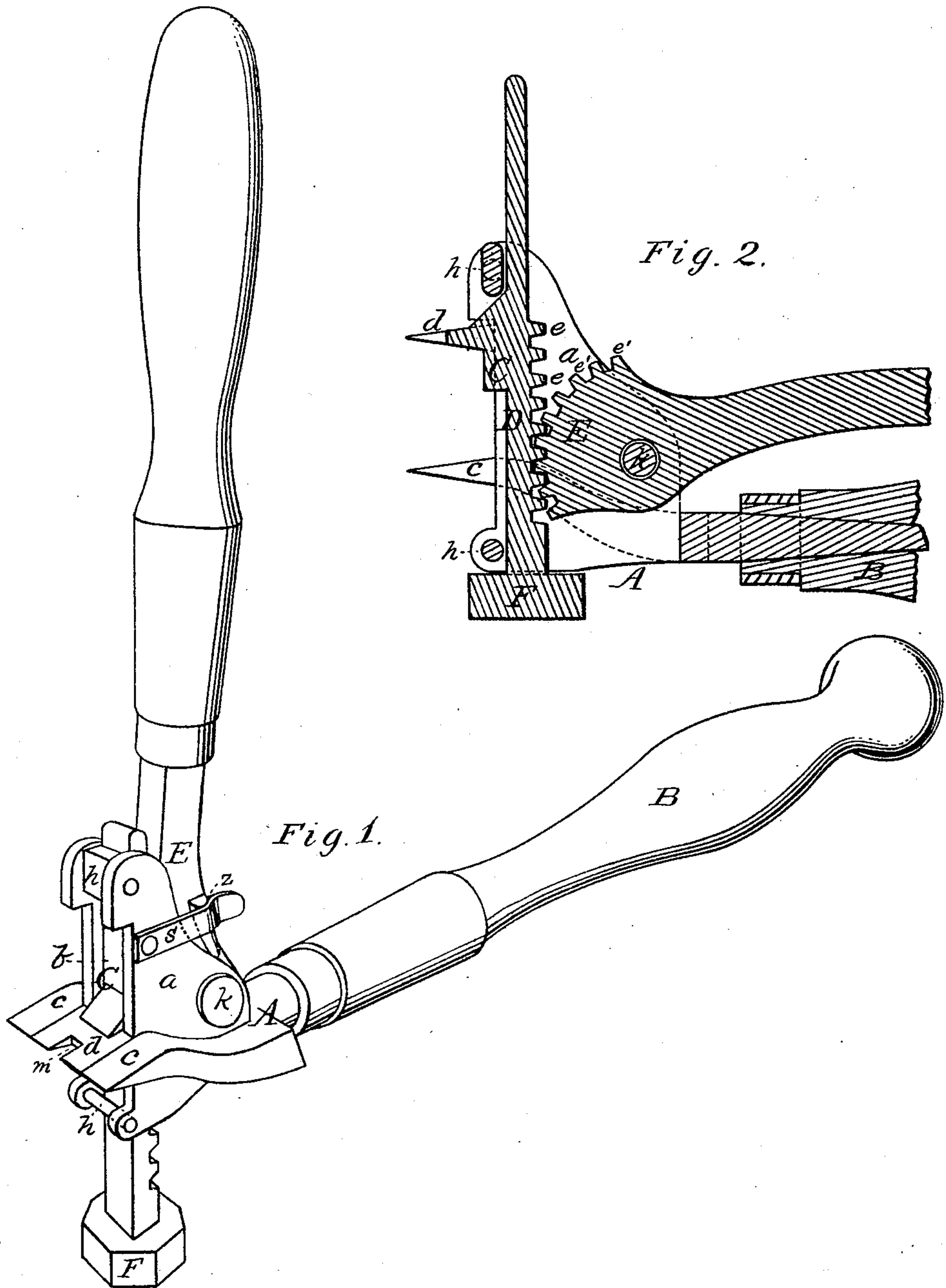


H. L. FISHER & G. W. INGERSOLL.

BOX-OPENER.

No. 185,223.

Patented Dec. 12, 1876.



WITNESSES
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UNITED STATES PATENT OFFICE.

HARVEY L. FISHER AND GEORGE W. INGERSOLL, OF TOLEDO, IOWA.

IMPROVEMENT IN BOX-OPENERS.

Specification forming part of Letters Patent No. **185,223**, dated December 12, 1876; application filed October 14, 1876.

To all whom it may concern:

Be it known that we, HARVEY L. FISHER and GEORGE W. INGERSOLL, of Toledo, in the county of Tama and State of Iowa, have invented a new and valuable Improvement in Box-Openers; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a perspective view of this invention. Fig. 2 is a partial vertical section of the same.

This invention has relation to implements for opening boxes, and similar purposes; and it consists in the combination, with a stationary lever, having two spaced bits, of a vertically-reciprocating rack-bar, having a bit adapted to be received between those afore-said, and a cogged lever engaging with the said rack-bar and pivoted to the stationary lever, whereby means are provided for separating the bits when they are inserted between a box and its lid, thus raising the latter, as hereinafter fully shown and described.

In the accompanying drawings, the letter A designates the main jaw of the box-opener, which is provided with cheek-pieces *a* on each side of a vertical cleft, *b*, and with transverse bits *c* at the side of said cheek-pieces, and projecting in front of the same. B indicates the handle of the main jaw, whereby the bits are forced into position in crevices of boxes and other places previous to separation. C represents the movable jaw, consisting of a rack, D, on the front of which is formed the bit *d*, and on the back of which are formed the teeth *e*. This rack is seated in the recess or cleft *b* of the main jaw between the cheek-pieces *a*, and is secured in place by lugs or bars *h*, attached to said cheek-pieces, in such a manner that this jaw will be capable of reciprocating movement when properly actuated. E designates the cogged segment-lever, whereby the rack-jaw is moved. This lever is pivoted to the cheeks of the main jaw, as shown

at *k*, and its teeth *e'*, extending between said cheek-pieces, engage with the teeth *e* of the rack-bar, in such a manner as to move said bar when the handle is raised or lowered.

When the handle is raised in the vertical position, as shown in Fig. 1 of the drawings, the bit *d* is brought in line transversely with the bits *c* of the main jaw, forming a composite bit, which is suitably beveled at its edge, and adapted to be readily inserted into a crevice or other narrow place. When the lever-handle is depressed, as indicated in Fig. 2, the action of the toothed segment raises the rack-bar, and with it the bit *d*, and separates the latter from the bits *c*, forcing asunder the parts between which the bits have been placed.

F represents a hammer-head at the end of the rack-bar, which is brought up against the lower end of the main jaw when the handles are brought together, and the implement forms a convenient hammer.

The bit *d* may be centrally notched, as shown at *m*, forming a claw, for the extraction of nails and tacks.

In order to keep the lever E in the raised position, so that its bit *d* will be in line with the bits *c* of the main jaw, a spring hook or catch, *s*, is pivoted to one of the cheek-pieces of the main jaw, and arranged to engage with a lug or projection, *z*, on the shank of the segment-lever.

What we claim as new, and desire to secure by Letters Patent, is—

In a box-opener, the combination, with the spaced bits *c c*, of the stationary lever U of the vertically-reciprocating rack D, having bit *d*, and the vibratory lever E, having a segment-rack engaged with the rack-bar, substantially as specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

HARVEY L. FISHER.
GEORGE W. INGERSOLL.

Witnesses:

J. H. BATES,
JOHN HAIGHT.