(No Model.)

J. LAMONT.

DEVICE FOR MAKING WATCH CASE BACKS.

No. 284,440. Patented Sept. 4, 1883.

Fig. 1

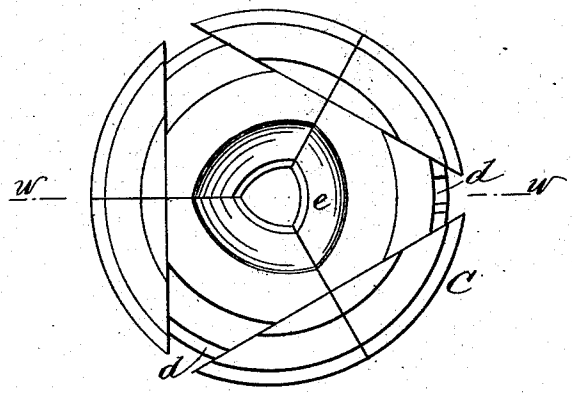


Fig. 3

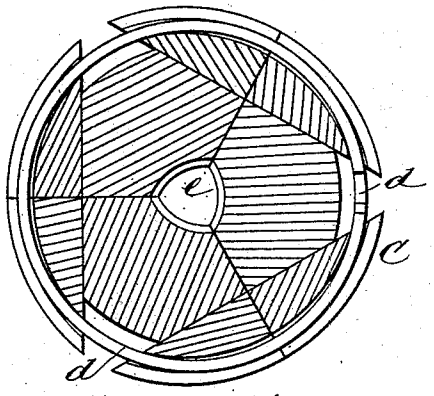


Fig. 2

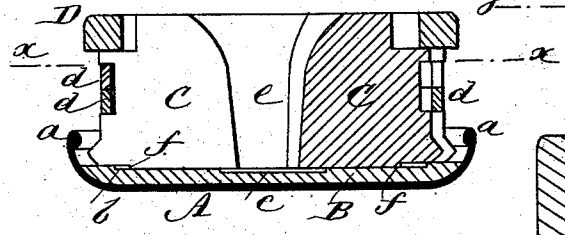


Fig. 4

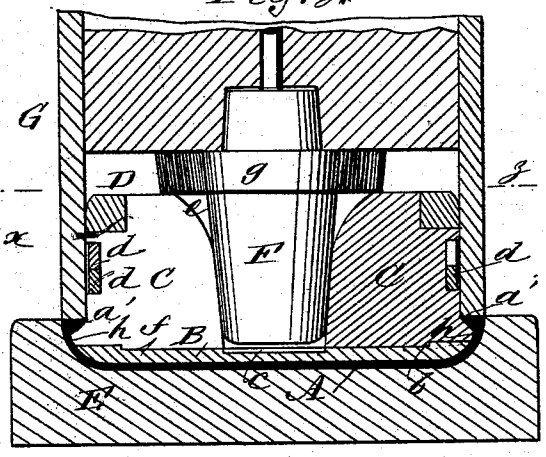
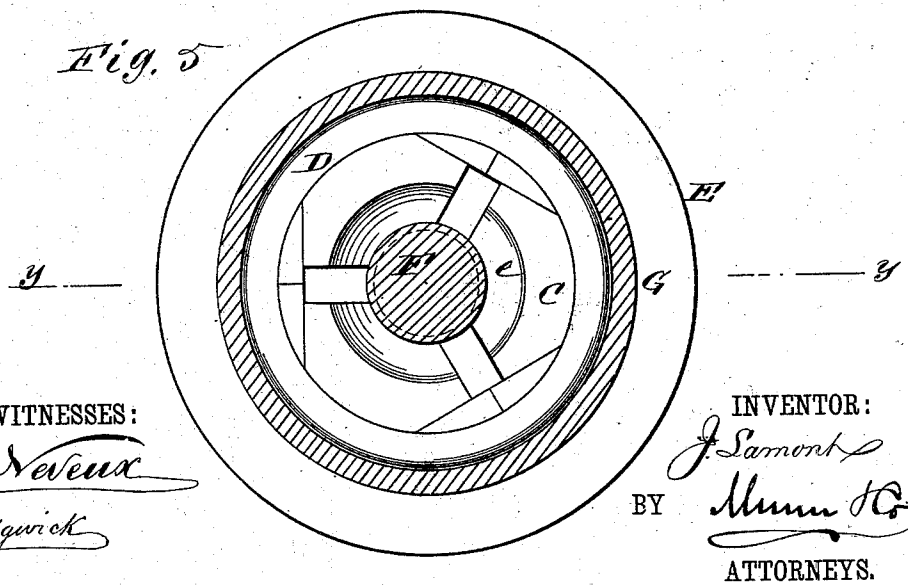


Fig. 5



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UNITED STATES PATENT OFFICE.

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DEVICE FOR MAKING WATCH-CASE BACKS.

SPECIFICATION forming part of Letters Patent No. 284,440, dated September 4, 1883.

Application filed May 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES LAMONT, of Sag Harbor, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Devices for Making Watch-Case Backs, of which the following is a full, clear, and exact description.

This invention consists in a novel construction of dies and combinations of parts pertaining thereto for making the backs or covers for cases of watches and lockets by compressing and shaping the metal at the edge of the disk or shell of which the back is composed to form the snap, the same covering or including an expanding and automatically-contracting male die that admits of its removal from the snap-fashioned shell without being taken apart, thus economizing both time and labor, substantially as hereinafter described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a plan of the expanding and automatically-contracting die embodied in and forming part of my invention. Fig. 2 is a vertical transverse section, upon the line *w w* in Fig. 1, of said die, with an upper loose ring applied to it, and representing said die as in position upon a removable bed-plate arranged within a watch-case back before said back or shell is compressed and shaped at its edge to form the snap, and Fig. 3 is a horizontal section upon the line *x x* in Fig. 2 of said die. Fig. 4 represents a vertical section, upon the line *y y* in Fig. 5, of the dies, plungers, and other parts used in compressing and shaping the edge of the shell or back of a watch-case, and showing said dies and parts as in operation at the completion of the work, and Fig. 5 is a horizontal section upon the line *z z* in Fig. 4.

The invention, as regards the construction of the dies and combinations of parts pertaining thereto, will be best described in connection with the operation and uses of said devices.

A indicates the shell or back of a watch-case, which in Fig. 2 is shown in its general form, or as compressed from a blank with its edge thickened, as shown at *a a*. This is the construction of the back before it is operated upon by my improved devices. Within this shell or back I place a loose or removable bed-plate, B, the lower surface of which conforms to the interior of the bottom of the back A, and the upper surface of which has or may have concentric circular depressions, as at *b c*.

C is the expanding and automatically-contracting die, which is next placed upon the bed-plate B within the shell or back A, as shown in Fig. 2. This die, which is of any desired thickness, is of segmental construction and collapsible diametrically, and is held contracted by one or more springs, *d*, applied to its exterior. It is also constructed with a downwardly-diminishing tapering aperture, *e*, in its center, and with an enlarged central projection, *f*, on the under surface of its expanding and contracting segments, which projection fills the depression *b* in the plate B when the die is expanded, to restrict the action of said die to its required expansion. There is also arranged upon or around a reduced upper portion of the die C a loose ring, D, which likewise limits or controls the expansion of said die.

The die C, when first introduced, as shown in Fig. 2, is in its contracted condition by means of the spring or springs *d*. Said die, with its loose ring D, bed-plate B, and shell or case-back A, is then placed upon a fixed bed, E, of a double-action cam or other suitable press. This fixed bed is recessed to receive within it the shell A, to the outer configuration of which, throughout its depth, it conforms.

Attached to or connected with the operating portion of the press in any suitable manner is an inner or central conical metal plunger, F, arranged to operate over and within the central aperture, *e*, of the die C; also, an outer annular metal plunger, G, arranged to come down upon the upper edge of the metal of the shell A. These two plungers F and G are independently operated to act in timely relation with each other, as follows: The central conical plunger, F, first comes down, and, entering the aperture *e* of the expanding-die C till arrested by a collar, *g*, on said plunger, expands and holds the die centrally and keeps it expanded until the pressing of the case-back A

is completed. The central aperture, *e*, is made tapering, so that the deeper the plunger F goes in the more will the die C be expanded, and this in an easy and gradual manner. Said die will be expanded till arrested by the walls of the recess *b* in the plate B and loose ring D, or either. This determines the lateral action of the die C upon or against the interior of the edge portion of the shell A to give it the thickened snap form shown at *a'* in Fig. 4, the bottom of the segments of the die C being constructed peripherically, as shown at *h*, to protrude and conform to the required interior shape of said edge. This formation and compression of the edge of the shell A, however, is not effected or completed without the aid of the outer plunger, G, which, after the plunger F has completed its downstroke and expanded the die C, comes down and swages the metal at the edge of the shell A around the outside projection, *h*, of said die. The inside plunger, F, is now raised and leaves the expanded die C held by the outside plunger, after which the outside plunger, G, rises and allows the collapsible die C to be contracted by its springs *d*, and so that it may be removed from the shell or back A without coming apart, and be left in a condition for operation upon a succeeding shell or watch-case back.

In addition to the function hereinbefore specified for the loose ring D, it may also serve as a guide for the outer plunger, G, and prevent said plunger from coming in contact with the segments of the expanding and automatically-contracting die C.

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

1. The combination, with the segmentally or sectionally constructed body of the die C, having a tapering central expanding aperture, *e*, and a peripherally-arranged lip or projection, *h*, of one or more springs, *d*, applied to close or contract said body, essentially as and for the purposes described.

2. The removable plate B, constructed with a recess, *b*, on its upper surface, in combination with the expanding and automatically-contracting die C, constructed with a projection, *f*, on its bottom, essentially as and for the purpose described.

3. The combination of the loose ring D with the expanding and automatically-contracting die C, constructed with a lower peripherical projection, *h*, substantially as specified.

4. In apparatus for compressing and shaping the edges of watch-case and other like backs, the combination, with the removable bed-plate B and fixed die or bed E, in which the shell or back to be operated upon is placed, of the expanding and automatically-contracting spring-bound die C, constructed with a central tapering aperture, *e*, the inner conical plunger, F, and the outer annular plunger, G, for operation in relation with each other essentially as described.

5. The combination, with the expanding and automatically-contracting die C and outer plunger, G, of the loose ring D, constructed and arranged to control the expansion of said die and to act as a guide for the outer plunger, substantially as specified.

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Witnesses:
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