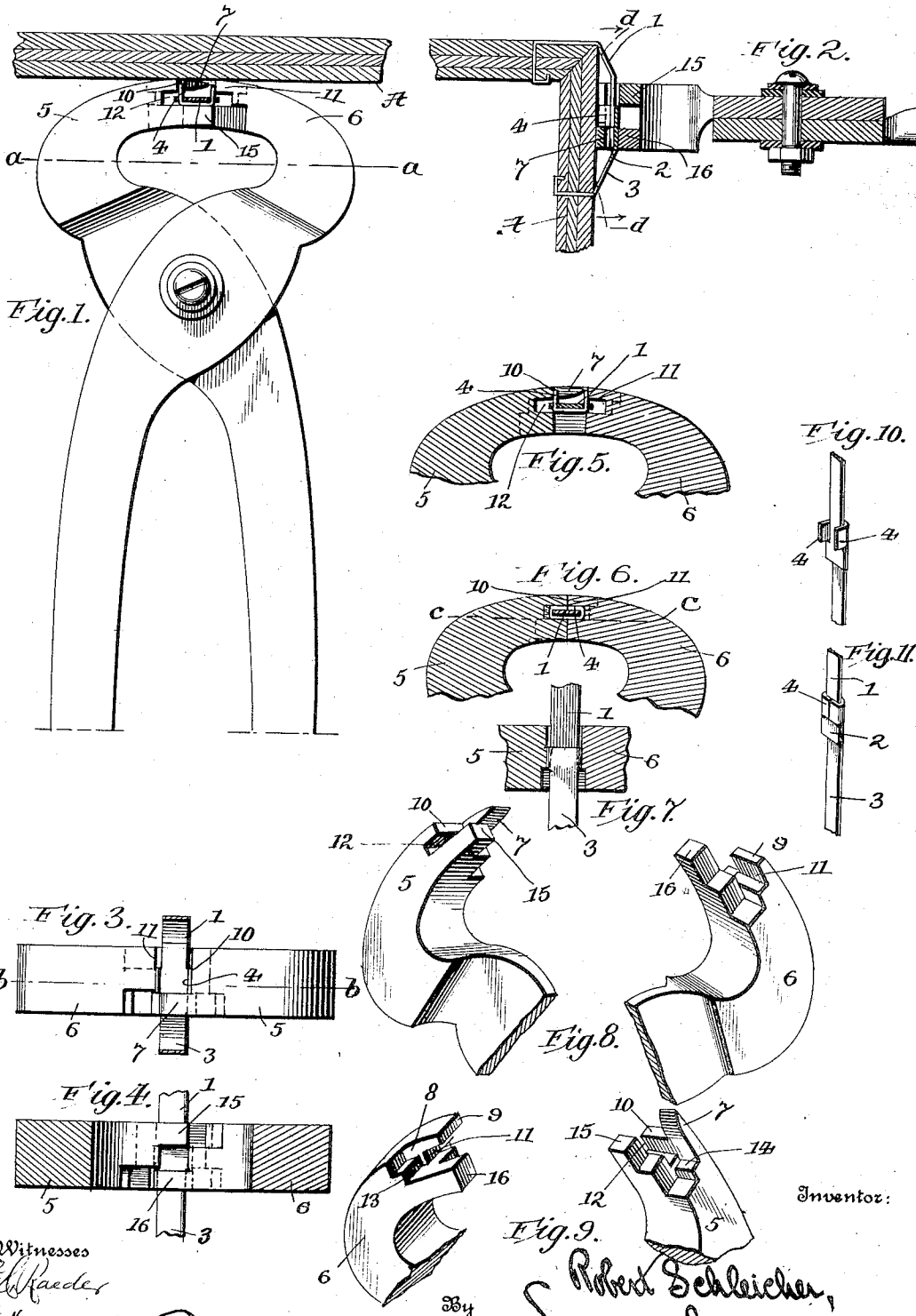


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 TOOL FOR SEALING BOX FASTENERS.
 APPLICATION FILED JUNE 9, 1909.

942,673.

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UNITED STATES PATENT OFFICE.

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TOOL FOR SEALING BOX-FASTENERS.

942,673.

Specification of Letters Patent.

Patented Dec. 7, 1909.

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To all whom it may concern:

Be it known that I, ROBERT SCHLEICHER, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Tools for Sealing Box-Fasteners, of which the following is a specification.

My present invention relates to box fastening devices and particularly to an improved tool or die for sealing or uniting the box fasteners or seals described and claimed in Letters Patent No. 915,045, granted to me March 9, 1909.

The invention lies in the form and functions of certain parts and will be described in detail in connection with the accompanying drawings, wherein:

Figure 1, is a plan view of a hand operated press fitted with these dies and shows the first operation of sealing a fastener; Fig. 2, is a section taken on the longitudinal center line of Fig. 1; Fig. 3, is a section on the line *d-d* of Fig. 2, looking to the right; Fig. 4 is a section on the line *a-a* of Fig. 1, looking toward the dies, as shown in Fig. 1; Fig. 5, is a section on the line *b-b* of Fig. 3, showing the dies in the same position illustrated in Fig. 1; Fig. 6, is a section on the line *b-b* of Fig. 3, showing the position of the dies after the fastener has been sealed and before the dies have been retracted; Fig. 7, is a section on the line *c-c* of Fig. 6; Figs. 8 and 9 are perspective views of the dies taken from opposite sides; Fig. 10, is a perspective view of the fastener ready to be clamped; and Fig. 11, is a perspective view of the fastener after clamping.

Referring now to Figs. 10 and 11, it will be seen that the fastener to be clamped or sealed consists of two parts each of sheet metal. The first of these consists of the shank or body portion 1, terminating in an enlargement or head 2. The second consists of a shank or body portion 3, having lateral wings or projections 4. Before the fasteners are to be sealed by the means forming the subject-matter of this application, the wings 4 are bent at approximately right angles with the shank 3, as shown in Fig. 10, this being done in the manufacture of the fasteners.

The two parts of the fastener are attached to the parts of the box which they are to fasten together, as illustrated in Fig. 2 (for

further description of the mode of attaching to the parts of the box see the patent cited).

The fasteners are so arranged that the wings 4 project toward the side A of the box, as shown in Figs. 1 and 2, and so that the shank 1 behind the head 2 lies between the wings 4. The sealing of the fastener is then effected by bending the wings 4 closely around the shank 1 back of head 2. It is to effect this clamping or union of the two members of the fastener by bending or folding the wings 4 as above described, that the present invention is designed, and to this end I employ two dies which jointly sustain the fastener members and fold one about the other.

Referring now to Figs. 1 to 9 inclusive, 5 and 6 represent the dies which, for purposes of clearness, are illustrated as mounted upon the jaws of pliers so that they may be brought together in proper relation and sufficient pressure exerted for bending the fastener into locking form. The pliers, however, are shown merely for purposes of explanation and illustration, as the invention resides in the form and function of the dies and not in the means for bringing them together. Any sort of hand press might be used or a pair or a series of dies might be mounted in a power press and be positioned and operated thereby.

A guide prong 7 is carried upon die 5. Its function is to penetrate between the fastener and box and guide the dies to position, as best shown in Figs. 3, 8 and 9. This guide prong does not extend the entire width of the die, but as best shown in Fig. 2, it is designed to pass to one side of the wings 4 and behind head 2, pressing it out closely against shank 3. This prong 7 is made rather thin and with a tapering or V-shaped edge, better to enter between the box and fastener. The fastener will spring away from the box sufficiently to allow the prong to enter. In the closed position of the dies this prong 7 lies in a recess 8 in die 6. The abutments 9 and 10 which just meet in the closed position of the dies are to engage the wings 4, and by forcing them toward each other, to bend them around the shank 1. Beneath guide prong 7 and abutment 10 a slot 12 is formed in die 5, and beneath abutment 9 a slot 11 is formed in die 6. In the closed position of the dies these

slots meet and form a single slot for the passage of the fastener. On the side of the dies adjacent to the guide prong 7 the slots 11 and 12 are slightly deepened or formed with offsets, as 13 and 14 for the purpose of giving clearance for the head 2 and thus prevent its being buckled.

The guide prong 7 co-acting with the head 2 and wings 4 will properly position the dies so that these depended portions will come opposite the head 2, and so that the projections 9 and 10 will properly engage the wings 4. To hold the fastener firmly so that it may not spring back and allow the wings 4 to clear projections 9 and 10 and also to cause the wings 4 to be tightly folded against shank 1, the projections 15 and 16 are provided. These form a back rest or support for the fastener during the clamping process. They are stepped in the manner shown or in any other equivalent manner to cause them to overlap even in a relatively open position of the dies. This is for the purpose of securing their functioning throughout the operation of the dies, so that the fastener will be prevented from swinging away from abutments 9 and 10 in all positions of the dies.

The operation is as follows: The prong 7 enters behind head 2 pressing it out against shank 3. At the same time shank 3 is firmly held by the supports or guides 15 and 16. As the dies are forced together the abutments 9 and 10 bend the wings 4 toward each other and as the fastener enters the grooves 11 and 12 the wings 4 are folded smoothly against shank 1. The dies are then retracted and the fastener springs back against the box.

Having thus described my invention, what I claim is:—

1. In a tool for securing a fastening device comprising a shank and wings adapted to be folded about said shank, the combination of actuating means; and a pair of oppositely disposed dies operated by said means, one of said dies having a guiding prong adapted to position the dies relatively to the fastening device and to approximate the parts thereof, and each die having an abutment to engage one of said wings and to bend the same inwardly toward the opposite wing, the dies being slotted to receive the body and the infolded wings of the fastener.

2. In a tool for securing a fastening device comprising a shank having an enlarged head and wings adapted to be folded about said shank behind said head, the combination of actuating means; and a pair of oppositely disposed dies, operated by said means, one of said dies having a guiding prong adapted to position the dies relatively to the fastening device and to approximate the parts thereof so that said shank lies between said wings, and each die having an

abutment to engage one of said wings and to bend the same inwardly toward the opposite wing, the dies being slotted to receive the body and the infolded wings of the fastener.

3. In a tool for securing a fastening device comprising a shank and wings adapted to be folded about said shank, the combination of actuating means; and a pair of oppositely disposed dies operated by said means, one of said dies having a guiding prong adapted to position the dies relatively to the fastening device and to approximate the parts thereof, and each die having an abutment to engage one of said wings and to bend the same inwardly toward the opposite wing, the dies being slotted to receive the body and the infolded wings of the fastener and to conform to the contour thereof.

4. In a device for sealing metallic fasteners, the combination of a pair of dies, each die having an abutment adapted to engage and fold a member of the fastener, and two series of intermeshing projections carried by the respective dies for preventing lateral displacement of the fastener in one direction prior to and throughout the action of the dies.

5. In a device for sealing metallic fasteners, the combination of a pair of dies, each die having an abutment adapted to engage and fold a member of the fastener, and two series of intermeshing projections carried by the respective dies for preventing lateral displacement of the fastener prior to and throughout the action of the dies, each die being formed with a recess intermediate said abutment and its series of projections.

6. In a device for sealing metallic fasteners, the combination of a pair of dies, one die having a guiding prong adapted to position the dies, each die having an abutment to engage and fold a member of the fastener; and means carried by said dies for preventing lateral displacement of the fastener in one direction throughout the action of the dies.

7. In a device for sealing metallic fasteners, the combination of a pair of dies, one die having a guide prong adapted to enter a recess in the other die and to position the dies relatively to the fastener, each die having an abutment adapted to engage and fold a member of the fastener, and two series of intermeshing projections carried by the respective dies, for preventing lateral displacement of the fastener in one direction, prior to and throughout the action of the dies.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT SCHLEICHER.

Witnesses:

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H. A. TALLEY.