

No. 661,297.

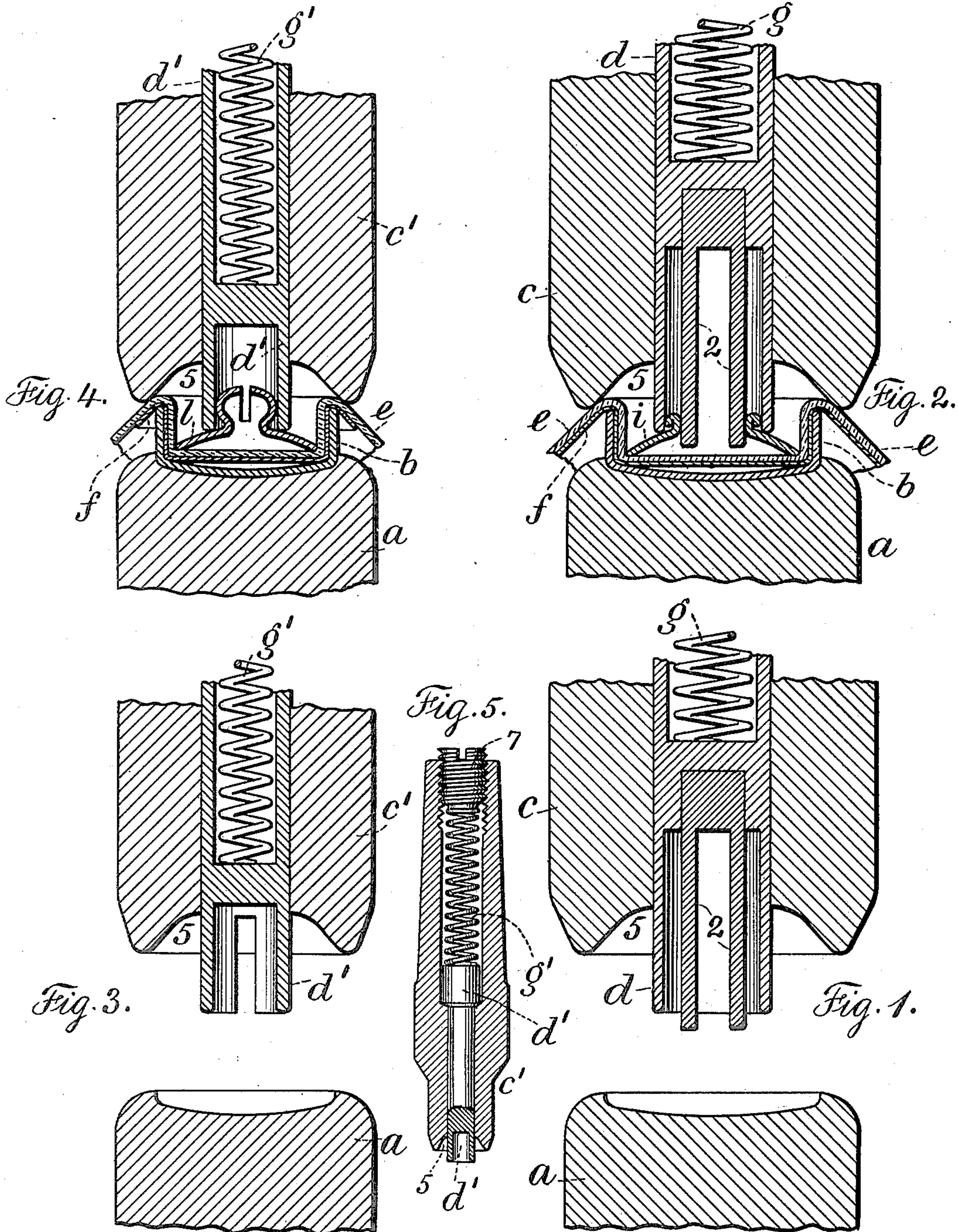
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J. V. WASHBURNE.

MECHANISM FOR ASSEMBLING, FORMING, AND SETTING GARMENT FASTENERS.

(Application filed Apr. 30, 1900.)

(No Model.)



Witnesses:  
J. Staib  
Chas. N. Smith

Inventor:  
James V. Washburne  
per L. W. Terrell & Son attys.



# UNITED STATES PATENT OFFICE.

JAMES V. WASHBURN, OF WATERBURY, CONNECTICUT.

MECHANISM FOR ASSEMBLING, FORMING, AND SETTING GARMENT-FASTENERS.

SPECIFICATION forming part of Letters Patent No. 661,297, dated November 6, 1900.

Application filed April 30, 1900. Serial No. 14,845. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES V. WASHBURN, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented an Improvement in Tools for Mounting the Members of Garment-Fasteners, of which the following is a specification.

My invention relates to tools or dies for mounting the members of fasteners to gloves or garments.

In my application, Serial No. 695,254, filed February 2, 1898, for improvement in fasteners for gloves and garments, there are shown and described dies or tools for mounting the members of fasteners to gloves or garments; but in said application a claim is made to the fastener and not to the die or tool. The present application relates to the said die or tool. These garment-fasteners usually consist of two parts or members, the one of cup shape and the other having a flange, the part with the flange fitting down into the cup-shaped portion and carrying with it the fabric of the garment which intervenes between the two parts, the rim of the cup-shaped part being turned over the flange of the other part. I employ a die having a recessed upper face adapted to receive and hold the cup-shaped part or member of the fastener and a second die above the first die provided with a tubular plunger. The latter die is made with an annular conical surface surrounding the plunger, and the plunger is adapted to hold the inner member of the fastening device, and the said plunger is spring-actuated and serves mainly to carry the inner member of the fastener, with the fabric, down into the cup-shaped portion, and the said plunger yields at this point, the connecting of the two parts being performed by the dies proper and by the annular conical surface surrounding the plunger bending inward the rim of the cup-shaped member and the fabric over the edge of the flange of the inner member.

In the drawings, Figure 1 is a vertical section of the parts of the dies for holding the socket member of the fastener. Fig. 2 is a vertical section of the same parts together with the parts of the fastener. Fig. 3 is a vertical section of the dies and plunger for holding the stud member of the fastener.

Fig. 4 is a vertical section of the same dies with the parts of the fastener, and Fig. 5 is a vertical section of a complete die of approved form and full size. In Figs. 1 and 3 the parts of the dies are separated preparatory to coming together, and Figs. 1 to 4, inclusive, are of exaggerated size for clearness.

The die *a* is recessed upon its upper face and adapted to receive the metal cup or head of the fastener. The outline of the recess agrees with the curved surface of the metal cup. The die *c* is centrally perforated to receive the tubular plunger *d*. This plunger has a tubular end, and to it are connected spring-fingers 2, the base of the fingers being a block let into the solid portion of the plunger *d*, and the upper end of the plunger *d* is tubular to receive the helical spring *g*.

The die *c'*, Figs. 3 and 4, is similar to the die *c*, and both dies are in their lower faces made with an inward conical surface 5. This die *c'* is centrally perforated to receive the plunger *d'*, which plunger is provided with a tubular lower end and a tubular upper end for the spring *g'*.

The plunger *d* of the die *c* receives the socket member *i* of the fastener, the spring-fingers 2 passing within the opening in the socket member and serving to frictionally hold the socket member to the die *d* in a state of suspension. The tubular plunger *d'* is adapted to receive the spring-head of the stud member *l* of the fastener. In Figs. 1 and 3 the dies and the plungers are shown alone, while in Figs. 2 and 4 they are shown in relation to the parts of the fastener, the metal cups *b* being in place upon the dies *a*, the socket member *i* being held by the plunger *d*, and the stud member *l* by the plunger *d'*.

The fabric or material of the garment is shown at *e*, and the same passes over the rim of the metal cup and down within the cup below the flange of the socket member or the stud member, and the said material *e* intervenes between the two members, and when the dies are brought together in a closer relation than that shown in Figs. 2 and 4 the conical surface 5 of the dies turns over the rim of the metal cup *b* down upon the flange of the socket and stud member to hold the two parts of the fastener together. I have shown, as in my aforesaid application, a strip



of paper *f* intervening between the material *e* of the garment and the metal cup *b* and over the edge of the rim of the said metal cup to prevent cutting the fabric as the said rim is  
 5 turned down upon the flange of the inner member.

The action of the dies in connecting the socket member and the metal cup or the stud member and the metal cup is identical. In the  
 10 action of these dies and as the same descend with the stud and socket members, there is just sufficient force in the plungers *d d'* to press the stud or socket member and the fabric down into the metal cup, after which the plun-  
 15 ger yields with the further downward movement of the die, the conical surface 5 of which turns the rim of the cup member over upon the flange of the inner member. The plungers hold the socket or stud member with suf-  
 20 ficient friction to support the said members or the fastening device after the parts are connected, but not sufficient to interfere with ready removal of the fastening device from the upper die.

25 In Fig. 5 I have shown the preferable form of complete die *c'*, in which the plunger *d'* is made tubular at the lower end and with a head at the upper end seating against a shoulder of the die-stem. The spring *g'* is received  
 30 in the opening in the die-stem and rests upon the upper surface of the head and is held in place by a screw-plug 7 in the upper end of the die-stem. The plunger *d'*, Fig. 3, is shown as divided and as adapted to receive a solid  
 35 stud member of a fastener, while the plunger *d'*, Fig. 4, is shown as holding a split stud

member. It is obvious that the dies may be made to connect the parts of snap-fasteners, whether the same be circular or of other shape.

I claim as my invention—

1. A die having a recessed face formed to receive the metal cup forming the head of the fastener, in combination with a die centrally perforated and having in the said perforation a tubular spring-actuated plunger for hold-  
 45 ing the inner member of the fastener and an annular conoidal surface surrounding the plunger and adapted to act upon the rim of the cup-shaped head to turn the same over upon the edge of the inner member, substan-  
 50 tially as set forth.

2. In a machine a die having a recessed upper face in combination with another die over the same centrally perforated, a tubular plunger, spring-actuated and movable  
 55 through the center of the upper die and the upper die having a conical surface surrounding the plunger, substantially as set forth.

3. In a machine a die having a recessed upper face in combination with another die  
 60 over the same centrally perforated, a tubular plunger, spring-actuated and movable through the center of the upper die and the upper die having a conical surface surrounding the plunger, and spring-fingers fixed to  
 65 and located within the tubular plunger, substantially as and for the purposes set forth.

Signed by me this 24th day of April, 1900.

JAMES V. WASHBURNE.

Witnesses:

GEO. T. PINCKNEY,  
 S. T. HAVILAND.