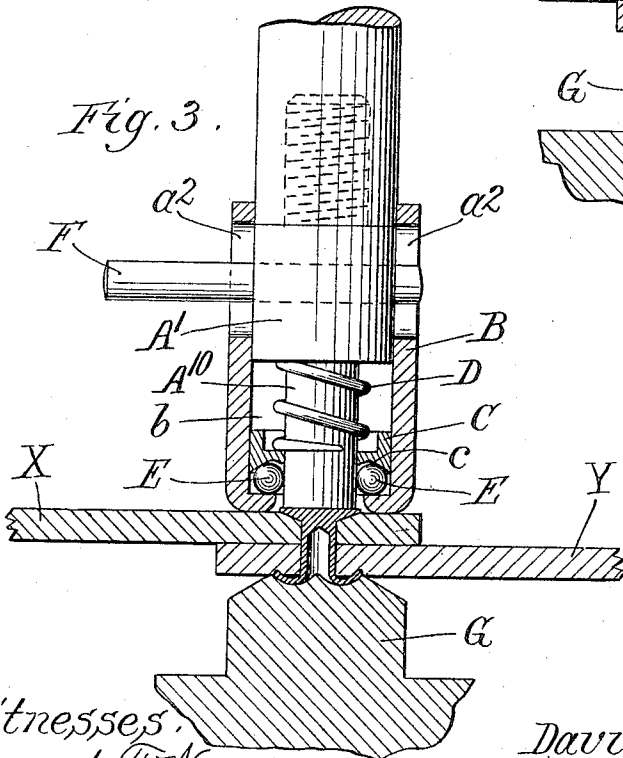
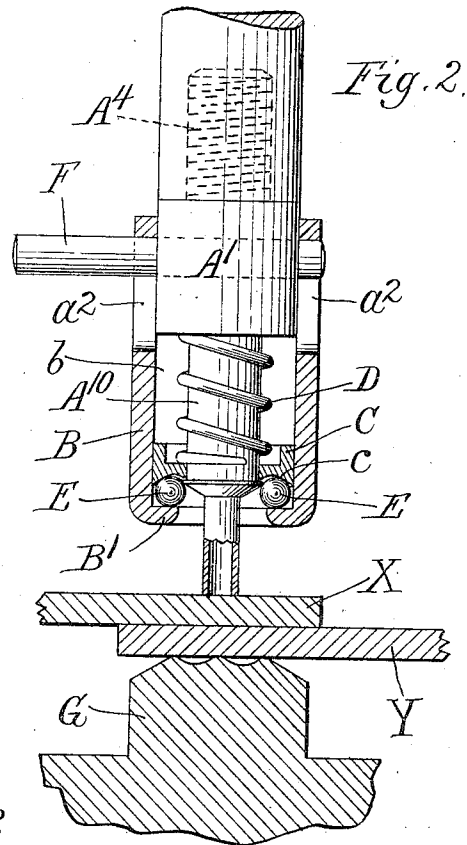
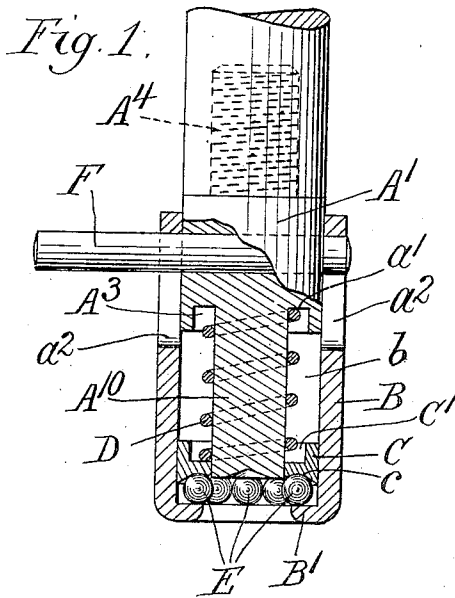


D. C. SASSEMAN & C. DALIN.
RIVET HOLDING CHUCK.
APPLICATION FILED JULY 6, 1908.

909,231.

Patented Jan. 12, 1909.



Witnesses.
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UNITED STATES PATENT OFFICE.

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ASSIGNORS TO F. H. SMITH MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A
CORPORATION OF ILLINOIS.

RIVET-HOLDING CHUCK.

No. 909,231.

Specification of Letters Patent.

Patented Jan. 12, 1909.

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To all whom it may concern:

Be it known that we, DAVID C. SASSEMAN and CHARLES DALIN, citizens of the United States, residing, respectively, at River Forest, in the county of Cook and State of Illinois, and at Chicago, in the county and State aforesaid, have invented new and useful Improvements in Rivet-Holding Chucks, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to devices of the nature of riveting machines, particularly to the means for holding the rivet in the reciprocating head of such machine, or in any tool which might be operated similarly to such reciprocating head.

It consists of the features of construction shown and described as indicated in the claims.

In the drawings:—Figure 1 is a partly sectional side elevation of the rivet-holding head or rivet chuck of the riveting machine, section being made axially through the parts relating to the invention, which are shown in their normal position without the rivet and when not in action. Fig. 2 is a detail axial section of the chuck head showing the rivet engaged. Fig. 3 is a view similar to Fig. 1, showing the parts in position occupied when the rivet has been driven home.

In the drawings, A represents the rivet-holding chuck and plunger for driving home the rivet.

G is the anvil upon which the rivet is clenched.

X—Y are the two pieces, as leather, to be secured together by the rivet.

The chuck comprises the rivet driver or plunger, A¹, reduced in diameter at the lower end portion, A¹⁰; a sleeve, B, which is mounted for reciprocation upon the unreduced portion of the plunger, A¹, and inclosing an annular chamber, b, around the reduced portion; a spring-pressed ball-race, C, annular in form with the outer diameter equal to that of the unreduced portion of the plunger, A¹, and the inner diameter equal to that of the reduced portion so that it fits upon said reduced portion in the chamber, b, the ball-track, c, being formed in the lower end of said race, and finally, a spring, D, coiled about the reduced portion, A¹⁰, of the plunger, A¹, reacting between the ball-race

and the shoulder, a¹, of the unreduced portion of the plunger for forcing the ball-race away from said shoulder. The sleeve, B, at its lower end terminates in an annular inwardly projecting flange, B¹, the diameter of whose central aperture is a little greater than that of the reduced portion, A¹⁰, of the plunger, so that said reduced portion can be protruded through said central aperture as the sleeve is forced back on the plunger. The flange, B¹, serves to retain the steel balls, E, in their track in the ball-race, and its inner surface facing the balls is perfectly flat,—that is, lies in a plane at right angles to the axis of the ball-race, the ball-track of the latter being tapered or oblique to such plane so as to tend to gather the balls toward the axis. In order that as much space as possible may be obtained for the length of the spring, D, an annular recess, A³, is formed in the shoulder at the lower end of the unreduced portion of the plunger, and the upper end of the ball race is rabbeted at C¹, forming a similar recess. The sleeve B is guided and retained on the plunger, A, by means of a cross pin, F, which takes through an unreduced portion of the plunger and engages slots, a², in the sleeve.

The spring, D, lodged as shown around the plunger and reacting against the shoulder thereof and the ball-race, tends to force the ball-race down on to the balls and the balls down on to the flat inner face of the flange, B¹, when the sleeve is stopped by the pin, F, at the upper end of the slots, a²; and the same spring by its yielding resistance after the rivet has been driven in so far that the flanged end of the sleeve, B, presses on the material, Y, holds the material while the plunger is driven on through the circlet of balls and out through the central aperture of the sleeve flange, B¹, driving before it the rivet head which spreads the balls as it thus escapes from behind them. One end of the pin may project beyond the sleeve to serve as means of engagement for a spanner wrench by which the chuck may be screwed into the reciprocating element of the press in which it is employed, a threaded stem, A⁴, being provided for that purpose.

We claim:—

1. A rivet-holding-and-driving chuck which comprises two relatively telescoping parts; a ball-race and balls therein en-

circling the end of the inner part, the outer part having rigid with it a track for the balls opposed to the ball-race, and a spring which yieldingly resists the protrusion of

5 said inner part through the ball-race.

2. A rivet-holding-and-driving chuck which comprises two relatively telescoping parts; a ball-race and balls therein encircling the end of the inner part; a spring 10 reacting between the ball-race and said inner part to yieldingly resist the protrusion of said inner part through the ball-race; means for positively stopping the protrusion of the outer part beyond the inner, 15 and means on said outer part for positively stopping the ball-race.

3. A rivet-holding-and-driving chuck comprising two relatively telescoped parts, the outer of which at the operating end 20 normally protrudes beyond the inner; means for limiting such protrusion; a ball-race and the balls therein encircling the operating end of the inner part; a spring reacting between said inner part and the ball-race to 25 yieldingly resist the protrusion of said inner part through the ball-race and means on the outer part for positively resisting the spring-induced tendency of the ball-race.

4. A rivet-holding-and-driving chuck 30 comprising two relatively telescoping parts, the outer of which normally protrudes at the operating end beyond the inner; means for limiting such protrusion, the inner part being reduced in diameter forming an annular chamber between said parts, the outer 35 part having an inwardly protruding annular flange bounding said chamber at one end; a ball-race lodged in such chamber; balls in said race encircling the operating 40 end of the inner of said telescoped parts and seating on said annular flange of the outer part and a spring in said chamber reacting between the ball-race and the inner of said telescoped parts.

45 5. A rivet-holding-and-driving chuck comprising two relatively telescoped parts, the inner part being reduced in diameter forming a shoulder, and the outer part be-

ing provided with an inwardly extending annular flange facing such shoulder; a ball- 50 race lodged in the chamber formed between such facing parts balls in said race and a spring in the chamber back of the ball-race reacting against the shoulder, said annular flange having its inwardly facing surface 55 in a plane substantially at right angles to the axis of the telescoped parts for opposing the balls.

6. A rivet-holding-and-driving chuck comprising two telescoping parts, the inner 60 of which operates as a rivet driver and is adapted to be protruded through the outer for driving the rivet; means for engaging the rivet head comprising a circlet of balls about the end of said rivet-driving element, 65 and a spring-pressed ball-race therefor, the outer element having at the end through which the inner element is thrust when protruded a flange facing the ball-race for stopping the balls. 70

7. A rivet-holding-and-driving chuck 70 comprising two telescoping parts, the inner of which operates as a rivet driver and is adapted to be protruded through the outer for driving the rivet; means for engaging 75 the rivet head comprising a circlet of balls about the end of said rivet-driving element, and a spring-pressed ball-race therefor, the outer element having at the end through 80 which the inner element is thrust when protruded a flange facing the ball-race for stopping the balls, such ball-race having its walls encompassing the balls tapered for gathering them inwardly, and the opposed face of the flange being substantially flat 85 and in a plane at right angles to the axis of the ball-race.

In testimony whereof, we have hereunto set our hands, at Chicago, Illinois, this 2nd day of July, 1908.

DAVID C. SASSEMAN.
CHARLES DALIN.

Witnesses:

FRED. H. SMITH,
E. F. SMITH.