R. F. Berwick,

Making Rivets.

No. 5,837, Patented Oct. 10, 1848.

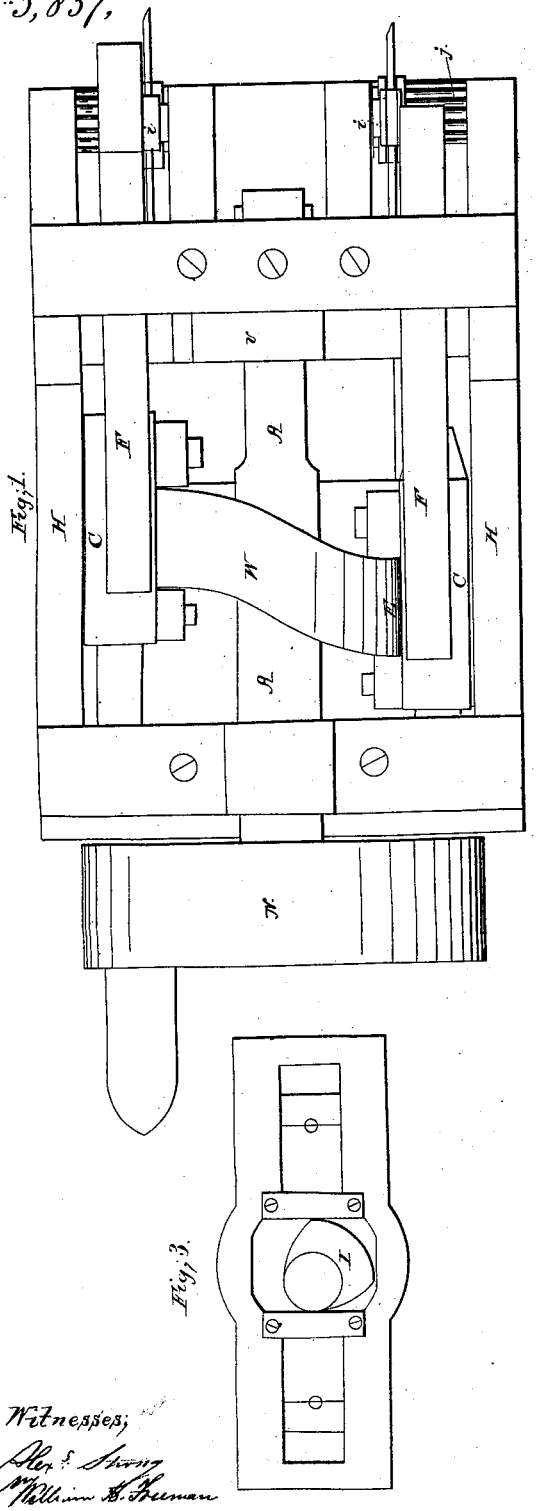

Fig. 1.

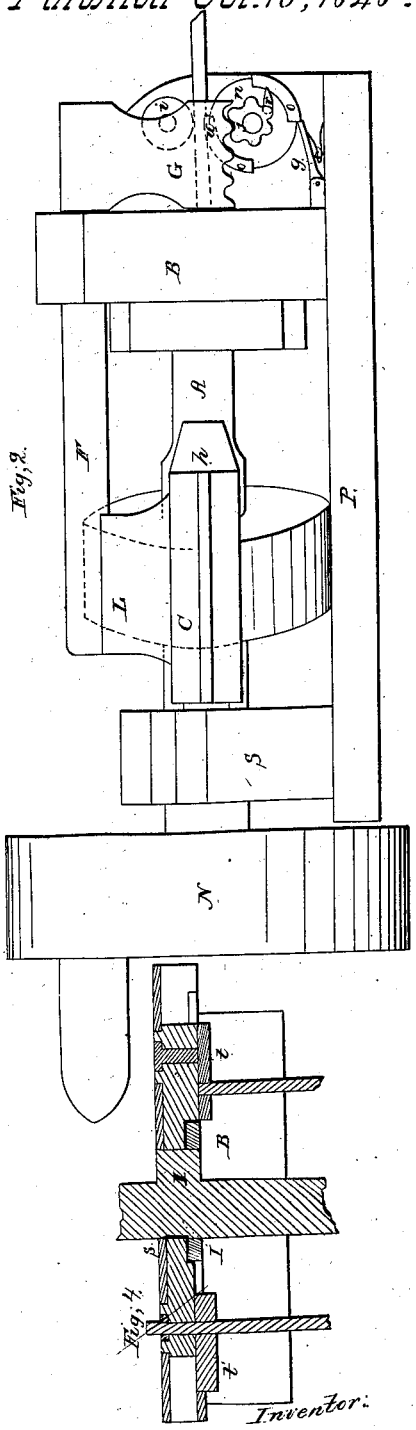

Fig. 2.

Fig. 3.

Fig. 4.

Witnesses;
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Inventor:
Robert F. Berwick

UNITED STATES PATENT OFFICE.

R. F. BERWICK, OF NEW YORK, N. Y.

SCREW-BLANK MACHINE.

Specification of Letters Patent No. 5,837, dated October 10, 1848.

To all whom it may concern:

Be it known that I, R. F. BERWICK, of New York, in the county and State of New York, have invented a Machine for Making Rivets, Screw-Blanks, Screw-Bolts, &c.; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a top view or ground plan. Fig. 2 is a side view with the side plate (shown as K in Fig. 1) removed so as to show the more clearly the operation of the machine. Fig. 3 is a view of the inside of the bolt shown as *v* (in Fig. 1) which together with Fig. 4 (which is a section of the bolt) show the manner in which the dies are loosened and closed by the action of the cam I and the manner in which the cam I moves the bolt *v* for the purpose of cutting off the wire which passes through the upright B. Fig. 4 also shows the manner in which the plates *t t* are set in the upright B and made to project more or less according to the length of the rivet intended to be made in this drawing. One of the plates *t*, No. 1, is shown flush with the upright B, making a full size rivet; the other *t*, No. 2, is represented as projecting, making a shorter size, each of the dies being of a thickness according to the projection of the plates.

In Fig. 2 P represents the foundation plate upon which are placed uprights B and S with the shaft A A passing through the center (as shown in Fig. 1) which contains the two cams W and I, the cam I being concealed inside the bolt *v* but shown in Figs. 3 and 4. C C are the heading tools. F, F, are arms which support the rack G on one end as represented in Fig. 2, the other ends of the arms being fastened to the heading tools by the connection L; these arms move with the heading tools, which are forced forward and drawn backward by the action of the cam W as shown in Fig. 1, the cam W being formed like the thread of a screw passing from E to D half-way around the shaft A and returning from D to E in like manner on the opposite side of the shaft; being thus arranged when the belt wheel N is made to revolve the cam W revolves, also pressing forward one heading tool and drawing back the other alternately, the cam I being upon the same shaft revolves at the same time with the cam W loosening and closing the dies and moving the bolt *v* in its proper position in time for the heading tool which is forced forward by the cam W to form the head of the rivet and this same movement of the bolt cuts the wire that is to be headed.

In Fig. 4 upon the shaft on which is placed the cam I will be seen a shallow groove marked as *s* which part does not press upon the dies as it passes them thus leaving loose each die as it passes it. Now the feeding apparatus is so arranged that at this period of the groove's passing the dies the wire is being fed in which forces out the rivet that has been previously made and replaces it with enough wire for a new rivet which wire is again cut off by the next movement of the bolt.

Each feeding apparatus is constructed as follows: It is composed of the rack G working upon a cog wheel *j* which is fastened upon a shaft which shaft also supports a wheel *n* containing a groove upon its surface. This wheel in combination with a smaller one above it is intended to roll in the wire. Now when the rack G is forced out by the arm F it rolls the cog-wheel halfway around but the wheel *n* does not turn with it, being loose upon the shaft and being stopped by the caps *o o* striking upon the wire at *u* or by a small lever *g* which catches upon the caps *o o*, the lever being pressed close against the wheel by a small spring *c* placed under it but when the rack is drawn backward rolling the cog wheel in the opposite direction then the wheel *n* is fastened to it by the arm *r* which catches upon a niche in the cap *o*, the caps *o o* are intended to regulate the length of wire that is rolled in for each rivet. The wheel *n* not being near enough to the smaller one *i* above it has no effect upon the wire when the wheel passes around it does not roll in the wire until the caps *o o* come in contact with it. The wheel not having any effect upon the wire between the caps it gives the bolt *v* time to move in its proper position that the hole in the dies may be opposite to that in the upright B. This may be better understood by examining Fig. 4. The caps *o o* being shortened or lengthened will roll in different lengths of wire accordingly.

To change the size or shape of the rivet all that is necessary is to change the caps *o o* for those of different length, change the dies and the plates *t*, *t*, and if the head of the rivet is to be altered all that is necessary is

to change the caps *h* upon the heading tools which can be screwed off and others screwed on to form either oval, sunk or flat heads, the other shaped heads such as square, eight side, round heads, &c., being regulated by the shape of the dies.

I do not wish to claim the cam I, it being old, but I claim it for the particular purpose for which it is used in closing the dies and the manner in which it allows the dies to become loose by the shallow groove upon a part of its surface, and also for the purpose of moving the bolt which contains the dies; thus the cam I performs two distinct services.

I claim as new—

1. The movable caps *o o* upon the surface of the wheels known and described as *n* in the feeding apparatus which caps are for regulating the length of wire to be rolled in the dies as described in the specifications.

2. I also claim the plates known as *t* set in the upright B, behind the dies which regulate the length of the wire to be cut off.

3. I claim the combination of the different parts of my machine in the manner as described and set forth in the drawings and specifications for the particular purpose of producing the effect therein shown and described.

R. F. BERWICK.

Witnesses:

JAMES STEWART,

LOUIS I. MARTIN.