

(No Model.)

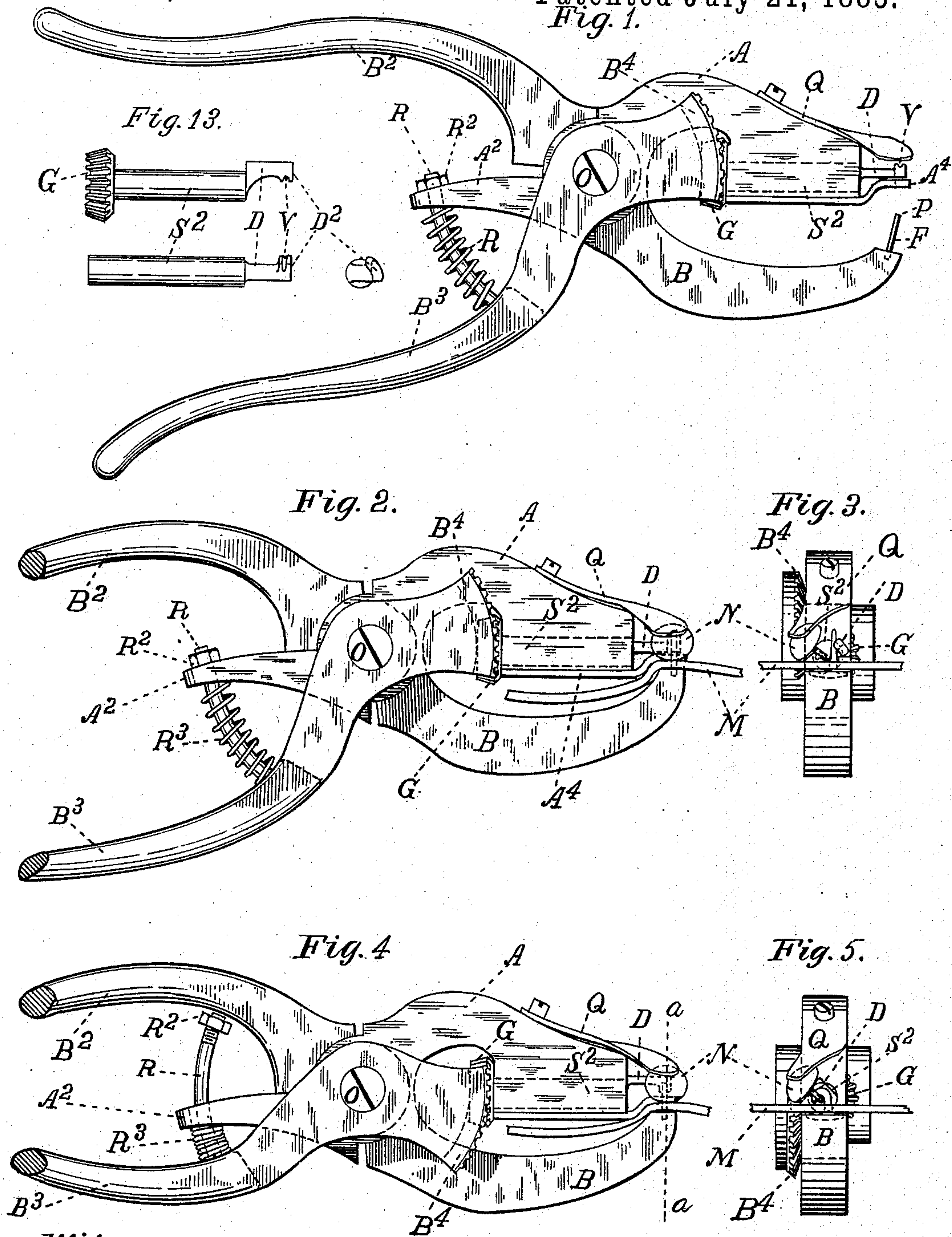
2 Sheets—Sheet 1.

F. H. RICHARDS.

BUTTON FASTENER SETTING INSTRUMENT.

No. 322,483.

Patented July 21, 1885.



Witnesses;
C. O. Palmer.
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Inventor;
Francis H. Richards.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 6.

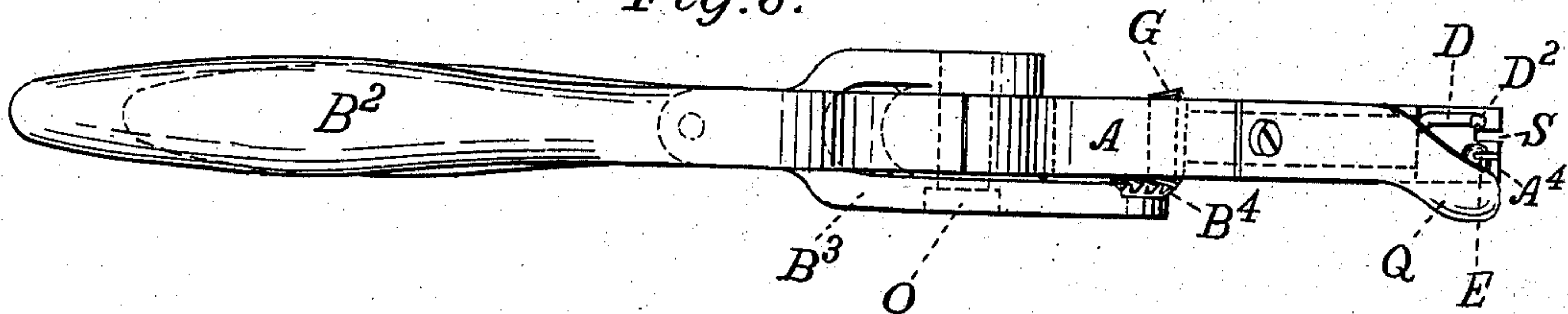


Fig. 7.

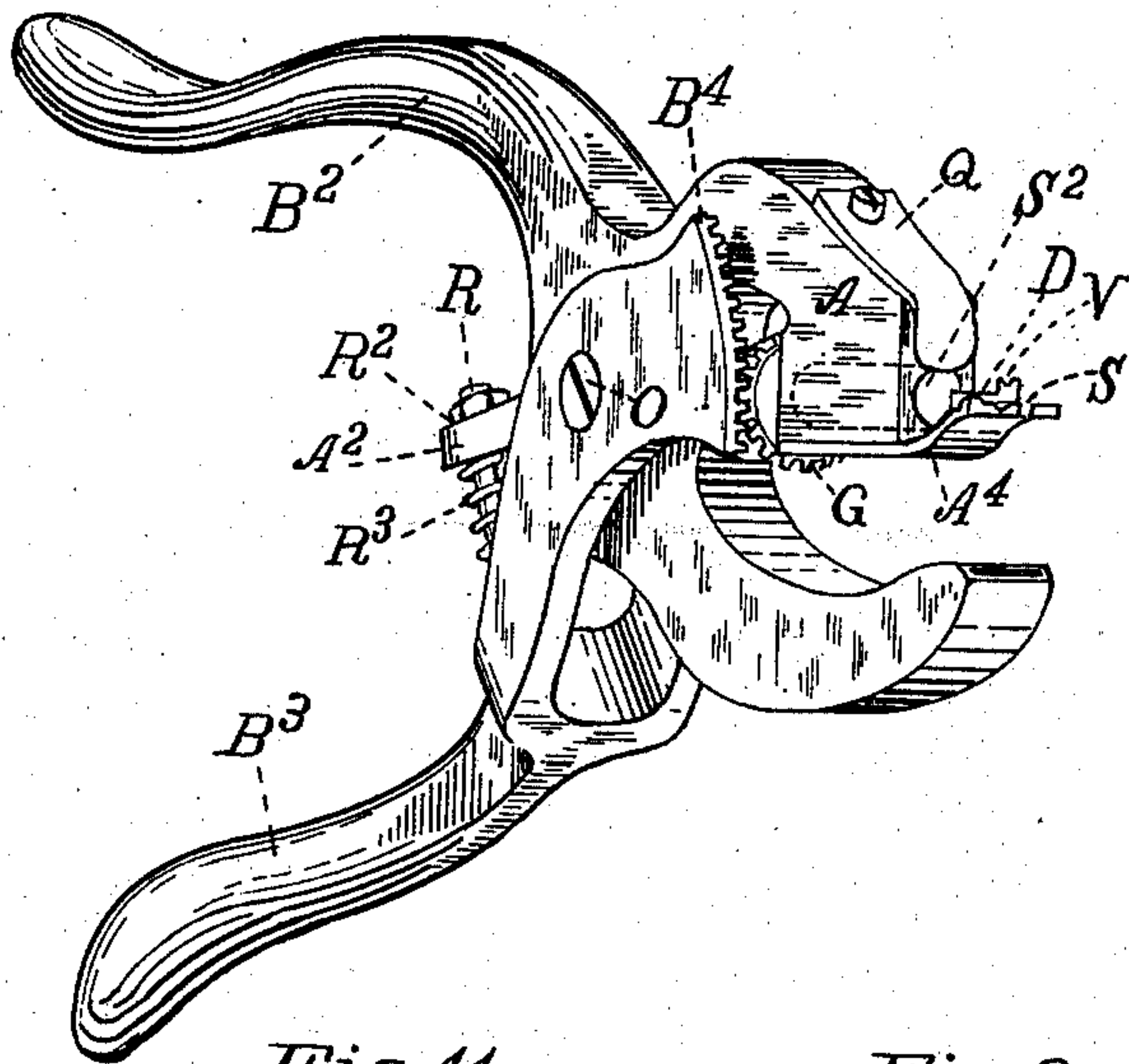


Fig. 8.

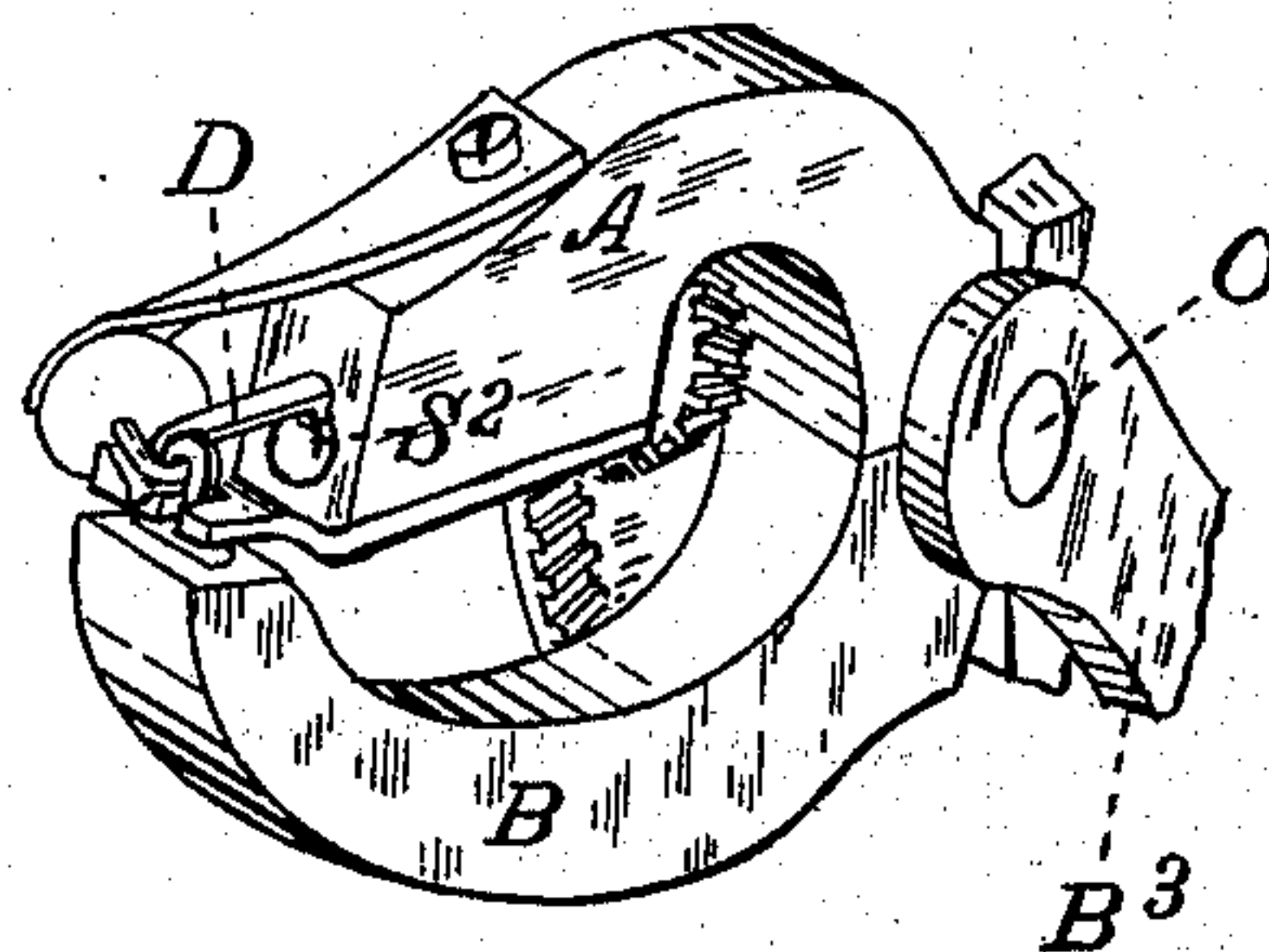


Fig. 11.

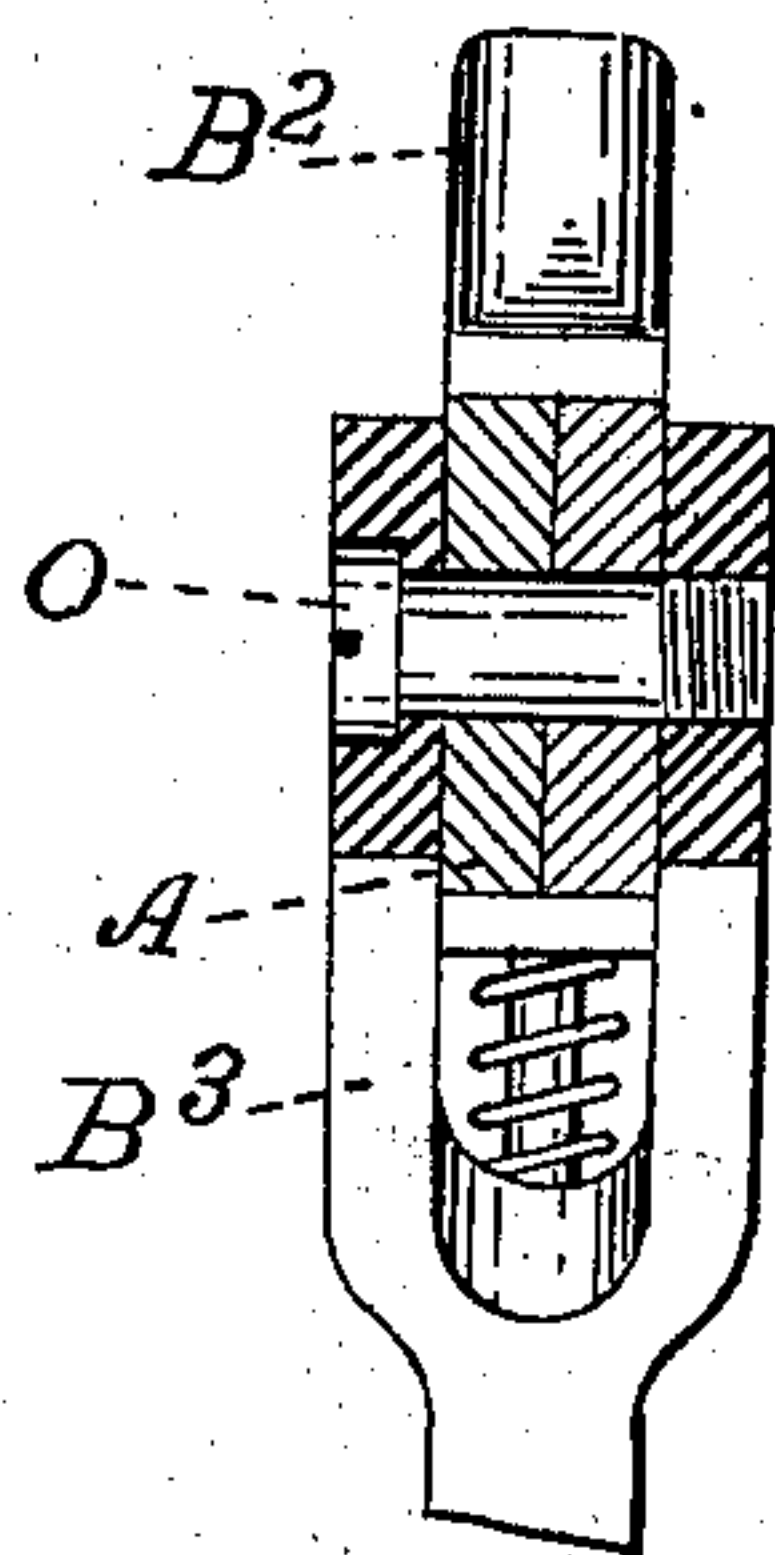


Fig. 9.

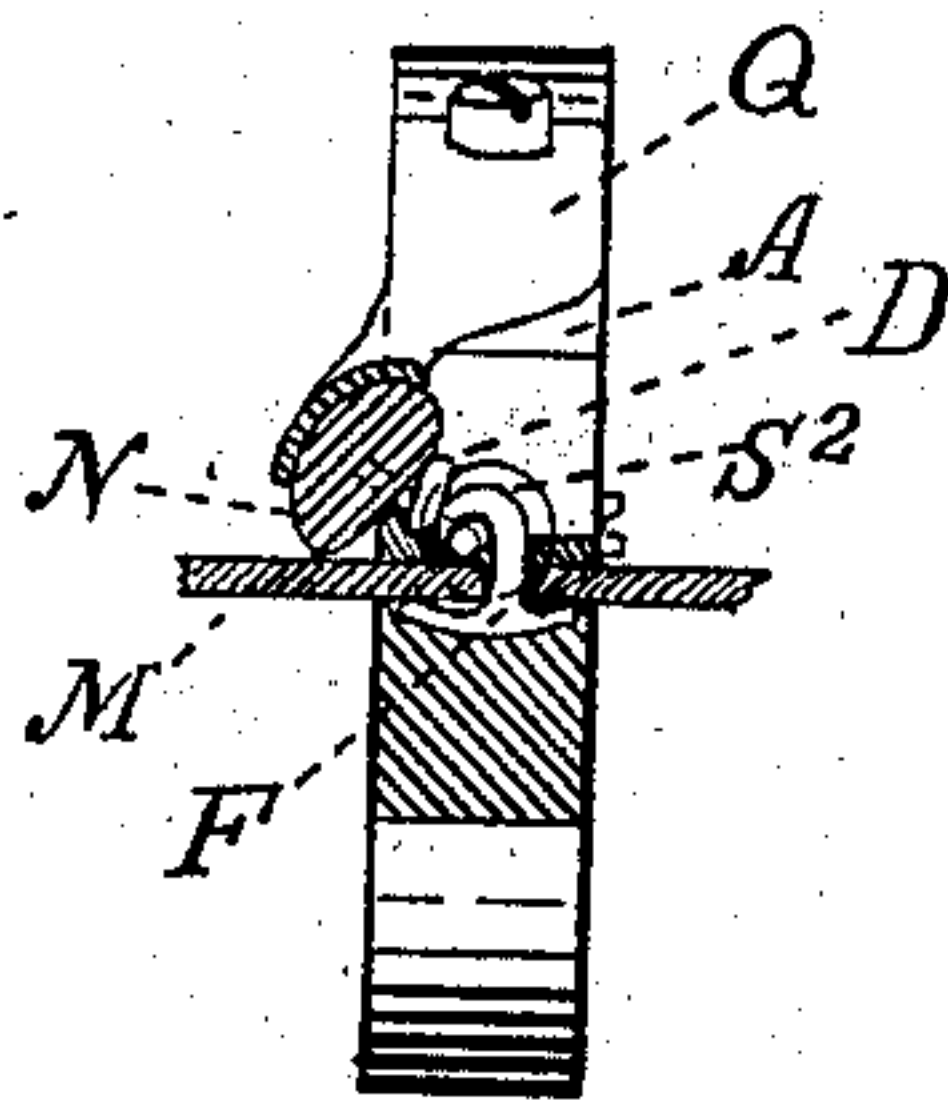


Fig. 10.

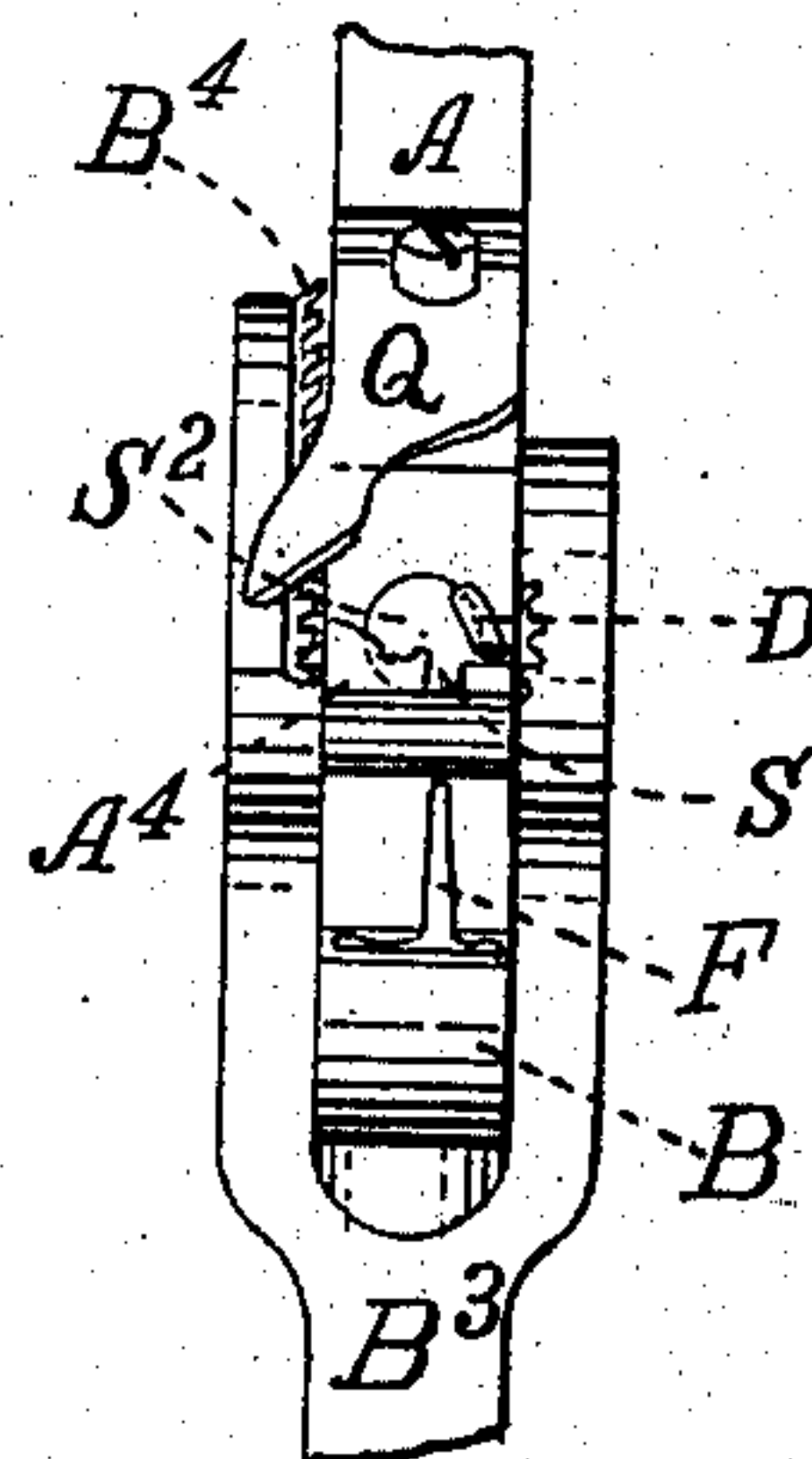
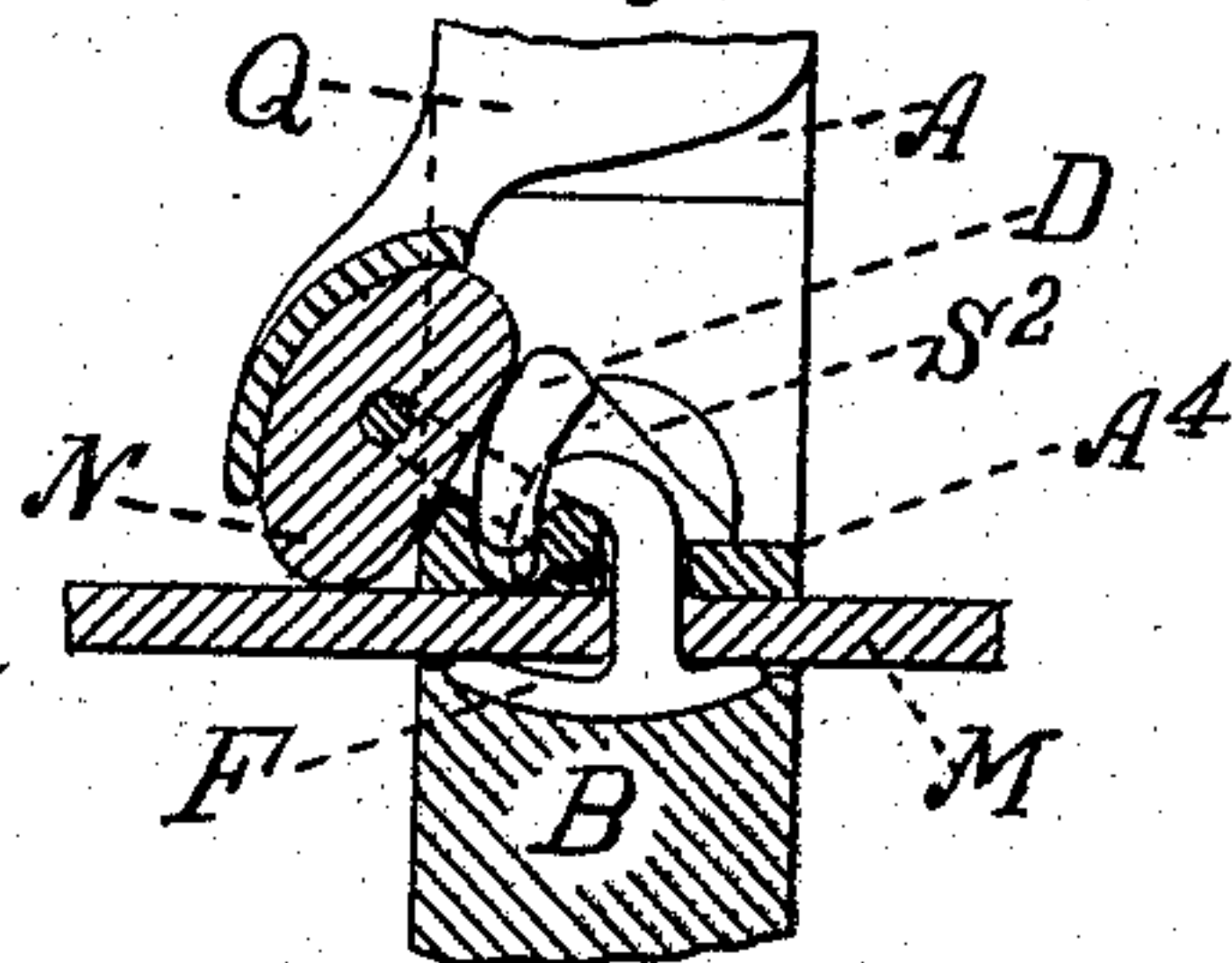


Fig. 12.



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BUTTON-FASTENER-SETTING INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 322,483, dated July 21, 1885.

Application filed November 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Springfield, in the county of Hampden, State of Massachusetts, have invented certain new and useful Improvements in Button-Fastener-Setting Instruments, of which the following is a specification, reference being had to the accompanying two sheets of drawings, forming a part thereof, in which—

Figure 1 is a side view of an instrument embodying my invention, showing the jaws in their open position, a one-prong button-fastener being placed in the lower one ready for use. Fig. 2 is a similar view, showing the jaws closed onto a fabric, and a button placed in position at one side of the button-fastener prong. Fig. 3 is an end view of the instrument with its parts in the positions shown in Fig. 2. In these two figures the prong is inserted through the fabric, but is not yet bent over into a hook. Fig. 4 is a view similar to Fig. 2, showing the parts in their positions at the close of the operation of bending the prong over into a hook. Fig. 5 is a view similar to Fig. 3 of the instrument, as shown in Fig. 4. Fig. 6 is a plan view of the instrument as shown in Fig. 1. Fig. 7 is a perspective view of the instrument with its parts in the same position. Fig. 8 is a similar view from the opposite side, showing the jaws closed and the prong bent over into a hook, as in Figs. 4 and 5. Fig. 9 is a sectional view in line *a a*, Fig. 4, showing the relative position of fabric, button, and button-fastener at the close of the setting operation. Fig. 10 is an end view similar to Fig. 3 of the instrument, with the jaws open as in Figs. 1 and 7. Fig. 11 is a cross-sectional view taken through the pivot-screw. Fig. 12 is an enlarged view of a part of Fig. 9, made to illustrate more clearly the proper construction of the parts. Fig. 13 shows three views of the presser-finger and its shaft, gear *G* being shown thereon in one view. Similar letters refer to similar parts throughout the several views.

My invention relates to an apparatus for securing buttons to fabrics or other goods by bending metallic button-fasteners, and more especially those known in the market as "Kempshall's One-Prong Button-Fastener;"

and it consists in combinations of devices, hereinafter described and claimed.

In the drawings, *A* and *B* represent, respectively, the upper and lower jaws of the instrument. The jaw *B* extends backward and forms the handle *B*², and jaw *A* has similarly formed thereon the arm *A*². These together form a pair of cross-arms pivoted together, as in ordinary pliers, by pivot-screw *O*. Pivoted to the same screw, outside of those cross-arms, is the forked end of handle *B*³, which is connected to jaw *A* by an elastic connection reaching to arm *A*². This connection may be constructed in any suitable way, of which there are a variety, the way I have selected being one of the most simple. This connection consists of a rod, *R*, attached to handle *B*³ and extending through a hole in arm *A*², having a stop, head, or nut, *R*², and a spring, *R*³, between said handle and arm. This arrangement makes handle *B*³ in effect the handle of jaw *A* until the jaws are closed, after which the spring *R*³ gives away and allows the motion of this handle to be continued, for a purpose which will be hereinafter explained. The front end of the lower jaw, *B*, is so formed as to press against the head *H* of the fastener *F*, and when the jaws are closing to force the prong *P* thereof through the fabric *M*, and the slot *S*, Figs. 6 and 7, of the upper jaw, as in Fig. 3. The end of this jaw *A* is made thin, and, beside having the aforesaid slot, is formed to receive the button *N* in such a position, either in front or on one side, as in the present instance of the instrument that the eye will lie close to said prong, as shown in Fig. 12. Said thin end may be made integral with the other parts of jaw *A*; but I prefer to have that part made in a separate piece, *A*⁴, and made of steel, secured by some suitable means to the main portion, which portion may then be made of cast-iron. The button may be held to its seat *E*, Fig. 6, on piece *A*⁴, by the finger of the person using the instrument, or, preferably, by a spring, as *Q*, suitably formed and secured to the upper jaw.

Thus, as I have explained in this paragraph, are the button-fastener and button held in place preparatory to clinching the button-fastener prong over the button-eye. This op-

eration is accomplished by means of a prong-bending presser-finger having simultaneously a vertical and lateral or curvilinear movement, which finger presses laterally against the prong and bends it over into a hook inclosing the button-shank. One suitable mechanism for operating said finger is constructed as follows: Through jaw A, above piece A⁴, and radial, or nearly so, to pivot O, a hole is bored to receive shaft S², which shaft is driven from handle B³ by means of segment B⁴ formed on said handle, and gear G secured to this shaft. The front end of said shaft is furnished with a finger or presser, D, which stands, when the instrument is not in use, at one side of the button-fastener prong, and usually opposite to the button, as in Figs. 3, 7, and 10. When in using the instrument the handle B³ is moved from its position in Fig. 2 to its position in Fig. 3, the aforesaid gearing rotates shaft S², bringing finger D into the position shown in Figs. 5, 8, and 9, and thereby turning over the prong P by a side pressure, into a hook which incloses the button-eye, as shown in these said figures. As the prong begins to bend, the presser-finger follows it over in a curved or other course determined by the nature of the mechanism carrying and operating the same, which course is a circular arc in the instrument shown in the drawings, for the reason that the said finger is here affixed to a shaft, as described; but in practice the radius of the arc may vary considerably, if said axis is suitably located. In practice, also, the form, size, and strength of presser-finger D should be adapted to the kind of button-fasteners which are to be set with the instrument, and especially is this true as to the point D², Fig. 13, of said finger. This point is preferably notched, as at V, Fig. 13, so that the button-fastener prong may rest therein and be guided thereby while it is bending over to form the hook.

Instead of the gearing described for communicating motion from handle B³ to shaft S², I may use any of the ordinary mechanical movements adapted to communicate an oscillating motion from one shaft to another, these being, of course, suitably constructed to adapt them for use in my aforesaid instrument.

The particular operation of the parts of my improved button-fastener-setting instrument will be understood from the drawings and the preceding description. In practice the button-fastener is first placed in a suitable receptacle formed in or attached to the member B, the fabric then properly held in position between the jaws, which are next brought together as hereinbefore described; or the button-fastener may be first inserted into the fabric, and then both together placed in position. After this, by continuing the motion of handle B³, the

prong is bent over into a hook inclosing the eye of the button, and thus securely fastening the same to the fabric or other goods. This operation being completed, the several parts are returned by a spring (not shown) or otherwise to their positions in Fig. 1, ready to be used again.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a button-fastener-setting instrument, the combination of a lower jaw adapted to press against the head of a malleable fastener, an upper jaw adapted to press on fabric or goods near to the prong of said fastener, and the prong-bending presser-finger adapted to have a curvilinear motion, substantially as described and for the purpose specified.

2. In the hereinbefore-described instrument, in combination, the upper jaw, A, provided with a bearing for shaft S², shaft S², provided with a presser-finger, substantially as described, handle B³, and gearing, substantially as described, between said handle and shaft, substantially as described.

3. In a button-fastener-setting instrument, in combination, the upper jaw, A, provided with a bearing for shaft S², and with arm A², shaft S², handle B³, gearing, substantially as described, between said handle and said shaft, and an elastic connection, substantially as described, between said handle and said arm, substantially as and for the purpose set forth.

4. The jaw B, the jaw A, having a thin end, as plate A⁴, and a movable finger, substantially as described, in combination, substantially as set forth.

5. The hereinbefore-described hand instrument for setting button-fasteners, consisting of the member B, having a suitable handle, as B², and adapted to press against the head of a button-fastener, the member A, formed to admit the prong of a button-fastener and to carry the movable presser-finger D, the handle B³, and connecting mechanism, substantially as described, from said handle to said member A, and to said presser-finger, in combination, substantially as set forth.

6. In a button-fastener-setting instrument, in combination, the member A, having the reduced end A⁴, which is provided with the slot or opening S for the fastener-prong, the seat E, formed on said end A⁴, to support the button in an oblique position, with its shank or eye near to one side of said slot S, and a spring, as Q, for holding said button onto said seat in said oblique position, substantially as described.

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