

(No Model.)

2 Sheets—Sheet 1.

A. B. SMITH.
CARPET SEWING MACHINE.

No. 298,318.

Patented May 6, 1884.

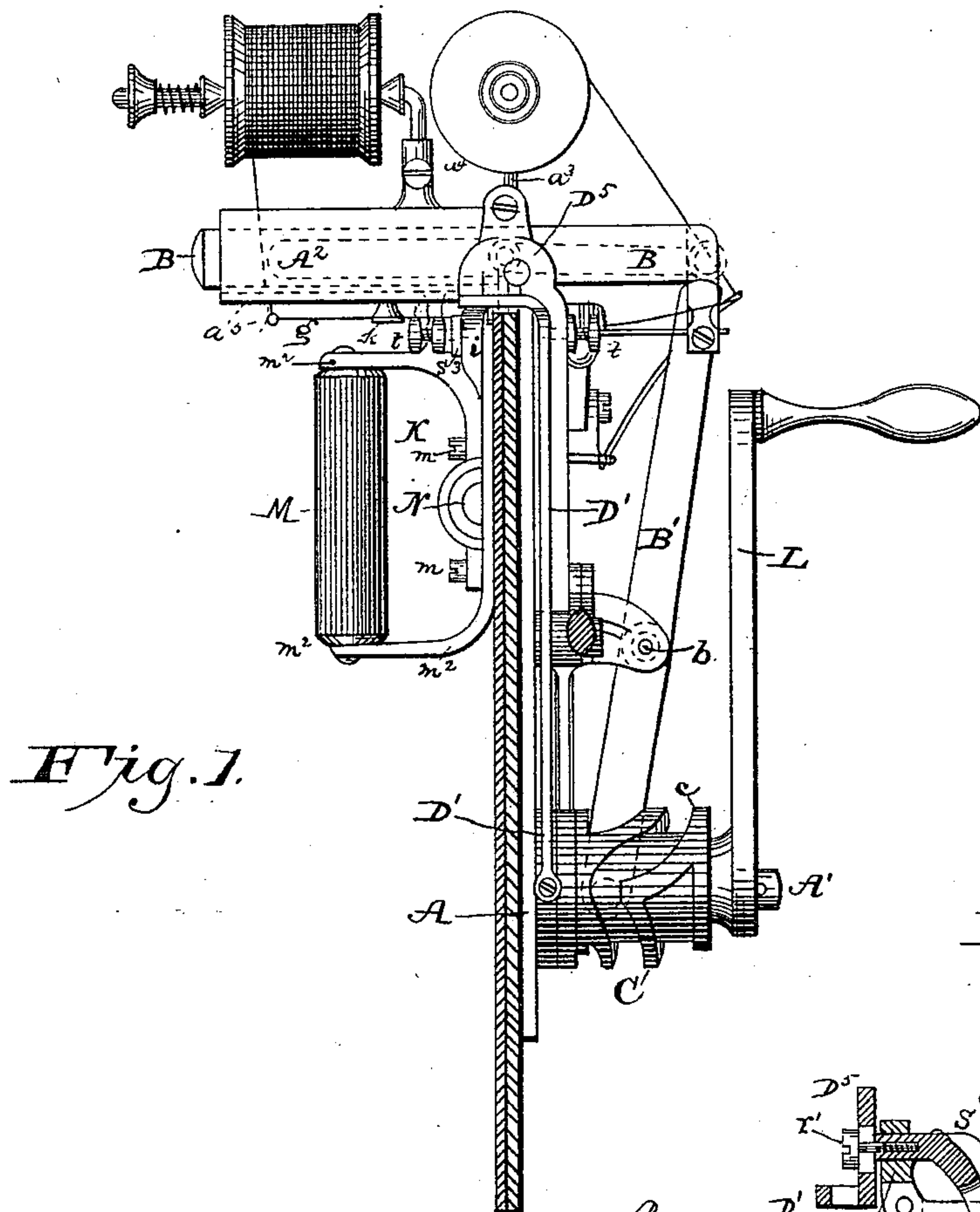


Fig. 1.

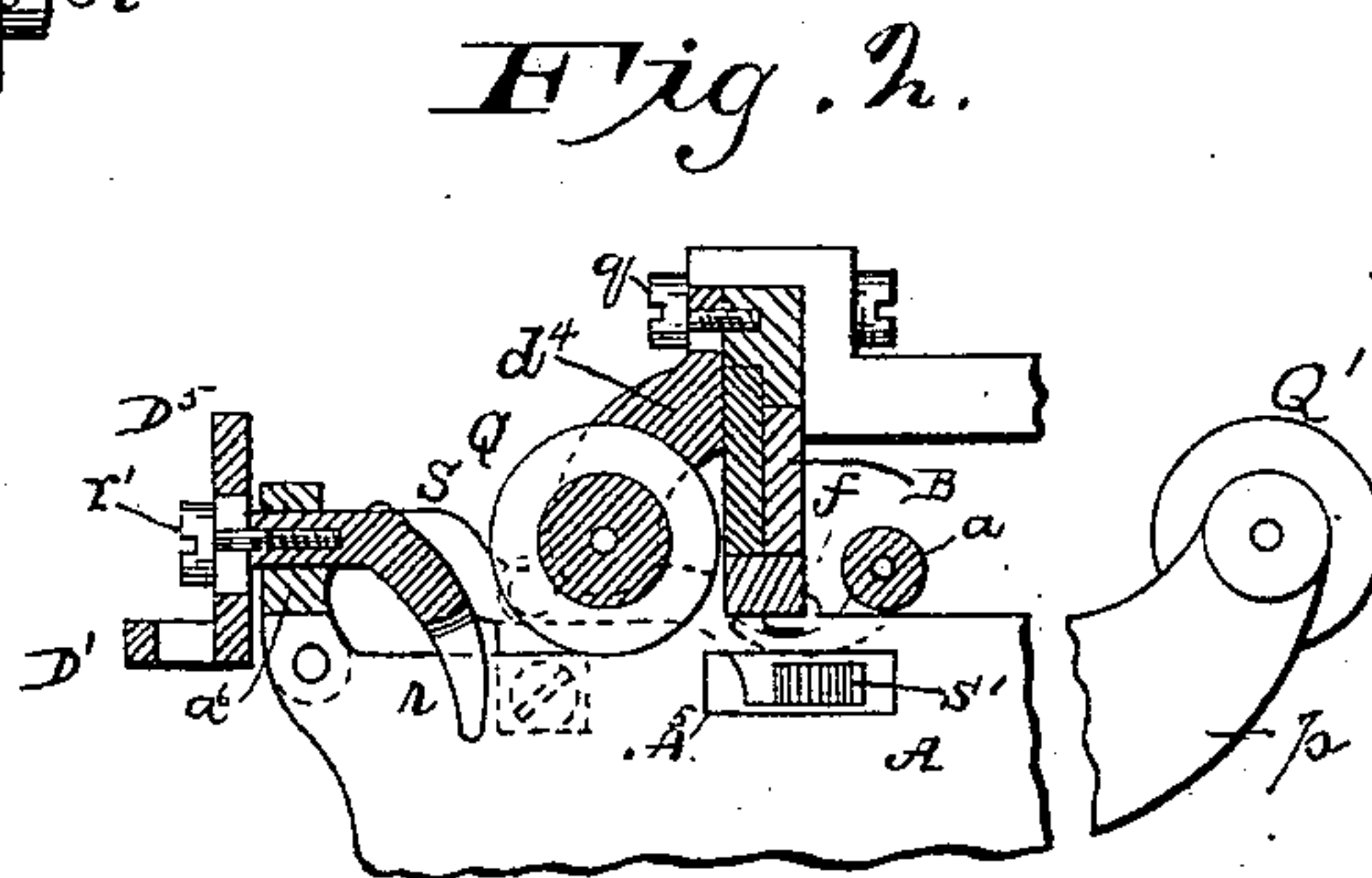


Fig. 2.

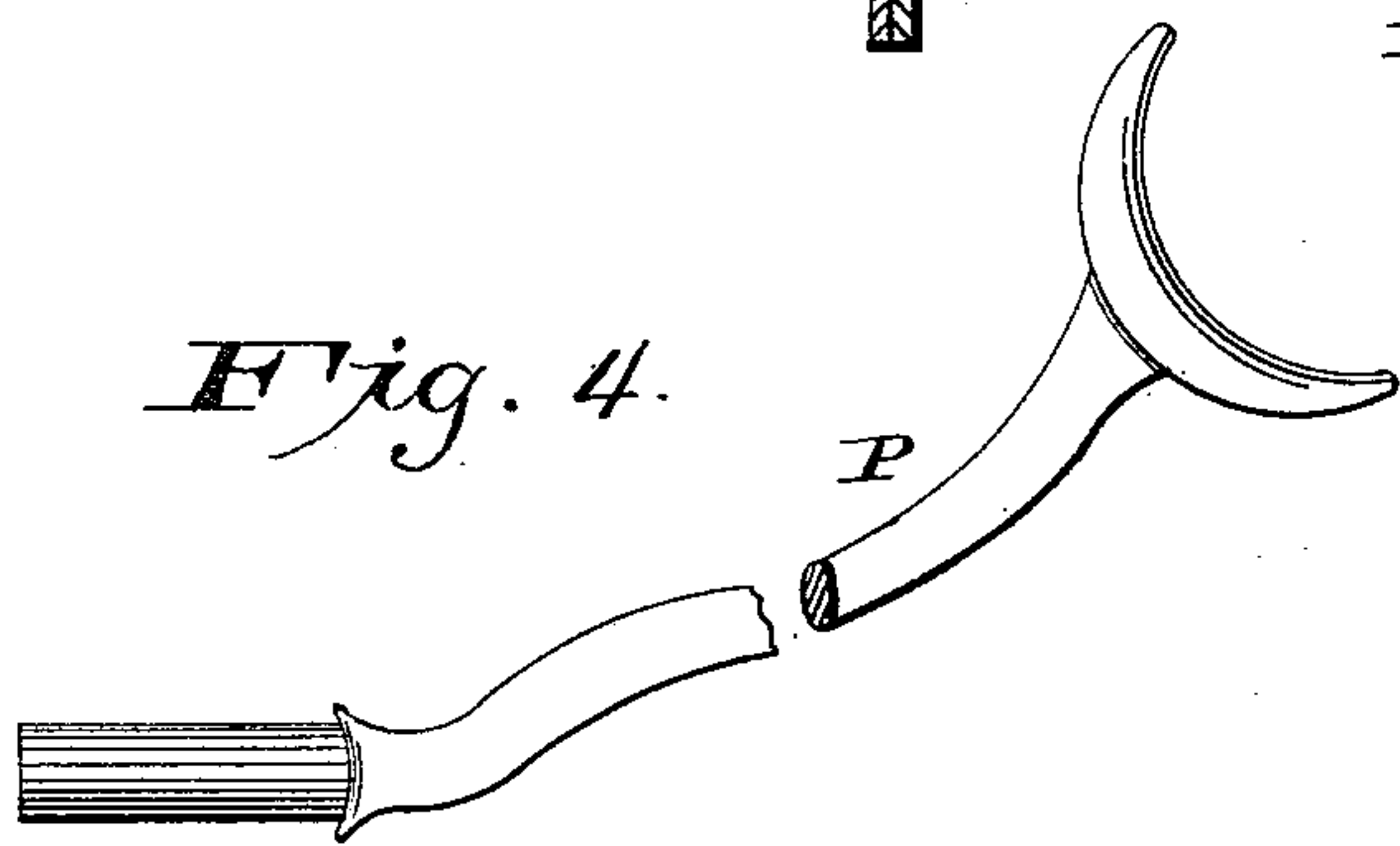


Fig. 4.

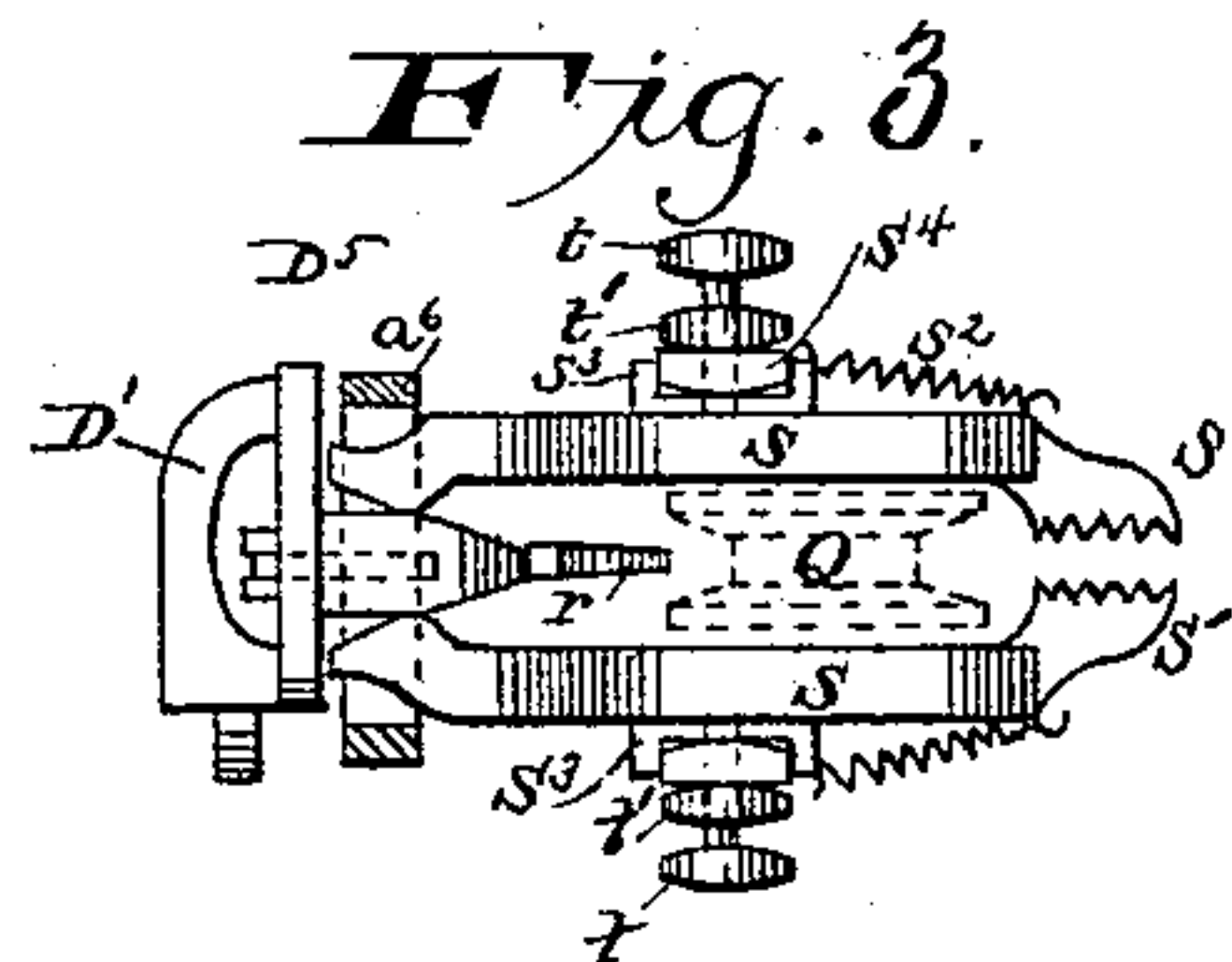


Fig. 3.

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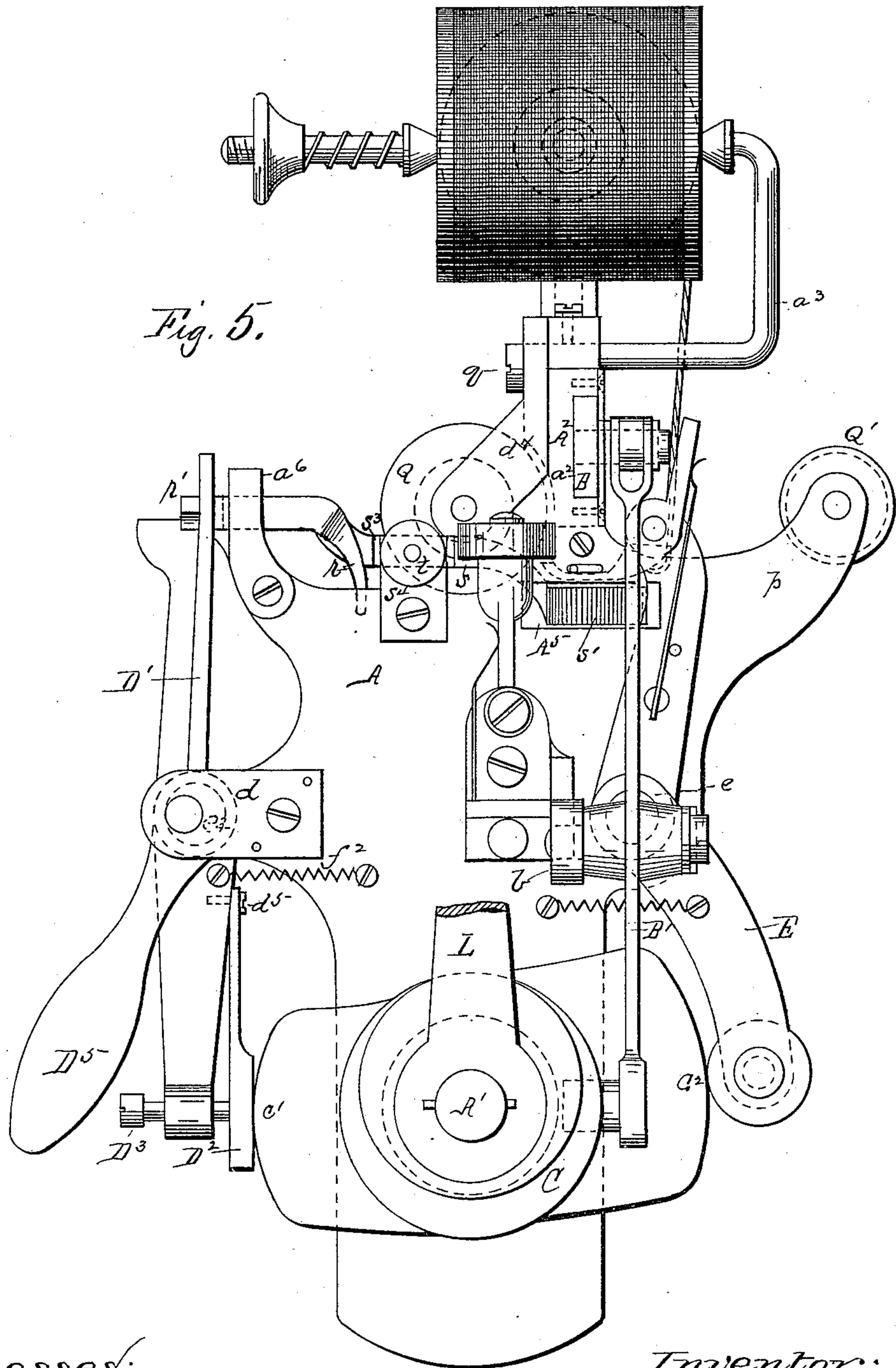
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Inventor:
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UNITED STATES PATENT OFFICE.

ALPHONSO B. SMITH, OF SAN FRANCISCO, CALIFORNIA.

CARPET-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 298,318, dated May 6, 1884.

Application filed July 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALPHONSO BUDD SMITH, a citizen of the United States, residing in the city and county of San Francisco, State of California, have made and invented certain new and useful Improvements in Carpet-Sewing Machines, of which the following is a specification.

The present invention originally formed a part of that set forth in application for patent made by me in the United States Patent Office on the 26th day of April, 1883, Serial No. 92,951, and constitutes the adaptation of the machine therein claimed to use upon the edge of the carpet without the interposition of a bench or supporting means, as is shown in said application. This present invention is therefore adapted for sewing the edges of thick, stiff material having sufficient body to support the machine directly on the edges of the two thicknesses to be united. I employ the same general construction of frame and supporting structure as, the same means for actuating the moving parts as, and in principle follow the invention, set out in my application No. 92,951. I however make certain changes in the feeding mechanism, the traveling gear, and the means for steadying the machine as it moves along the edges of the carpet, as will be hereinafter set out and claimed.

The accompanying drawings form a part of this specification, and illustrate what I consider the best means for embodying the invention and of adapting the bench-machine claimed in my other application for use upon the edges of the carpet directly.

Figure 1 is a rear elevation of the machine in position for work on the edges of the carpet. Fig. 2 is a central section of a portion of the machine. Fig. 3 is a plan view of the feeding mechanism. Fig. 4 is a view of the steadying-piece. Fig. 5 is a side elevation of the machine.

Similar letters of reference indicate corresponding parts in all the views where they occur.

A is a flat plate of sheet or thin cast metal, forming the principal carrying-plate for the mechanism which operates the needle, looper, and feed device. It carries a stud, A', on which is mounted a groove-cam, C, to work

the needle-actuating lever B', and a double-face cam, c' c², of which one part operates a feeding-lever, D', and the other part actuates the lever E of the looper or underneath carrier. Upon the front of this plate A is also a stud, b, whereon the needle-actuating lever B' is pivoted. At one side the plate A also has a bracket, d, for the feed-lever center, and at the other side a pivot, e, for the looper-lever.

Secured to the top plate, A, is a box, A², having a groove, a², to receive and guide the needle-bar B. The box A² is set in a horizontal position transversely to the faces of the plates A K. Upon this box are sockets a³ a⁴ for the spool-spindles.

When it is desired to make the machine adjustable to different thicknesses of fabric, I form in the bottom of the rear end of the box A²—i. e., the end back of the plate A—a dovetail slot or way, a⁵, to receive the dovetail end piece, i, at the top of the second plate, K, which plate lies parallel to the main plate A. This dovetail-slot a⁵ is shown clearly in the application of which this is a division, and to which reference has already been made. I have not deemed it necessary to further illustrate it here, as I lay no claim to it in this application. A thumb-screw, k, is let through the sliding block, to work from the under side against the bottom of the slot a⁵, for locking the sliding block in place at any point. By means of this connection the plate K may be set and held at any desired distance from the plate A, so as to allow for the varying thicknesses of material. In this application of the machine, however, for operation directly upon the edges of the material this adjusting means may be omitted and the plates K and A secured at a fixed distance from each other. The adjustment was provided in my application already referred to for the purpose of adapting the machine for interchangeable use upon a bench or directly upon the edges of the material. The plate K is about the same width as the principal plate A, but is considerably shorter. It gives attachment above, as already explained, through the medium of the end piece, i, to the main plate, or a part thereof, and also carries the handle M, secured upon it by means of screws m m and the socket N, which receives the end of the steadying-bar P. This

steadying-bar P is of a length and shape to extend backward and upward and have its crutch-piece P² fit in the arm-pit of the operator as his hands take hold of the handle M and crank L, by which the cams C c' c² are rotated and motion is given to the parts. The machine travels along on the edges of the carpet on the grooved rollers Q Q'. The roller Q is formed with a deep face-groove, the walls of which are tapering, thereby affording a groove which is narrower at the bottom than at the outer circumference of the flanges, and which will, when rolled along over the edges of the carpet, serve to draw them close together. The roller Q is carried in a bracket, d⁴, fixed to the front of the needle-arm box A² by a screw, q, taking through a slot. The roller Q is thereby adjustable and travels in advance of the needle, to compress the edges at that point. The smaller rear roller, Q', is carried in an ear or extension, p, at the top rear corner of the principal plate A.

The progressive movement of the carriage which the plates and other parts described compose, after each stitch, as the needle leaves the material, is effected by the action of the feed devices, which will now be explained. The feed-lever D' is operated by the face-cam c', and being pivoted at d, the forward throw of its lower end moves its upper end backward; but the engagement of the feed-bars, hereinafter explained, with the material has the effect to hold this upper end of the lever at rest and make it a point of leverage, and the whole machine is moved forward upon the material as the cam throws out the lower end of the lever D'. A spring, f², holds the lever to work against the cam; but by using a groove-cam in place of this face-cam the spring will not be required.

To regulate the length of stitch, a contact-plate, D², is fixed to the inner side of the lever D', so that its lower end can be set out away from the end of the lever a greater or less distance. One end of this tongue or plate D² is fixed at d⁵ to the lever, and the lower end rests against a set-screw, D³, working through the end of the feed-lever D' from the front; and the throw of the feed-lever is diminished or increased by setting the tongue D² toward or away from the cam. The fulcrum of the feed-lever D' is an eccentric, e², set in bearings in the bracket d on the edge of the plate A, and a handle, D⁵, is fixed to or forms a continuation of the eccentric to the front, by means of which the center of the lever can be thrown in or out.

The feeding action performed directly upon the carpet is effected by the parts to be described next. Two nipper-jaws or feed-bars, s, having corrugated gripping ends s', which take hold of the material being stitched from opposite sides, through openings A⁵, formed in the plates A and K, are suitably secured to the plates to be operated upon by the action of the feed-lever. The gripping ends s' consist of

dogs with notched or serrated inner faces, and are pivoted to the bars s and held out of contact with the material by the elastic tension of springs s². The bars s are sustained on brackets s⁴, one fixed to each plate A and K, with sufficient room between the outside faces of the plates and the inside of the brackets to take in the bars s. The bars s are provided with seats s³ on the outside thereof, to receive the brackets s⁴, and be held thereon from end-wise movement. The inside faces of the brackets are made round or convex, so that the bars s may rock thereon. Set-screws t, having rounded washers t', are let in through the brackets s⁴ to bear upon the seats s³ on the bars s, by means of which the tightness between the bracket and the bars may be varied. These bars s fit in the space on each side of the flanged roller Q, and just outside of the plates A and K. Their front ends are brought closer together and are inserted in the loop a⁶ on top of the plate A. Through this loop a⁶, and in position to strike between the ends of the two bars s, also extends the beak r, with wedge-shaped sides, fixed to the top of the feed-lever D' by a screw, r', working through a slot in the said lever. The beak r at the smaller end of the wedge is curved downwardly, to enter the slit between the two thicknesses of material which are being stitched, and turns in the threads, ragged edges, or nap in advance of the needle and feed. As the upper end of the feed-lever D' is thrown backward, the beak is wedged in between the forward ends of the bars s, and the dogs s' made to bite upon the material through the openings A⁵, the brackets s⁴ acting as fulcrum therefor. At the reverse motion of the feed-lever the wedge withdraws and the small springs s² throw out the feed-points.

Combined with these parts are the required thread-controlling mechanism and the needle and looper operating mechanism for forming stitches. The particular construction of these, however, forms no part of my present invention, as this application and the mode of obtaining the required movements for the other mechanism will be comprehended by any mechanic.

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

1. The combination, with the carrying-frame adapted to rest outside of and travel over the edges of material being sewed, of the steadying-bar having a crutch-piece on one end and the other end adapted to take into a socket on the frame, substantially as herein described.

2. In a carpet-sewing machine, the combination, with the traveling-frame adapted to carry all the stitch-forming mechanism and to rest astride of and move over the edges of the material to be stitched, of the nipper-jaws s s' adapted to engage with and grasp between

them the material to be stitched, the wedge-piece r , and mechanism, substantially as described, whereby the outer ends of said jaws are spread apart and their inner ends pressed
5 together to grasp the material, and thereby form a resistance-point by which progression of the frame is produced, step by step, at each grip of said jaws on the material, substantially as herein set forth.
10 3. The combination, with the traveling frame having horizontally-reciprocating needle-carrier and vibrating looper, of the feed-lever with the wedge-piece r , the fixed loop a^6 on the frame, the brackets s^4 , nipper-jaws

supported by said brackets, and the openings 15 A^5 in the plates A and K, below the line of action of the needle, substantially as set forth.

4. The combination, with the traveling frame having horizontally-reciprocating needle carrier and looper, of the brackets $s^4 s^4$, 20 feed-bars $s s$, dogs $s' s'$, pivoted on said bars, binding-screws t , wedge-piece r , actuating-lever D' , and cam for operating said lever, substantially as herein set forth.

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