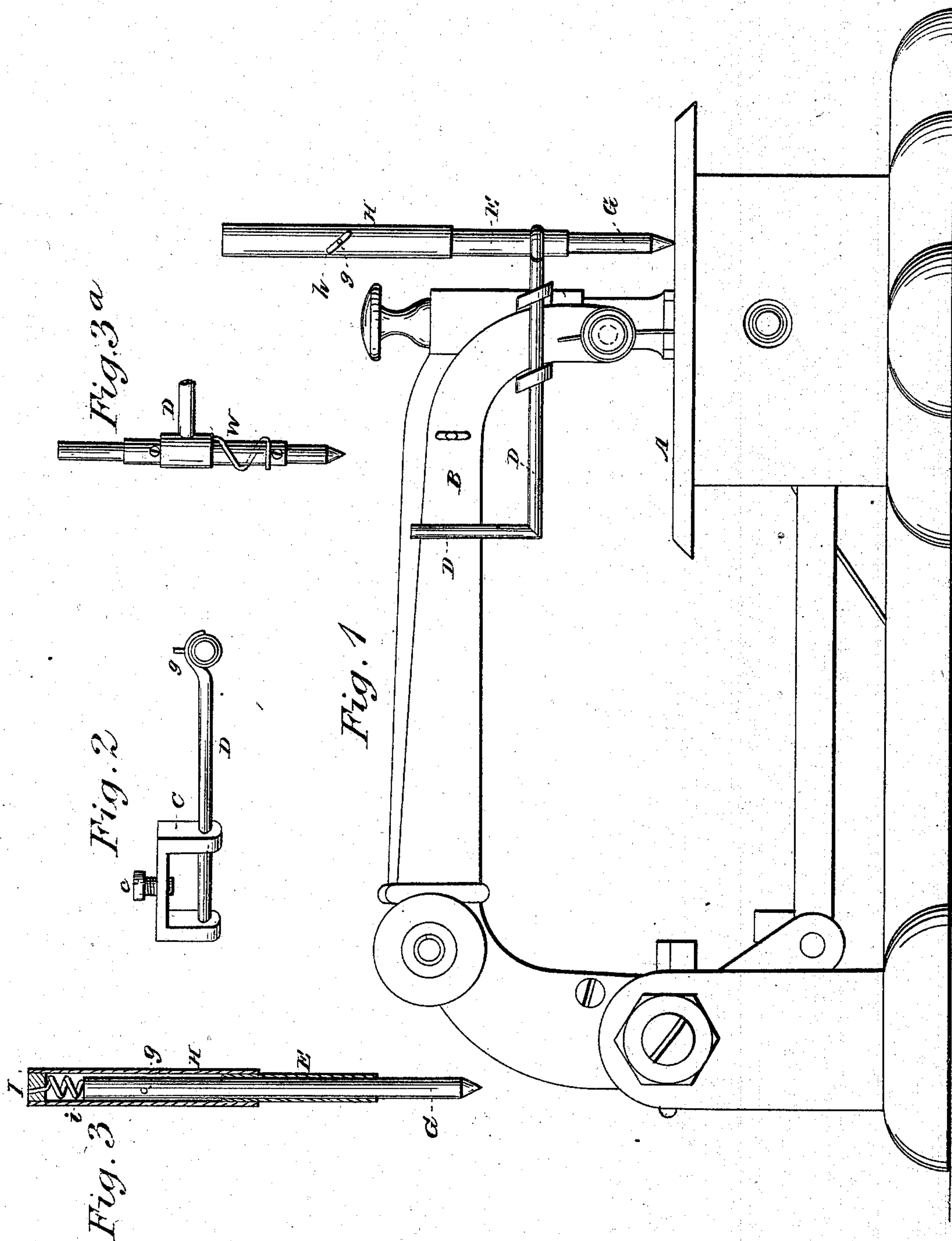


C. O. YALE.
Sewing-Machine Marker.

No. 60,111.

Patented Nov. 27, 1866.



Witnesses:

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IMPROVEMENT IN MARKING DEVICE FOR SEWING-MACHINE.

CHARLES O. YALE, OF NEW YORK, N. Y.

Letters Patent No. 60,111, dated November 27, 1866.

SPECIFICATION.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES O. YALE, of the city and county of New York, in the State of New York, have invented certain new and useful Improvements in Markers for Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof.

My invention is intended to carry a common lead pencil or other suitable marking device, and to imprint dots upon the muslin or other fabric which is being sewed, forming a line of dots parallel to the line of stitches which is being formed when the marks are made. The distance between the line of marks and the stitches may be varied within considerable limits. Efforts have been previously made to employ marking devices having the general characteristics above described, but they have been but partially successful, owing to difficulties in the production of a distinct mark except by a motion of the pencil, or of the marking device, so as to produce a friction between the black lead, or equivalent marking substance, and the fabric which is to be marked. Means have been devised to obtain a friction by moving the point lineally on the fabric, but this tends to disturb the accuracy of the feed; it is liable to move the muslin or other fabric which is being sewed. My invention overcomes the difficulty by giving a rotatory motion to the pencil or marking device, at the period while it is pressed upon the fabric. It also provides means for adjusting the force or pressure with which the marker is held in contact with the fabric during that period.

I will first describe what I consider the best means for carrying out my invention, and will afterwards designate specifically the points which I claim as new. The accompanying drawings form a part of this specification.

Figure 1 is a view of my invention attached to a sewing-machine, and in position to be operated.

Figure 2 is a plan view of my marker; and

Figure 3 is a longitudinal section of the tubes H E, and their contents.

Figure 3^a represents one of the modifications of which my invention is susceptible.

Similar letters of reference indicate like parts in all the figures. The drawings indicate the novel points, with so much of the other parts of a sewing-machine as is necessary to indicate their relation thereto. The material of all the novel parts may be brass, or all may be iron or steel.

A is the plate, and B the needle-bar of a sewing-machine. C is a clamping piece which is applied in the manner represented, and tightened by means of the screw *c*. D is an arm of steel bent upward at one extremity, as indicated by D', and which is held to the needle-bar by the clamp C, as represented, so that it may be shifted outward or inward, or removed altogether, at pleasure. On the outer extremity of the arm D is firmly secured a hollow vertical tube, E, which encloses and guides a lead pencil, G, the lower end of which is properly pointed to produce the marks. It will be observed that the tube E, and all the connected parts, are carried upward and downward with the motion of the needle-bar.

The connection of the pencil and the tube E is peculiar. The pencil is loosely enclosed in the tube, and is supported vertically by an additional tube, arranged as represented, and which fits tightly, and so as to be capable of being moved upon the exterior of the tube E. This larger tube, H, has a plug, I, fitted tightly and adjustably in its upper extremity, in which is secured a coiled spring, *i*, which presses down upon the upper end of the pencil, G, so as to exert a proper pressure on the pencil in the act of marking. There is an inclined or spiral slot in the side of the tube H, as represented by *h*. This carries a pin, *g*, which is driven into the pencil G, as represented.

It follows from this construction and arrangement, that the parts may be adjusted by moving the tube H upward and downward on the tube E, and by moving the plug I upward and downward in the tube H, so as to raise and lower the pencil, and to graduate the force of the spring thereon, as may be required under the various conditions occurring in practice. It also follows that when the parts are properly adjusted, the pin *g* will stand in the lower end of the spiral slot *h* when the instrument is up, but that when the pencil is pressed down upon the fabric by the descent of the needle-bar, B, the point of the pencil will rest upon the fabric, while the needle-bar and its connections will descend further, and by the traversing of the spiral slot, *h*, downward, will act upon the pin, *g*, so as to twist the pencil to a greater or less extent, as may be required to make a legible dot. On the rising of the needle-bar and its connections these motions are reversed, and the pencil, as it rises, is turned back again to its original position.

The spiral slot *h* may be of any length required; but I do not deem it necessary in ordinary practice to

give more than one-fourth of a complete revolution to the pencil G. When a light mark is sufficient I not only move the plug I upward in the tube H, so as to moderate the tension of the spring *i*, but also elevate the tube H on the tube E so as to hold the pencil at such an elevation that the point of the pencil will not touch the fabric until the needle-bar has descended nearly to its lowest position. I can employ a screw or other positive connection between the tubes E and H so as to allow their being adjusted with the same delicacy as at present, without the chance of their sliding one upon the other as above described, but I prefer the mere frictional or sliding contact, as represented, for the reasons, first, that it may be cheaply constructed, and, second, that it will in many cases save the hand of the operator from being severely injured, by allowing the latter and its connections to slip upward without inflicting any serious injury upon the finger or other portion upon which it may accidentally strike in its descent. Fig. 3^a represents one of the substitutes which may be employed to give the proper rotary motion while the pencil presses on the fabric. The pencil is held in the tube by the aid of set-screws, and the tube slides up and down in the socket formed on the end of the bar D. The spring is wound around, as indicated by W, and performs the function of twisting the tube around alternately in one direction and the other in addition to that of pressing the pencil upon the fabric and allowing it to yield. Many other modifications of the details may be employed if preferred in any cases, but I consider the arrangement shown in figs. 1, 2, and 3, the best and cheapest for general use. In effecting the twisting motion by the means indicated in fig. 3^a it is well to enclose the spring W in an outside tube, not represented, so as to prevent it from enlarging as it is compressed. I prefer also to use springs, which may be made by cutting and bending inward the material of the tube, to hold the pencil instead of the set-screws shown.

Having now fully described my invention, what I claim as new in markers for sewing-machines, and desire to secure by Letters Patent, is as follows:

1. I claim giving a rotary motion to the pencil while resting on the fabric, substantially as and for the purpose herein set forth.
2. I claim, in connection with the above, the supporting and guiding parts E H, and the pressure-spring *i*, arranged relatively to each other, and to the marking device G, for joint operation, substantially in the manner and for the purpose herein set forth.

CHARLES C. YALE.

Witnesses:

JAMES J. CLARK,
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