C. P. St. JOHN.
Sewing-Machine.

2 Sheets—Sheet 1.

No. 205,922. Patented July 9, 1878.

Fig. 1.

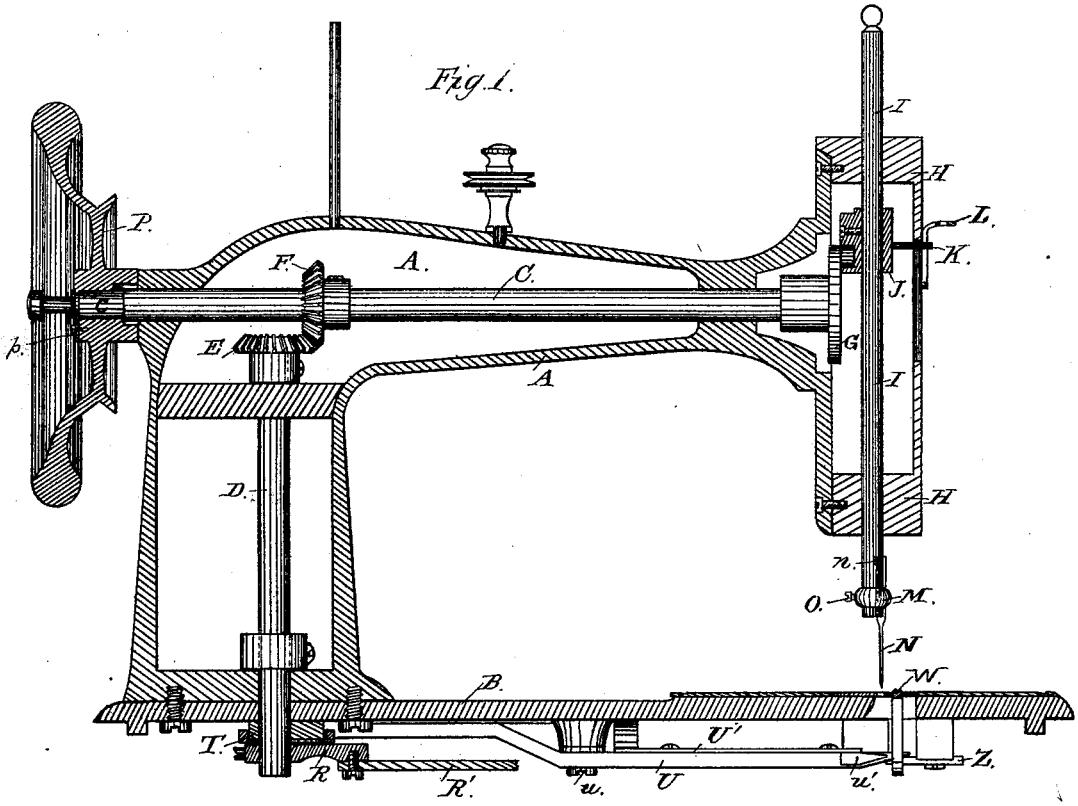
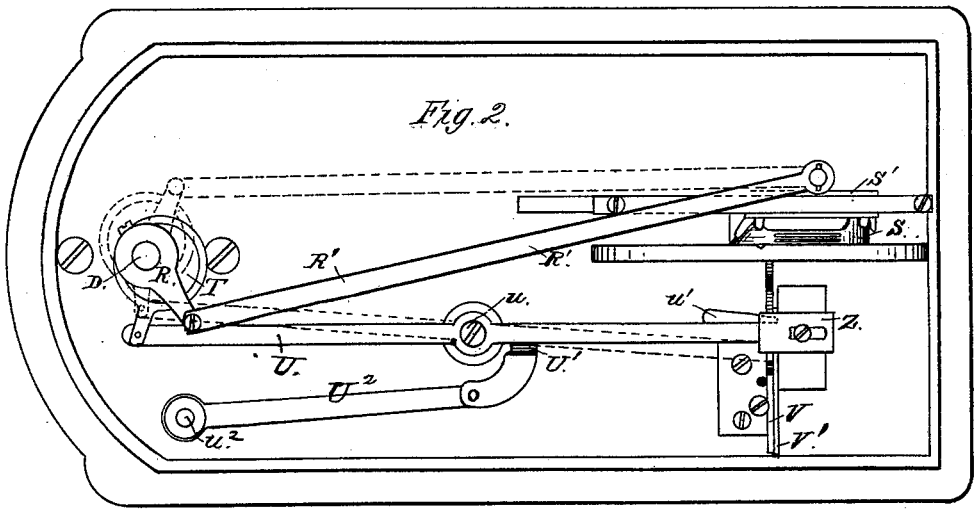


Fig. 2.



Attest:
Geo. T. Smallwood Jr.
Walter Allen

Inventor:
Charles P. St. John
By Knight Bros. Attys.

C. P. St. JOHN.
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Fig. 6.

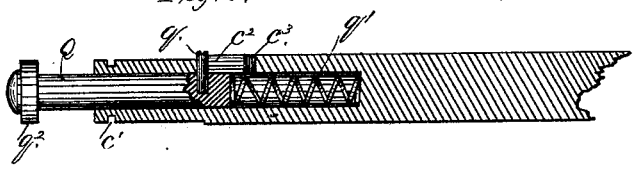


Fig. 5.

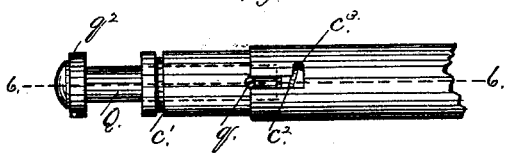


Fig. 7.

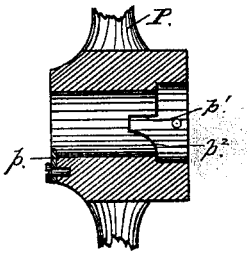


Fig. 3.

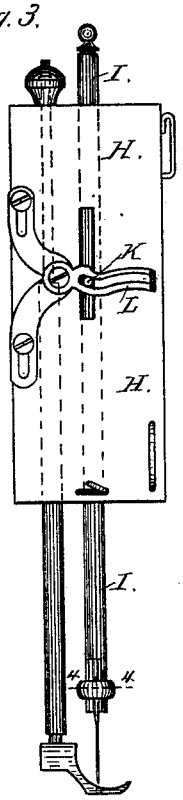


Fig. 4

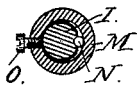


Fig. 9.

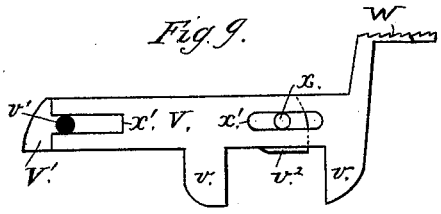
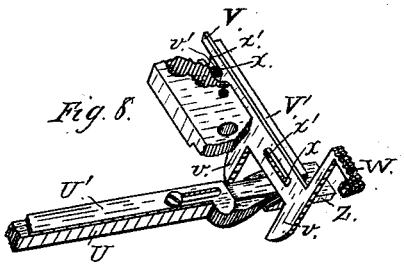


Fig. 8.



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Inventor:
Charles P. St. John
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Attys.

UNITED STATES PATENT OFFICE.

CHARLES P. ST. JOHN, OF SPRINGFIELD, OHIO.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **205,922**, dated July 9, 1878; application filed April 24, 1878.

To all whom it may concern:

Be it known that I, CHARLES P. ST. JOHN, of Springfield, in the county of Clarke and State of Ohio, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification:

My invention consists, in part, in connecting the driving-wheel with its shaft by means of a spring-pin on the shaft engaging with a notch in the wheel-hub, or vice versa, said notch having one oblique face and one square face, so that the wheel may turn freely without the shaft in one direction, but when turned in the other direction will rotate the shaft, the said connecting-pin being connected to a sliding rod, which may be pressed in by the finger and locked out of gear with the wheel, permitting the latter to turn freely without the shaft, when desired, for winding the bobbin.

The invention further relates to a feed-movement consisting of an operating-lever actuated by an eccentric, and carrying a wedge-shaped tappet adjustable endwise on said lever, in order to regulate the length of stitches, as hereinafter described.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of my improved machine. Fig. 2 is a bottom view thereof. Fig. 3 is a front view of the head, with the needle-bar and presser. Fig. 4 is a horizontal section of the needle-clamp on the line 4 4, Fig. 3. Fig. 5 is a plan view of a portion of the driving-shaft, with clutch applied. Fig. 6 is a longitudinal section of the same on the line 6 6, Fig. 5. Fig. 7 is a longitudinal section of the hub of the driving-wheel. Fig. 8 is a perspective view of the feed mechanism. Fig. 9 is a side elevation of the feed-plates.

The arm A, bed or table B, and other parts not herein specifically described may be of usual construction.

I prefer to employ a hollow arm and standard, as shown, to contain and conceal the main driving-shaft C and the vertical shaft D, which is geared to the shaft C by bevel pinions E F. The forward end of the driving-shaft carries the customary crank-wheel G, working within the hollow head H of the machine, and imparting reciprocating vertical movement to the needle-bar I through the medium of a slotted cross-head, J, attached thereto. A pin, K, projecting horizontally from the cross-head J through the face of the head H, operates the take-up L.

The shank of the needle N has a boss, *n*, and fits within a groove or cavity prepared for it in the face of the needle-bar, and is secured by the clamp-ring M and screw O.

The rear end of the shaft C is formed with a journal, *c*, for the reception of the hand-wheel or band-wheel P, which is secured thereon by a key-plate, *p*, on the wheel engaging in a circumferential groove or gland, c^1, near the end of the shaft. This device will be seen to permit the rotation of the wheel on the shaft, while preventing its slipping off.

To communicate rotary motion from the wheel to the shaft when the wheel is turned forward, I employ a ratchet-movement, consisting of a pin, *q*, projecting radially from a longitudinal rod, Q, which is fitted to slide within an axial cavity in the end of the shaft C, and is pressed outward by spring, q^1. On the extremity of the rod Q is a knob, q^2, for the purpose of manipulating it. The pin *q* works in a longitudinal slot, c^2, in the shaft, and, by slightly turning the rod when it is pressed back to the farthest extent, is engaged in a transverse notch, c^3, at the extremity of said slot, so as to prevent the pin engaging with the wheel-hub. The hand-wheel P is then free to turn on the shaft, as may be necessary for winding bobbins, or for running a needle-sharpener, or for any other purpose.

When the pin *q* is released from the notch c^3, the spring q^1 presses the rod outward until the pin *q* reaches the other extremity of the slot c^2, and engages with a notch, p^1 p^2, in the hub of the wheel P. This notch will be seen to have one straight longitudinal face, p^1, and one oblique face, p^2, so that when the wheel is turned forward the face p^1, engaging with the pin *q*, imparts motion to the shaft C; but when it is turned backward the oblique face p^2 slips on the pin, which retires before it, allowing the wheel to turn freely on the shaft, and slipping into the notch p^1 p^2 at each rotation, after the manner of a ratchet-movement.

On the lower end of the vertical shaft D are keyed a crank, R, and an eccentric, T. The

crank R imparts a longitudinal reciprocating motion to the shuttle S by means of the connecting-rod R′ and shuttle-carrier S′.

The eccentric T imparts a transverse reciprocating motion to the feed-lever U on its fulcrum *u*. To regulate the length of stitch, a slide, U^1, is applied to the top of the lever U, with a wedge-shaped head, u^1, adapted to move the feed-plates V V′ to a greater or less extent, as the said wedge-shaped head is moved forward or backward. Its adjustment is effected by means of a connecting-bar, U^2, and a screw-stud, u^2, located conveniently above the plate or table B, and serving to fix the slide in any position to which it may be adjusted.

The feed-lever U and the wedge-shaped head connected therewith operate between the downwardly-projecting rigid jaws *r r* of a plate, V, carrying the feed-head W, the surface of which is roughened in customary manner. The alternate elevation and depression of the head W are effected by a second plate, V′, pivoted at v^1 to a stationary point, and formed with an oblique shoulder, r^2, with which the feed-lever U comes in contact, so as to raise the free end of the plate V′.

The two plates V V′ are connected by pins *x x* working in slots *x′ x′*, so as to communicate the vertical motion of the plate V′ to the plate V, and thus throw up the feed-head W, while permitting the independent horizontal motion of the plate V, by which the feed-motion is imparted. The elevation of the feed is regulated by the endwise adjustment of the plate Z, on the beveled end of which the similarly-beveled end of the feed-lever U rests.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

1. The lock-bolt Q, provided with a pin or lug, *q*, and pressed out by a spring, q^1, in combination with the wheel P, recessed as shown, and with the shaft C, formed with longitudinal and lateral slots *c* c^3, to cause the bolt to engage with the wheel or admit of retaining it in retracted position, when desired.

2. The combination of the feed-lever U and the slide U^1, provided with a wedge-shaped head, u^1, adjustable on said feed-lever to regulate the length of stitch by means of a connecting-bar, U^2, and screw-stud u^2, as described.

C. P. ST. JOHN.

Witnesses:
IRA W. WALLACE,
P. B. MARTIN.