2 Sheets--Sheet 1.

A. TITTMAN.

Wax-Thread Sewing-Machines.

No. 136,792 Patented March 11, 1873.

Fig. 1.

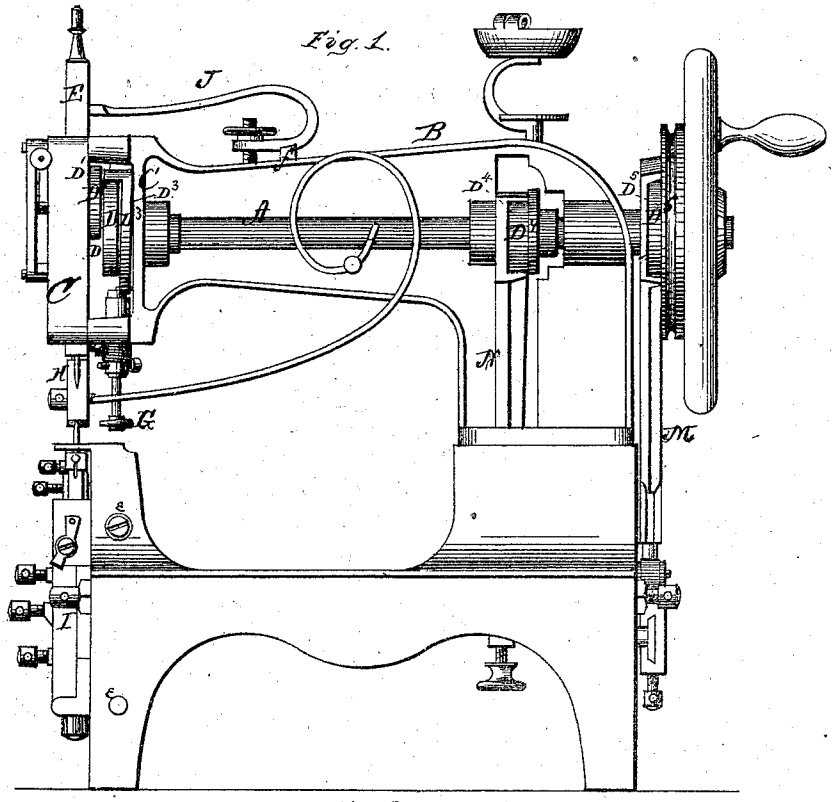
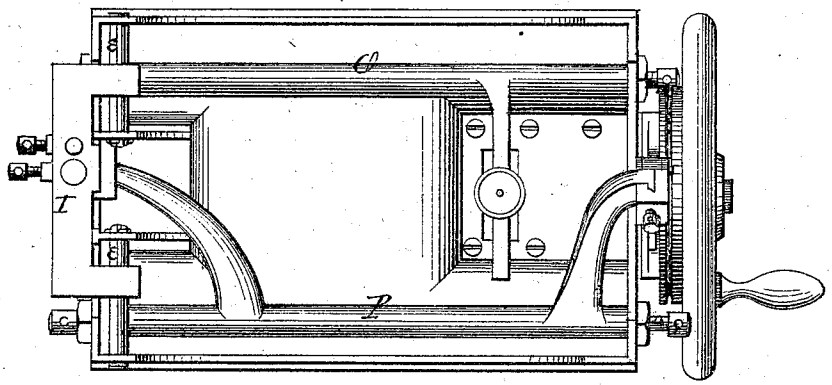


Fig. 2.



Witnesses
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2 Sheets--Sheet 2.

A. TITTMAN.

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Fig. 3.

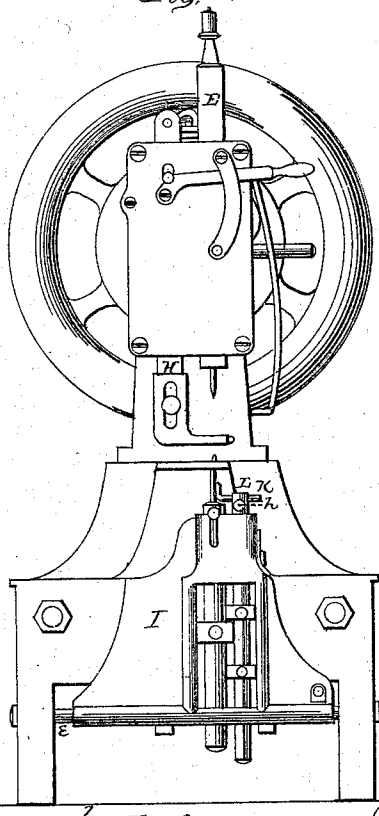


Fig. 4.

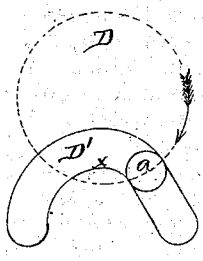


Fig. 5.

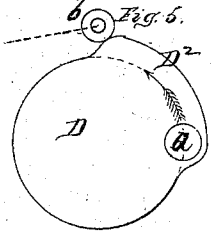


Fig. 6.

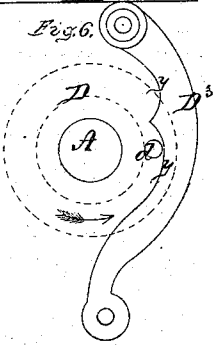
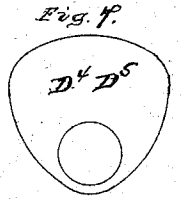


Fig. 7.



Witnesses
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UNITED STATES PATENT OFFICE.

ALEXANDER TITTMAN, OF EVANSVILLE, INDIANA.

IMPROVEMENT IN WAX-THREAD SEWING-MACHINES.

Specification forming part of Letters Patent No. **136,792**, dated March 11, 1873.

To all whom it may concern:

Be it known that I, ALEXANDER TITTMAN, of Evansville, in the county of Vanderburg and State of Indiana, have invented certain new and useful Improvements in Wax-End Sewing-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon which form a part of this specification.

My invention is intended as an improvement upon what is known as the Butterfield machine for sewing leather, patented July 4, 1854, and April 8, 1862; and it consists in the construction and arrangement of parts for operating the awl, the presser-foot, the thread-guide, and the needle-carriage, as hereinafter described.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side elevation; Fig. 2, a bottom view; and Fig. 3, a front view of the machine with my improvements added thereto; Figs. 4, 5, 6, and 7 represent the various cams.

The machine upon which my invention is an improvement being so well known, I do not deem it necessary to describe any more of the same than what is required for a proper understanding of this case.

For further description of the machine and its operation I refer to the two patents above mentioned.

A represents the main driving-shaft passing horizontally through the bent standard B, and the front end extending into the head C, attached to or formed upon the front end of the standard. Upon the front end of the shaft A, within the head C, is attached a plate, D, having upon its front side a crank or wrist-pin, *a*. This pin works in a cam-block, D^1, attached to the awl-carrying bar E for the purpose of operating the same. The curve of this cam, as shown in Fig. 4, is nearly a half circle, struck with a radius equal to the distance between the center of the crank-pin *a* and the center of the shaft A, the side where the crank-pin runs when pushing the awl through the leather being so nearly on a straight line as to avoid a sharp corner at *x*. The result of the operation of this cam in the movement of the awl during one revolution is, the first quarter down, the second quarter up, and the remaining one-half stationary. On the circumference of the crank-plate D is formed the cam D^2, as shown in Fig. 5, which lifts the presser-foot by coming in contact with an arm connected with the presser-foot bar H, said arm having a roller, *b*, bearing against the cam to avoid undue friction. The cam D^2 leaves the foot down during three-fourths of a revolution and lifts it exactly at the time when the cam D^4 commences its upward motion to operate the feeding mechanism, as hereinafter described.

On the back of the plate D is another crank-pin, *d*, which works against an arm, D^3, pivoted to the head C and operating the thread-guide G. This arm is formed on its inner edge with two curves, *y y*, at different distances from the center of the shaft A, as shown in Fig. 6, and is connected at its lower end with the shaft of the thread-guide G. The operation of the arm D^3 is to swing the thread-guide around just when the needle or hook is going down and as the awl is descending. The cams D^4 and D^5 are both of the form shown in Fig. 7. The cam D^4 moves the needle-carriage by means of a bar, N, placed over said cam and extending down below the sewing-machine table, where its lower end is, by a rocking lever, O, or other suitable means, connected with the carriage so that the motion of the same will be horizontally back and forth on its guide-rods. The cam D^5 moves the needle and cast-off up and down by means of a bar, M, placed over said cam, and which also extends below the sewing-machine table and its lower end by a suitable rocking-lever, P, is connected with the needle-bar, the needle-bar operating the cast-off at the proper time. Both of these cams operate their respective bars the first quarter up, the second stationary, third down, and fourth stationary. I represents the needle-carriage guided by means of three horizontal pins *e e*, upon which it moves back and forth, thus reducing the friction caused by its movement to the smallest possible amount. J represents the presser-spring fastened by a set-nut on a bolt upon the standard B and its front end operating on the presser-foot bar H. The rear curved end of

the spring J rests upon a saddle, *f*, which is movable back and forth from the tightening-screw, whereby the operator can quickly and precisely suit the pressure to the nature of the goods being sewed. K represents the cast-off which consists simply of a straight rod with its end turned up and shaped to fit along the side of the needle. This is passed through the end of the bar L horizontally, said bar being sawed through or split for a suitable distance, thereby forming an efficient clamp with the screw *h*. This device is easily adjusted by merely turning the cast-off right-side up close to the needle and pressing it against the same and then tightening the clamp-screw *h*.

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

The driving shaft having the cams D^4 and D^5, and disk D with cam D^2 and pins *a d*, when combined with and operating the awl-carrier through the cam-block D^1, the thread-guide through the pivoted curved arm D^3, and the needle, and cast-off, and carriage, through the links N M and connecting mechanism, all substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ALEXANDER TITTMAN.

Witnesses:
F. S. ZUMSTEIN,
C. WUNDERLICH,
City Marshal.