

WHEELER & CARPENTER.

Sewing Machine.

No. 21,100.

Patented Aug. 3, 1858.

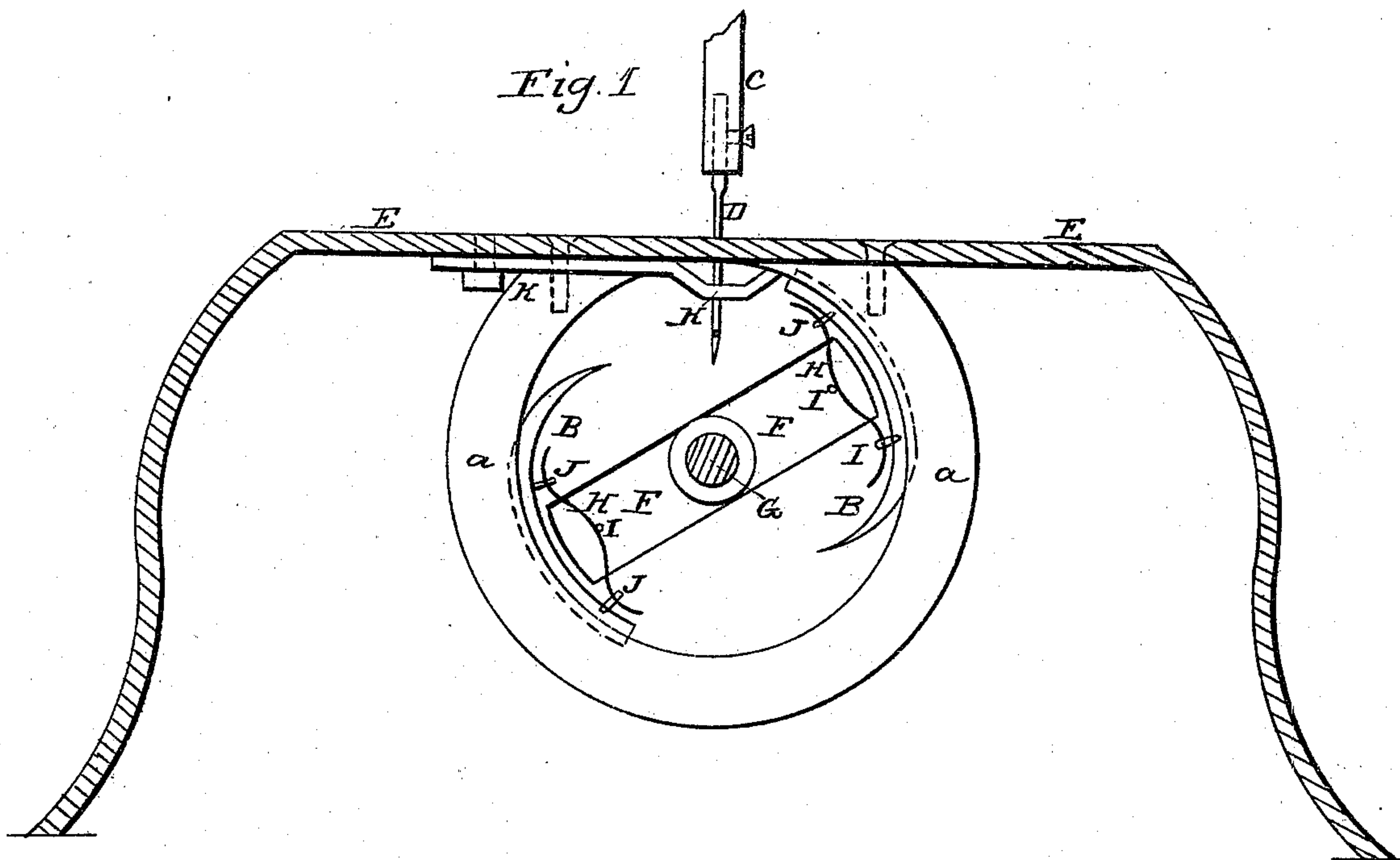


Fig. 2



Fig. 4

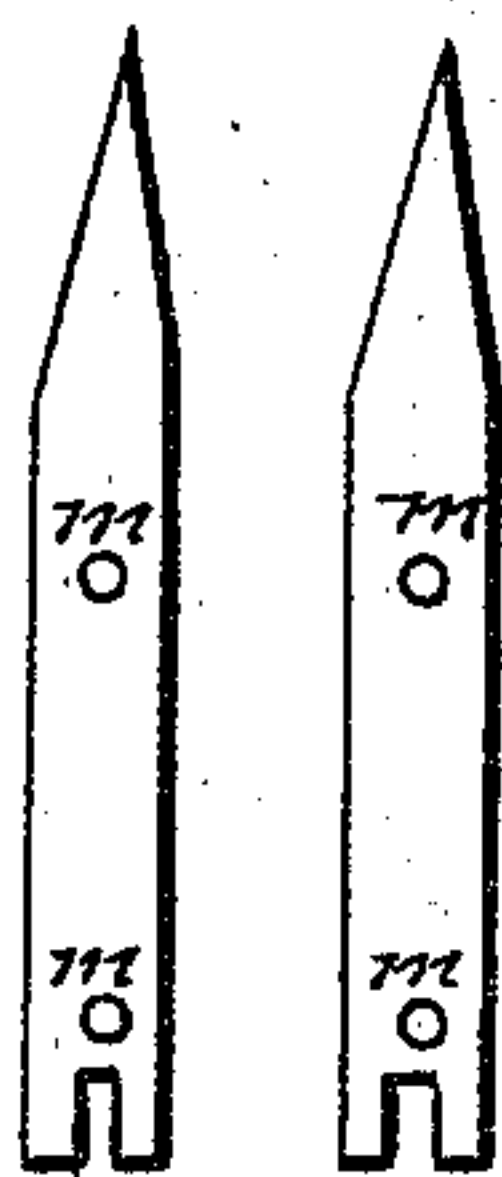


Fig. 5

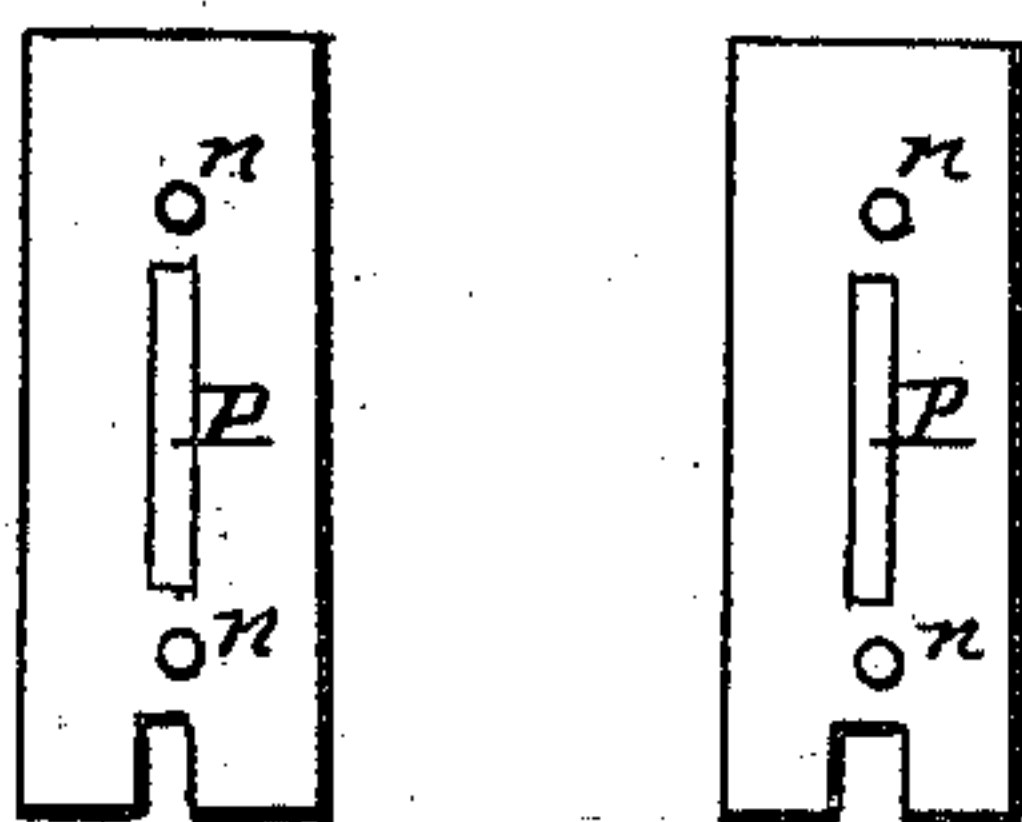


Fig. 6

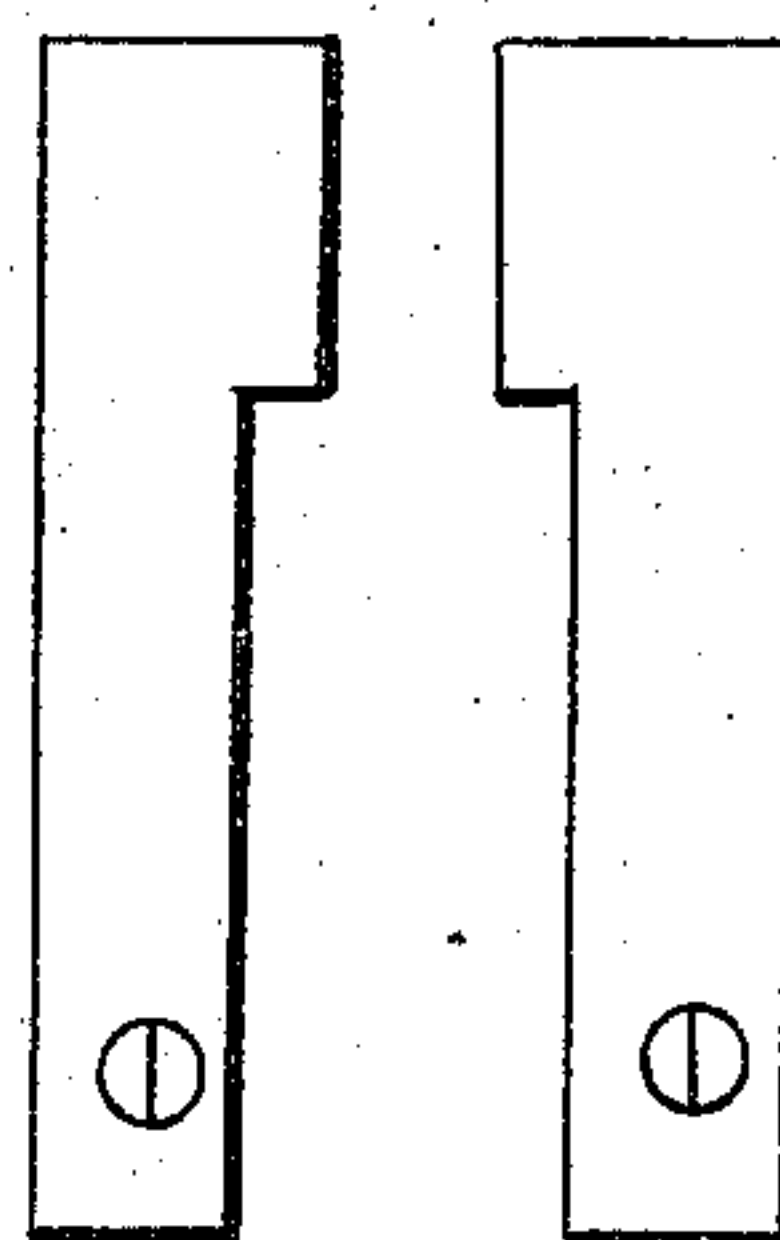
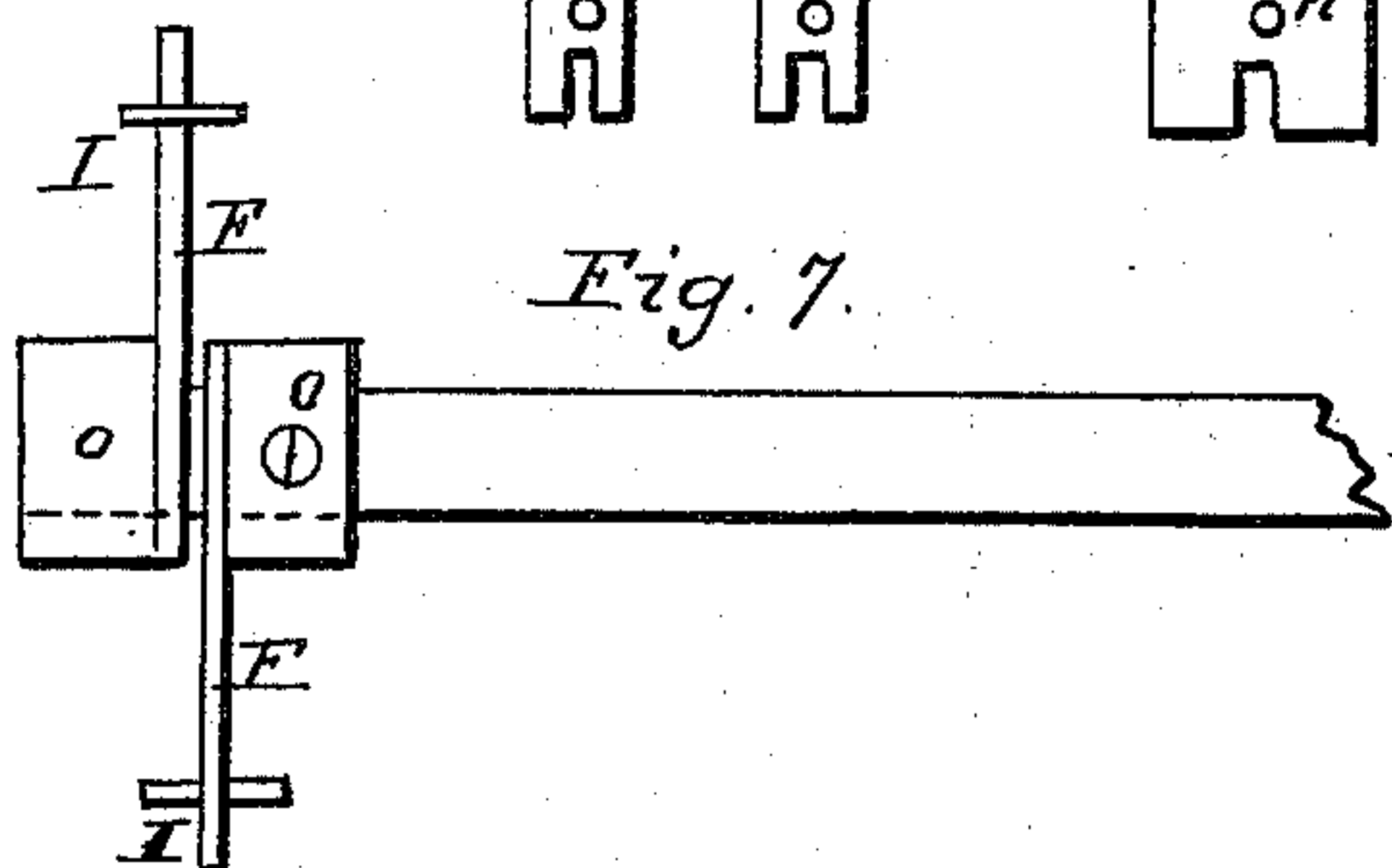


Fig. 3



Fig. 7



UNITED STATES PATENT OFFICE.

DARIUS WHEELER AND LUMAN CARPENTER, OF OSWEGO, NEW YORK.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 21,100, dated August 3, 1858.

To all whom it may concern:

Be it known that we, DARIUS WHEELER and LUMAN CARPENTER, of Oswego, State of New York, have invented new and useful Improvements in Sewing-Machines; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of our improvements consists in a new and useful combination of a peculiarly-formed looper with other parts of a sewing-machine, by means whereof the looper passes entirely through the loop in such a manner that the loop, after its discharge from the looper, cannot be taken again by the looper.

We will proceed to describe our improvements, and only so much of the machine as may be necessary to explain fully our improvements, which may be applied by any mechanic skilled in the arts to many sewing-machines in use.

E E is the main frame of the machine, to which the operating part is attached, and upon which the cloth to be sewed is placed. This is made of cast-iron or other metal, and may be attached to a table, and the machine may be operated by hand by means of a wheel or pulley; or may be connected with a treadle attached to the table, and operated by the foot.

The letters *a a* in the drawings represent a circular frame, of brass, iron, or other metal, the rim whereof is about one-half inch square, which is fastened perpendicularly to the under side of the main frame of the machine at a portion of the arc of said circular frame which is left flat for the space of about two inches, so as to fit to the said main frame, to which it is fastened by means of screws. The said circular frame is about four inches in diameter, and may be of any diameter desired, according to the size of the machine and the speed desired to be attained for propelling the needle. A groove is made in the inside of this circular frame, the form of which is represented in Figure 2 of the drawings, and in this groove the looper is made to revolve.

The letter *c* represents a section of the needle bar or carrier in which the needle is fastened; and the letter *D* represents the needle, with an eye in the lower end to receive the thread.

There are two loopers, made of brass or

other metal, represented by the letters B B, which are fastened to the two arms attached to the shaft G by collars and set-screws, as shown in Fig. 7, and these arms carry said loopers around in the groove of the circular frame, and the point is turned up far enough to take the loop above the eye of the needle, and as the loopers pass on in their revolution the loop is shortened and kept of sufficient tension, and before it is discharged at the rear end of the looper the needle passes through the loop a second time, and thus forms the stitch, the loopers having a notch at the rear end for the purpose of having the needle pass down and through the loop. This notch is represented in Fig. 4 of the drawings. The forked end of the looper is important for the purpose of facilitating the action of the needle and to give it an opportunity to pass down and take the loop from the looper before it is discharged. Fig. 4 represents the inside surface of loopers B B with the said forked ends, and the spots *m m* are the holes or countersinks in which the pins J J in Fig. 1 are placed. The arms F F are fastened to the revolving shaft by means of collars and set-screws, and pass through slots in the springs H H, which are held to their place by the pins I I or their equivalents, and move the loopers by means of the spring-pins J J, which are stationary in the spring and fits in corresponding holes or countersinks in the loopers. This shaft C is made to revolve at the required speed by means of a cam or any similar device, which may readily be adjusted by any mechanic. The springs H H are made of a thin plate of steel about one-half inch wide. It will be seen that the arms attached to the revolving shaft and passing through the springs H H, upon which are fastened the spring-pins J J, and fitting into corresponding countersinks in the loopers B B, will carry said loopers around in said groove of said circular frame, the motion of said loopers and of the needle being so graduated that every time the needle descends the looper will enter the loop as it forms on the needle, and as the needle again descends it will pass through and take the loop at the forks of the looper before the looper is discharged, or at about the instant of its discharge from the looper.

In order to have the loopers pass entirely through the loop, and still to move continu-

ously in a circle, we have arranged a cam, made of brass or other metal, and attached the same to the under side of the plane of the main frame, which is represented in the drawings by letters K K, through which the needle passes in its descent, which cam raises the springs H H when passing the needle, and one of the spring-pins J J being raised at a time, the loop is readily passed by said pins in succession as each is raised and the other down, so as to move the looper or remain fixed to the looper until the loop comes to that pin which is then raised by said cam, and the other pin remains fixed to the looper. This cam is so arranged with convex surfaces as to effect the above objects at the precise time as the loopers move round in the circle.

It will be seen that by our improvements the loop, upon its being taken by the looper, immediately is shortened and recedes out of the path of the point of the looper, so that it is impossible for it to be again taken by the looper.

In the drawings, Fig. 5 represents the surface of springs H H in Fig. 1 flattened, showing the stationary spring-pins J J corresponding with holes or countersinks *m m* in Fig. 4. P P are slots through which the arms F F pass. The cam-plate over which the springs H H pass in their revolution is represented in Fig. 6 by a flat view, and these springs pass over this cam a sufficient distance apart to allow the loopers to pass between.

Fig. 7 represents a section of the shaft C in Fig. 1, to which the collars *o o* are attached, which carry the arms F F which move the

loopers B B, as shown in Fig. 1. I I are the pins extending through arms F F, to prevent the springs H H in Fig. 1 moving high up on the arms, and to give tension.

We are aware of Blodget and Serow's patent of January 14, 1851, and do not intend to claim anything therein contained; and we are also familiar with the claims of E. Harry Smith, now under examination at the Patent Office, and make no claim to the broad principle claimed by him of a revolving looper having a continuous rotary movement and passing entirely through a loop of the needle-thread; but,

Having thus given a full description of our improvements, what we claim as our invention, and desire to secure Letters Patent, is—

1. The combination of the notched looper with the needle, spring-pins, and cam-plate, substantially as described, whereby one end of the looper takes the loop and the other end discharges it upon the needle while the looper is moving continuously in a circle.

2. The form of the looper, substantially as set forth, whereby as the looper progresses through the loop the loop by the combined action of the needle and looper becomes shorter than when first taken, and is removed entirely out of the path of the point of the looper at and after its discharge, so that it cannot be taken again by the looper.

DARIUS WHEELER.

LUMAN CARPENTER.

In presence of—

C. T. RICHARDSON,
FRANKLIN EVERTS.