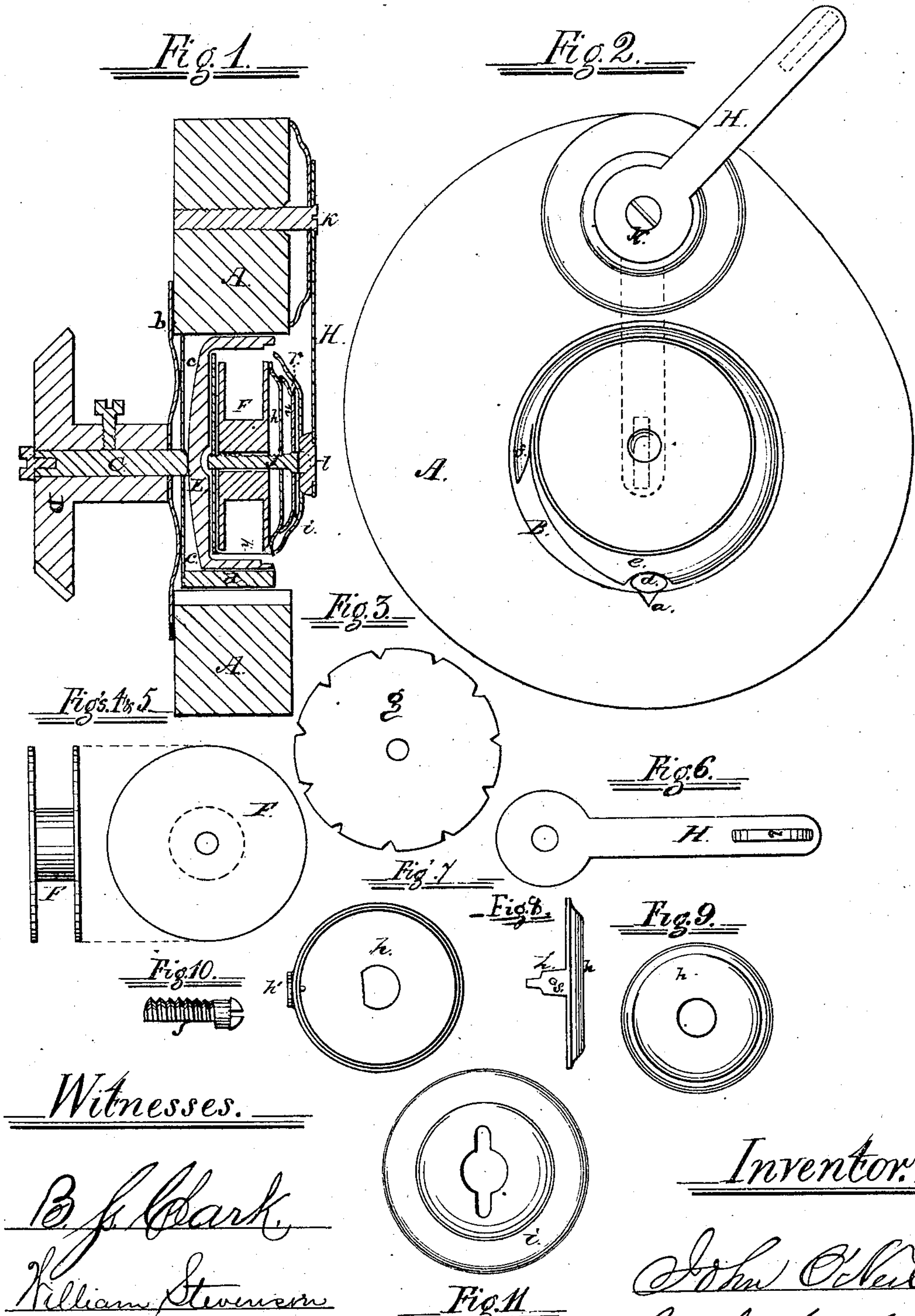
J. O'NEIL.

Sewing-Machine.

No. 159,958.

Patented Feb. 16, 1875.



Witnesses.

B. J. Clark

William Stevenson

Inventor.

John O'Neil

By J. P. ... his atty

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UNITED STATES PATENT OFFICE.

JOHN O'NEIL, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO THERON D. FULLER AND JULIAN WOOD, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **159,958**, dated February 16, 1875; application filed September 15, 1874.

To all whom it may concern:

Be it known that I, JOHN O'NEIL, of the city of New York, in the county and State of New York, have invented an Improvement in Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a central vertical section of a shuttle, shuttle-carrier, and bobbin, and their accessories, containing my invention. Fig. 2 is a plan of the same. The other figures are detailed views of the several parts, Fig. 3 being a face view of a notched disk connected with the bobbin, whereby the tension of the thread is regulated. Figs. 4 and 5, a plan and elevation of the bobbin; Fig. 6, a face view of the spring-catch for preventing the rotation of the bobbin with the shuttle; Figs. 7 and 8, respectively, a face and edge view of a disk having on its edge a finger that takes into the notches in Fig. 3; Fig. 9, a face view of the tension-disk; and Fig. 10 the screw for binding the shuttle and its several accessories together; and Fig. 11 is a face view of a disk, *i*, which caps the shuttle and bobbin.

My invention consists in the combination, in a sewing-machine, of a revolving shuttle and a bobbin that does not rotate with the shuttle.

A represents a portion of the bed or table of the sewing-machine. In this bed a circular opening, B, is made to receive and hold the shuttle. It is so located with reference to the needle that the needle will enter the opening at some point on its outer edge at which a notch, *a*, may be cut for it. *b* is a metallic plate secured to the under face of the table, closing the said opening at the bottom. Through the center of this plate passes a small shaft, C, upon the upper end of which is secured a metallic disk, *c*, fitted to revolve freely in the opening B. D is a gear-wheel secured to the shaft C. In the disk *c*, near its periphery, is fixed a stud, *d*. E is the shuttle. It consists of a shallow hollow cylinder or cup, closed at the bottom, the under surface of which should be convex, and of a diameter to fit loosely into the opening B. At one point on its outer surface is a notch, *e*, into which fits the stud *d*, and also a projection, *f*, which forms the point of the shuttle, to carry the thread from the bobbin through the loop in the thread carried by the needle. F is the bobbin, proportioned to fit into the shuttle, as shown in Figs. 1 and 2. The bobbin consists of a short cylinder, upon each end of which is a broad flange. Underneath the bottom is placed a notched disk, *g*, a little larger in diameter than the adjacent flanged end of the bobbin. Upon the opposite end is placed a disk, *h*, having formed on its edge a spring-finger, *h'*, which extends, at right angles to the face of the disk, to, and engages with, the notches in the disk *g*. A circular cap, *i*, is placed over the whole, and the several parts are bound together by a screw, *j*. H is a spring-arm pivoted in the table A at *k*. On the under face of the free end of this arm is a projection, *l*, which, resting in the notch-head of the screw *j*, prevents the said screw, and with it the bobbin and the several parts connected with it, from revolving with the shuttle. The projection *l* fits quite loosely into the notch in the head of the screw *j*, and does not bottom therein, leaving some free space between the projection and notch, which are so formed that a thread drawn under the arm against the projection will readily pass over the head of the screw between that and the said projection.

The operation of my shuttle and bobbin is as follows: Motion being communicated to the shaft C, and the carrying disk *c*, the shuttle will be thereby rotated, while the bobbin F lying within the shuttle will be prevented from rotating with the shuttle. The projection *f*, forming the point of the shuttle, taking up the loop in the thread carried by the needle, the shuttle will pass through it, the loop passing between the head of the screw *j* and projection *l*, and loop it upon the thread carried by the bobbin F, the latter passing from the bobbin through a hole, *s*, in the finger *h*, and then around a disk, *n*, in a groove, *r*, formed in the edge of the same, thereby bringing the bobbin-thread in the track of the needle-thread as the latter is carried by the shuttle, as before described. The tension is caused by the the friction between the bobbin and the disks

g and *h*, and is regulated by turning down or back the screw *j*. The hole in the disk *h* being only the segment of a circle, and the screw-shaft *j* being flattened on one side to fit the hole by turning the disk *h* on the head of the bobbin back or forth, the screw will be run out or into the disk *g*, and the friction on the bobbin thereby lessened or increased at pleasure, the finger *h'*, taking into the notches in the periphery of the disk *g*, holding the two disks in adjustment with each other.

It is obvious that other devices than the arm H, of analogous construction and operation, may be employed for holding and applying the projection or catch *l* to the bobbin F to prevent its rotation with the shuttle, but I regard the said arm as convenient, cheaply made, and readily manipulated, for the removal of the bobbin from the shuttle. So also, so far as the mere holding of the bobbin from revolving with the shuttle is concerned, the catch-projection *l* might be made to take into a notch made immediately in the head of the bobbin.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the revolving shuttle E, the bobbin F, provided with a slotted-headed screw and a catch, *l*, whereby the bobbin is prevented from revolving with the shuttle, substantially as described.

2. The combination of the bobbin F, the screw *j*, and the notched disk *g* and plate *h*, having on its edge the finger *h'*, as and for the purpose specified.

3. The combination of the bobbin F, the finger *h'* and the disk *n*, having on its edge the groove *r*, as and for the purpose specified.

Witness my hand this 11th day of September, 1874.

JOHN O'NEIL.

Witnesses:
B. S. CLARK,
WILLIAM STEVENSON.