

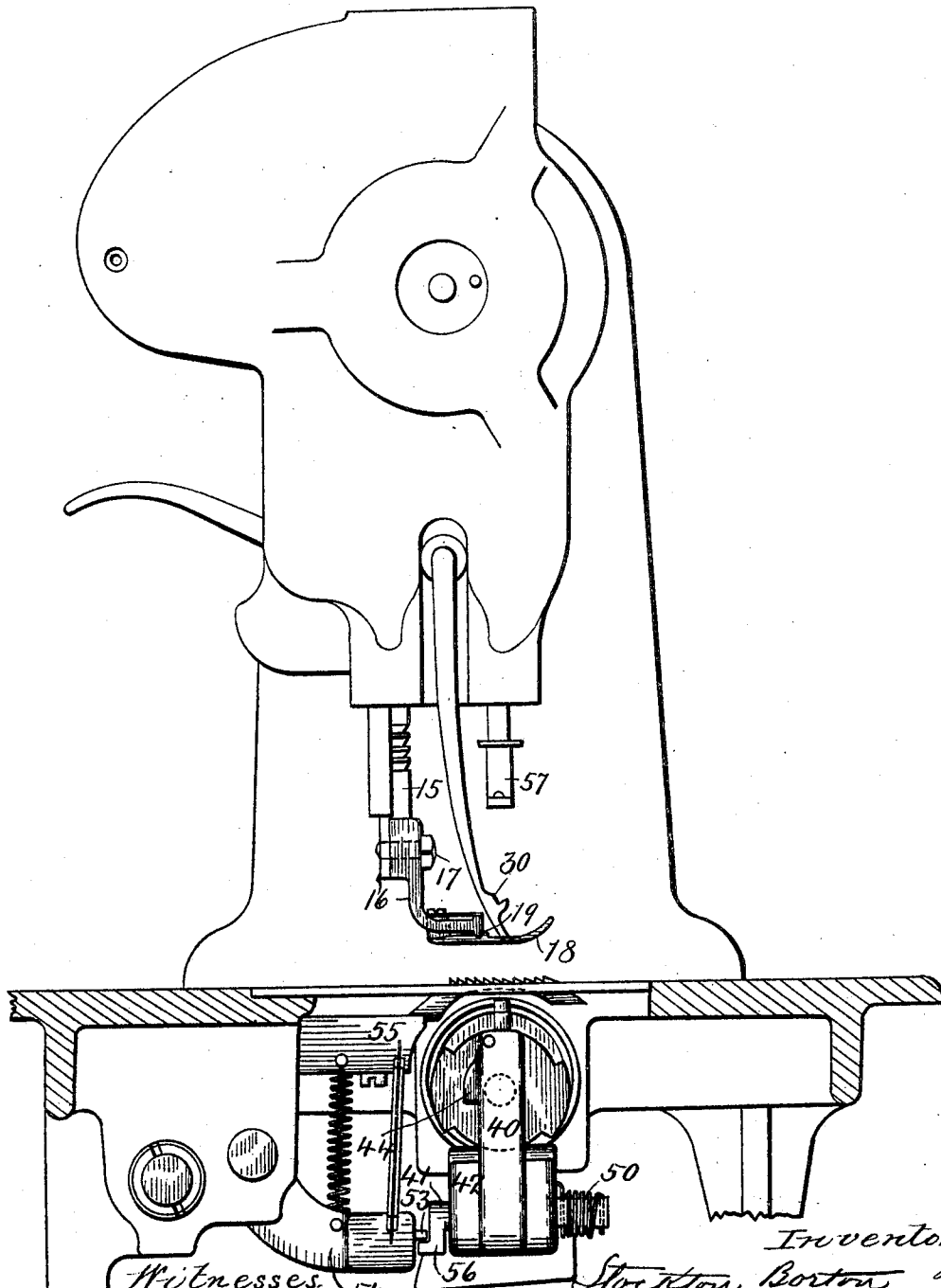
No. 804,301.

PATENTED NOV. 14, 1905.

S. BORTON & O. B. BRUSH.  
SHUTTLE MECHANISM FOR SEWING MACHINES.  
APPLICATION FILED JAN. 26, 1901.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses.  
H. R. Edlin.  
*[Signature]*

Inventors  
Stockton Borton and  
Otis B. Brush  
by *[Signature]*

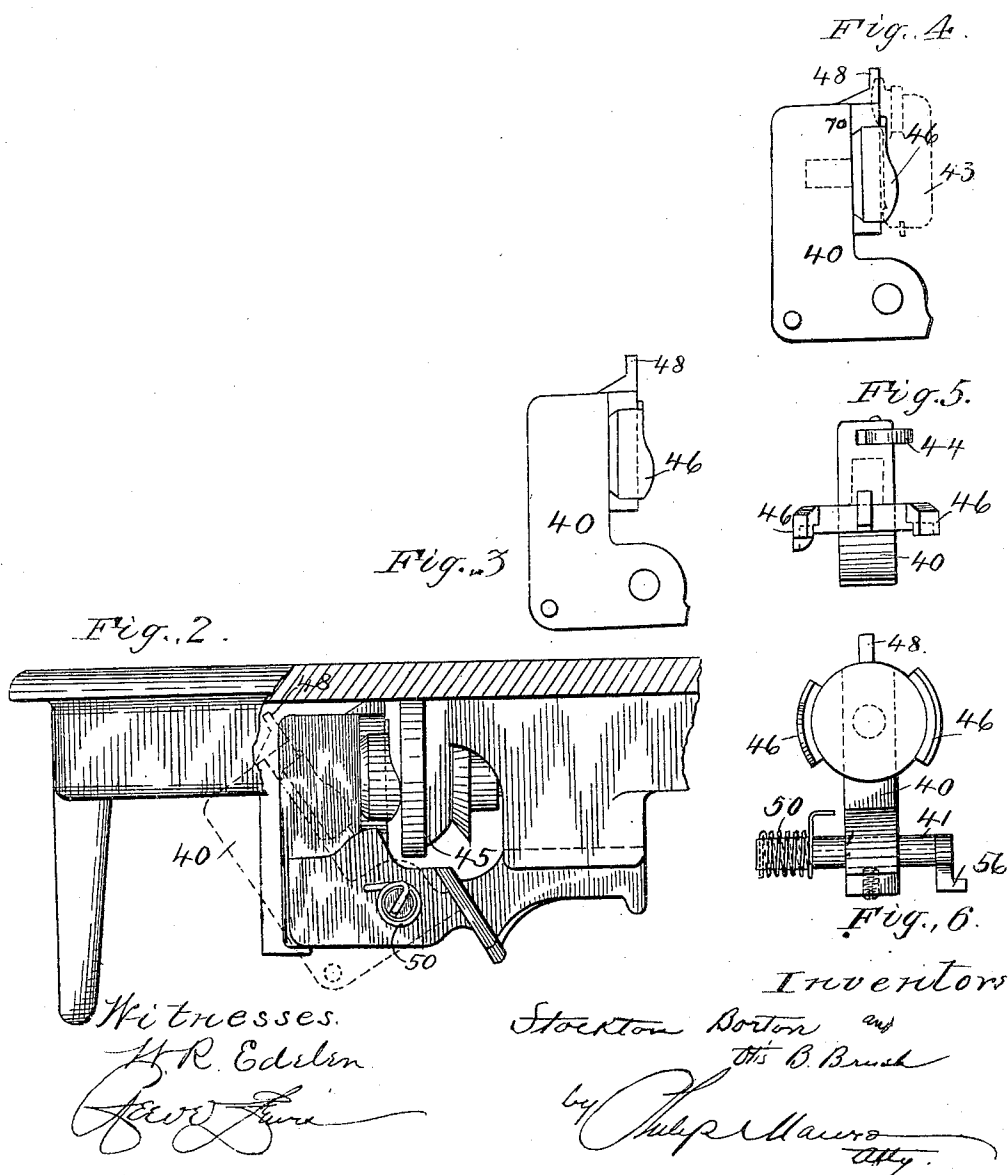
No. 804,301.

PATENTED NOV. 14, 1905.

S. BORTON & O. B. BRUSH.  
SHUTTLE MECHANISM FOR SEWING MACHINES.

APPLICATION FILED JAN. 26, 1901.

2 SHEETS—SHEET 2.



# UNITED STATES PATENT OFFICE.

STOCKTON BORTON, OF PROVIDENCE, RHODE ISLAND, AND OTIS B. BRUSH, OF BRIDGEPORT, CONNECTICUT, ASSIGNORS TO WILLCOX & GIBBS SEWING MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## SHUTTLE MECHANISM FOR SEWING-MACHINES.

No. 804,301.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed January 26, 1901. Serial No. 44,851.

*To all whom it may concern:*

Be it known that we, STOCKTON BORTON, a resident of Providence, Rhode Island, and OTIS B. BRUSH, a resident of Bridgeport, Connecticut, have invented a new and useful Improvement in Shuttle Mechanism for Sewing-Machines, which invention is fully set forth in the following specification.

This invention has reference to certain improvements in sewing-machines which are particularly though not exclusively applicable to lock-stitch sewing-machines, such as that known as the "Willcox & Gibbs lock-stitch machine."

The invention comprises improvements in the bobbin-case hanger designed to secure the proper insertion of the bobbin-case in the hook. These improvements are illustrated in the accompanying drawings, wherein—

Figure 1 is an elevation of the head of a Willcox & Gibbs lock-stitch rotary-hook sewing-machine, which, except as hereinafter described, is of well-known construction. Fig. 2 is a side elevation, partly in section, of the hanger and adjacent parts. Figs. 3, 4, 5, and 6 are details of the same.

Referring to Fig. 1, the presser-foot 16, which is attached to the presser-bar 15 by a screw 17, has a hinged presser-shoe 18, which bears on the work. The shoe 18 oscillates on a curved rib 19 on the inner side of the foot which enters a corresponding transverse recess in the shoe, the axis of oscillation being a little in the rear of the needle-hole. A space is left between the holder and the rear part of the shoe, which permits the latter to tilt upward. 30 is an oscillating needle-guard, the construction and action of which are well known.

Referring now to the parts of the machine beneath the work-plate, 40 represents the bobbin-case hanger, which is pivoted on a short shaft 41 between ears 42. To insert or remove the bobbin-case 43, (which in use is suspended from the hanger, as shown in Fig. 4,) the hanger is swung downward to the position shown by dotted lines in Fig. 2, the hanger being first released from its operative position by pressing in the spring-catch 44, which engages on one of the ears 42. Thus far the construction is old and well known.

(See, for example, patent to S. Borton, No. 592,090, November 24, 1896.)

An operator sometimes through carelessness does not center the bobbin-case accurately on the hanger, and when this is done and the hanger forcibly thrust back into place it is damaged by contact with the rotary hook 45, Fig. 2. It has been found necessary to provide means for preventing such accident, and this is accomplished by the two curved wings or flanges 46 one on each side of the hanger and which center the bobbin-case with reference to the cup-shaped hook and cause it to enter the same properly. It has also been found that the operator occasionally failed to push the hanger fully back into place, so that the spring-catch 44 did not enter above the ear and lock it in place. When this occurred, the needle in descending struck the bobbin-case, causing damage thereto or breaking the point of the needle. This mishap has been guarded against by the spring 50, coiled around and attached at one end to the shaft 41 of the hanger and secured at the other to one of the ears 42. This spring exerts its pressure in such direction as to depress the hanger. When, therefore, the latter is pushed into place, if not pressed far enough to cause engagement of the latch 44 the spring throws the hanger back to the position shown in dotted lines, Fig. 2. Again, the operator sometimes attempted to replace the hanger and bobbin-case when the point of the needle was beneath the cloth-plate. To prevent this, a stop is provided carried by a movable part of the machine and so arranged that it opposes an effectual obstacle to the movement of the hanger except when the needle is entirely above the cloth-plate. In the machine shown in the drawings this stop 53 is placed on the vibrating feed-rocker 54, Fig. 1, which vibrates vertically, imparting the up-and-down motion to the feed-bar 55. When the needle is down, the feed is also down, and in this position the pin or stop 53 is in the path of a projection 56 on shaft 41 of the hanger, preventing movement of the latter. When the needle-bar 57 is up, as in Fig. 1, stop 53 is clear of projection 56 and the hanger can be swung back into place.

The bobbin-hanger is, as heretofore, pro-

vided with a projection 48 at its upper edge, the main office of which is to act as a stop to prevent the bobbin-case from turning with the rotary hook, the bobbin-case having an opening or depression in which this stop or projection 48 engages when the bobbin-case is properly placed. Should the operator fail to center the bobbin-case properly and turn it too far backward or forward, the hanger could (when the feed-rocker is down and not in contact with the projection 56) be pushed up in position and locked, in which case the bobbin-case would be jammed between the hook and hanger and be damaged. This is prevented by the radially-projecting wings or flanges 46 cooperating with the flange 70 on the bobbin-case 43. This flange 70 projects laterally from the face of the bobbin-case and extends part way around the same a distance approximately equal to the distance between the upper ends of flanges 46 46, Fig. 6, in which space flange 70 engages when the bobbin-case is properly centered on the hanger. If the bobbin-case is not properly centered, being turned too far to one side or the other, the flange 70, bearing against one of the flanges

46, will hold the bobbin-case so far out that the hanger cannot be closed sufficiently to latch and would be thrown down by the spring 50.

What we claim is—

The combination with the rotary hook, of a bobbin-hanger hinged to the frame so as to swing outward for removal and insertion of the bobbin, and a bobbin-case suspended upon said hanger, and wings or flanges one on each side of the hanger for centering the bobbin-case and preventing closing of the hanger when the bobbin-case is improperly placed thereon.

In testimony whereof we have signed this specification in the presence of the subscribing witnesses.

STOCKTON BORTON.  
OTIS B. BRUSH.

Witnesses as to signature of Stockton Borton;

J. B. SEDGWICK,  
R. K. CHAPMAN.

Witnesses as to signature of Otis B. Brush:

J. C. HANKEY,  
J. PARMLY.