

(No Model.)

R. H. ST. JOHN.

SHUTTLE ACTUATING MECHANISM FOR SEWING MACHINES.

No. 485,897

Patented Nov. 8, 1892.

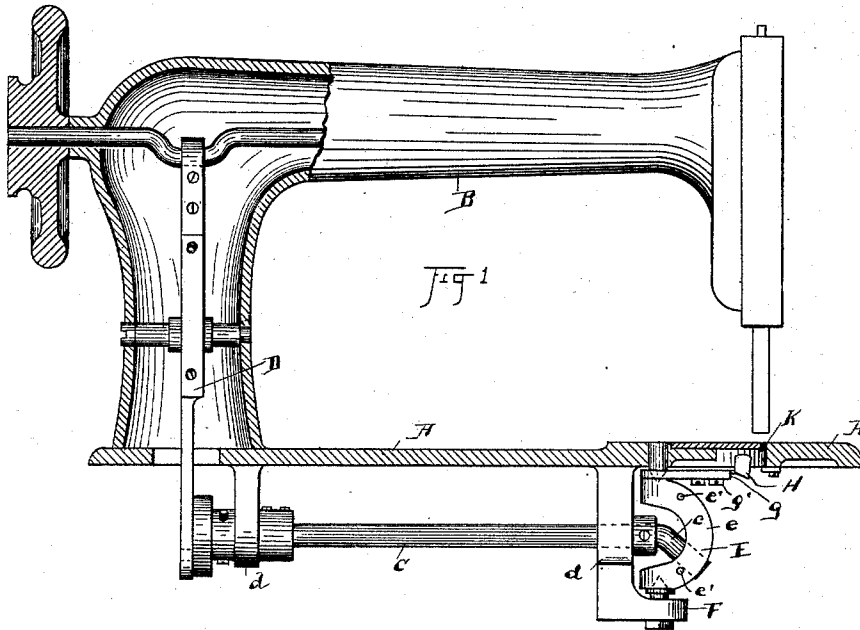


Fig. 1

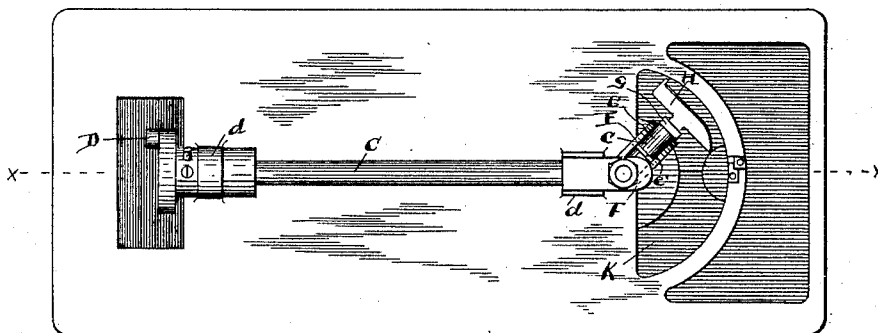


Fig. 2

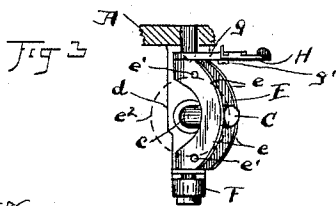


Fig. 3

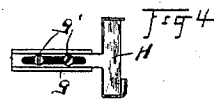


Fig. 4

Witnesses
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UNITED STATES PATENT OFFICE.

ROSWELL H. ST. JOHN, OF CLEVELAND, OHIO, ASSIGNOR TO THE STANDARD SEWING MACHINE COMPANY, OF SAME PLACE.

SHUTTLE-ACTUATING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 485,897, dated November 8, 1892.

Application filed December 19, 1890. Serial No. 375,173. (No model.)

To all whom it may concern:

Be it known that I, ROSWELL H. ST. JOHN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Shuttle-Actuating Mechanism for Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in improvements in sewing-machines, and the special feature of novelty resides in the shuttle-operating mechanism and the parts associated therewith, all substantially as shown and described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of that part of a sewing-machine with which my improved mechanism is especially connected and showing the arm sectioned at the rear and the longitudinal section of a table taken substantially on line *x x*, Fig. 2, and disclosing the operating mechanism beneath said table. Fig. 2 is a bottom view of a table with the operating mechanism in position thereon. Fig. 3 is a front elevation of the yoke and the brackets supporting the same with the operating-shaft having its extremity in the center of the yoke and showing the shuttle-arm at the top of the figure. Fig. 4 is a detail of the shuttle-supporting arm and the shuttle-carrier and showing that the shuttle-carrier is adjustable upon this arm.

A represents the table of the sewing-machine, which may be of any well-known style, and B is the arm.

C is the shuttle-operating shaft, connected at its rear end by link D with the power-shaft above, whereby the said shaft C is rotated. Any suitable connection between the power-shaft and the said shaft C which will give the latter shaft a continuous rotary movement while the machine is in operation may be adopted. This shaft C is supported in the bearings *d*, preferably formed integral with the table or bed-plate A, although, if preferred, these bearings may be separate brackets attached to said plate or table. Suitable collars are fixed on the said shaft C to prevent

axial movement therein; but any other means of preventing such movement may be adopted. At the forward extremity *c* the said shaft is bent, as here shown, at an angle of about thirty-five degrees to the body thereof; but this angle of bend may be varied more or less, according as more or less throw of the shuttle may be desired. The bend in the proportion here shown is adapted to machines of ordinary size and construction. This extremity or arm *c* operates in a yoke E, which is set at its lower end in a bracket F and at its upper end in the table or plate A, having suitable bearings with center screws fixed therein and adapted to be oscillated from side to side by the said arm B. This yoke is substantially semicircular with its bearings at its ends and set at right angles to the shaft C. The yoke between its ends has sides *e*, integral at their ends, and with an open space between them adapted to receive and form a bearing for the short arm *c* on shaft C. The wear upon these sides, if any occurs, is taken up by the screws *e'*, passing through said sides; but the wear will be very slow and imperceptible, at least for some time. Obviously when the shaft C is rotated the yoke E is given an oscillating movement from side to side in proportion to the angle of the bend *c*. The radius of this movement, so far as the extremity of the arm is concerned, is shown by a dotted circular line *e''*, Fig. 3. Thus in Fig. 3, which is a front elevation of the parts when in the position shown in Fig. 2, the arm *c* is shown at the extremity of its movement to the right, and a corresponding position on the dotted line *e''* upon the opposite side of the circle is the limit of its movement in that direction. The principle upon which the arm *c* operates may be said to be that of a cam, and the said arm at all times describing a large circle with the shaft C as the center has such leverage as will easily and effectually carry the yoke E from side to side, and in a noiseless easy manner, without any strain whatever at any point in the movement. Obviously the leverage of the arm *c* is at all times so exerted as to make the movement of the yoke easy and positive.

Now in order that the shuttle may be carried from side to side by this yoke I provide

the yoke at its top with an arm *g*, which is made rigid with the yoke and upon which is adjustably secured by screws *g'* the shuttle-carrier *H*. This carrier works in a shuttle-race *K*, formed in the table or bed-plate *A*. The movement of the shuttle being circular, the form of the race *K* at its front edge likewise is circular, and the carrier is arranged to travel in this race from side to side, according to the movements of the yoke *E*, upon which and the arm *g* the carrier is secured.

The arm *c* is shown here as formed by bending the end of shaft *C*; but it might be a separate piece fixed on said shaft. Any angle of inclination or construction of arm *c* or its equivalent, operating with the effect of the construction of arm *c* shown, is understood to be within the scope of the invention, this means of operating a shuttle-carrier being regarded as broadly new.

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

In a sewing-machine, a shuttle-operating shaft having its front end bent at an angle to its body, in combination with a semicircular yoke having a bearing-space between its sides for the bent end of the said shaft and its concave or open edge inside in respect to the shaft and its ends supported pivotally equal distances above and below the axis of the said shaft, and a shuttle-carrying arm rigid with said yoke at right angles to the axis of said yoke, substantially as described.

Witness my hand to the foregoing specification this 30th day of November, 1890.

ROSWELL H. ST. JOHN.

Witnesses:

H. T. FISHER,
N. L. McLANE.