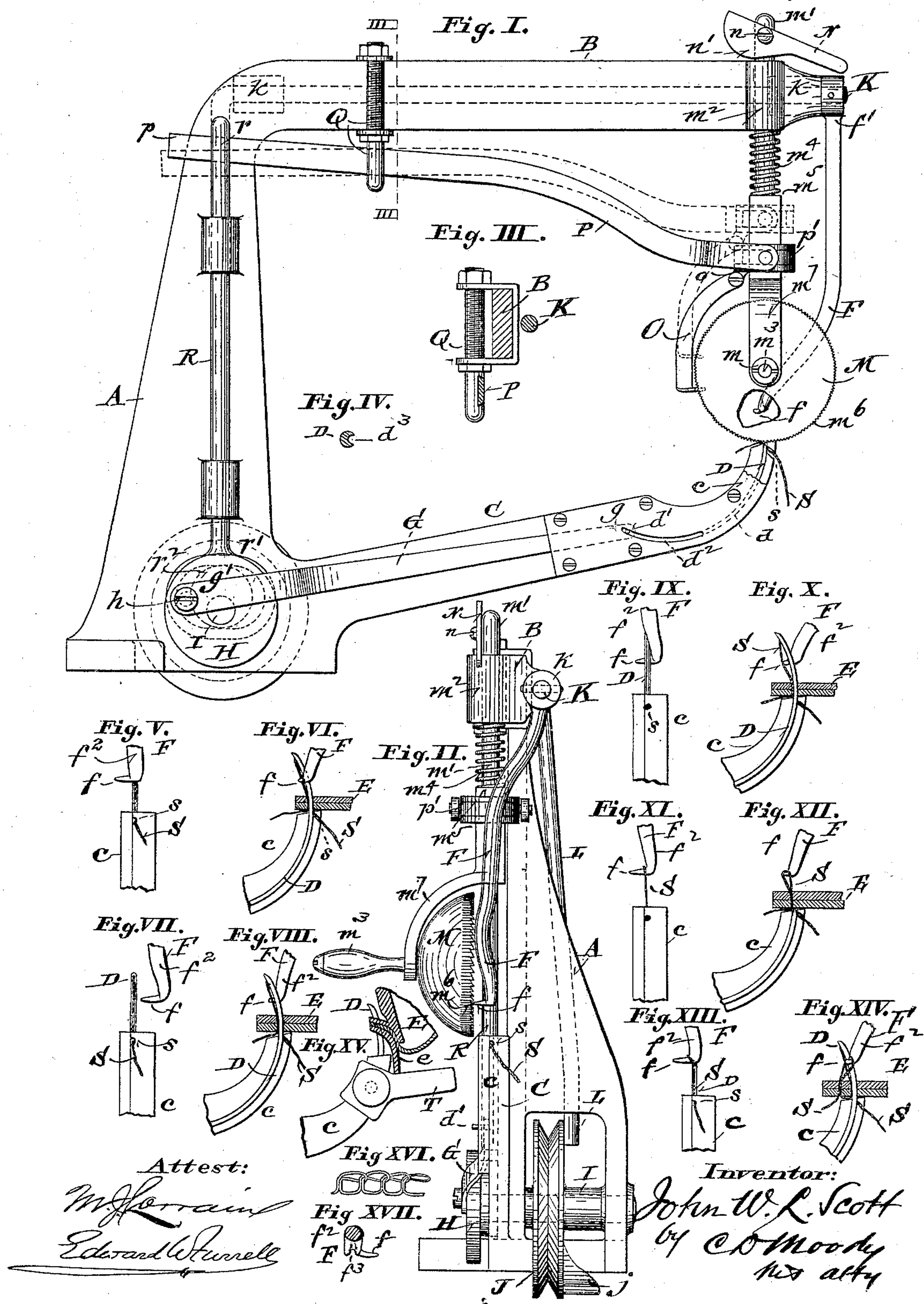


(No Model.)

J. W. L. SCOTT.
SEWING MACHINE.

No. 443,009.

Patented Dec. 16, 1890.



UNITED STATES PATENT OFFICE.

JOHN W. L. SCOTT, OF EDWARDSVILLE, ILLINOIS, ASSIGNOR OF ONE-HALF TO
CHARLES N. TRAVOUS, OF SAME PLACE.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 443,009, dated December 16, 1890.

Application filed May 7, 1890. Serial No. 350,885. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. L. SCOTT, of Edwardsville, Illinois, have made a new and useful Improvement in Sewing-Machines, of which the following is a full, clear, and exact description.

The improvement is applicable to various forms of sewing-machines, but more especially to machines for sewing shoes and harness.

The leading features of the improved construction are an underneath curved needle working upward and downward in a curved guide, a hook adapted to be vibrated laterally into and out of the plane of the movement of the upper portion of the needle and so as to take the stitches successively from the needle, and a circular-dished rotating feed and presser device, all substantially together with minor features of construction, as is hereinafter set forth and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure I is a side elevation of the improved machine. The portions of the machine not essential to an understanding of its improved features are not shown. Fig. II is a front end elevation of the machine; Fig. III, a vertical section on the line 3 3 of Fig. I; Fig. IV, a cross-section, upon an enlarged scale, of the needle; and Figs. V to XV, inclusive, views illustrating the relative action of the needle and hook, Figs. V and VI being views, respectively, at right angles to each other, and showing the needle projected upward and the hook in the plane of the needle; Figs. VII and VIII, views corresponding, respectively, to Figs. V and VI, but showing the hook out of the plane of the needle; Figs. IX and X, corresponding views showing the needle up and the hook in position to take the stitch; Figs. XI and XII, corresponding views showing the needle down and the hook upholding the stitch; Figs. XIII and XIV, corresponding views showing the needle up again and carrying the second stitch through the loop of the first stitch, and Fig. XV showing the needle projected upward through the welt of a shoe, and also showing a support for the welt. In Figs. VI, VIII, X, XII, and XIV the material being sewed is shown; Fig. XVI, a view illustrating

the stitch made on the present machine; and Fig. XVII a horizontal section of the hook.

The same letters of reference denote the same parts.

The frame work of the machine consists, mainly, of the standard A, the overhanging arm B, and the horn C.

The needle D is held and adapted to be worked longitudinally in a channel *d* in the outer end *c* of the horn. The channel and needle are relatively fitted to each other to enable the needle to be moved longitudinally in the channel, and also so that the wall of the channel shall offer lateral support to the needle, especially at and near the outer end of the channel. The needle is curved substantially as shown, and its movement is indicated substantially by its positions shown in the various figures. When the needle is withdrawn downward to its lowest limit, it is wholly within the channel *d*, and the work E being operated upon can rest upon the end *c* of the horn. When the needle is projected to the opposite end of its stroke, its point is carried not only through the work E, but sufficiently past the point *f* of the hook F to enable the hook to take the stitch from the needle. The movement of the needle is effected, preferably, by means of the pitman G, which, at its outer end *g*, is jointed to the needle, and at its inner end *g'* is jointed to the wrist-pin *h* of a crank H, which is fast upon a shaft I, journaled in suitable bearings in the standard A, substantially as shown. The shaft is driven by means of a belt (not shown) passing around the pulley J, which is fast on the shaft I. The hook F is operated to cause its point *f* to be moved laterally toward and from the portion of the needle which is projected above the horn, the movement being substantially indicated in Figs. V, VI, VII, and VIII. The movements of the needle and hook are relatively contrived to enable the hook to take a stitch from the needle, uphold it until the needle has carried up the next stitch through the loop of the stitch upon the hook, and then cast off the first stitch and take on the second stitch, and so on.

The preferable mode of constructing and operating the hook is as follows: The hook

extends upward and at its upper end f' is fastened to a rock-shaft K, which is journaled in bearings $k\ k$ in or upon the overhanging arm B, and is provided with an arm L, which
 5 extends downward to coact with a cam j upon the pulley J. As the pulley rotates the cam encounters and thereby causes the lower end of the arm L to be swung laterally, and the shaft K is thereby rotated in its bearings to
 10 effect the described movement of the hook. After the arm L has been swung aside, as described, by the action of the cam j any suitable means—such as gravity or other familiar means—are utilized to effect the re-
 15 turn of the arm L and hook to their original position, substantially as described.

M represents the dished, toothed, pointed, or serrated wheel, which serves a double purpose—to feed the work and to hold the work
 20 down upon the horn. It is journaled at m in an arm m' , which is upheld in the overhanging arm B by means of the cam-lever N, which is pivoted at n to the arm m' , and bears at n' upon the top of the overhanging
 25 arm B. The arm m' is preferably journaled at m^2 in the arm B to enable the wheel, by means of its handle m^3 , to be turned horizontally around to suit the position of the work E being operated upon. A spring m^4
 30 pressing upward against the arm B and downward upon a shoulder m^5 upon the arm m' serves to force the wheel M downward upon the work with sufficient pressure. The rotation of the wheel M upon or in its journal
 35 m and the consequent feeding of the work is effected by the pawl O coacting with the serration m^6 upon the wheel. The pawl at o is jointed to a lever P, which is fulcrumed in or upon a bearing Q, attached to the arm B. By
 40 drawing the end p of the lever downward the end p' of the lever is lifted, and the pawl O thereby caused to rotate the wheel M. The movement is indicated by the broken lines in Fig. I. The vibration of the lever P is ef-
 45 fected, preferably, by means of the strap R, which at its upper end r is connected with the lever P and at its lower end r' with an eccentric r^2 upon the shaft I, whose revolution thus causes the strap R to move upward and down-
 50 ward and the lever P to turn upon its bearing Q. The bearing Q is adjustable longitudinally upon the arm B to enable the lever end p' to be vibrated through a greater distance, and the wheel M to be rotated farther
 55 around at each revolution of the shaft I. The connections of the lever P with the bearing Q and strap R are such as to permit of the described adjustment of the lever P. The lever P at its end p' preferably encircles the
 60 arm m' , which thus serves as a guide for the lever P in its movement. The arm m' is made with an offset m^7 to provide room for the wheel M, as shown. By turning the cam-

lever N on its pivot the wheel M can be raised and lowered. 65

S represents the thread.

T represents a support for the welt e as it is being sewed.

The needle and the pitman G are connected, preferably, by shaping the needle to form or
 70 providing it with an offset d' , and jointing the pitman end g to the offset, which is also made to project to work in a curved slot d^2 in the side of the horn, by which means the movement of the needle is effected more ad-
 75 vantageously, as thereby the needle is guided at its inner as well as at its outer end.

The needle, as shown in Fig. IV, is grooved at d^3 to provide more room for the thread S, and the hook-shank f^2 above the hook-point
 80 is grooved at f^3 to provide more room for the needle-point as the needle rises past the hook. The thread S passes through a passage s in the horn to the needle.

I claim— 85

1. In a sewing-machine, the combination, with the shaft I, the driving-pulley J thereon, and the cam j on the side of the driving-pulley, of the rock-shaft K, journaled in the bearings in the overhanging arm B, the
 90 arm L, depending from said shaft in the path of the cam j , the hook F, depending from the rock-shaft and having the point and the curved reciprocating needle co-operating with said hook, substantially as specified. 95

2. In a sewing-machine, the combination, with the standard, the horn, the overhanging arm B, the hook F, the curved needle moving in a channel in the horn, and the pitman operating said needle and connected to the
 100 wheel II on the shaft I by a wrist-pin h , of the arm m' , journaled and turning in the bearing m^2 on the arm B and having the curved portion m^7 and handle m^3 , the dish-shaped feed-wheel M, pivoted at the end of
 105 the part m^1 of the arm m' , the coiled spring m^4 , and the cam-lever N, pivoted to the arm m' and bearing on the arm B, substantially as specified.

3. The combination, with the arm m' and
 110 the toothed dish-shaped feed-wheel M, pivoted on the lower end of said arm, of the pawl O, arranged to engage and turn said wheel, the lever P, to which said pawl is pivoted, the eccentric and eccentric-strap connected to and
 115 vibrating said lever, and the fulcrum piece or bearing Q for the said lever adjustable longitudinally on the arm B and arranged to have its point of connection with the lever P changed thereon to correspond with its ad-
 120 justment, substantially as specified.

Witness my hand this 5th day of May, 1890.

JOHN W. L. SCOTT.

Witnesses:

C. D. MOODY,

H. M. THOMPSON.