

(No Model.)

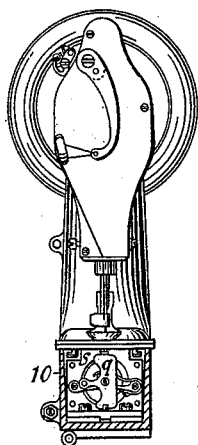
2 Sheets—Sheet 1.

K. S. KLOGEL.  
SEWING MACHINE.

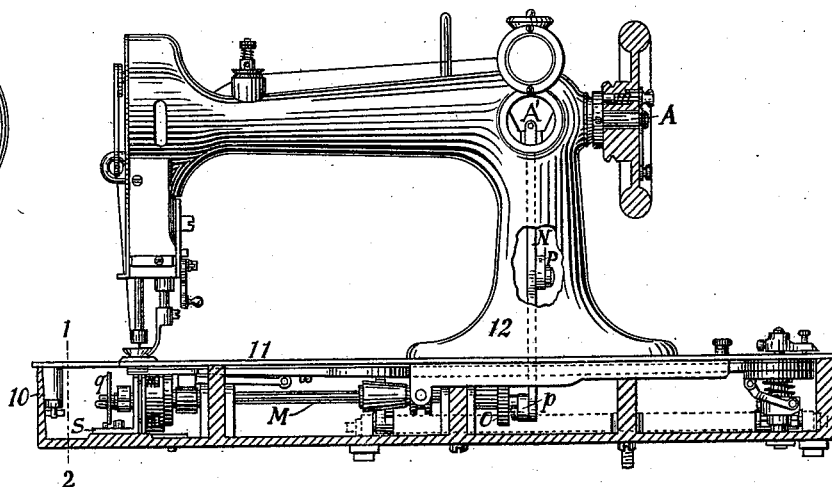
No. 524,063.

Patented Aug. 7, 1894.

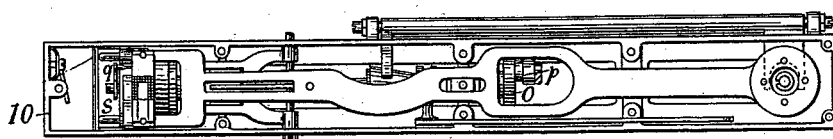
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



**WITNESSES:**

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*INVENTOR.*

H. P. Klogel.

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SEWING MACHINE.

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Fig. 4.

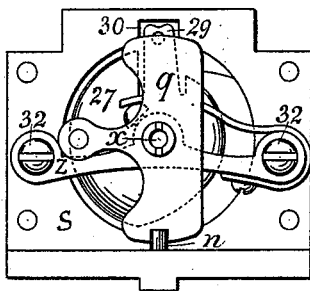


Fig. 5.

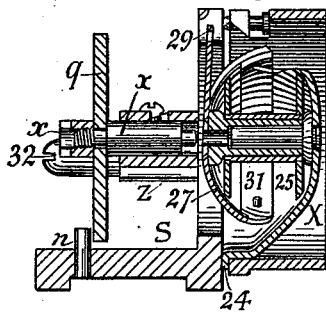


Fig. 6.

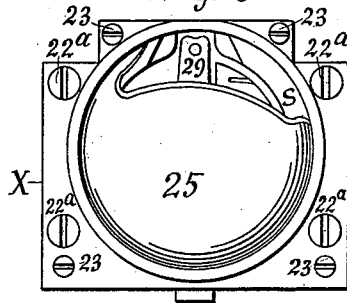


Fig. 8.

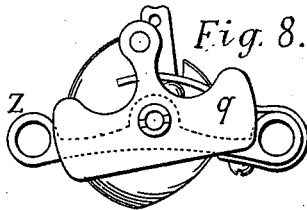


Fig. 7.

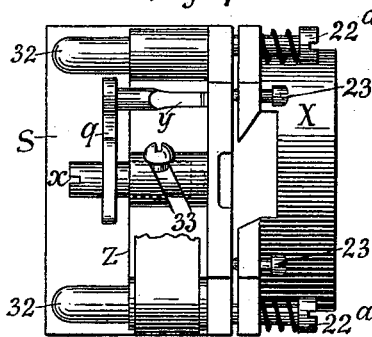


Fig. 10.

Fig. 11.

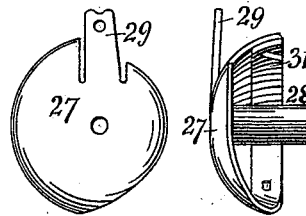


Fig. 9.

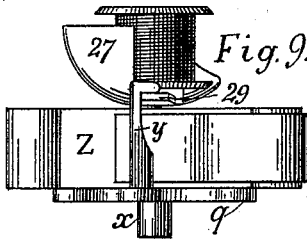


Fig. 12.

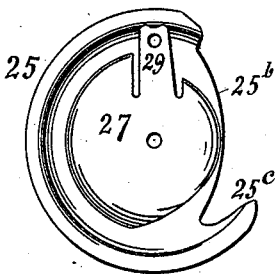


Fig. 13.

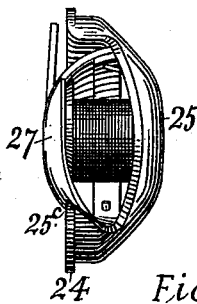


Fig. 15.

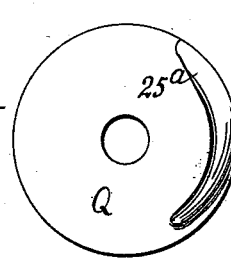


Fig. 16.

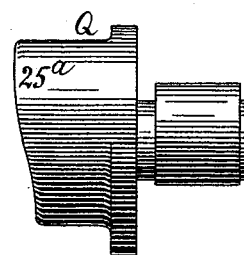
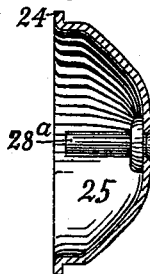


Fig. 14.



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# UNITED STATES PATENT OFFICE

KARL SIGURD KLOGEL, OF NEW YORK, N. Y.

## SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 524,063, dated August 7, 1894.

Application filed July 22, 1891. Serial No. 400,282. (No model.)

*To all whom it may concern:*

Be it known that I, KARL SIGURD KLOGEL, of New York city, in the county and State of New York, have invented a new and Improved Sewing-Machine, of which the following is a full, clear, and exact description.

My invention relates to improvements in sewing machines, and the most important improvements in the machine embodying my invention are, the new rotary shuttle with the new arrangement of the shuttle bearing and its adjustments, and to this end, my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the views.

Figure 1 is a front end view, partly in section, of the machine, on a line 1—2 in Fig. 2 showing a front view of the shuttle in place. Fig. 2 is a side view of a machine, with the front side of the bed removed, showing the shuttle mechanism and its connection with the main shaft. Fig. 3 is a top view of the machine, with the arm and bed plate removed to expose the shuttle. Figs. 4 to 14 inclusive, show in detail the shuttle mechanism and its separate parts; Fig. 4 being a front view; Fig. 5 a vertical section; Fig. 6 an end view showing the back side; Fig. 7 a top view of the entire shuttle mechanism; Fig. 8 a front view of the shuttle mechanism, whereby the bobbin holder and the bobbin are removed from the machine, and which mechanism also serves as a latch for the bobbin holder; Fig. 9 a top view of the parts shown in Fig. 8; Figs. 10 and 11 front and side views of the bobbin holder; Figs. 12 and 13 front and side views of the shuttle and bobbin holder as they appear together; and Fig. 14 a vertical section of the shuttle. Fig. 15 is a front view, and Fig. 16 a side view of the shuttle carrier.

The machine comprises a bed, forming an oblong box 10 of square cross section, covered with a steel plate 11, upon which the arm 12 is secured by means of screws.

The manner in which motion is transmitted from the main crank shaft A to the shaft M which drives the shuttle and feeding motion

is shown in Fig. 2. On the main shaft is a crank A', which is located above the vertical portion of the arm 12, and this crank connects by means of a pitman N, with the link P pivoted to the side of the arm and on the middle of the pitman N, and also, by means of the short link p and the crank disk O, with the shaft M which is mounted longitudinally in the bed in the usual way. It will thus be seen that the movement of the main shaft will impart to the shaft M, a rotary motion in a direction opposite to that of the main shaft.

The shuttle device comprises an angular bracket S, to which is attached on one side a cylindrical cell X, by means of screws 22<sup>a</sup> secured in the bracket, the cell X constituting the bearing of the shuttle. It is held to slide upon the screws 22<sup>a</sup>, and is pressed against the bracket S by spiral springs coiled around the screws, and is held from actual contact with the bracket by means of set screws 23, whereby an accurately adjustable space between the bracket S and cell X is provided.

The cell or ring X, as before stated, constitutes the peripheral bearing or race for the shuttle 25, which is constructed to be manufactured of sheet metal and consists of a bulging shell having the rim formed into a cylindrical or nearly cylindrical bearing surface, axially projecting to a satisfactory width, and at the face side edge which turns close to the needle, provided with a radially projecting guide flange 24, (see Figs. 13 and 14) lying within the adjustable space between the cell X and bracket S, whereby the shuttle is held in its plane of rotation. (See Figs. 5 and 7.) This construction of the shuttle with a guide flange radially projecting from the peripheral bearing surface for holding it in its plane of rotation is an important improvement, because thereby the thread of the loop is prevented from coming in contact with the bearing surface, while in shuttles as heretofore used in combination with an annular race, the extreme edges of the proper bearing surface being used for holding the shuttle in its plane of rotation, the needle thread, when the shuttle is passing through its loop, always glides against the rear edge of the bearing surface, whereby it is very apt to be cut or soiled. The shuttle is actuated by the driver 25<sup>a</sup> on the shuttle carrier Q, engaging

the recess 25<sup>b</sup> in the shuttle, and in cutting this recess a hook or loop catcher 25<sup>c</sup> is formed as shown in Figs. 12 and 13.

The shuttle device is attached by the angular bracket S to the bottom of the machine bed in such a way that it can be adjusted in the direction of the shaft M, and easily taken out of the machine when desired.

The bobbin holder consists of a nearly half spherical cover 27, provided with a pin 28 to hold the bobbin, this pin being drilled through, forming a pipe which fits upon the center spindle 28<sup>a</sup> in the shuttle, and a vertical spur 29, made of one piece with the cover and serving as the thread guide, said spur having at its upper end a hole through which the bobbin thread is passed. This spur 29, loosely fitting in a notch 30 in the circular opening in the bracket S, also prevents the cover 27 and the bobbin therein from partaking of the rotary motion of the shuttle. One side of the cover 27 is cut off to nearly the same radius as that of the bobbin disks, and beveled down to the circumference of the cover, for the purpose of facilitating the slipping of the thread loops off the shuttle. Tension upon the bobbin thread is obtained by passing it under a tension plate 31 inside of the cover 27.

The bobbin holder is kept in position by a device which also serves the purpose of taking the bobbin holder and bobbin out of the machine. This device (shown in Figs. 4 to 7 inclusive) has a cross piece or latch Z, which slides upon two pins 32 secured in the bracket S. In the middle of the latch Z, and in line with the center spindle in the shuttle, is a spindle x, having on one end a short pin which fits into the center hole in the bobbin holder, and on the other end a lock plate g, in which a hook y is secured, as shown in Figs. 7 and 9.

An inclined slot 33 (see Fig. 7) is cut in the semicircular portion of the latch Z, where the spindle x passes through it, and a screw passes through this slot and is secured in the spindle x. In the position shown in Figs. 4 and 7, the lock plate g, pressing against the pin n secured in the bracket S, keeps the latch Z close to the bracket, thus preventing the bob-

bin holder from sliding out. If turned into the position shown in Figs. 8 and 9, the screw in the inclined slot pushes the pin on the spindle x in the center hole of the bobbin holder, and at the same time the hook y grasps the spur 29 on the bobbin cover 27, and then the whole system as represented in Figs. 8 and 9, can be pulled out and lifted above the bed plate.

From the foregoing description, and by reference to the drawings, it will be seen that the shuttle and bobbin holder are practically of the same thickness in all parts, so that they may be cheaply made by striking them up out of sheet metal. It will also be noticed that by supporting the shuttle bearing and bobbin holder on the bracket S, it may be adjusted so as to be at all times near enough to the needle.

The construction described enables the bobbin holder and shuttle to be easily removed. Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a sewing machine, the combination of a shuttle shell having a peripheral bearing surface provided with a radially projecting guide flange, a hook or loop catcher cut out from the rim and retreating into the bulging portion of the shuttle shell, with an outwardly flaring bobbin holder shell, loosely mounted upon a journal pin in the shuttle and kept stationary, on one side cut away to form a loop passage and the other side extending its periphery to the shuttle shell, to form a thread-guard for guiding the thread loops over the bobbin on the face side of the shuttle, substantially as set forth.

2. The device consisting of the latch or cross piece Z, the spindle X, movable centrally through the latch and carrying the locking plate g, with the hook y, the parts being constructed as set forth and the device mounted upon the bracket S, substantially as set forth for the purpose specified.

KARL SIGURD KLODEL.

Witnesses:

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C. SEDGWICK.