No. 626,470. Patented June 6, 1899.

H. R. TRACY.

SEWING MACHINE.

(Application filed May 13, 1893. Renewed Aug. 31, 1898.)

(No Model.)

Fig. 3.

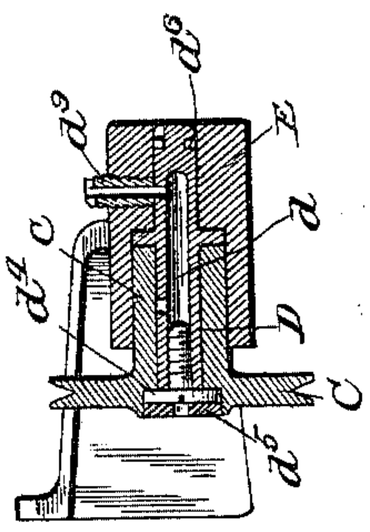


Fig. 4.

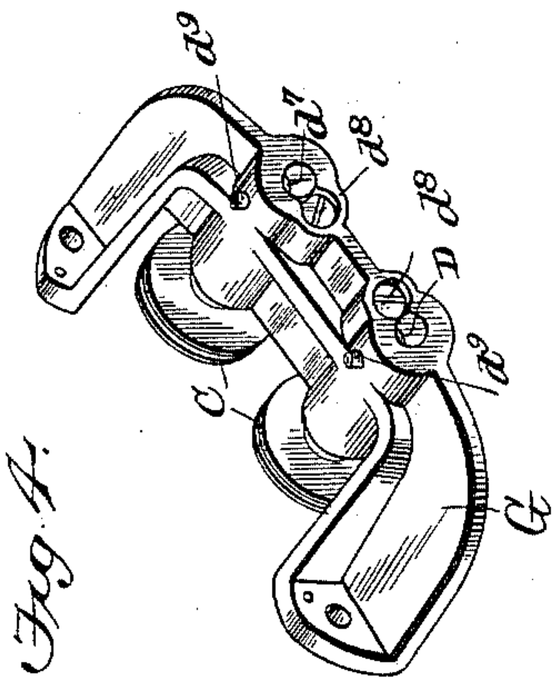


Fig. 6.

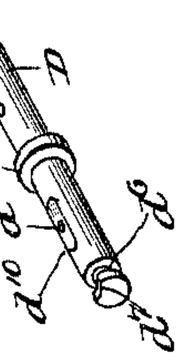


Fig. 2.

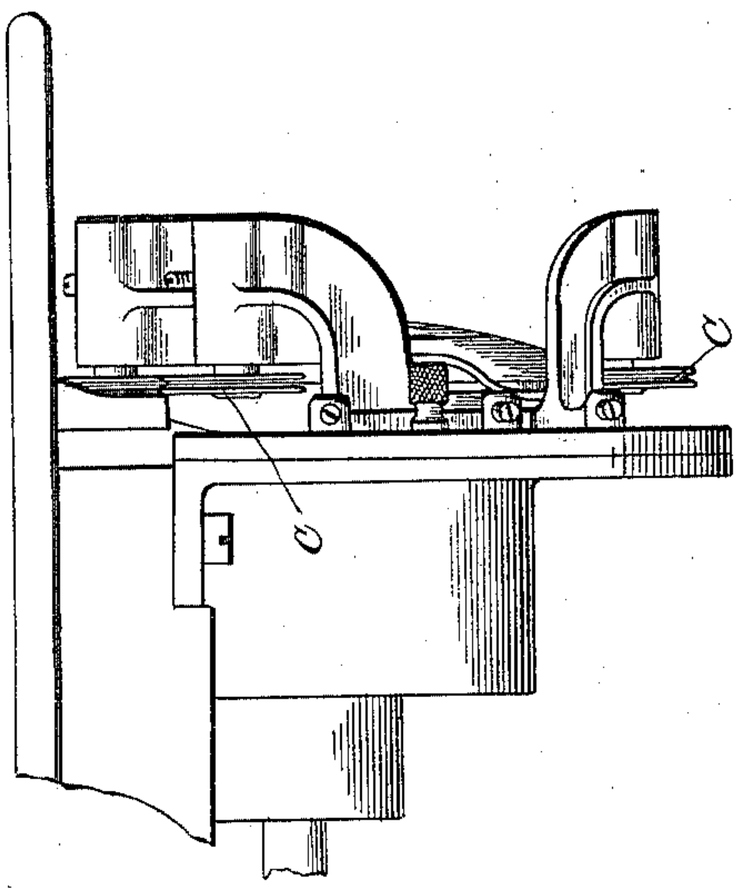


Fig. 5.

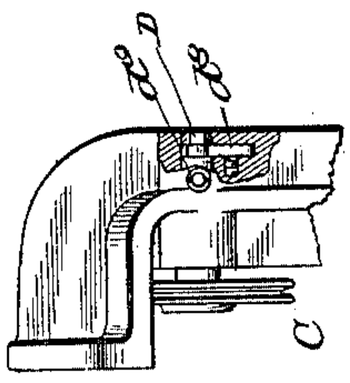
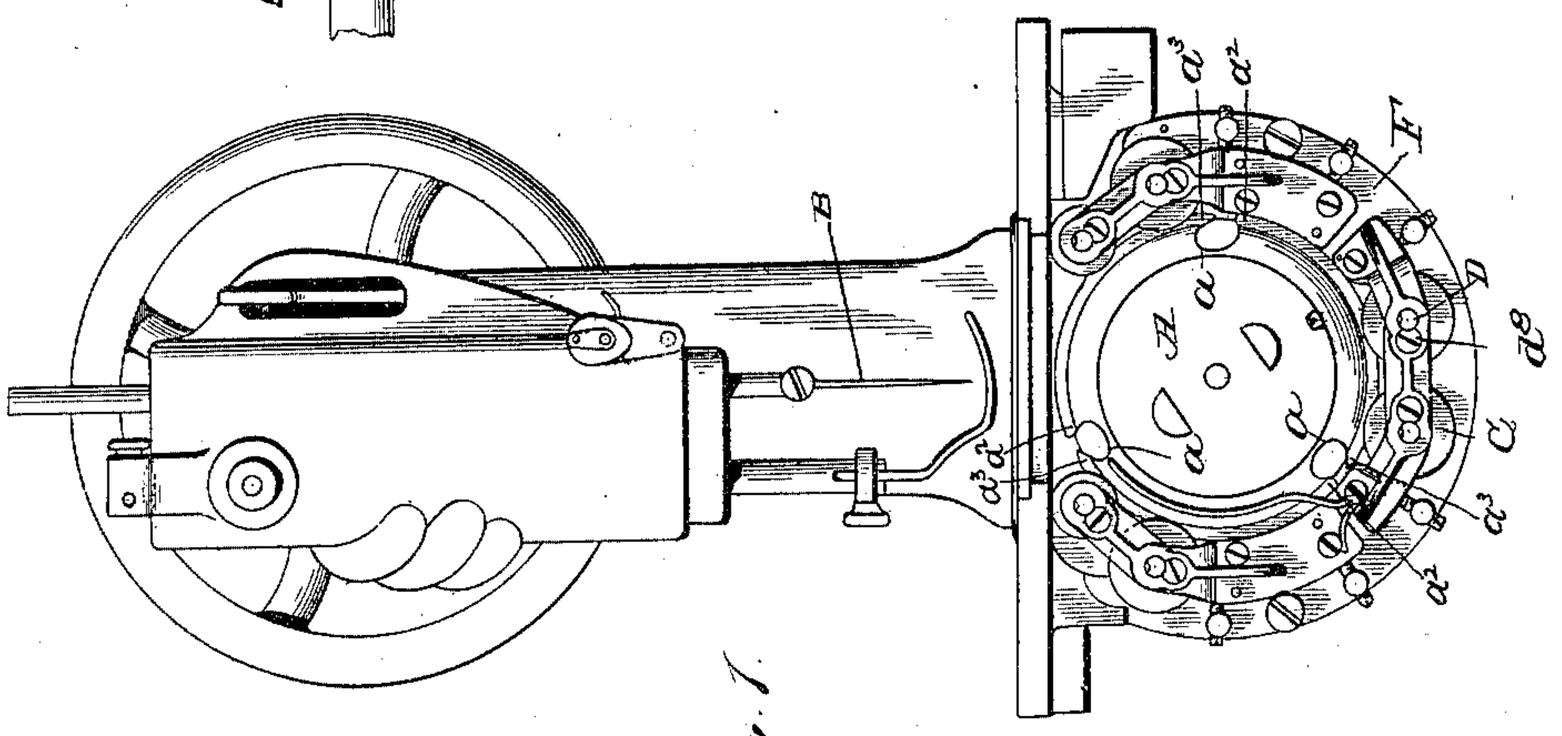


Fig. 1.



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UNITED STATES PATENT OFFICE.

HARRIET RUTH TRACY, OF NEW YORK, N. Y.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 626,470, dated June 6, 1899.

Application filed May 13, 1893. Renewed August 31, 1898. Serial No. 689,960. (No model.)

To all whom it may concern:

Be it known that I, HARRIET RUTH TRACY, a citizen of the United States, residing at New York, (New Brighton,) in the county of Richmond and State of New York, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to sewing-machines.

The object is to produce means for supporting the shuttle or loop-taker of a sewing-machine in such manner that the shuttle or loop-taker shall have a free rotary motion and allow the passage of the needle-thread entirely around it without coming in contact with its support; furthermore, to produce a support for a shuttle or loop-taker, whereby a free rotary movement will be permitted the shuttle or loop-taker, the passage of the thread around the shuttle or loop-taker facilitated, and whereby also ample oiling without allow- the escape of the oil endangering soiling of the thread is provided for.

The invention consists of various novel details of construction whereby the objects of the invention are attained and the operativeness of the invention insured.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a sewing-machine comprising my invention. Fig. 2 is a side elevation of a detached portion of the working parts of a sewing-machine embodying the invention. Fig. 3 is a longitudinal vertical section of one of the supporting-rollers and its appurtenances. Fig. 4 is a perspective view of two of the supporting-rollers arranged in position for attachment to a sewing-machine. Fig. 5 is a plan view, partly in section, showing the oil-receiving opening for the shaft, and the means for retaining the shafts in position. Fig. 6 is a perspective view of one of the shafts upon which the supporting wheels or rollers are mounted.

In the drawings, A represents a shuttle or loop-taker which is designed to contain the under thread utilized in forming a lock-stitch. The shuttle or loop-taker is provided with three peripheral openings a, the terminals or ends of each of which form at each opening a pair of opposing hooks a^2 a^3 of different size and shape, of which the hook a^2 is adapted to engage the loop of the needle-thread brought down by the needle B and to carry it entirely around the shuttle to inclose a second or lower thread to form a lock-stitch, and the hook a^3 to engage the loop of the needle-thread and to carry it through a preceding loop to form a chain-stitch or to engage a lower or shuttle thread to form a locked chain-stitch, the change from one kind of stitch to the other being effected by simply reversing the direction of rotation of the loop-taker. The periphery of the shuttle or loop-taker A is reduced and is designed to be received in and be retained in position by grooves in supporting-wheels C, suitably secured upon the frame of the machine. These wheels are preferably mounted in sets upon suitable frames G, as illustrated in the drawings, the frames being attached by screws or other means to a plate F, adjacent to the loop-taker or shuttle. Any desired number of the wheels may be used and they may be arranged in any convenient operative position and disposed in such manner with relation to the hook-openings in the shuttle as to insure an easily-operated and smooth-running shuttle.

In order that the wheels or rollers C may be properly sustained, their free movement insured, and possibility of soiling of the loop of the needle-thread in passing around the shuttle or loop-taker by coming in contact with oil prevented, I mount the wheels or rollers in the manner now to be described.

D represents the shafts of the wheels or rollers C. This shaft is provided with an internal passage d, communication with which is had through suitable openings d^2 d^2. The shaft is provided with an external collar d^3, which serves to retain the shaft in proper position and also to prevent the too free passage of oil from end to end on the exterior of the shaft.

Each of the wheels C is provided with an elongated hub or projection c, forming a bearing for the wheel, and when the parts are in position the end of this elongated portion bears against the collar d^3 on the shaft. The wheels or rollers C are retained in position on the shafts by screws d^4, which are received

in suitable countersinks in the wheels or rollers. Only a portion of these countersinks are occupied by the heads of the screws d^4, the rest of the countersinks being filled by a plug or cap d^5, which may be of any suitable material, such as metal, vulcanized rubber, wood, paper, or the like.

The preferred manner of retaining the shaft D in position in its bearings E is by forming near the end of the shaft a circumferential groove d^6, and by cutting away one side of the end of the shaft, as at d^7, and by placing adjacent to the end of the shaft a screw d^8, the head whereof is of a thickness to enter the groove d^6. The cut d^7 is of a form to receive the end of the screw d^8, so that by bringing the indentation adjacent to the screw d^8 the shaft may be freely moved back and forth, and by giving the shaft a quarter-turn after being placed in position the head of the screw will engage the circular groove and sliding of the shaft prevented. As a convenient means of preventing the axial movement of the shaft D after being placed in position I provide a set-screw d^9, passing through the bearing E and impinging against the shaft. The set-screw d^9 is preferably made hollow in order that oil necessary for the lubrication of the shaft D may be introduced through it. The parts are so formed that when in proper position the opening in the set-screw d^9 is directly over one of the openings d^2 in the shaft D, and a flattened portion d^{10} is provided near this opening to form a secure seat for the end of the screw.

From the foregoing it will be seen that by introducing oil through the hollow set-screw d^9 the same will be conducted through the shaft D and distributed along the bearings of the wheels C as the same revolve and possibility of the escape of oil to the peripheries of the wheels will at all times be prevented, and thereby danger of soiling thread brought into contact with the shuttle or loop-taker carried by the wheels will be prevented.

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

1. In a sewing-machine the combination with a shuttle or loop-taker, of a support therefor consisting of a series of circumferentially-grooved rollers, each having an elongated bearing formed thereon, a shaft for each of said bearings, an internal oil-passage formed in the shaft, a set-screw in the end of the passage, a countersink in the rollers to receive the head of the set-screws, and a plug for filling the countersink, substantially as described.

2. In a sewing-machine, the combination with a shuttle or loop-taker of a support therefor consisting of a series of circumferentially-grooved rollers, each having an elongated bearing formed thereon and mounted on a fixed shaft provided with an external collar and an internal oil-passage, ports leading to the oil-passage, a set-screw in the end of the passage to retain the roller on the shaft, and a set-screw penetrating the bearing of the shaft and impinging upon said shaft to hold the same in place, substantially as described.

3. In a sewing-machine, the combination with a shuttle or loop-taker, of a support therefor consisting of a series of circumferentially-grooved rollers, each having an elongated bearing formed thereon and mounted on a fixed shaft provided with an external collar and an internal oil-passage, ports leading to the oil-passage, a set-screw in the end of the passage to retain the wheel on the shaft, a set-screw penetrating the bearing of the shaft and impinging upon said shaft to hold the same in place, and a passage in set-screw of bearing adapted to register with ports in the shaft, substantially as described.

4. In a sewing-machine, the combination with a shuttle or loop-taker, of a support therefor consisting of a series of circumferentially-grooved rollers, each having an elongated bearing formed thereon and mounted on a fixed shaft provided with an external collar and an internal oil-passage, ports leading to the passage, a set-screw in the end of the passage, a set-screw penetrating the bearing of the shaft and impinging upon said shaft, a passage in the latter set-screw, and an annular groove in one end of the shaft to admit the head of a set-screw in the bearing adjacent to the groove, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HARRIET RUTH TRACY.

Witnesses:
DAVID H. MEAD,
E. H. PARRY.