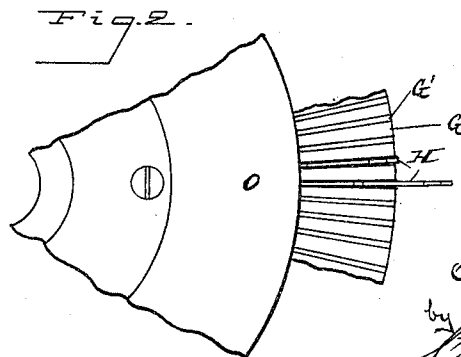
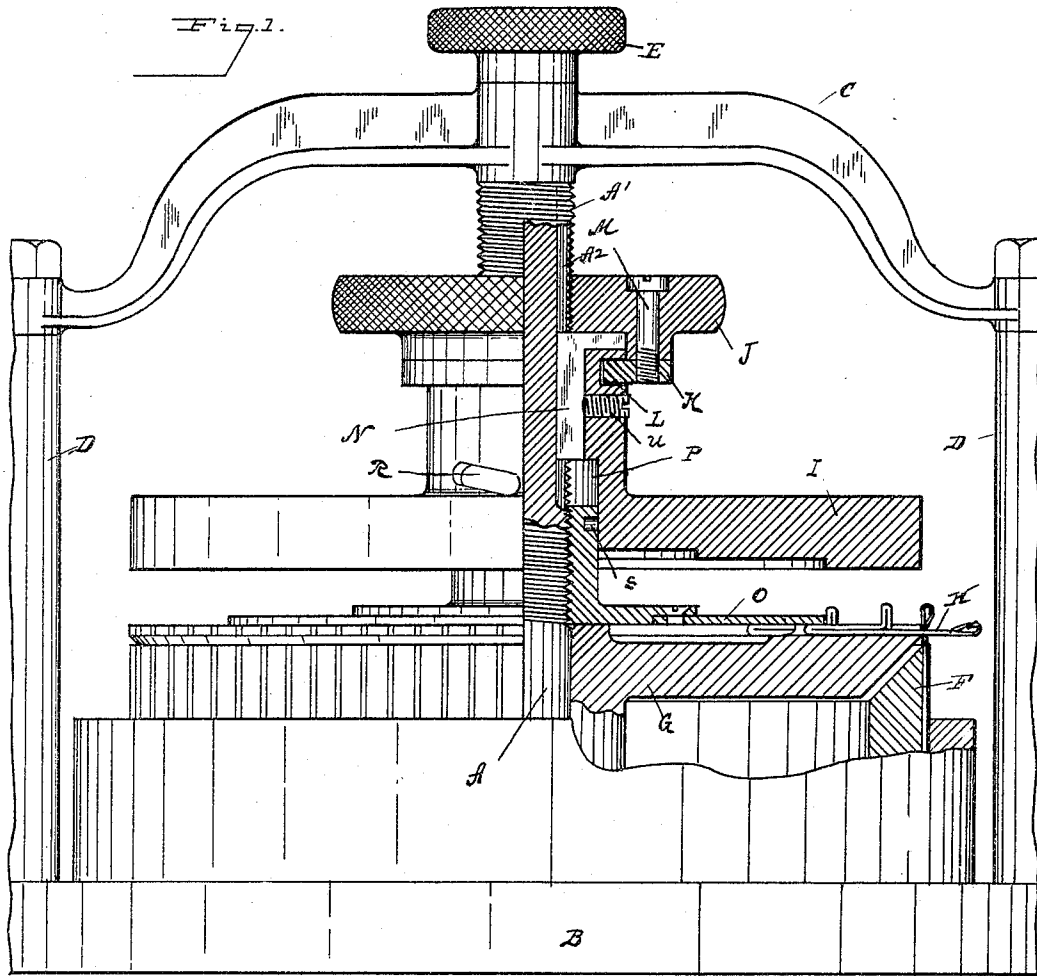


No. 783,408.

PATENTED FEB. 28, 1905.

A. C. BAUM.
CIRCULAR KNITTING MACHINE.
APPLICATION FILED FEB. 14, 1902.



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UNITED STATES PATENT OFFICE.

ASA C. BAUM, OF LITTLEFALLS, NEW YORK.

CIRCULAR-KNITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 783,408, dated February 28, 1905.

Application filed February 14, 1902. Serial No. 94,140.

To all whom it may concern:

Be it known that I, ASA C. BAUM, a citizen of the United States, and a resident of Little-falls, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Circular - Knitting Machines, of which the following is a specification.

This invention relates to that class of circular-knitting machines in which the dial-shaft extends through the cap-plate and which are provided with supporting arms or arches connecting the upper end of the dial-shaft to the bed-plate of the machine.

The object of my invention is, first, to provide means whereby the cap-plate may be raised or separated from the dial for the purpose of rendering its under side accessible without removing the arch or disturbing the circumferential adjustment between the two; secondly, to provide means whereby the needles in the dial may be held in place when the cap-plate is raised or removed from the dial.

Referring to the accompanying drawings, Figure 1 is a partly-sectional and partly-elevated view of my improved knitting-machine. Fig. 2 is a fragmentary elevated top view of the needle-presser and the dial.

Similar letters refer to similar parts in both views.

A represents the dial-shaft; B, the bed-plate; C, the arch; D, the supports for the arch, and E the hand-nut connecting the dial-shaft to the arch C.

F represents the cylinder of the machine, and G the dial in which the horizontal needles H are slidably mounted in radial slots G'.

I represents the cap-plate holding the cams which operate the horizontal needles.

In carrying out my invention I provide the dial-shaft with screw-threads A'. Engaging with these threads is a coupling-nut J, which is rotatably connected to the cap-plate by means of an inwardly-projecting disk or ring K, adapted to engage an annular groove L, cut in the upper portion of the hub of the cap-plate. In order to permit the introduction of said ring into the groove, the ring is made in sections, which are secured to the coupling-nut by means of screws M. For the purpose of preventing the cap-plate revolving when

the same is elevated by means of the coupling-nut the dial-shaft is provided with a groove A², in which a key N slides. This key is mounted in a corresponding groove cut in the hub of the cap-plate.

O represents the needle presser or retainer, whereby the needles are held in position when the cap-plate is raised. This needle-presser is provided with a hub adapted to fit inside a recess or enlarged portion P within the hub of the cap-plate. The hub of the needle-presser also engages the threaded portion of the dial-shaft for the purpose hereinafter mentioned.

In operating my invention the needle-presser is brought down on the heels of the needles by giving it a slight turn by means of a key inserted through the slot R in the hub of the cap-plate, said key engaging a cavity S, located in the hub of the needle-presser. In order to permit the needle-presser to be so adjusted, the slot R and the cavity S are so positioned that they will coincide with each other when the cap-plate is brought down to a normal position on the dial. The cap-plate is then raised by turning the coupling-nut J, the under side of the cap-plate being thus made accessible and suspended in an elevated position, as indicated in Fig. 1. When the cap-plate is again lowered to its proper place, the needle-presser is elevated slightly by giving it a turn in the opposite direction from that just described, this being accomplished in the same manner or by inserting a key through the slot or keyway R, above mentioned. The needle-presser thus releases its grip or contact with the heels of the needles and permits same to be operated as usual. A further advantage of the threaded connection between the dial-shaft and the cap-plate by the intermediate coupling-nut is that a more delicate adjustment between the cap-plate and the dial can be made than is possible to obtain by means of a set-screw, which has heretofore been employed for the purpose of holding the cap-plate to the dial-shaft. When the required adjustment of the cap-plate has been obtained, the cap-plate may be held perfectly rigid by the set-screw U, which engages the key N, above referred to.

It is evident that by the construction above described the cap plate may be raised so as

to make its cams accessible without disturbing the work in progress on the machine, as the needles are held in position by the needle presser or retainer, this being a feature of
5 great utility and advantage in this class of machines.

I do not desire to limit myself to the particular construction herein shown and described, as I am aware that some changes may
10 be made therein without departing from the spirit and scope of my invention. For instance, the needle-presser may be made in sections should it be required to expose parts located farther toward the center of the dial.
15 The needle-presser may also be differently connected or constructed than shown. The cap-plate and its connection with the dial-shaft may also differ from that above described.

20 What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the dial-cam-carrying plate of a circular-knitting machine, with means for lifting said plate clear of the dial,
25 substantially as specified.

2. In a circular-knitting machine, the combination with a dial-shaft having a threaded portion, the dial-cam plate slidably mounted on said shaft, a coupling-nut connecting the
30 dial-cam plate with the threaded portion of the dial-shaft whereby said dial-cam plate may be raised or lowered by turning the coupling-nut, and means for holding said dial-cam plate against rotation when the coupling-nut is re-
35 volved substantially as specified.

3. In a circular-knitting machine the combination of a dial, a cam-carrying cap-plate, a dial-shaft extending through the cap-plate, a threaded portion on said dial-shaft, a nut
40 adapted to said threaded portion and rotatably connected to said cap-plate whereby the said cap-plate may be moved toward or away from said dial by the rotation of said nut, for the purpose specified.

4. The combination in a circular-knitting machine, of a dial-cam-carrying plate, a threaded stem thereon having a spline therein, a nut adapted to said threaded stem, an arch or other carrier for the cam-plate, and a feather adapted
50 to the spline in the stem and having portions engaging the cam-plate and nut.

5. In a circular-knitting machine the combination of a dial, a cam-carrying cap-plate, a dial-shaft extending through the cap-plate,
55 a threaded portion on said dial-shaft, a nut adapted to said threaded portion and rotatably connected to said cap-plate whereby the said cap-plate may be moved toward or away from said dial by the rotation of said nut, and means
60 for preventing circumferential motion of said cap-plate.

6. In a circular-knitting machine the combination with the dial-shaft having a threaded portion, the cap-plate slidably mounted on
65 said shaft, a coupling-nut connecting the cap-

plate with the threaded portion of the dial-shaft, means for holding the cap-plate against rotation when the coupling-nut is turned for the purpose of elevating the cap-plate, a needle-presser secured independently under-
70 neath the cap-plate, said needle-presser being provided with means whereby same may be raised or lowered for the purpose of effecting a vertical adjustment of the same, substantially
75 as described.

7. In a circular-knitting machine the combination with the dial-shaft having a threaded portion, the cap-plate slidably mounted on said shaft, a coupling-nut connecting the cap-
80 plate with the threaded portion of the dial-shaft, whereby the cap-plate may be raised or lowered by turning the coupling-nut, and means for holding the cap-plate against rotation when the coupling-nut is revolved, sub-
85 stantially as described.

8. In a circular-knitting machine, the combination of a removable cap-plate and a needle-presser comprising a disk or ring arranged underneath the said cap-plate and said
90 needle-presser engaging the heels of the dial-needles preventing the said needles from disengaging the dial when the cap-plate is removed, substantially as described.

9. In a circular-knitting machine the combination of a support, a removable cap-plate
95 and needle-presser secured independently to said support, said needle-presser being provided with means whereby the same may be raised or lowered for the purpose of effecting a vertical adjustment of the same, substantially
100 as described.

10. The combination in a circular-knitting machine, of a dial with its needles, a cam-carrying cap-plate, means for raising or lowering said cap-plate, and means for holding the
105 needles in position when the cap-plate is separated from the dial.

11. In a circular-knitting machine, the combination of a dial, a cam-carrying cap-plate, a
110 dial-shaft extending through the cap-plate, said dial-shaft having a threaded portion, a nut adapted to said threaded portion an intermediate connection between the said nut and cap-plate, whereby the said cap-plate may be
115 moved toward or away from the said dial by the rotation of the nut and means for preventing circumferential motion of the said cap-plate.

12. The combination in a circular-knitting machine of a dial, a cam-carrying cap-plate, a
120 dial-shaft extending through the said cap-plate, means on the dial-shaft for moving the said cap-plate toward or away from said dial and means for holding the said cap-plate against rotation during said movement.

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