

(No³ Model.)

P. DIEHL.
SHUTTLE RACE FOR SEWING MACHINES.

No. 465,362.

Patented Dec. 15, 1891.

Fig. 1.

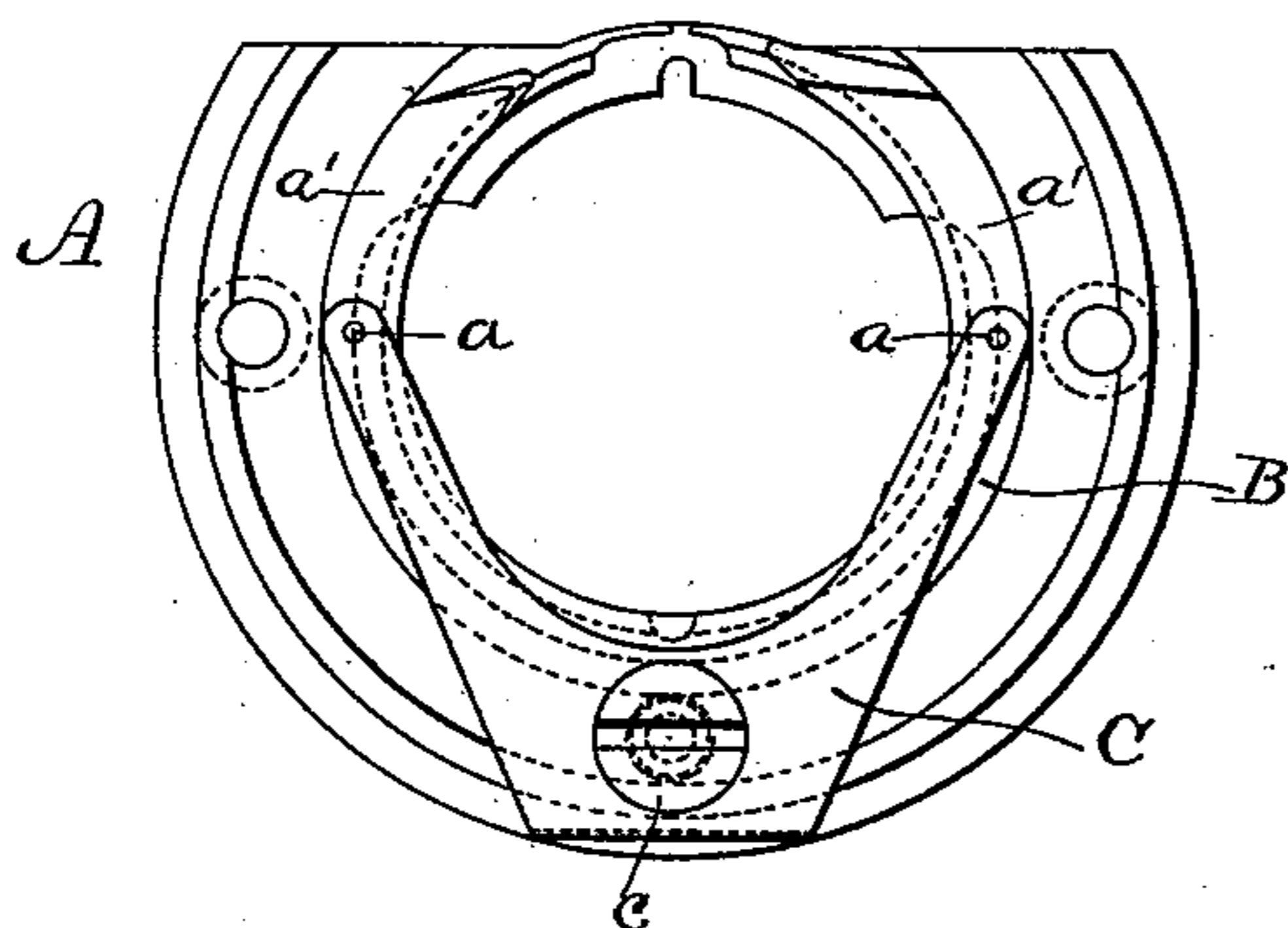


Fig. 2.

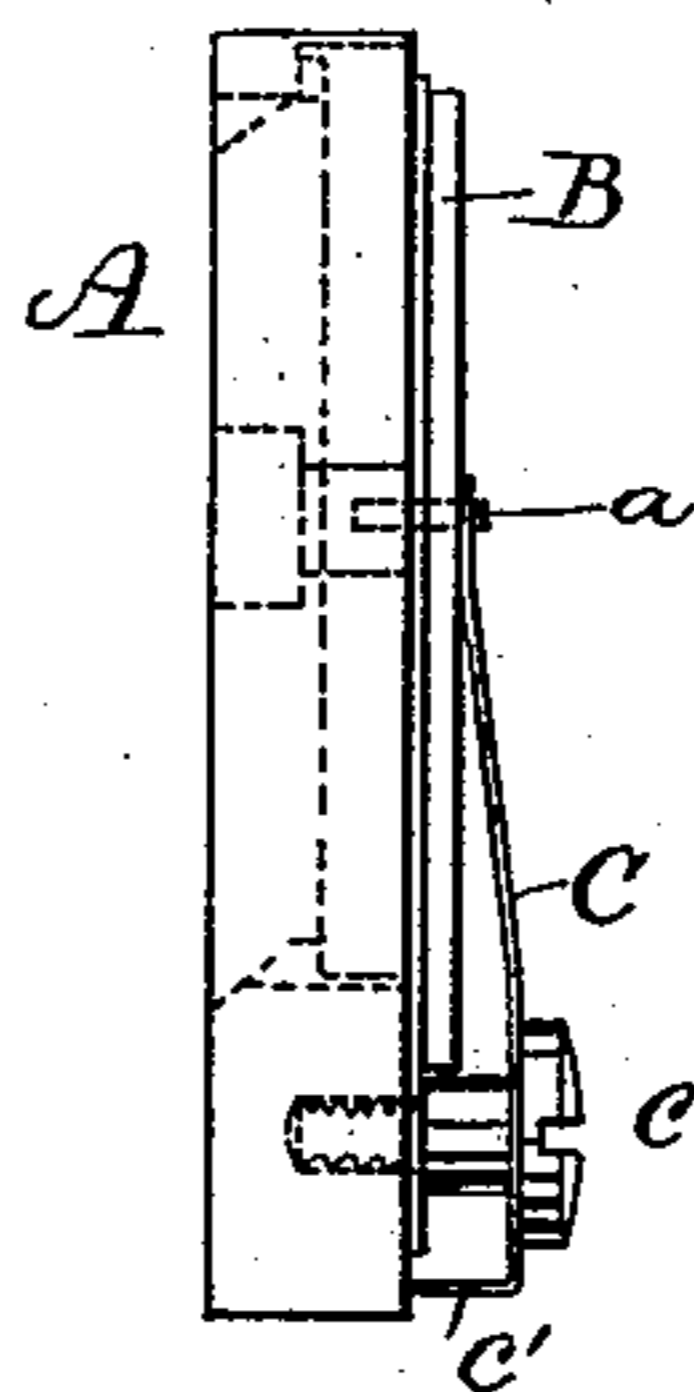


Fig. 3.

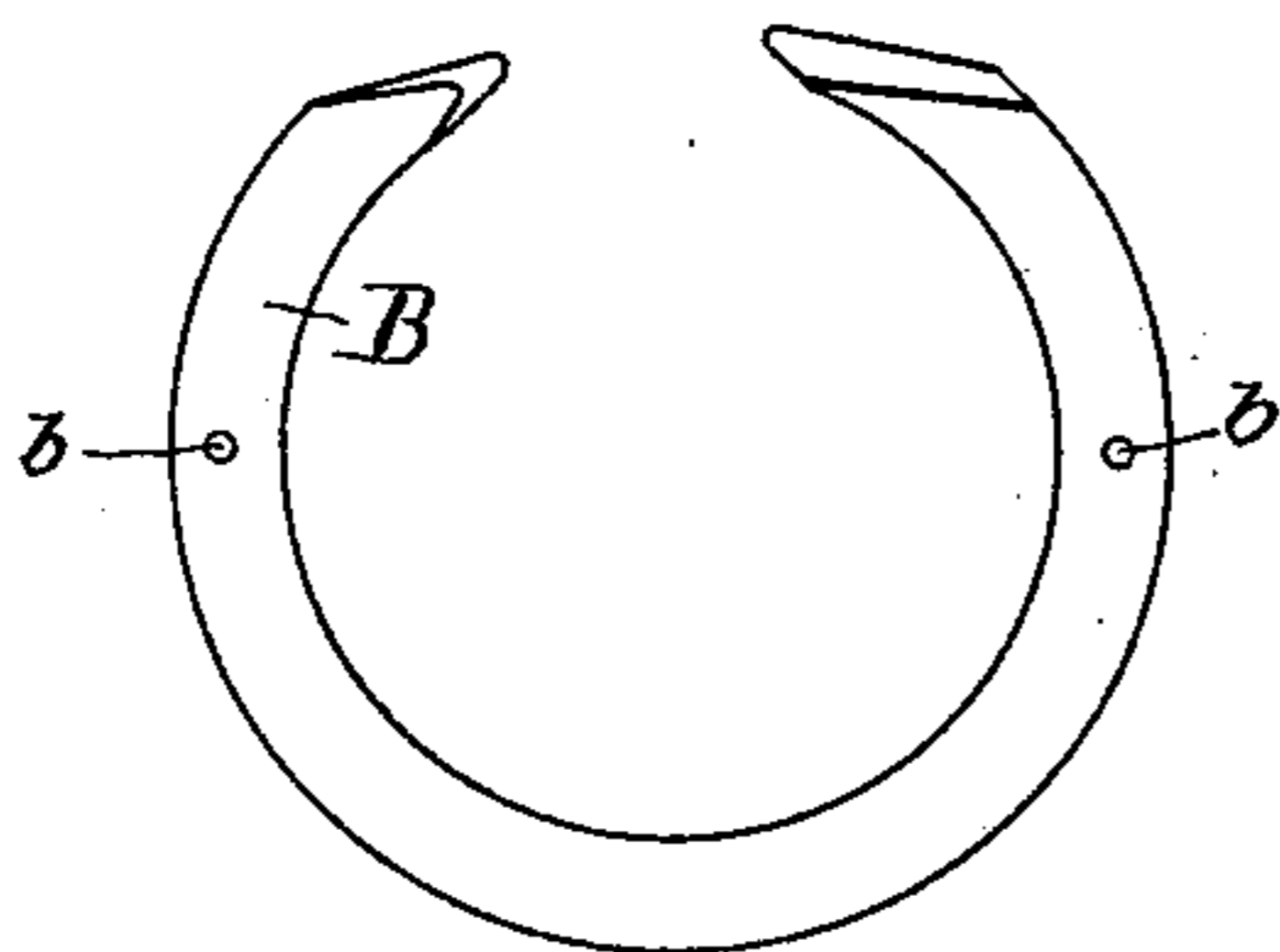
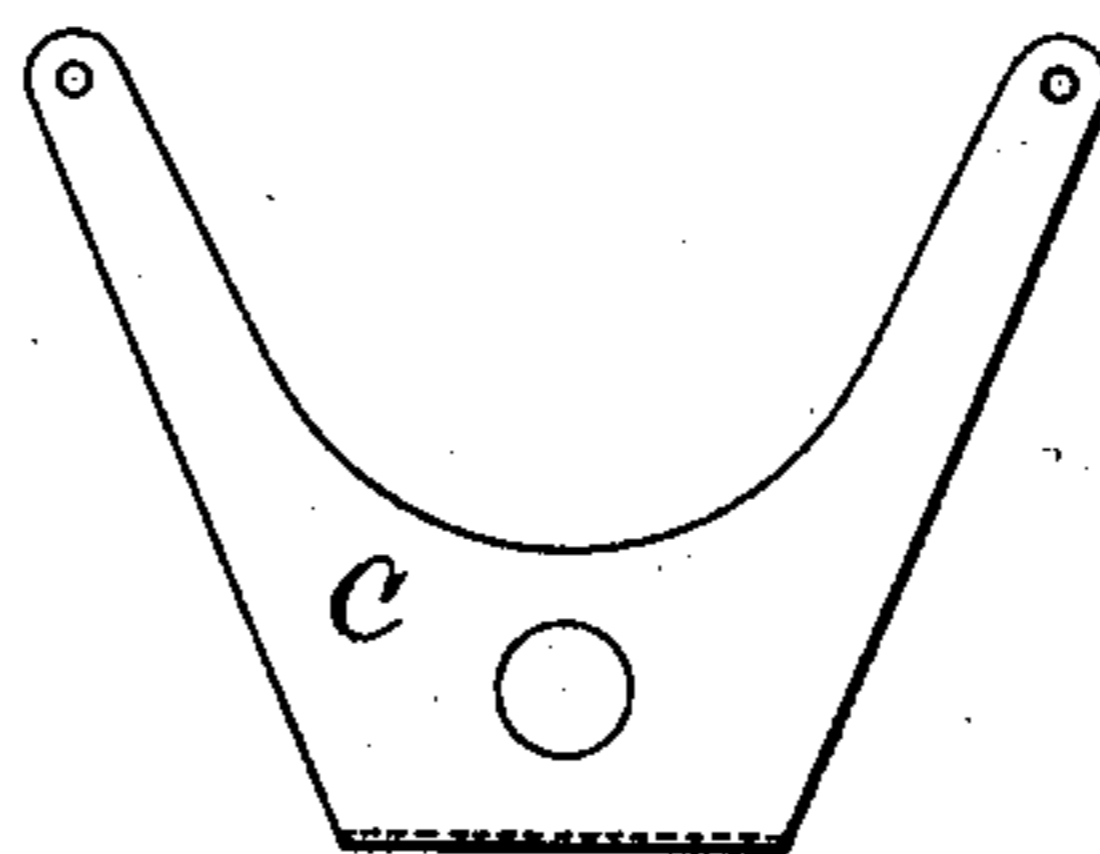


Fig. 4.



WITNESSES:

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PHILIP DIEHL, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE SINGER
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SHUTTLE-RACE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 465,362, dated December 15, 1891.

Application filed June 20, 1891. Serial No. 396,927. (No model.)

To all whom it may concern:

Be it known that I, PHILIP DIEHL, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Shuttle-Races for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 More or less trouble has been experienced with sewing-machines employing oscillating or rotary shuttles working in circular shuttle-races, owing to the fact that if the free end of the needle-thread be not properly secured in commencing to sew it may be carried into the race and cause the shuttle to bind in the race, or, should the needle or shuttle thread be broken when the machine is in operation, the same trouble is liable to occur. This difficulty has heretofore been partly avoided by providing the race with an elastic flange or back, as shown in patent to Miller and Diehl, No. 274,359; but as the said elastic flange or back was attached to its lower part or bottom by screws the difficulty was not entirely obviated, as the said flange or back, while free to yield at its top and side portions, could not yield sufficiently at its bottom portion to wholly prevent the shuttle from binding when the thread or threads were drawn into the race.

My invention has for its object to entirely obviate the difficulty referred to by providing the shuttle-race with a flange plate or ring so supported as to be free to yield or move outward away from the shuttle at all points. This result is effected by providing the shuttle-race with a loosely-mounted curved plate, which extends nearly around the race and which may therefore be termed a "ring," the said ring being held in place by a bifurcated spring pressing against its outer face at opposite points, so that all parts of the said ring are free to move outward or away from the shuttle when necessary.

In the accompanying drawings, Figure 1 is a front view of my improved shuttle-race.

Fig. 2 is a side or edge view thereof; and Figs. 3 and 4 are detail views of the ring and of a two-armed spring, respectively.

A denotes a shuttle-race such as is used in the well-known "Singer" oscillating-shuttle sewing-machine, the same being provided with a suitable circular recess for the shuttle to travel in.

B is a curved plate, forming nearly a complete annulus or ring, the same being loosely fitted in a circular recess in one face (preferably the outer face) of the shuttle-race, and the latter is provided with two small dowel-pins *a*, which pass loosely through holes *b* in the ring B.

C is a bifurcated or two-armed spring attached to the shuttle-race by a single screw *c*, and having the free ends of its arms arranged to press against the outer face of the ring B at points which are preferably diametrically opposite each other, the said arms being also preferably perforated near their ends for the passage of the dowel-pins.

The spring C has a flange *c'* at its lower side to abut against the shuttle-race, and above said flange is a vertical portion against which the under side of the head of the screw *c* bears, while above said vertical portion the arms of the spring incline inwardly to press in the ring, all as clearly shown in Fig. 2.

From the foregoing it will be apparent that the ring B, which is yieldingly held against an annular shoulder *a'* of the shuttle-race, and which is of such interior diameter as to retain the shuttle in the race, will be free to spring outward at all points, when it may be necessary for it to do so, by reason of the fact that any thread may be drawn into the shuttle-race or when the shuttle-race may become clogged by dirt or lint, which would otherwise cause the shuttle to bind in the race.

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

1. The combination, with a circular shuttle-race, of a curved plate or ring loosely fitted

thereto, and a bifurcated spring, the free ends of the arms of which press against the face of said ring at two opposite points.

2. The combination, with the shuttle-race
5 A, having the dowel-pins *a*, of a curved plate or ring B, the bifurcated spring C, having the flange *c'*, and the single attaching-screw *c*.

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

PHILIP DIEHL.

Witnesses:

WM. M. HOUSE,
J. G. GREENE.