

(No Model.)

A. RONTKE.

SHUTTLE DRIVING MECHANISM FOR SEWING MACHINES.

No. 455,115.

Patented June 30, 1891.

Fig. 1

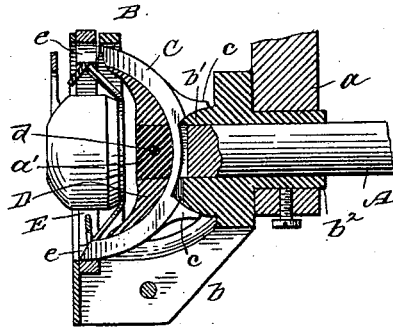


Fig. 3.

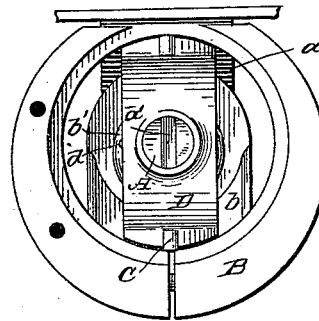


Fig. 4

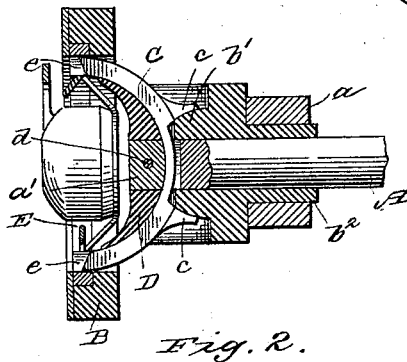
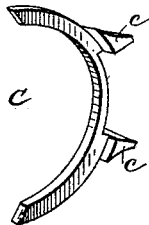


Fig. 2.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## SHUTTLE-DRIVING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 455,115, dated June 30, 1891.

Application filed July 11, 1889. Serial No. 317,191. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT RONTKE, a citizen of Germany, residing at Chicago, in the county of Cook and State of Illinois, have  
5 invented certain new and useful Improvements in Shuttle-Driving Mechanism for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention has for its object to provide a smooth and positively-operating shuttle-driving mechanism for rotary-shuttle sewing-machines, said mechanism consisting of the fewest possible parts. To this end I provide the forward end of the shuttle-operating shaft with a slotted and curved driver-guide which is rigidly attached to said shaft. Rearward of this driver-guide is a stationary eccentric, preferably having a rounded  
20 face against which bears two wings or projections on a segmental driver fitted to work freely in the slot of the said driver-guide, the outer ends or horns of the said driver (which latter slides back and forth in its  
25 guide as the shaft is rotated) being alternately projected into and withdrawn from recesses in the shuttle as the movable parts are rotated, thus allowing the loops of needle-thread to pass around the shuttle without entire disconnection of the latter from the driver.

In the drawings, Figure 1 is a vertical section through the shuttle-race, shuttle, and adjacent parts of a machine with my invention  
35 applied thereto, and Fig. 2 is a horizontal section of the same. Fig. 3 is a front elevation of the shuttle-race and driver-guide with the shuttle removed, and Fig. 4 is a detail perspective view of the driver.

40 A denotes the rotating-shuttle-driving shaft, and B the shuttle-race, from which latter extends rearwardly a portion  $b$ , on which is formed an eccentric  $b'$ , preferably having a rounded face. The portion  $b$  has a sleeve  
45  $b^2$  attached to the hanger  $a$ . The shaft A passes through the sleeve  $b^2$ , the portion  $b$ , and the eccentric  $b'$ , and is slotted at its forward end for the reception of the sliding alternating segmental shuttle-driver C, having  
50 the wings or projections  $c$ , with concave in-

ner faces fitting against the outer convex face of the rounded eccentric  $b'$ .

Attached to the outer end of the shaft B (in the present instance by the pin  $d$ ) is a curved driver-guide D, having a slot in which  
55 fits the curved or segmental driver C. The shuttle E, which rotates in the race B in the usual manner, is provided with two holes or recesses  $e$ , diametrically opposite each other, and which are alternately entered by the extremities or horns of the alternating driver C, and the latter is, as herein shown, held in place in its slot in the shaft A by a plug or block  $a'$ , which is secured in place by the pin  $d$ , which holds the driver-guide D on the shaft A.  
65

The operation of my invention is as follows: As the shaft A rotates the alternating driver C, the wings of which are held against the face of the eccentric  $b'$ , will be caused to slide back and forth in the rotating driver-guide D, thus causing the ends or horns of the driver to be alternately projected into and withdrawn from the holes or recesses  $e$  in the shuttle, and thereby causing the loops of needle-thread to freely pass around the shuttle.  
75 The eccentric  $b'$  is so placed that it is largely below the center of the shaft A, so that that horn of the driver which is uppermost is withdrawn from the shuttle, as shown in Fig. 1, thus allowing the loops of thread to escape  
80 from the top of the shuttle as the stitches are tightened by the take-up; but when the driver is in the horizontal position shown by Fig. 2 both horns are in engagement with the shuttle. The movements of my sliding alternating driver are smooth and positive, and as the horns thereof, when withdrawn from the shuttle, are brought within the smooth outer face of the driver-guide D the latter serves  
85 as a guard to prevent the loops of thread from catching on the ends of said horns.

I claim—

1. In a sewing-machine, the combination, with a shuttle-race, a shuttle having two diametrically-opposite recesses, and a rotary  
95 shuttle-operating shaft having a slot at or near its forward end, of a stationary eccentric near the said forward end of said shaft, a sliding alternating segmental shuttle-driver fitted in said slot and having wings or projections

engaging said eccentric, said driver having  
two horns, one at each end, to alternately en-  
ter said recesses in the said shuttle, and a  
shuttle-driver guide rigid with said shaft  
5 and having a slot in which said alternating  
driver slides back and forth as said shaft  
rotates.

2. In a sewing-machine, the combination,  
with a shuttle-race, a shuttle, and a rotary  
10 shuttle-operating shaft having a slot at or  
near its forward end, of a stationary eccen-  
tric near the forward end of said shaft and  
having a rounded or convex face, a sliding

alternating segmental shuttle-driver fitted in  
said slot and having wings or projections 15  
with concave inner faces fitting the convex  
face of said eccentric, and a shuttle-driver  
guide rigid with said shaft and having a slot  
in which said driver slides back and forth as  
said shaft rotates. 20

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

ALBERT RONTKE.

Witnesses:

JAMES BOLTON,

EDW. A. SAALFELD.