

No. 759,317.

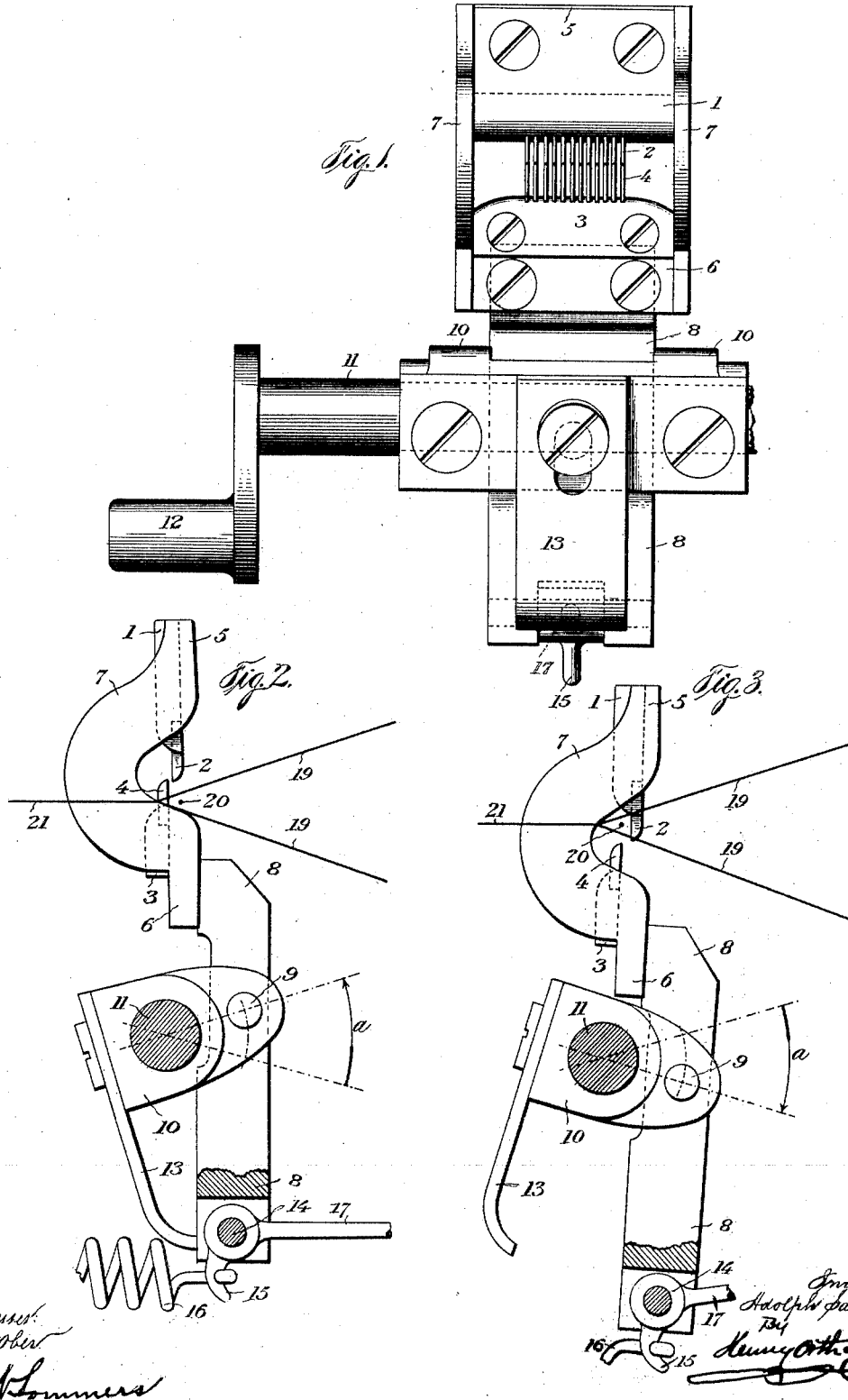
PATENTED MAY 10, 1904.

A. SAURER.
LOOM REED.

APPLICATION FILED SEPT. 22, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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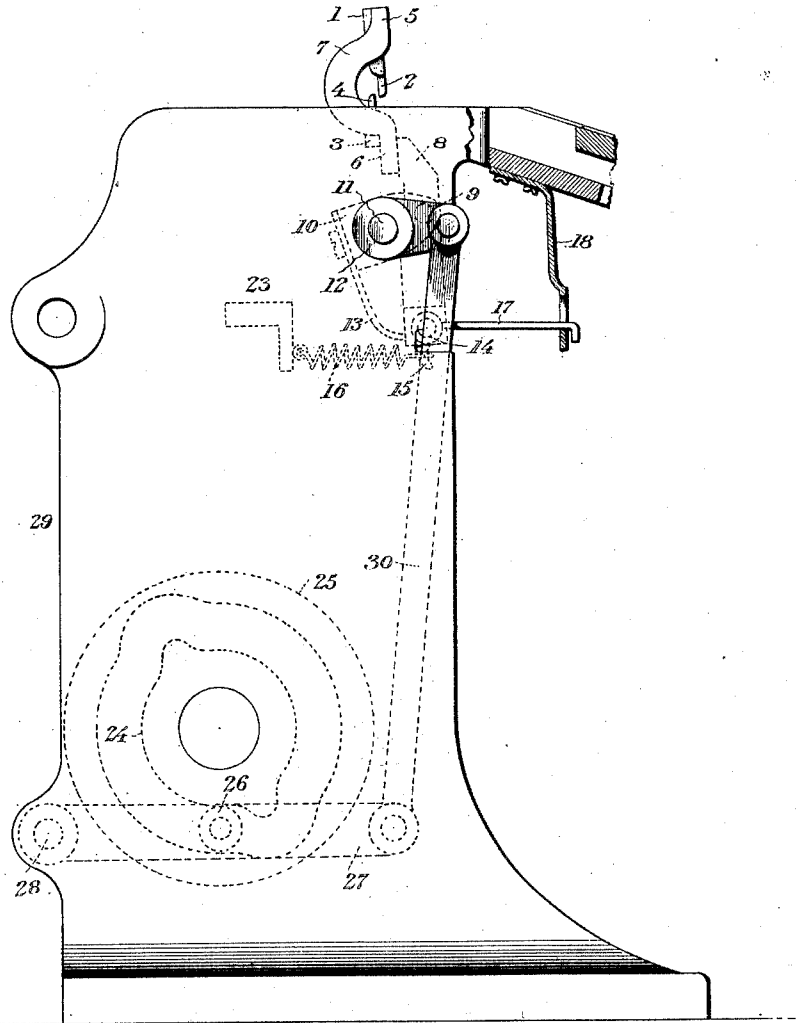
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2 SHEETS—SHEET 2.

Fig. 4.



Witness
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UNITED STATES PATENT OFFICE.

ADOLPH SAURER, OF ARBON, SWITZERLAND.

LOOM-REED.

SPECIFICATION forming part of Letters Patent No. 759,317, dated May 10, 1904.

Application filed September 22, 1902. Serial No. 124,453. (No model.)

To all whom it may concern.

Be it known that I, ADOLPH SAURER, a citizen of the Republic of Switzerland, residing at Arbon, canton of Thurgau, Switzerland, have invented new and useful Improvements in and Relating to Loom-Reeds, of which the following is a specification.

My invention has relation to looms for weaving narrow goods—such as ribbons, tape, and the like—and its essential characteristic features lie in the use of a divided slay or reed and in means for transferring the weft from the rear to the front of the reed to be beaten up, such weft being laid in the warp in rear of said reed instead of in front thereof, as usual.

The object of my invention is not only an economy of space—namely, to avoid the enlarging of the loom crosswise and forwardly of the reed, necessary to the location of the shuttle-race in the usual manner—but also to avoid the difficulty in locating the shuttle-race and the shuttle-driving mechanism in front of the reed of a loom of the kind referred to; but that my invention may be fully understood I will describe the same in detail, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of a divided reed embodying my invention, showing the crank-shaft. Figs. 2 and 3 are sectional side elevations showing said reed in its upper and lower positions, respectively; and Fig. 4 is a side elevation, partly in section, of a portion of a loom-frame, illustrating means for actuating the reed.

To cross-rails 1 and 3, rigidly secured together at a proper distance from each other by end plates 7, are secured short reeds or reed-teeth 2 and 4, respectively, overlapping each other and leaving between them sufficient space for the weft-thread to readily pass from the rear to the front of the reeds or reed-teeth.

To the rear face of the reed-rail 3 is secured a plate 6, to which is secured the reed-support 8, having a slot in its lower face about midway of its vertical edges, in which slot is secured a pin 14, on which is pivoted a rod 17, having its rear free end bent at right angles to form an abutment, which, in con-

junction with a fixed slotted stop-plate 18, (through the slot of which the bent end of the rod passes,) serves to limit the swing of the support 8 on its spindle. The rod 17 has at its forward end a lug 15, to which is connected one end of a spring 16, whose opposite end is connected to a fixed part 23 of the loom. (Shown in dotted lines in Fig. 4.)

The reed-support 8 is loosely mounted on a spindle 9, on which are also journaled the arms of a forked crank 10, secured to a rock-shaft 11, rocked periodically in the arc of the circle *a*, Figs. 2 and 3, in which 19 indicates the warp-threads, 20 the weft-thread, and 21 the finished ribbon or tape. This rocking motion may be imparted to the rock-shaft 11 by any suitable means—for instance, as shown in Fig. 4, through the medium of a cam-groove 24 in the end face of a disk or cylinder 25, driven in any desired manner, the cam 24 acting on a roller 26, carried by a lever 27, fulcrumed at 28 to the loom-frame 29 and connected by a rod 30 to the wrist-pin of a crank 12 on rock-shaft 11.

In Fig. 2 the reed is shown in its normal position—that is to say, in the position it assumes when the shuttle (not shown) lays the weft into the open shed—*i. e.*, when the pick takes place—the warp-threads 19 lying between the lower row of teeth 4 of the reed and the weft-thread lying in the warp in rear of said lower row of teeth. As the shuttle is about to traverse the shed in rear of the reed the shaft 11 through its crank 12 is rocked from left to right, thereby moving the reed-support 8 downward through the action of crank 10 on its spindle 9, whereby plate 13 is moved to the left and out of contact with the support, as shown in Fig. 3, thus allowing traction-spring 16 to tilt the support 8 on its spindle 9, so that the reed will swing back toward the weft-thread 20 and by the downward movement of the reed cause said weft-thread 20 to pass through the gap between the upper and lower rows of reed-teeth 2 and 4 in front of said upper row of teeth. This downward displacement of the reed also brings the warp-threads 19 between the teeth 2 of the upper row, as shown in Fig. 3, at which time the shuttle has traversed the shed and drawn the

weft-thread tight. As soon as the described operations have taken place the shaft 11 is rocked in an opposite direction, whereby the reed is returned to its normal position with
 5 the warp between the teeth 4 of the lower row and the weft in front of said lower row of teeth. At the same time the plate 13 has moved in contact with reed-support 8 and tilts the same in an opposite or forward direction
 10 against the stress of the spring 16, thereby beating up the weft. The tilting of the reed-support 8 under the action of spring 16 to move the reed backward toward the weft-thread 20 is limited by the stop-plate 18 and
 15 just sufficient to bring the gap between the upper and lower reed-teeth 2 and 4 in line with said weft-thread 20 to enable it to pass through said gap, and this tilting movement takes place during the first period of down-
 20 ward movement of the reed.

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

1. A divided loom-reed having upper and
 25 lower sets of teeth the upper set in rear of the lower, for the purpose set forth.

2. A divided loom-reed having upper and lower sets of reeds or teeth, the upper set in rear of and overlapping the lower set, for the
 30 purpose set forth.

3. A divided, pivotally-mounted, loom-reed, having upper and lower sets of reeds or teeth, the upper set in rear of and overlapping the lower set of teeth; in combination with means
 35 organized to tilt the reed backwardly and move it downwardly and then move it upwardly and forwardly, for the purpose set forth.

4. A divided, pivotally-mounted, loom-reed,
 40 having upper and lower sets of reeds, the upper set in rear of the lower set, a rock-shaft, a crank thereon acting on the reed to move the same downwardly and then upwardly when said shaft is rocked in opposite directions, and
 45 means to swing the reed backward during its downward movement and forward after it has

completed its return or upward movement, for the purposes set forth.

5. A divided loom-reed having upper and lower sets of reeds or teeth, the upper set in
 50 rear of and overlapping the lower set, and a spindle on which said reed is loosely mounted; in combination with a rock-shaft, a crank thereon connected to the reed-spindle to move the reed downwardly and then upwardly when
 55 said shaft is rocked in opposite directions, means to swing the reed backward during its downward movement and forward after it has completed its return or upward movement, for the purposes set forth. 60

6. A divided, pivotally-mounted, loom-reed, having upper and lower sets of reeds, the upper set in rear of the lower set, a rock-shaft, a crank thereon acting on the reed to move the same downwardly and then upwardly when
 65 said shaft is rocked in opposite directions, means to swing the reed backward during the downward movement and forward after it has completed its return or upward movement, and means to limit the backward swing of the
 70 reed, for the purpose set forth.

7. A divided reed having upper and lower sets of reeds or teeth, the upper set in rear of and overlapping the lower set, and having a
 75 downward extension, and a spindle on which said reed is loosely mounted; in combination with a rock-shaft, a crank secured thereto and engaging said spindle, the plate 13 secured to said crank and adapted to act on the reed extension to swing the reed forward, the rod 17
 80 connected to said reed extension, the spring 16 connected to said rod to swing the reed backward and the stop-plate 18 through which passes the bent end of rod 17, substantially
 85 as and for the purposes set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADOLPH SAURER.

Witnesses:

A. LIEBERKNECHT,
 M. VEITH.