C. MORIGGL.

DIVIDED LOOM REED.

APPLICATION FILED MAY 16, 1912.

1,067,619. Patented July 15, 1913.

Fig. 1

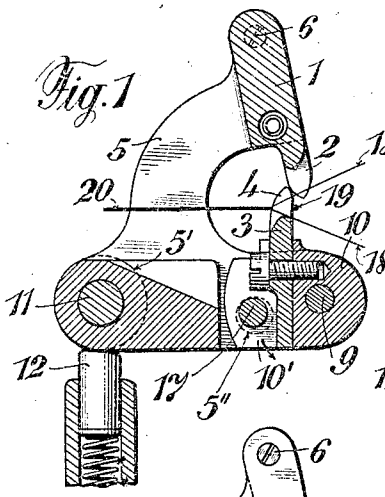


Fig. 2

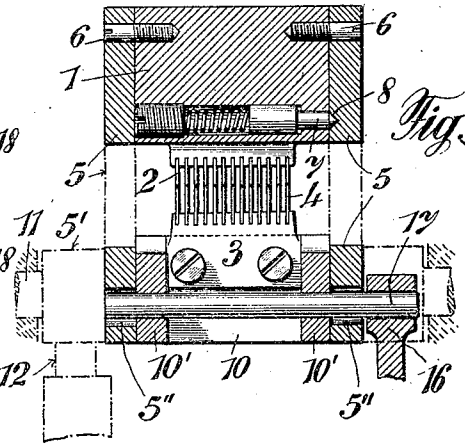


Fig. 3

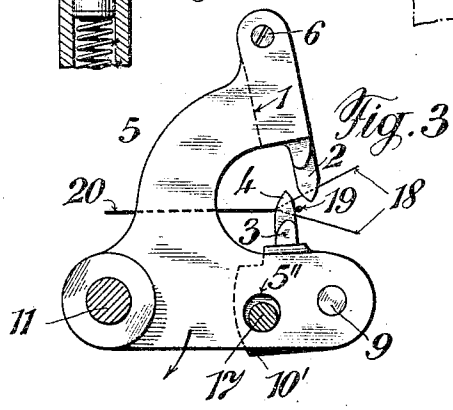


Fig. 4

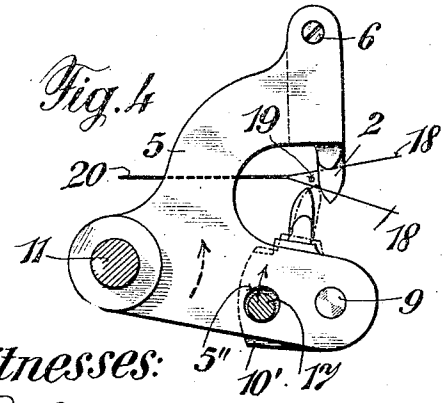
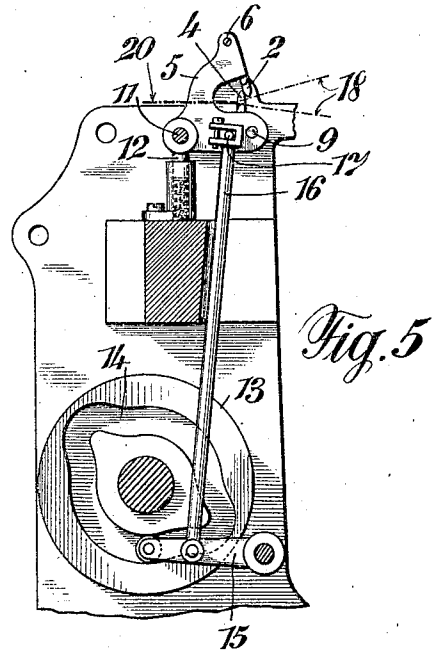


Fig. 5



Witnesses:

B. Sommers

E. Leckert.

Inventor:

Carl Moriggl

By Henry Orth & Co

Atty

UNITED STATES PATENT OFFICE.

CARL MORIGGL, OF ARBON, SWITZERLAND, ASSIGNOR TO THE FIRM OF ADOLPH SAURER, OF ARBON, SWITZERLAND.

DIVIDED LOOM-REED.

1,067,619. Specification of Letters Patent. Patented July 15, 1913.

Application filed May 16, 1912. Serial No. 697,813.

To all whom it may concern:

Be it known that I, CARL MORIGGL, a subject of the Emperor of Austria-Hungary, residing at Arbon, Switzerland, have invented new and useful Improvements in Divided Loom-Reeds; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The invention relates to a divided loom-reed in which one set of teeth is movably arranged so that it may move away from or against the other set of teeth. This type of reeds as hitherto constructed possesses the drawback that by the thread guide of the shuttle the weft is inserted through the open reed behind the sets of teeth of the latter. Since during this operation the reed must open very far in order to allow the thread guide to pass, it happens when the shed is formed that warp threads especially if they have knots do not fall into their proper tooth spaces but stick to adjacent warp threads and are taken by them into their tooth spaces. Since in such reed also in the open position of the reed the lower movable set of teeth does not release the warp threads, it happens that the warp threads especially if they have knots, are caught by the knots in the tooth spaces so that the forming of the shed does not take place as it ought to do. In consequence of these drawbacks fabrics of inferior value are produced, or the threads sticking to each other or caught in the tooth spaces are torn or cut by the thread guide.

The object of the present invention is to provide a divided loom-reed of the type referred to in which the weft is inserted in the wellknown manner in front of the sets of teeth. In order to avoid the above mentioned drawbacks the movable set of teeth being carried by a member pivotally mounted on the reed carrier supporting the other set of teeth is moved with relation to the carrier each time when the reed is opened, so that it wholly releases the warp threads while they move into the open shed position.

In the accompanying drawing which illustrates a form of construction of the invention by way of example, Figure 1 shows a vertical section through the reed. Fig. 2 shows a longitudinal section through the same. Figs. 3 and 4 are side elevations showing the reed in two different working positions. Fig. 5 shows parts of a loom with a reed according to this invention and a mechanism for actuating the reed.

The reed is provided with an upper plate 1 carrying a downward projecting set of teeth 2 and with a lower plate 3 carrying an upward projecting set of teeth 4. The lower set of teeth is arranged behind the upper set and the teeth of both sets cover each other for a certain amount. The plate 1 is arranged between the arms of a forked carrier 5 and mounted to turn about pivots 6. The plate is held in working position by means of a pin 7 the point of which is pressed by the action of a spring into a notch 8 provided in the carrier 5. By means of screws the plate 3 is secured to a member 10 which is arranged between the arms of the carrier 5 and mounted to turn about the axle 9. The reed carrier 5 is mounted to rock about a fixed axle 11. A spring presses a brake-block 12 against a cylindrical portion 5′ laterally projecting from the carrier (Figs. 2 and 5). The carrier 5 is oscillated from a disk 13 which is mounted on the loom (Fig. 5) and provided with a cam slot 14. The disk 13 is rotated by any suitable means which are not shown on the drawing. A roller mounted on the lever 15 is guided in the slot and a link 16 connects the lever 15 to the axle 17 (Fig. 5). The axle 17 is secured to projections 10′ of the member 10 and projects through openings 5″ provided in the arms of the bracket 5. The openings 5″ are of larger diameter than the axle 17. The warp threads 18 are guided through the teeth. 19 designates the weft and 20 the finished ribbon.

The described reed when mounted on a ribbon loom operates as follows: Fig. 1 shows the reed carrier in its upper position of rest, that is the position in which the shuttle inserts the weft 19 into the open shed. The reed is closed so that the teeth of both sets touch each other. When the shuttle has passed the teeth the inserted thread 19 is located in front of the lower set of teeth. When thereafter the link 16 is lowered by means of the cam slot 14 of the rotating disk 13, for the first time the

carrier 5 is not moved but only the member 10 which is turned downward with the lower set of teeth as much as the play between the axle 17 and the openings 5'' allows such movement. The reed is opened hereby, that means the lower set of teeth is moved away from the upper set so that a space is left between both sets of teeth (Fig. 3). As soon as the axle 17 touches the lower wall of the openings 5'' also the carrier. 5 and therewith both sets of teeth are moved downward whereby the weft 19 is moved through said space behind the upper set of teeth (Fig. 4). When thereafter the link 16 is raised by the disk 13 in consequence of the play between axle 17 and the openings 5'' at the first time only the member 10 is turned upward about the axle 9 whereby the lower set of teeth 4 is moved against the upper set 2, that means the reed is closed, as shown in dash and dot lines in Fig. 4. After the axle 17 has touched the upper wall of the openings 5'' also the carrier 5 is moved upward whereby the inserted weft 19 is pressed by the lower set of teeth against the finished portion 20 of the ribbon. The described operation is repeated at every insertion of a weft. During all this operation the carrier 5 is braked by the block 12 so that it performs no undesired motion and is prevented from being driven by the member 10 when moving alone.

With the reed according to this invention the weft is inserted in front of the lower set of teeth and the latter when the reed is opened is moved so much downward that the corresponding warp threads are released by said set of teeth. By this means a warp thread which, by a knot for instance adheres to an adjacent warp thread and is taken into the tooth space of the latter, is removed from there and brought into its proper tooth space of the lower set of teeth. Hereby both the threads are prevented from being torn by the thread guide of the shuttle. Moreover since the lower set of teeth moves to and fro like a rake a warp thread which carries a knot is prevented from being caught in a tooth space so that there is no danger also with such thread that the forming of the shed is interrupted.

In order to clean both sets of teeth, by displacing the pin 7 from the notch 8 the plate 1 with the upper set 2 may be turned upward whereafter the plate 3 with the lower set of teeth may be unscrewed.

I claim:

1. In a divided reed a movable set of teeth, a second set of teeth, a reed carrier supporting the second set of teeth, a member pivotally mounted on said reed carrier and carrying said movable set of teeth and means for alternately moving the movable set of teeth away from and against said second set of teeth in such manner that when the reed is opened the movable set is moved independently of the carrier so that it wholly releases the warp threads moving into the open shed position.

2. In a divided reed a movable set of teeth, a second set of teeth, a reed carrier supporting the second set of teeth, a member pivotally mounted on said reed carrier and carrying said movable set of teeth, an axle secured to the said member the reed carrier having openings through which said axle passes of larger diameter than the axle, and means for reciprocating the axle.

3. In a divided reed a movable set of teeth, a second set of teeth, a reed carrier supporting the second set of teeth, a member pivotally mounted on said reed carrier and carrying said movable set of teeth, an axle secured to the said member, the reed carrier having openings through which said axle passes of larger diameter than the axle, means for reciprocating the axle and means for exerting a braking action on said reed carrier.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

CARL MORIGGL.

Witnesses:

CARL GUBLER,

ARNOLD LEHNER.