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N. & J. CHAIZE.

APPARATUS FOR PREVENTING THE PRODUCTION OF REED STRIPES IN WOVEN FABRICS.

APPLICATION FILED SEPT. 11, 1902.

NO MODEL.

Fig. 1.

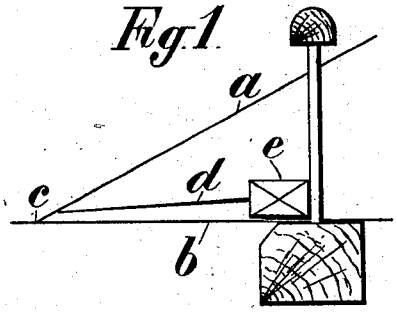


Fig. 1₁.

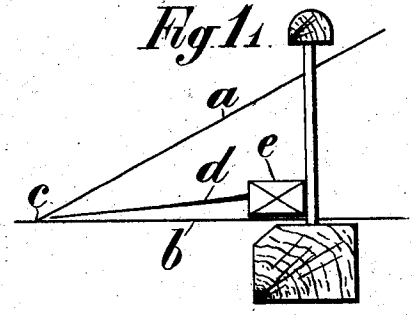


Fig. 2.

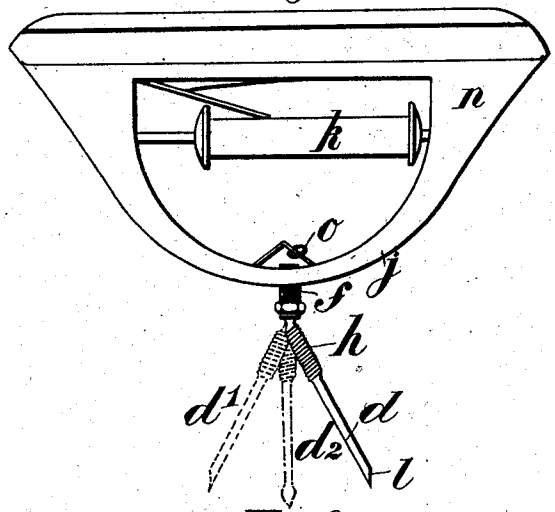
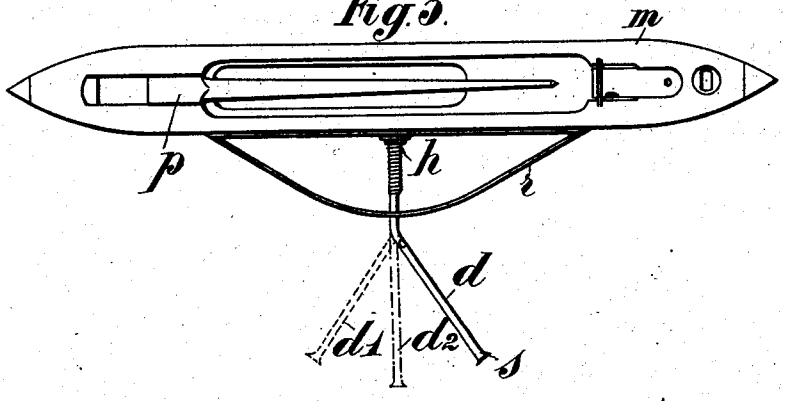


Fig. 3.



WITNESSES

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No. 728,366. Patented May 19, 1903.

UNITED STATES PATENT OFFICE.

NICOLAS CHAIZE AND JACQUES CHAIZE, OF ST. ETIENNE, FRANCE.

APPARATUS FOR PREVENTING THE PRODUCTION OF REED-STRIPES IN WOVEN FABRICS.

SPECIFICATION forming part of Letters Patent No. 728,366, dated May 19, 1903.

Application filed September 11, 1902. Serial No. 122,905. (No model.)

To all whom it may concern:

Be it known that we, NICOLAS CHAIZE and JACQUES CHAIZE, citizens of the French Republic, residing at St. Etienne, (Bellevue,) in the department of the Loire, France, have invented certain new and useful Improvements in Methods of and Apparatus for Preventing the Production of Races or Reed-Stripes in Woven Fabrics; and we 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.

Up to the present time reducing-reeds of greater or smaller size and often of great strength have been employed for the purpose of better dividing the warp in looms and to cover as well as possible the races or reed-stripes caused by the dents in well-regulated woven fabrics. These well-clamped reeds attain their object in part and have the great disadvantage that they strip the warp-threads and provoke many breakages. If the reeds be less tightly clamped, it is necessary to increase the number of threads without thus effacing the races or reed-stripes produced by the dents of the reeds.

The object of this invention is to avoid all these inconveniences by an absolute and automatic filling of the warp-threads at each opening of the warp for the passage of the weft and to obtain with a reduced number of warp-threads a fabric or a ribbon having an appearance similar to one manufactured with the normal number of threads. It is thus possible to reduce the weight or size of the textile material if the number of warp-threads be not too greatly reduced.

As an advantage of these improvements, which are applicable in the manufacture of all kinds of woven fabrics whatever, there may be mentioned the possibility of employing lighter reeds, whence results an economy in the cost of the reeds, less warp used, fewer breakages, greater production, and a general lowering of the net cost, particularly arising from the fewer ends of warp used, while there is an increase in the salable value of the product, owing to its superior appearance.

In the accompanying drawings, to which reference will be hereinafter made, Figure 1 represents these improvements diagrammatically. Fig. 1′ is a modified diagram. Fig. 2 shows a ribbon-shuttle fitted with a device intended to carry out this invention in connection with a ribbon-loom, and Fig. 3 a similar device fitted to a common shuttle for a cloth-loom.

In Figs. 1 and 1′ the opening of the warp or shed is indicated by the separation of the two sheets of warp *a* and *b* at the point *c*, at which point or in proximity therewith the device *d*, fixed upon the facing-cheek of the shuttle *e*, operates upon the interior faces of the sheets or upon the face of one sheet only, as indicated by Fig. 1. The devices *d* can be of many shapes and be constructed of various different materials, as will be obvious, and they may have an elastic action, as hereinafter described, or they may be rigid.

When the device is attached to the shuttle, it will be evident from what has preceded that it may be so arranged as to have a distance between its operative part and the shuttle to which it is attached greater or less in different circumstances; also, that instead of being connected with the shuttle it may be connected with or form part of some other piece of apparatus which is caused to travel across the shed at each pick. It is also to be understood that the form of the device and of its attachments illustrated in the accompanying drawings may be very widely modified.

As represented by Figs. 2 and 3 the device consists of a bent stem *d*, flexibly connected with its mounting by the spiral spring *h*. In Fig. 2 the stem is movable at *f*, so as to be able to turn around and occupy the position *d′* or any intermediate position, as may be necessitated by its friction upon the inner faces of the warp-sheets *a* or *b*. Instead of being bent it may be straight, as indicated by the dotted lines d^2.

In Fig. 3 the device is shown as being mounted directly upon the cheek of the shuttle *m*. In Fig. 2 it is shown to be mounted upon the bow *j*, and the thread from the pirn *k* passes through the guide *o*, the hollow stem *d*, and issues through the eyeleted end *l* or any other part of the stem. This stem in Fig. 3 is guided by a slot in the metallic strip *r*, fixed upon the same cheek of the shuttle. The thread from the pirn takes the same course

as described with reference to Fig. 2 in the modification Fig. 3 and issues by the open end *s*.

The description given with reference to Figs. 2 and 3 is illustrative only, and, it will be understood, the device or its exact equivalent, varied in form or not, may be similarly applied to other shuttles or to the equivalent of a shuttle which is caused to traverse the warp-sheet at each opening in the same manner as a shuttle.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination with a loom, of a device adapted to pass through the shed at every pick and having a yielding stem projecting toward the opening of the shed.

2. In a loom, the combination with the shuttle, of a yielding hollow stem projecting laterally therefrom.

3. In a loom, the combination with the shuttle, of a hollow stem projecting laterally therefrom and flexibly connected therewith.

4. In a loom, the combination with the shuttle, of a hollow stem projecting laterally therefrom, and a spring connecting said stem with the frame of the shuttle.

5. In a loom, the combination with a weft-carrier, of a yielding hollow stem projecting therefrom in the direction of the reed and arranged to exert a rubbing action upon the inner face of the warp-threads when opened to receive the pick.

In testimony whereof we affix our signatures in presence of two witnesses.

NICOLAS CHAIZE.
JACQUES CHAIZE.

Witnesses:
HENRY DANZER,
NICOLAS CRESPIN.