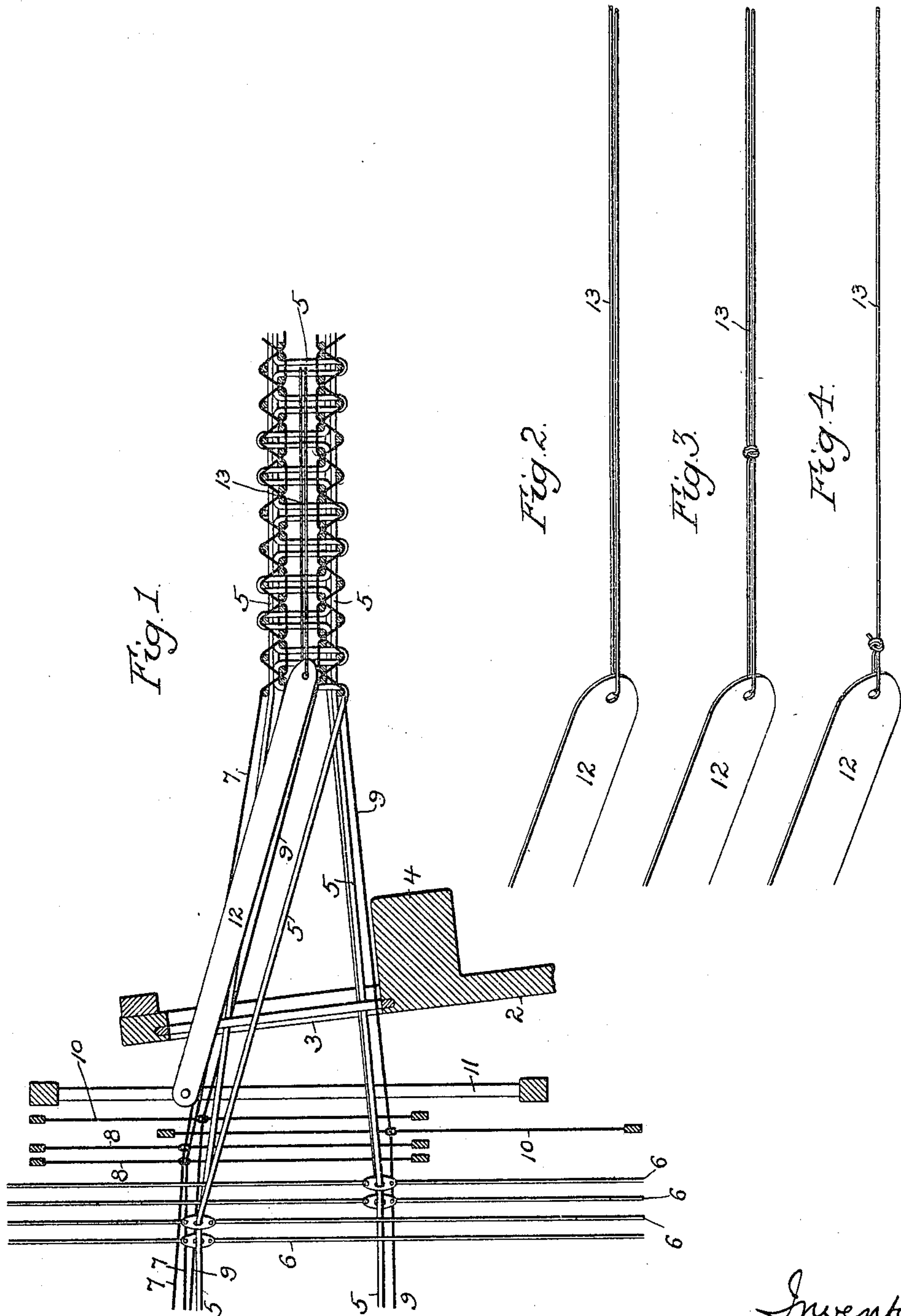


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 LOOM FOR WEAVING DOUBLE PILE FABRICS.  
 APPLICATION FILED DEC. 18, 1909.

962,286.

Patented June 21, 1910.



Witnesses  
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# UNITED STATES PATENT OFFICE.

GEORGE ZIMMERMANN, OF PHILADELPHIA, PENNSYLVANIA.

LOOM FOR WEAVING DOUBLE-PILE FABRICS.

962,286.

Specification of Letters Patent. Patented June 21, 1910.

Application filed December 18, 1909. Serial No. 533,954.

*To all whom it may concern:*

Be it known that I, GEORGE ZIMMERMANN, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Looms for Weaving Double-Pile Fabrics, of which the following is a specification.

The object of my invention is to simplify the construction and improve the operation of the loom for weaving double pile fabrics for which I have obtained Letters Patent No. 806,729, dated December 5, 1905. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawing, in which—

Figure 1 is a longitudinal section of sufficient of the loom to illustrate my present invention, and Figs. 2, 3 and 4 are perspective views of that member of the loom to which my present invention particularly relates.

My patented loom was intended for weaving that class of pile fabrics which comprise two independent backing webs spaced apart and connected by the pile forming warp threads, which cross from one backing web to the other and are subsequently severed midway between the two webs so as to produce two independent fabrics, each with a cut pile face.

In the loom forming the subject of my former patent, and in others of its class, bars or plates are interposed between the two backing webs to hold the latter the proper distance apart, these bars or plates being spaced apart laterally so as to permit of the proper shedding between them of the different sets of pile-forming warp threads. I have found that these separator plates are unnecessary, and the provision of a simple substitute therefor constitutes my present invention.

In Fig. 1 of the drawings, 1 represents the breast beam of the loom, and 2 represents part of the swinging lay of the loom with the usual reed 3 and shuttle race 4. The pile-forming warp threads 5 are controlled by the harness cords 6 of a suitable jacquard apparatus, the binding warp threads 7 of the upper backing fabric are controlled by heddles 8, and the binding warp threads 9 of the lower backing fabric are controlled by heddles 10, and, in addition to these heddles, there is another heddle 11, which controls a series of bars 12 so as to raise and lower said bars and

permit of the insertion of the weft threads either above or below the same, depending upon whether said weft threads are to form part of the upper web or of the lower web.

So far as described, the loom is similar to that of my former patent, but instead of pivoting the rear ends of the bars 12 to rigid bars interposed between the upper and lower webs of the fabric as before, I simply project the rear ends of the bars 12 into the web to a short distance beyond the beating up point and connect to each of said bars a flexible tail 13, which may be of wire but which is preferably composed of a textile string or cord, so that, in case it breaks away from the bar and is carried along with the web, it will not injure the cutting knife whereby the pile warp threads are subsequently severed.

As the woven web is drawn along toward the breast beam, the frictional contact of the tails 13 with the pile warp threads crossing from one backing web to the other causes such a pull upon said tails that the rear ends of the bars 12 will always be maintained in their proper relation to the beating up point of the web, while at the same time the free operation of said bars 12 by the heddle 11 is permitted. The cord constituting each tail 13 may be simply looped through the opening at the rear end of the bar 12, as shown in Figs. 1 and 2, so as to provide a tail with two ends, or the two members of the tail may be knotted together, if desired, as shown in Fig. 3, or the tail may consist of a single end knotted to the rear end of the bar 12, as shown in Fig. 4, the use of the double ended tail being, however, preferred, because of the better frictional hold of the pile warp threads thereon. To facilitate the raising and lowering of the bars 12 the rear ends of the same which project into the web, are preferably rounded, as shown. It will be evident that the bars 12 may, if desired, be controlled by suitable cords of the jacquard harness, instead of by a heddle, although the use of the latter is preferred.

I claim:

1. The combination, in a loom for weaving double pile fabrics, of mechanism for weaving two webs with threads crossing from one to the other, heddle-or-harness-controlled bars which constitute rigid separators interposed between the webs at the beating-up point, and flexible tails extending from said bars into the woven web and



serving to maintain said bars in proper relation to the web at the beating up point, said flexible tails being smaller than the space between the webs.

5 2. The combination, in a loom for weaving double pile fabrics, of mechanism for weaving two webs with threads crossing from one to the other, heddle-or-harness-controlled bars which constitute rigid separators interposed between the webs at the beating-up point, and flexible tails extending from said bars into the woven web and serving to maintain said bars in proper relation to the web at the beating up point, 10 said flexible tails being composed of textile material and being smaller than the space between the webs.

3. The combination, in a loom for weaving double pile fabric, of mechanism for weaving two webs with threads crossing from one to the other, heddle-or-harness-controlled bars which constitute rigid separators interposed between the webs at the beating up point, and flexible tails extending from said bars into the woven web and serving to maintain said bars in proper relation to the web at the beating up point, each of said flexible tails presenting a plurality of ends and being smaller than the 25 space between the webs.

4. The combination, in a loom for weaving double pile fabrics, of mechanism for weaving two webs with threads crossing

from one to the other, heddle-or-harness-controlled bars which constitute rigid separators interposed between the webs at the beating up point, and flexible tails extending from said bars into the woven web and serving to maintain said bars in proper relation to the web at the beating up point, 35 said flexible tails being smaller than the space between the webs and being confined to the bars so as to cause the latter to resist the pull upon the tails in the direction in which the woven web moves. 40 45

5. The combination, in a loom for weaving double pile fabrics, of mechanism for weaving two webs with threads crossing from one to the other, heddle-or-harness-controlled bars having rounded ends which are interposed between the webs at the beating up point and constitute rigid separators for said webs, and flexible tails projecting from the rounded ends of the bars into the woven web and serving to maintain said bars 50 in proper relation to the web at the beating up point, said flexible tails being smaller than the space between the webs. 55

In testimony whereof, I have signed my name to this specification, in the presence of 60 two subscribing witnesses.

GEORGE ZIMMERMANN.

Witnesses:

KATE A. BEADLE,  
HAMILTON D. TURNER.