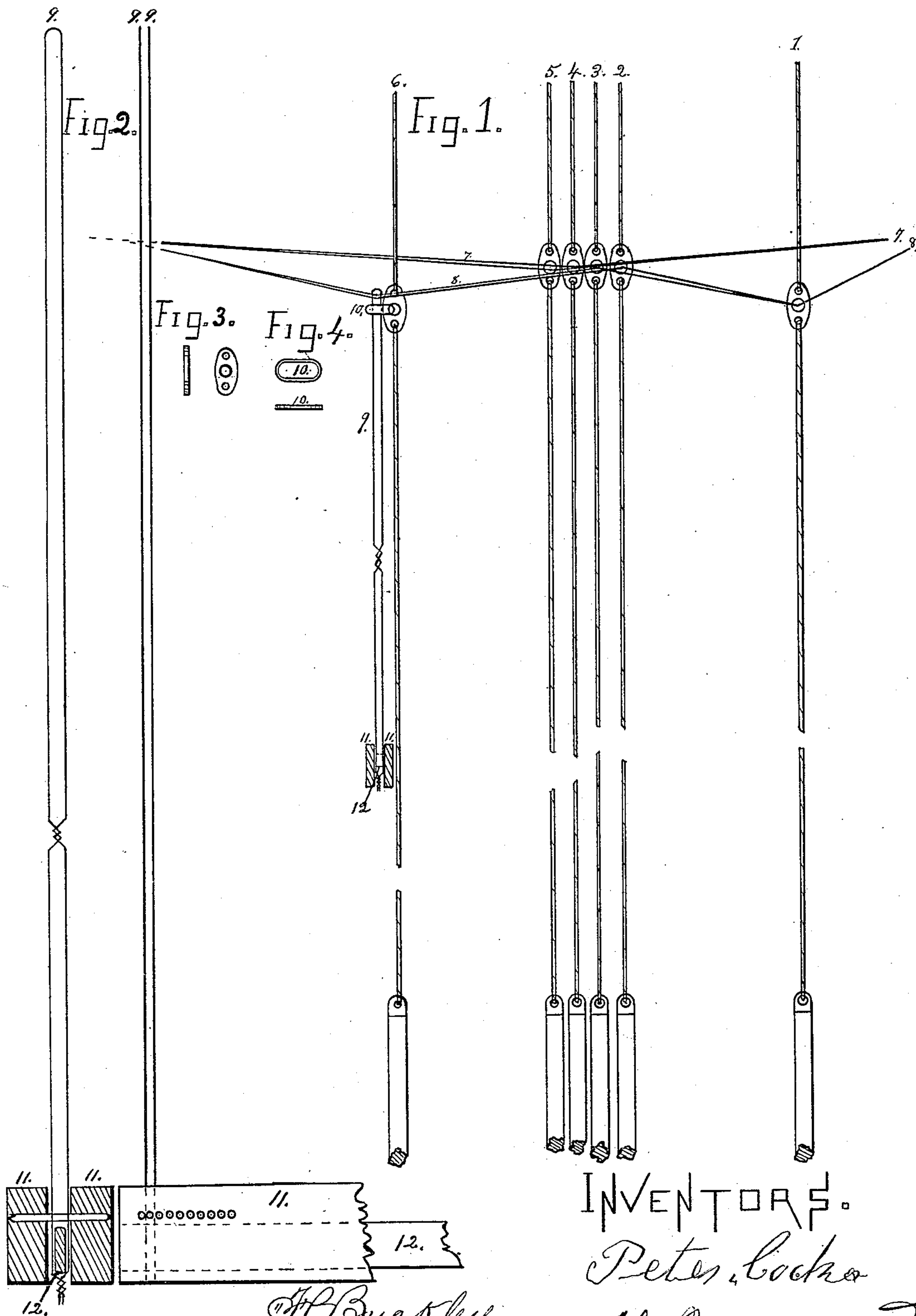


P. COCKER & T. GREENWOOD.
DOUP HEDDLE.

Patented Aug. 30, 1881.



WITNESSES

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PETER COCKER AND THOMAS GREENWOOD, OF PHILADELPHIA, PA.

DOUP-HEDDLE.

SPECIFICATION forming part of Letters Patent No. 246,290, dated August 30, 1881.

Application filed May 16, 1881. (No model.)

To all whom it may concern:

Be it known that we, PETER COCKER and THOMAS GREENWOOD, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have jointly invented a new and useful Improvement in Doup-Heddles, of which the following is a specification.

Our invention relates to loom heddles and harnesses for cross-weaving.

Heretofore in this class of weaving the doup or half heddle has been subjected to much friction in drawing the doup through the eye of the full heddle and in crossing of the yarn, which soon destroys the doup or half heddle. With our improvement we are enabled to successfully use a doup made of wire; and when using a doup made of vegetable or animal fiber the friction is so reduced that the doup or half heddle will last as long as the full heddle.

Our invention consists in the combination of a link with the mail or eye of a harness cord or heddle and a doup or half heddle, which doup passes through the link instead of the eye, as will be hereinafter described with reference to the accompanying drawings, in which—

Figure 1 is a diagram showing the arrangement of the Jacquard harness-cords and a doup of our improved construction for operating four ends in each split of the reed. Fig. 2 shows a view of one of our metal wire dous. Fig. 3 shows views of a mail or harness eye such as is used in the harness of a Jacquard machine. Fig. 4 shows views of one of the links.

Like numerals of reference refer to like parts in the several figures.

The construction and arrangement of our improvement are as follows:

1, 2, 3, 4, 5, and 6 are Jacquard harness-cords. The cord 1 is for giving and taking up slack in the warp ends, and keeping them at the proper tension. Cords 2, 3, 4, and 5 are for controlling the warp ends to produce plain or twill weaving, and thereby with the doup produce figured weaving by combinations of plain, twill, and cross weaving. The cord 6 is for crossing the ends 8 to the left-hand side of the ends 7. This arrangement of the Jacquard harness-cords and warp ends in cross-weaving

is not new, but is well known to those skilled in the art of cross-weaving.

9, Fig. 2, is a wire doup, which is formed with two long eyes or slots. 10 is the link, which is made of wire and linked in the eye of the harness-cord. The doup 9 passes through this link, as is shown in Fig. 1, and the warp ends 8, that pass through the eyes of cords 1, 2, and 3, pass through the slot of doup 9 above the link 10. The doup 9, at the bottom, is strung on a metal bar, 12, which bar is fastened in a frame, 11, made of wood or iron. This frame is provided with dividing-pins to keep the dous in proper place. This frame 11 is connected to and lifted by the Jacquard machine at every shot, as is usual in doup cross-weaving.

The operation of our improvement is similar to that of other well-known doup heddles or harness—as, for instance, that shown in Patent No. 210,736, December 10, 1878—and is as follows: As long as the cord 6 remains at rest the four threads in the eyes of cords 2, 3, 4, and 5 can be operated to produce a figure by twilling and plain weaving. When it is desired to cross-weave the cords 2, 3, 4, and 5 remain at rest and the cords 1 and 6 are lifted. The cord 6 being on the left-hand side of the threads 7, the threads 8 will be drawn up on the left-hand side of the threads 7. At the next shot the cords 2 and 3, being raised, will lift up the threads 8 on the right-hand side of threads 7, and so continue alternately with such dous, as desired, and produce cross-weaving over the full width, or at such parts as is required to produce the figure or figures desired.

It is obvious that heddle wires and frames may be used in place of the Jacquard harness-cords, and our improvement can be used in connection with heddles and operated by any of the well-known heddle motions.

We claim—

The combination of a harness-cord, 6, or its equivalent, the same having a mail or eye, with the link 10 and doup 9, as shown, described, and for the purpose specified.

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Witnesses:

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