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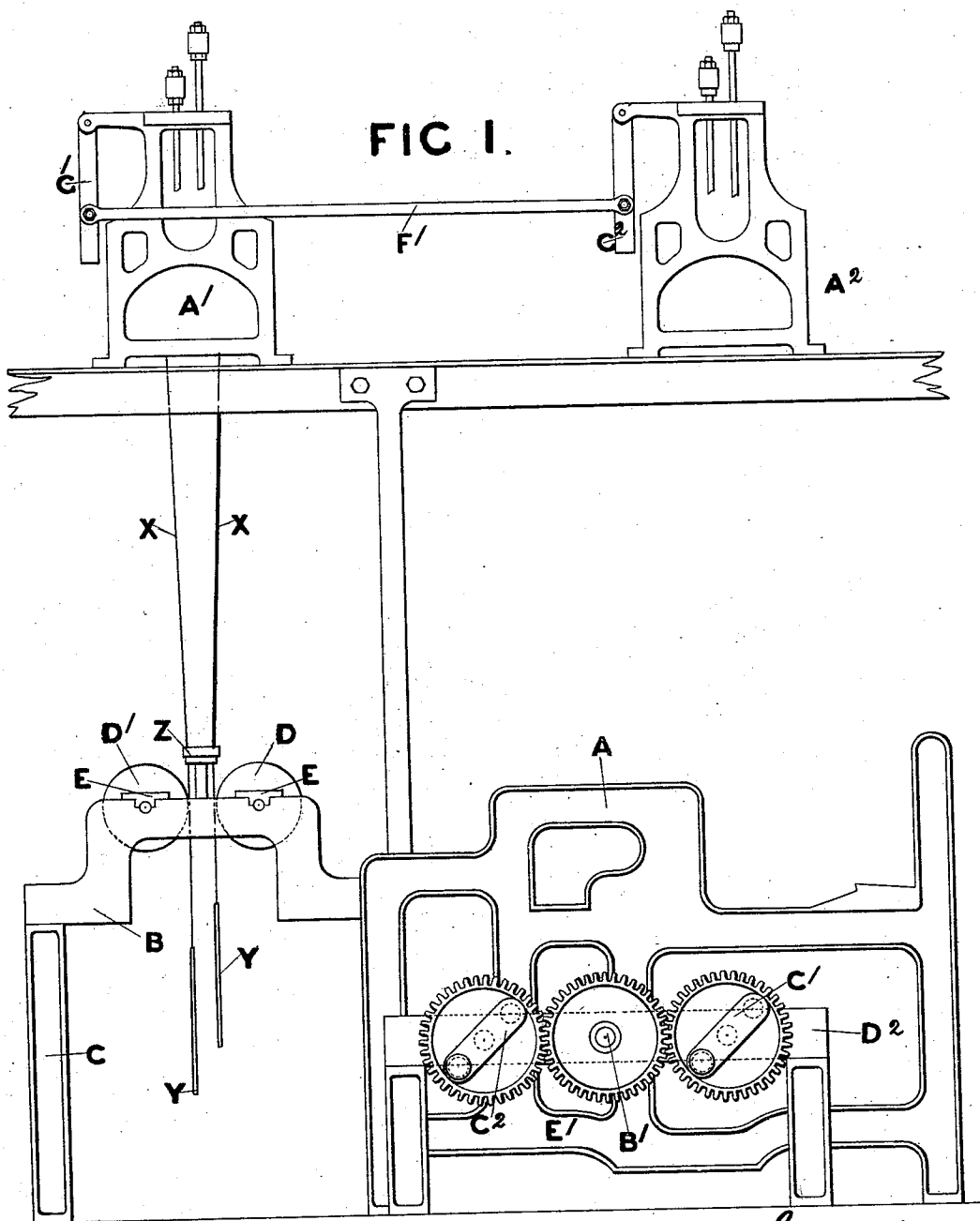
3 Sheets—Sheet 1.

G. & F. PRIESTLEY.

LOOM FOR WEAVING DOUBLE PILE FABRICS.

No. 529,955.

Patented Nov. 27, 1894.



Witnesses:-
H. K. Boulter
B. Northrup

Inventors:
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3 Sheets—Sheet 2.

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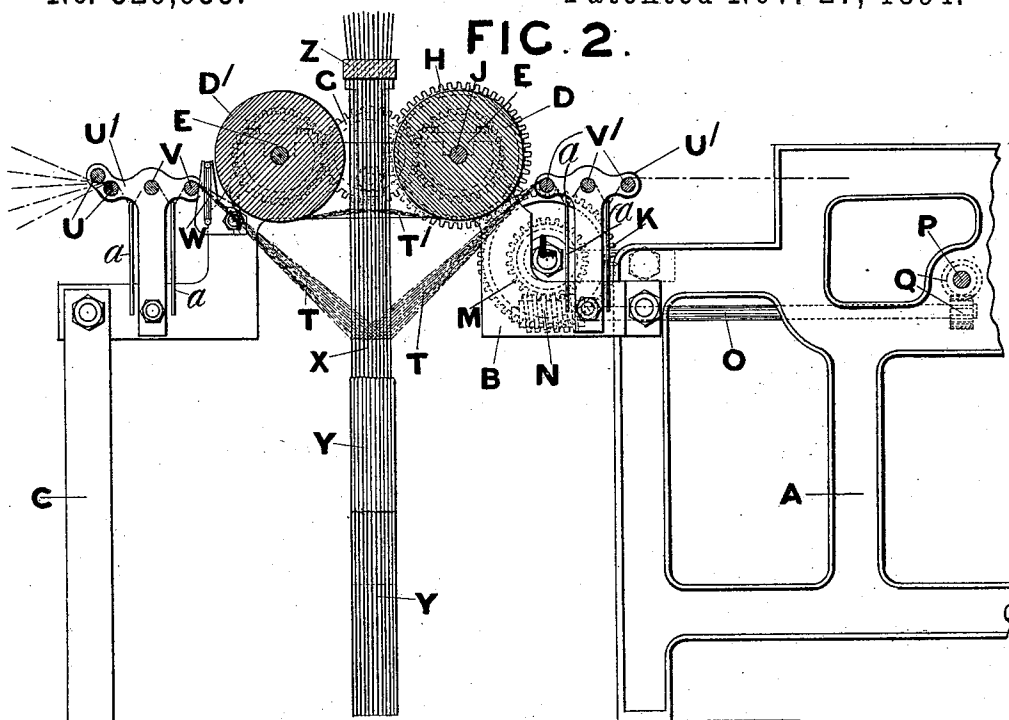
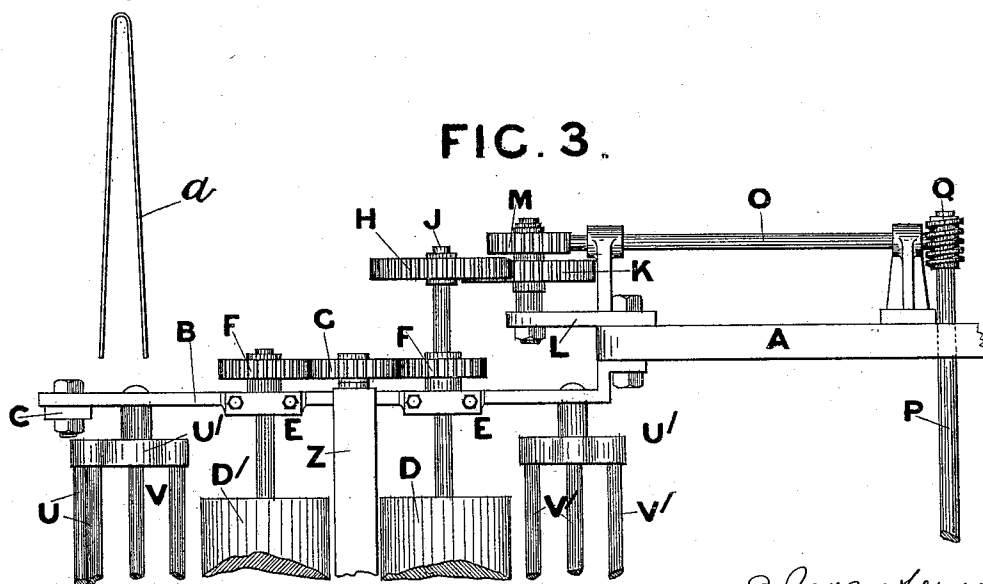


FIG. 4



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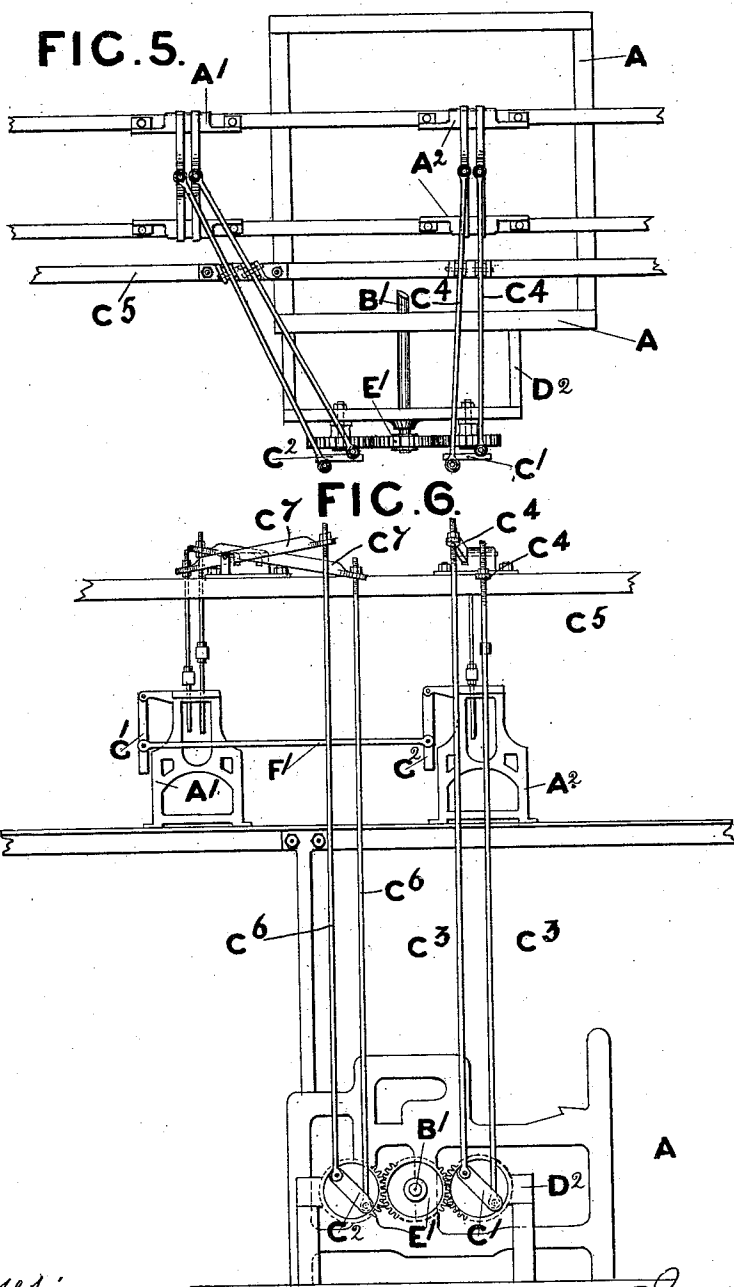
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UNITED STATES PATENT OFFICE.

GEORGE PRIESTLEY AND FREDERICK PRIESTLEY, OF BRADFORD, ENGLAND.

LOOM FOR WEAVING DOUBLE PILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 529,955, dated November 27, 1894.

Application filed March 25, 1893. Serial No. 467,652. (No model.) Patented in England February 25, 1892, No. 3,678; in France March 13, 1893, No. 228,587; in Belgium March 13, 1893, No. 103,810, and in Germany March 14, 1893, No. 73,124.

To all whom it may concern:

Be it known that we, GEORGE PRIESTLEY and FREDERICK PRIESTLEY, subjects of the Queen of England, residing at Bradford, England, have invented certain new and useful Improvements in Looms for Weaving Double Pile Fabrics, (for which we have obtained Letters Patent in England, No. 3,678, dated February 25, 1892; in France, No. 228,587, dated March 13, 1893; in Belgium, No. 103,810, dated March 13, 1893, and in Germany, No. 73,124, dated March 14, 1893,) of which the following is a full, clear, and exact description.

15 This invention relates to improvements in apparatus for weaving double pile fabrics such as carpets, fancy plushes, velvets, and other pile fabrics having woven or colored designs in which the whole of the pile warp threads are not continuously being formed into pile and the object is to feed the pile warp so that only such of the pile warp threads are let off at a time as the nature of the design requires.

25 The said improvements consist in the employment of a Jacquard apparatus or engine (in addition to that ordinarily employed) to regulate the feed of the pile warp so arranged that only such of the pile warp threads as the nature of the pattern requires are brought into position to be let off by the pile letting off mechanism. For this purpose we employ an independent set of harness operated by Jacquard or other similar mechanism to bring 35 the pile warp threads as they are required into contact with the pile letting off roller or rollers or the like and to keep them in contact with such roller or rollers as long as such threads are required to be let off to supply pile to form the pattern.

40 The pile warp threads it will be understood are not mounted upon a warp beam but upon separate bobbins or creels in a similar manner to that employed when single figured pile fabrics are woven.

45 With the objects hereinbefore stated in view, the invention consists in the novel construction, arrangement and combination of parts as hereinafter fully described, illustrated in the drawings and pointed out in the appended claims.

In the accompanying drawings, Figure 1, represents a side elevation of such parts of a loom as are necessary to illustrate the application of our improvements thereto. Fig. 2, 55 is a longitudinal section of the rear portion of the same on a larger scale with the pile warp shown. Fig. 3, is a plan view of the same without the pile warp. Fig. 4, is a view of a detail hereinafter referred to. Fig. 5 is 60 a plan and Fig. 6 a side view of such parts of a loom as are necessary to illustrate the method of coupling up and operating the two jacquards.

The side frames A of the loom are extended 65 on each side toward the rear by the continuations B supported at the back by the standards C. Two pile feed rollers D and D' are employed mounted in bearings E formed in frame B and are geared together so as to revolve at the same speed and in the same direction by the spur wheels F mounted on their arbors and connected by the intermediate spur wheel G. The pile feed rollers are driven by the spur wheel H fixed on the arbor J of the roller D engaging the stud wheel K 75 mounted upon the bracket L secured to the side frame A. The stud wheel K is connected to and driven by the worm wheel M mounted on the same stud as K and operated by the 80 worm N on the shaft O driven at the other end from the crank shaft P of the loom by the worm and worm wheel Q. Any other convenient arrangement may be employed for driving the feed rollers.

85 The pile warp represented by the broken lines T and T' in Fig. 2 passes from bobbins or creels arranged at the back of the loom between the guide bars U and over the bars V and through the reed W and under the roller D' and is connected to the harness X operated by the Jacquard apparatus A' above. It then passes under the roller D and over the bars V' and forward into the loom to be woven.

95 When the pile warp is held down in the position shown by the broken lines T it is clear of the feed rollers D and D' and consequently is not fed into the loom but the Jacquard mechanism is so arranged that such of the 100 pile warp threads that are required for the formation of the pattern or figure of the fab-

ric are lifted up by the Jacquard harness against the feed rollers in the position shown by T' and consequently while they are held in that position they are continuously fed into the loom.

The harness X is provided with weights Y at the bottom in the ordinary way and passes through a comber board Z above supported at each end on the frames B. Tension weights a are also hung on each of the warp threads between the bars U, V and V, V half the weights being preferably placed between U V and the other half between V, V so as to allow them more space. Similar weights are also hung on the warp between the bars V'. For convenience in hanging the weights on the warp they are preferably made of double wire as shown on a larger scale, Fig. 4.

The bars U, V and V' are mounted in the T shaped standards U' secured on each side to the frames B.

The double lift Jacquard apparatus A² Fig. 1 for manipulating the pile warp to form the figure or pattern of the double pile fabric is arranged and operated in the ordinary manner but the lifting rods for working it instead of being actuated by a double crank disk on the tappet shaft B' are connected to and operated by the similar double crank disk C' mounted on a stud secured to the frame-work or bracket D² connected to the side frame. The disk C' has teeth on its periphery engaging the spur wheel E' on the tappet shaft B' and is driven thereby.

The crank disk C' operating the jacquard A² is connected thereto by the connecting rods C³ C³, and the lifting levers C⁴ C⁴, in the usual way. The lifting levers are mounted upon the beam C⁵ and are connected as usual to the lifting grates of the jacquard.

The Jacquard apparatus A' regulating the feed of the warp is driven in a similar manner from the double crank disk C² through the medium of the rods C⁶ C⁶ and levers C⁷ C⁷. The card cylinder and card motion may be actuated by a rod F' on either side coupling the vibrating arms G² of the slay motion of the apparatus A² to the similar arms G' of apparatus A'.

Any other convenient arrangement of mech-

anism for actuating the two jacquards may be employed.

The Jacquard apparatus employed and particularly that for feeding the pile warp is preferably of that class in which the harness when once lifted remains up until the nature of the pattern requires it to be let down.

The ground or backing of the fabric is preferably manipulated by the healds and tappets in a similar manner to ordinary looms for weaving double pile fabrics.

We claim—

1. In a loom of the class described, the combination with a feed roller and means for operating the same, of a Jacquard apparatus, and a harness operated thereby and adapted to bring certain of the pile warp threads into contact with said roller, for the purpose specified.

2. In a loom of the class described, the combination of feed rollers and means for operating the same, a harness arranged and operating between said rollers, a Jacquard apparatus adapted to operate said harness as described, and guide bars for the pile warp threads, the said harness being adapted to bring certain of the said threads into contact with the feed rollers, for the purpose specified.

3. In a loom of the class described, the combination of feed rollers, means for operating the same, a harness arranged between said rollers and extending above the same, a jacquard to which said harness is connected and by which it is operated to cause certain of the pile warp threads to be brought in contact with the feed rollers, guide bars for the warp threads arranged in advance of the feed rollers, and weights adapted to be suspended from the warp threads intermediate of the said guide bars, in the manner described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

GEORGE PRIESTLEY.
FREDERICK PRIESTLEY.

Witnesses:

SAMUEL A. DRACUP,
DAVID NOWELL.