

(No Model.)

J. GEBBIE.  
JACQUARD MECHANISM FOR LOOMS.

No. 506,686.

Patented Oct. 17, 1893.

Fig. 1.

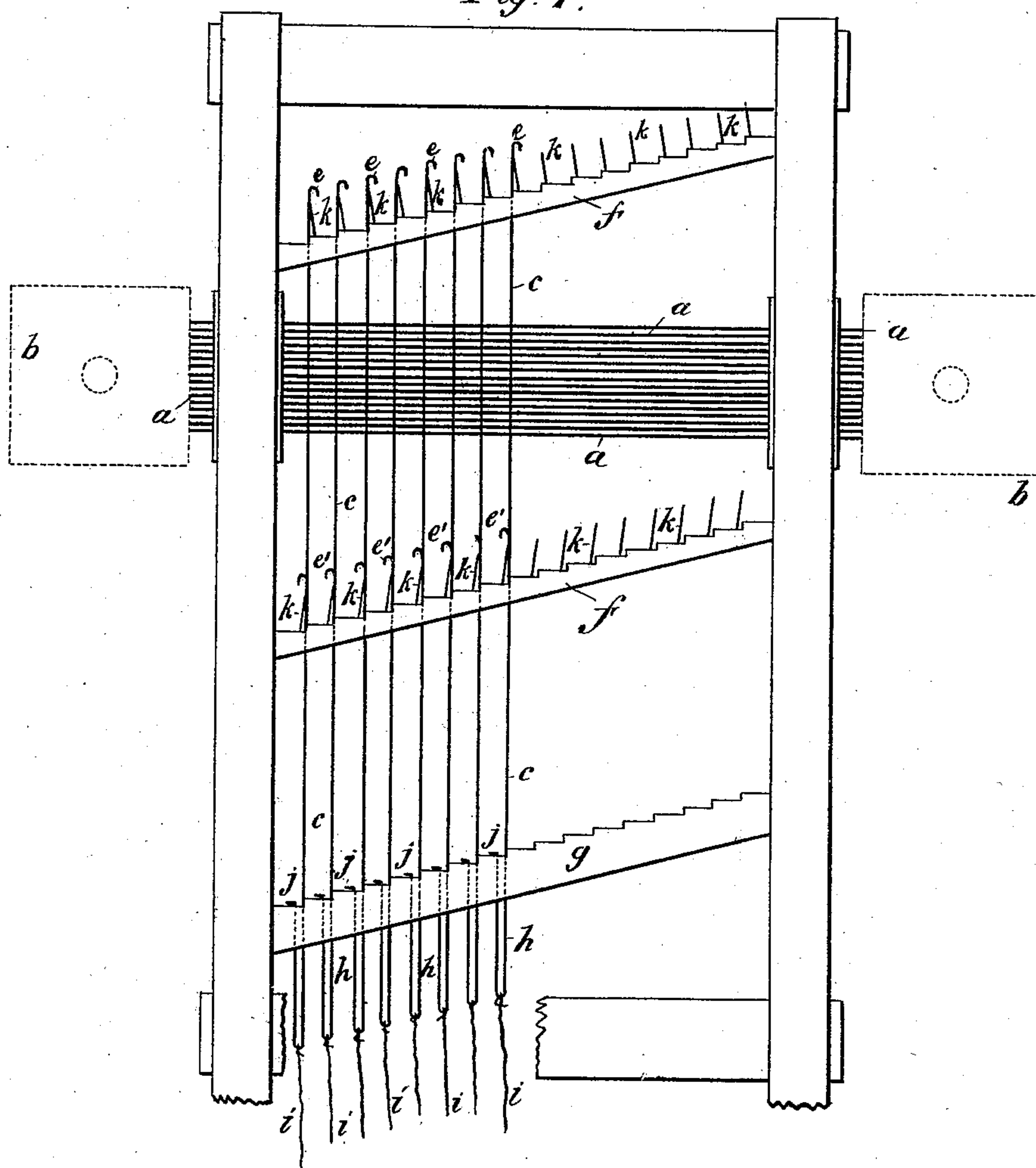
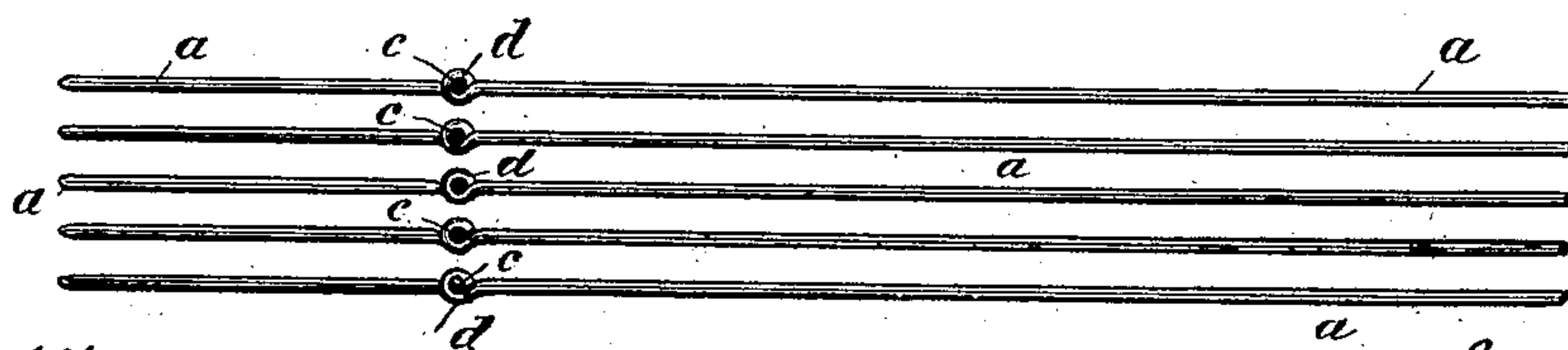
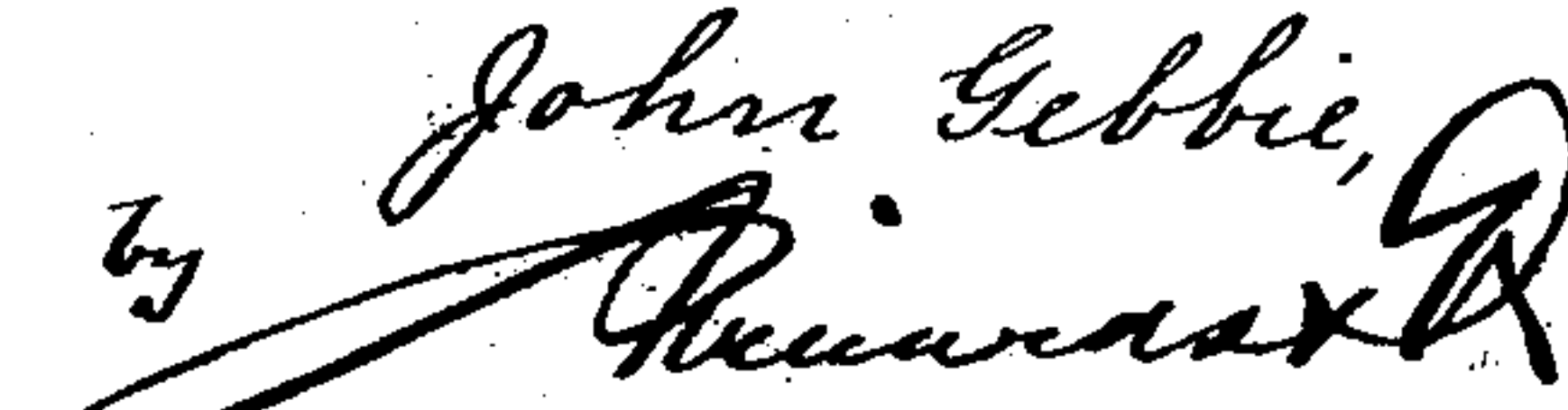


Fig. 2.



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# UNITED STATES PATENT OFFICE.

JOHN GEBBIE, OF KILMARNOCK, SCOTLAND.

## JACQUARD MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 506,686, dated October 17, 1893.

Application filed February 9, 1893. Serial No. 461,619. (No model.) Patented in England November 29, 1892, No. 21,771.

*To all whom it may concern:*

Be it known that I, JOHN GEBBIE, lace manufacturer, a subject of the Queen of the United Kingdom of Great Britain and Ireland, residing at Kilmarnock, in the county of Ayr, Scotland, have invented new and useful Improvements in Jacquard Mechanism for Looms, (for which I have made application for Letters Patent in Great Britain, No. 21,771, bearing date the 29th day of November, 1892,) of which the following is a specification.

My invention has for its object to improve Jacquard mechanism by duplicating the action of the needles, by dispensing with the ordinary springs used in conjunction with these needles and by utilizing the "upstanders" to act as springs for returning the needles to their normal positions each "upstander" for this purpose being formed with two hooks facing in opposite directions alternately. I attain these objects by the mechanism illustrated in the accompanying drawings in which—

Figure 1 is a side elevation of so much of a Jacquard mechanism as is necessary to show the improvements and Fig. 2 is a plan of some of the needles drawn to a larger scale.

In carrying out my invention the horizontal needles *a* of the Jacquard apparatus are pointed at both ends, and each end is acted on alternately by pattern cards placed over barrels *b* in the usual manner. Each needle *a* has an upstander *c* passed through an eye *d* made in it and each upstander has formed upon it in addition to the usual hook *e* at its upper end an additional hook *e'* which is provided at the proper point. The hooks in each plane constitute a row which faces in the opposite direction to the hooks in the plane immediately above or below. Each row of hooks *e, e'* has a separate knife frame *f* provided in conjunction with it, the said frames being laid in an inclined plane. The plane of each series of hooks *e, e'* of the upstanders *c* is inclined parallel to the plane of the knife frames *f*, that is to say, the hooks of one upstander is on a level above or below its neighbor in the row corresponding to the distance vertically between any two horizontal planes or rows of adjacent needles *a* of the Jacquard apparatus. The knife frames *f* are actuated alternately from the loom in the usual way.

The upstanders *c* besides being guided by passing them through the Jacquard needles *a* and through the knife frames *f* are further guided by being passed through holes in an inclined guide frame *g* and at their lower ends they are returned upward so as to form loops *h* to which the cords *i*, also connected to the fabric producing mechanism of the loom, are tied. The returned end of each upstander *c* is, as seen at *j*, bent at a right angle to constitute a stop which prevents the upstander dropping too low down and the loop *h* is of sufficient length to prevent its being withdrawn from the guide *g* when the upstander is raised to the highest position by the action of the knives *k*. The horizontal needles *a* in the lower row have the upstanders *c* at the lowest part of the inclined plane passed through them and so on in succession with each plane of needles until the uppermost row and the highest upstanders are reached. The two hooks *e, e'* on each upstander being faced in opposite directions and the series of knives *k* being correspondingly arranged or inclined when the unselected needles have been pushed back by the action of the pattern cards at one side of the apparatus, the upstanders of the needles will be sprung against the knives *k* of the frame *f* which is at rest and so that their hooks *e* or *e'* shall be moved out of the path of the knives *k* of the other frame which by acting upon the hooks *e* or *e'* of the upstanders of the selected needles raises or lifts them. The upstanders of the unselected needles spring back to their normal positions taking the unselected needles with them when the cards cease to act upon them.

Having now described the invention, what I desire to claim and secure by Letters Patent is—

In Jacquard apparatus the combination of a series of superposed rows of horizontal needles each having an eye and pointed at and operated by Jacquard cards from both ends a series of upstanders each passing through an eye in a horizontal needle and having in its length two hooks the hooks facing in opposite directions, a separate knife frame for each plane or row of hooks the knives of the frame which is temporarily at rest acting as abutments against which one hook of the up-



standers of the unselected needles is sprung so as to free its other hook from the corresponding knife of the other temporarily operating frame the knives of one frame being  
5 on the side of the upstanders opposite to those of the other frame and a guide through which the returned lower ends of the upstanders which constitute loops are passed substantially as described.

In witness whereof I have hereunto set my hand and seal the 17th day of December, 1892.

JOHN GEBBIE. [L. S.]

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