

(No Model.)

H. HILL.

JACQUARD MECHANISM FOR EMBROIDERING MACHINES.

No. 604,755.

Patented May 31, 1898.

Fig 1.

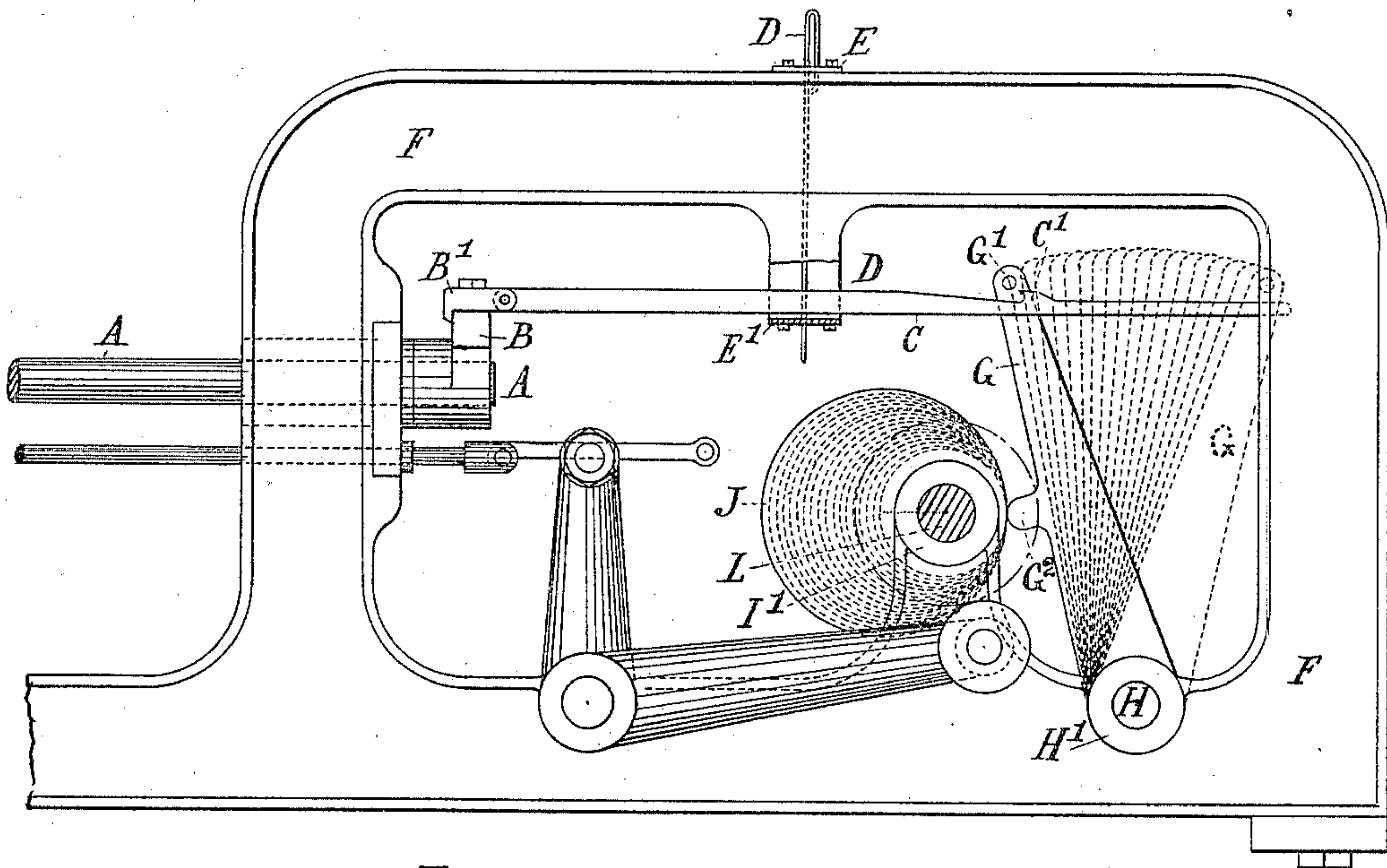
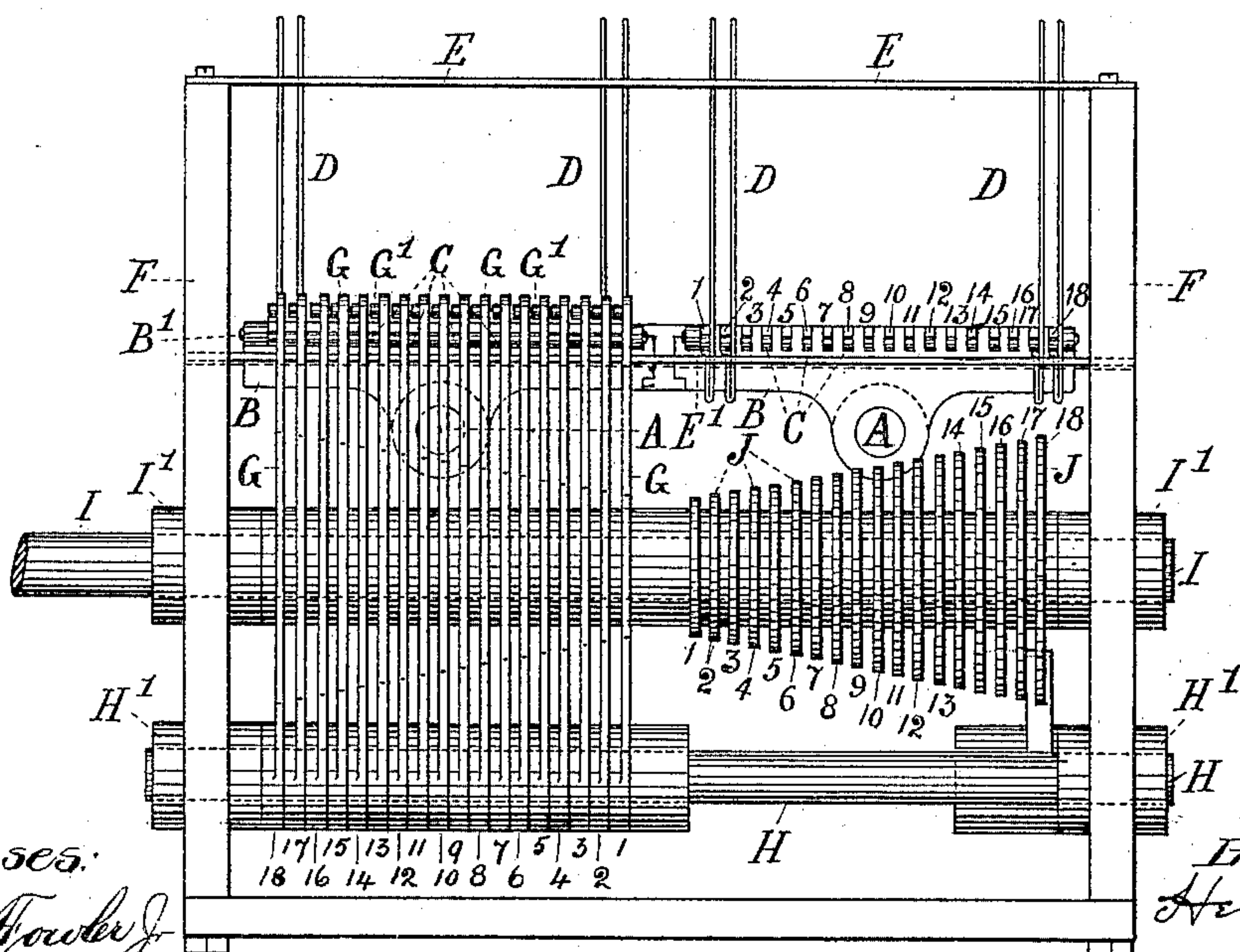


Fig 2.



Witnesses:

J. M. Fowler  
A. J. Stewart.

Inventor  
Henry Hill

By Chas. Chas.  
His Attorneys



# UNITED STATES PATENT OFFICE.

HENRY HILL, OF NOTTINGHAM, ENGLAND.

## JACQUARD MECHANISM FOR EMBROIDERING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 604,755, dated May 31, 1898.

Application filed August 30, 1897. Serial No. 649,999. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY HILL, a subject of the Queen of England, residing at Nottingham, England, have invented certain new and useful Improvements in or Relating to Jacquard Mechanism for Embroidering-Machines, of which the following is a specification.

This invention relates to improvements in jacquard mechanism for automatically moving the embroidery-frame of a multiple embroidering-machine each stitch both in the required direction and the required distance. Jacquards of this description are mainly arranged to impart a varying length of movement to either or both of two main moving or sliding parts therein, one of the said parts being connected by intermediate mechanism to the embroidery-frame so that its movement is transmitted to the embroidery-frame vertically and the other connected so that its movement is transmitted to the frame horizontally. The present invention relates to means for imparting the requisite varying length of movement to either or both of the two main sliding parts in the jacquard.

The invention will be best understood by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of jacquard mechanism constructed according to my invention, and Fig. 2 an end elevation showing parts removed.

Like letters indicate like parts throughout the drawings.

In carrying out my invention the two longitudinally-sliding shafts A A, which form the two main sliding parts referred to and are connected to mechanism for transmitting their movements to the embroidery-frame, are each provided with a transverse frame B.

Connected to each frame B are a convenient number of hooked arms or jacks C, the whole of which are preferably arranged, as shown, in an approximately horizontal plane with their hooks C' all equidistant from the frame B.

The arms or jacks C are pivoted to the frames B or to brackets B' secured thereto, and their free ends are raised by vertical needles D, carried in plates or slays E E', secured to the framing F.

To each arm or jack C is a corresponding

lever G. The lower ends of the whole of the latter are pivoted on a horizontal transverse shaft H, the ends of which are carried in bearings H', formed in the framing F.

The upper end of each lever G is provided with a projecting pin or stud G', which will engage with the hooks C' of its corresponding arm or jack C when the free end of the latter is raised.

The whole of the levers G are oscillated about their fulcrums by cams or eccentrics J, each of which engages with a projecting nose G<sup>2</sup> on the corresponding lever, as shown, or antifriction-rollers may be employed.

The whole of the cams J are mounted on a transverse shaft I, carried in bearings I', formed in the framing F, and the said shaft is connected by suitable gearing to the main shaft of the embroidering-machine, from which it thus receives a constant rotary motion.

It will now be understood that to each longitudinally-sliding shaft A there are a set of hooked arms or jacks C, a set of levers G to correspond to the arms or jacks C, and a set of cams or eccentrics J to correspond to the levers G, one cam in the set actuating one lever G. The cams J comprising one set are each formed to impart a different length of movement to its corresponding lever. For example, No. 1 is formed to move its corresponding lever No. 1 from its normal position through an angular space which may be termed "one unit." No. 2 may be formed to move its corresponding lever No. 2 two units, No. 3 three units, and so on throughout. In Fig. 1 one set of levers G are shown in their several extreme positions into which they are moved by the cams J. By raising that jack C in the set which corresponds to the lever whose stud G moves through a space equal to the distance it is desired to move the shaft A longitudinally the said jack will engage with the stud G' and the desired result will be obtained. For example, if No. 1 arm or jack B be raised the shaft A will be moved, say, one unit. If No. 2 be raised, the shaft A will be moved two units, and so on throughout. It is therefore possible to move each shaft A longitudinally a distance equal to one or any number of units up to the number of arms or jacks C employed by raising one nee-



dle D. The levers G may be returned to their normal position by springs of any suitable form or by other convenient means.

The vertical needles D are connected to the  
5 vertical needles of a jacquard of any well-known construction controlled by pattern-cards or a band in the same manner as the arrangement described in the specification hereinbefore cited.

10 I claim—

1. In a device such as described, the combination with the longitudinally-moving shafts, connections between said shafts and the embroidery-frame, a series of hooked jacks piv-  
15 otally connected to said shafts, the lifting-needles for raising said jacks, a series of oscillating levers corresponding in number to the jacks, each adapted to engage and move a particular jack, and mechanism for impart-  
20 ing to each lever a different length of move-

ment; substantially as and for the purpose set forth.

2. In a device such as described, the combination with the longitudinally-moving shafts, connections between said shafts and the embroidery-frame, a series of hooked jacks piv- 25 otally connected to said shafts, a series of lifting-needles, each adapted to raise a particular jack, a series of oscillating levers corresponding in number to the jacks and each 30 adapted to engage and move a particular jack, a series of cams or eccentrics corresponding in number to the levers and each adapted to impart a different length of movement to its corresponding lever; substantially as and for 35 the purpose set forth.

HENRY HILL.

Witnesses:

MARK SHAW,  
HUBERT HICKING.