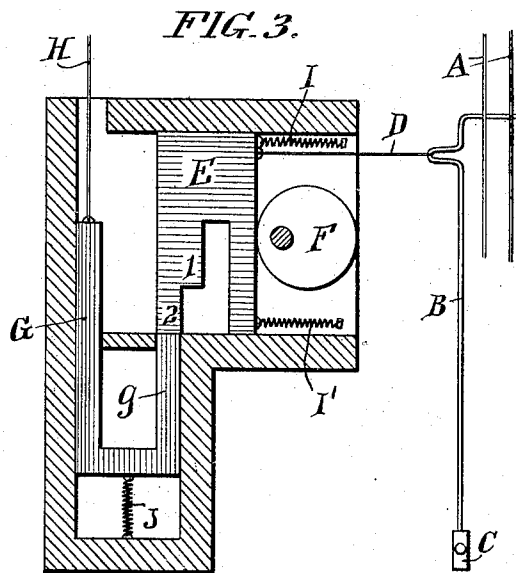
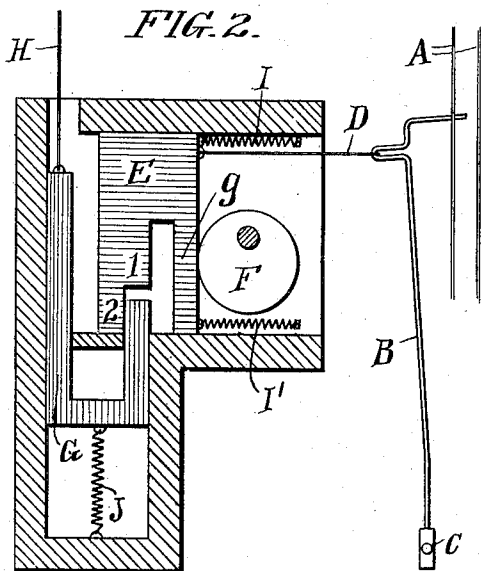
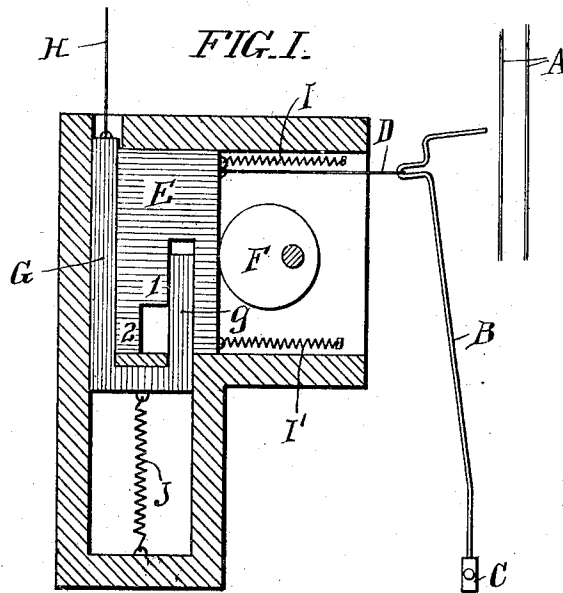


P. WOLL, JR.
JACQUARD CONNECTION FOR LACE MACHINES.
APPLICATION FILED MAR 19, 1910.

980,384.

Patented Jan. 3, 1911.



INVENTOR.

WITNESSES:

Thomas M. Smith
Daniel Webster, Jr.

BY

Peter Woll, Jr.,
J. Walter Douglas
ATTORNEY.

UNITED STATES PATENT OFFICE.

PETER WOLL, JR., OF PHILADELPHIA, PENNSYLVANIA.

JACQUARD CONNECTION FOR LACE-MACHINES.

980,384.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed March 19, 1910. Serial No. 550,416.

To all whom it may concern:

Be it known that I, PETER WOLL, JR., a citizen of the United States, residing at Oak Lane, in the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Jacquard Connections for Lace-Machines, of which the following is a specification.

My invention relates more particularly to jacquard connections for lace machines consisting of a series of jacks mounted upon a rocking-bar; said jacks being adapted to move in and out of the threads extending from the spool-boards to the drum, upon which the finished fabric is wound. Heretofore, these jacks have been, through the intermedium of strings, directly connected with and controlled by the jacquard. This arrangement, however, has always proven more or less unsatisfactory, because of the irregular expansion or contraction of the strings, whereby the operation of the jacks has been rendered irregular and uncertain, resulting in imperfect work and frequent loss of time and product.

The principal object of my present invention is to obviate the usual effect of unequal variation in the length of the strings and so to define the movement of the jacks that the latter will at all times assume the exact position required. This I accomplish by interposing between the jacquard and the jack, an equalizing device or connection, connected with the jacquard string and adapted to neutralize the effect of variation in length of the string so that the movements of the jack may at all times be defined with certainty and exactness. I do not limit myself, as to the construction of this device, but for the purpose of illustrating my invention herein, have adopted the form shown in the drawings, and which consists of a sliding check connected with and adapted to move with the jack and to automatically define the extent of such movement. The operation of this sliding check I control by means of a key or bolt which through a string or other connection with the jacquard, is by the action of the latter made to engage with and controls the operation of said sliding check in the manner hereinafter more fully described.

In the drawings, Figure 1, is a diagrammatic view of my invention, showing the jack withdrawn from the threads, Fig. 2, is

a similar view with the jack part way through the threads; and Fig. 3, is a similar view showing the jack all the way through the threads.

A represents the threads.

B represents a jack mounted upon a rocking-bar C.

D is a string connection from the jack to the sliding check E, provided with steps 1 and 2, corresponding in number to the position required to be assumed by the jack. The check E is mounted in a comb or casing furnishing a guideway for the check and is adapted to move in unison with the jack.

F is an eccentric, which is designed to throw the sliding check backward as the jack is withdrawn from the threads by the movement of the rocking-bar C.

G is a key or bolt connected by means of string H, with the jacquard, and sliding in the guideway in the casing and by action of the jacquard, is alternately raised or permitted to fall.

As will be understood by those skilled in the art, the action of the jacquard takes place when the jack has been withdrawn from the threads, by the operation of the rocking-bar C, and the sliding check E, has been thrown back to its utmost limit by the eccentric F. The parts thus occupying the positions stated, a full lift of the jacquard raises the bolt G, to its highest position, bringing its projecting foot *g*, into engagement with step 1, of the sliding check E, and thus prevents any forward movement of the jack until by the further action of the jacquard, the bolt G, is permitted to fall below the step 2, thus releasing the check E, and permitting the jack to move forward through the threads, as shown in Fig. 3. Again supposing that by the action of the jacquard, a half lift is imparted to the key or bolt G, the foot or lug *g*, will be raised to a position below the step 1, of the sliding check E, and the latter thus permitted to move forward until the main foot or lug *g*, engages with the step 2, thus enabling the jack to move forward to the position shown in Fig. 2. It will be evident that the number of positions to be assumed by the jack, will correspond with the number of steps with which the sliding check is provided. It will also be observed by reference to the drawings, that the connection between the jacquard and the jack is a broken one, and that the relative position of the bolt or

key G, will vary more or less with every contraction or expansion of a string H, to which it is attached. The effect of this variation in the length of the string H, is overcome by making the depth or face of steps 1 and 2, of the check E, sufficient to accommodate the greatest possible change in the relative position of the key or bolt G; the ultimate effect of such variation being merely to shift the point of contact between said key or bolt G, and steps 1 and 2, as the case may be, of check E, without in any way affecting the operation of the said check E.

I, I¹ and J, are springs designed to facilitate the movements of the check E, and bolt G, respectively.

Having thus described the nature and object of my invention, what I claim as new and desire to secure by Letters Patent is:—

In a lace-machine, a jacquard device,

jacks mounted on a rocking-bar and connections between the jacquard-device and the jacks, comprising a casing having guideways at an angle to each other, a stepped check guided in one of said guideways and connected to a jack, means positively to retract said check, springs to advance said check, a bolt in the other guideway having a part to encounter the steps of the check and connected to the jacquard and yielding means to withdraw the bolt from the path of said check.

In testimony whereof, I have hereunto set my signature in the presence of two subscribing witnesses.

PETER WOLL, Jr.

Witnesses:

ALBERT E. ZACHERLE,
ANDREW BROGAN.