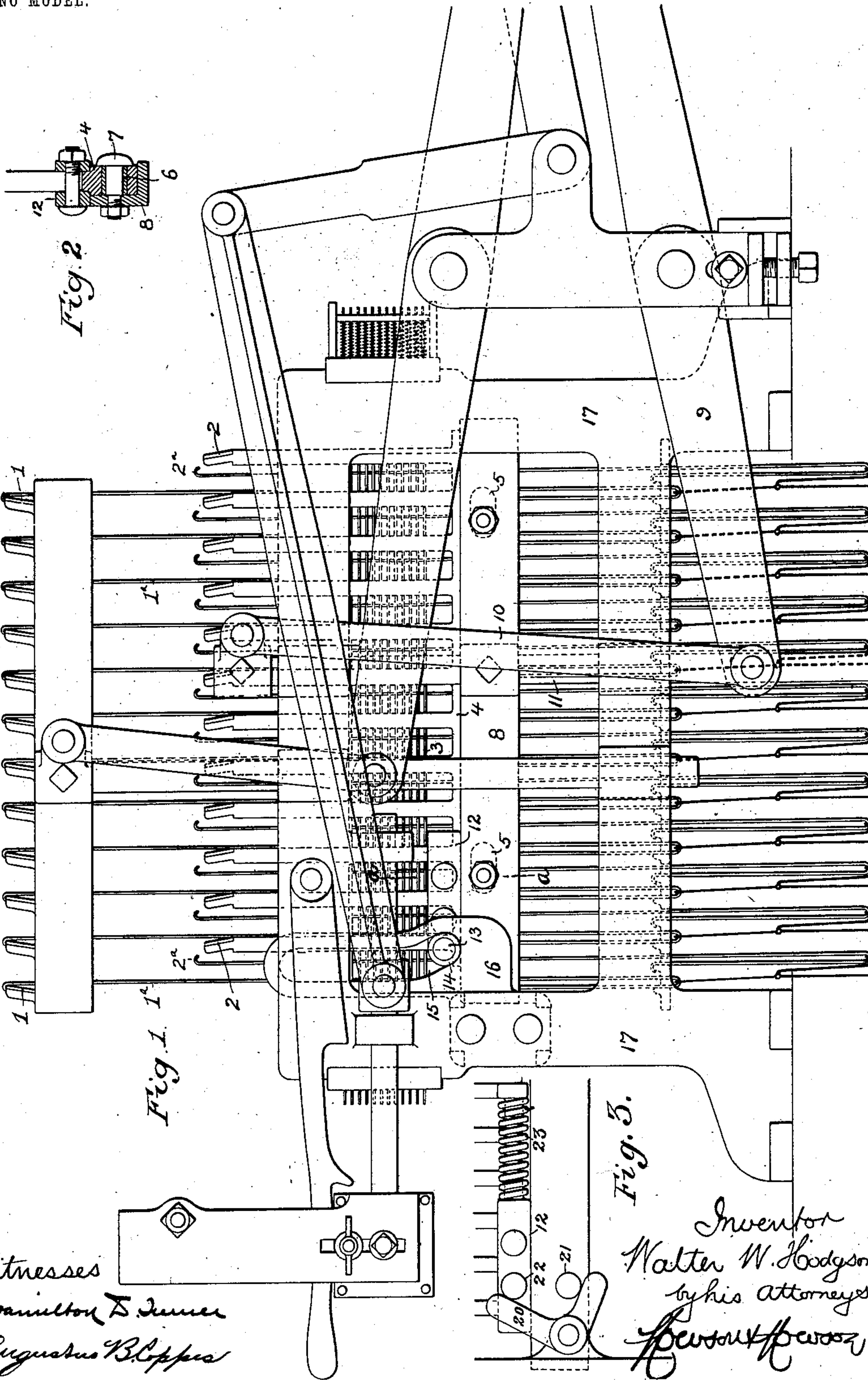


No. 744,685.

PATENTED NOV. 17, 1903.

W. W. HODGSON.
JACQUARD MACHINE.
APPLICATION FILED AUG. 27, 1903.

NO MODEL.



Witnesses

Hamilton D. Turner
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Inventor
Walter W. Hodgson
by his attorneys
~~Perseus Perseus~~

UNITED STATES PATENT OFFICE.

WALTER W. HODGSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO WILLIAM E. BEATTY AND FRED SUTCLIFFE, OF PHILADELPHIA, PENNSYLVANIA.

JACQUARD-MACHINE.

SPECIFICATION forming part of Letters Patent No. 744,685, dated November 17, 1903.

Application filed August 27, 1903. Serial No. 170,980. (No model.)

To all whom it may concern:

Be it known that I, WALTER W. HODGSON, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Jacquard-Machines, of which the following is a specification.

My invention consists of a jacquard-machine of the type shown in my application, Serial No. 148,605, filed March 19, 1903, the object of my present invention being to prevent release of a descending hook of a pair from the control of the griff-bar while the other hook of the pair is being lifted, or vice versa. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of a jacquard-machine constructed in accordance with my invention. Fig. 2 is a transverse section of part of the same on the line *a a*, Fig. 1; and Fig. 3 is a side view illustrating a modification of the means for laterally moving one of the griff-bars.

In a jacquard-machine of the type described two sets of griff-bars 1 and 2 are employed, one set of griff-bars facing in one direction and the other set in the opposite direction, and there are two sets of hooked lifters 1^a and 2^a, the lifters 1^a having hooks which engage with the griff-bars 1, and the lifters 2^a having hooks which face in the opposite direction and are adapted to engage with the griff-bars 2. The needles 3 are each connected to one or more lifters of each set. Consequently movement of a needle so as to cause a hooked lifter or lifters of one set to engage with a griff bar or bars of one set tends to deflect away from a griff bar or bars of the other set a lifter or lifters of the other set controlled by said needle. For instance, as shown in Fig. 1, all of the hooked lifters 1^a are in engagement with and have been lifted by the griff-bars 1, and the lifters 2^a are inclined away from the griff-bars 2. If now on a change of card a hooked lifter 2^a is pushed over, so as to engage with a griff-bar 2, and the bar on engaging the hooked end of the lifter tends to retain it in this position, strain will be exerted upon the corresponding hooked lifter 1^a of the pair, so as to tend to pull it free from the griff-bar 1,

and while this strain may not immediately effect the release of the hook from the griff-bar because of the distance between the eye of the needle and the hook of the elevated lifter the strain constantly increases as the elevated griff-bar descends, because of the constantly-shortening distance between the needle and the hook of the lifter, until by the time the griff-frame has been partially lowered the strain becomes so great as to pull the hook of the lifter from the griff-bar and permit said lifter to drop. This objection I overcome by imparting to one set of griff-bars movement in the same direction as the needle movement, in addition to their vertical movement or movement at right angles to that of the needles. This movement is in the present instance imparted to the frame 4, carrying the griff-bars 2, this frame having slots 5 for the reception of antifriction-rollers 6, Fig. 2, which are mounted upon the bolts 7, whereby said frame 4 is vertically confined to the main frame 8, to which vertical reciprocating motion is imparted in the usual way from the lever 9 through the medium of a link 10 and vertically-guided rod 11.

Secured to each side of the frame 4 is a plate 12, with projecting stud 13, carrying an antifriction-roller 14, which is adapted to a slot 15 in a plate 16, rigidly secured to the main frame 17 of the jacquard-machine, said slot being vertical throughout the greater portion of its extent, but being angularly deflected at the bottom, so that as the griff-frame 4 approaches the limit of its descending motion it will be deflected longitudinally, or in a direction away from the card-cylinder, and as it begins to rise will approach said card-cylinder and will then continue to rise in such position. While, therefore, each griff-bar 2 when in its lowermost position is far enough away from the hooked lifters 2^a to prevent it from engaging with any one of these lifters except such as are designedly moved into engagement with it by the needles, said griff-bars 2 as they begin to rise will approach the adjoining lifters 1^a, and by the time they reach the vertical portion of their travel will be so close to said hooked lifters 1^a that the lateral strain upon the latter ex-

erted through the medium of the needles 3 is relieved and there is no tendency to pull the hook of a lifter out of engagement either with a descending or an ascending griff-bar.

5 While I prefer in all cases to use a slotted plate in connection with an engaging element of the griff-frame to impart longitudinal movement to the latter, other means for accomplishing this result may be employed.
10 For instance, the fixed frame of the jacquard may have mounted thereupon a bell-crank lever 20, having one arm to be struck by a projection 21 on the descending frame 8, and another arm for engaging with a projection
15 22 on the griff-frame 4, so as to move the latter longitudinally as it approaches the limit of its downward movement and permit it to move back again under the influence of a spring 23 as it begins to ascend.

20 I am aware that it has been proposed to employ in jacquard-machines griff-frames movable in the direction of movement of the needles as they approach the mid-position, so as to cause the griff-bars and their hooked
25 lifters to clear each other as they pass, and I therefore do not claim any such construction, my invention being for a different purpose and requiring a different construction and combination of parts from that above al-
30 luded to.

Having thus described my invention, I claim and desire to secure by Letters Patent—

35 1. A double-lift jacquard-machine having two sets of griff-bars and two sets of hooked lifters, one set facing in one direction and engaging with one set of griff-bars and the other set facing in the other direction and engag-

ing with the other set of griff-bars, needles each connected to one or more of each set of 40 said hooked lifters, means for reciprocating the griff-bars, and means for imparting to one set of griff-bars movement in a direction parallel to the direction of movement of the needles, substantially as described. 45

2. The combination, in a double-lift jacquard-machine, of two sets of griff-bars and two sets of hooked lifters, one set facing in one direction and engaging one set of griff- 50 bars and the other set facing in the other direction and engaging the other set of griff-bars, needles controlling one or more lifters of each set, means for reciprocating the griff-frames, and a slot-and-pin device whereby one of the griff-frames has movement in the 55 direction of the movement of the needles imparted to it.

3. The combination in a double-lift jacquard-machine, of two sets of griff-bars, two sets of hooked lifters, one set facing in one 60 direction and engaging one set of griff-bars and the other set facing in the other direction and engaging the other set of griff-bars, needles each connected to one or more lifters of each set, means for reciprocating the griff- 65 bars, and means for moving one set of griff-bars in the direction of movement of the needles as it approaches the limit of its downward movement and begins to rise therefrom.

In testimony whereof I have signed my 70 name to this specification in the presence of two subscribing witnesses.

WALTER W. HODGSON.

Witnesses:

F. E. BECHTOLD,
WILL. A. BARR.