

No. 757,342.

PATENTED APR. 12, 1904.

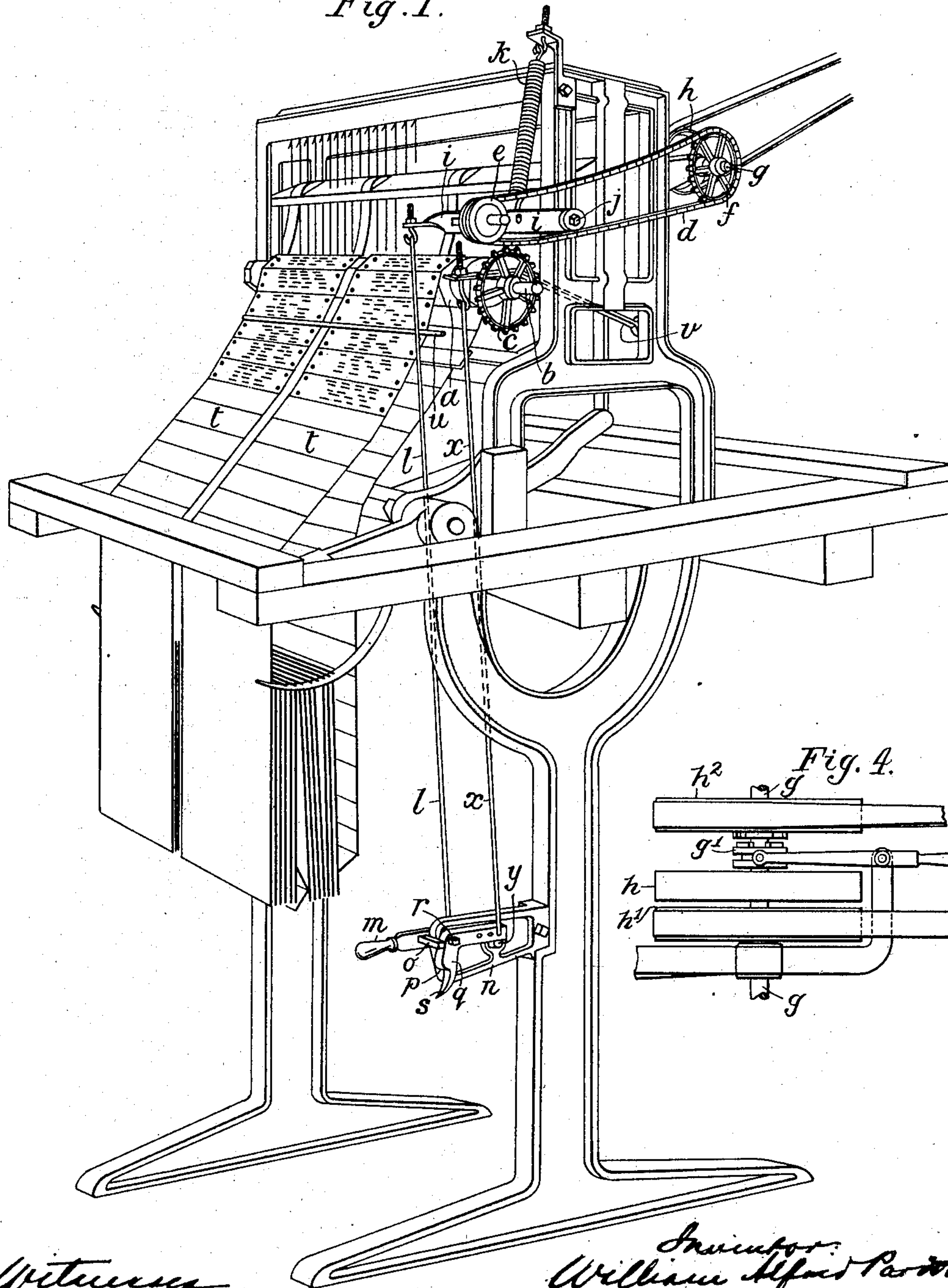
W. A. PARDOE.  
JACQUARD.

APPLICATION FILED JULY 22, 1903.

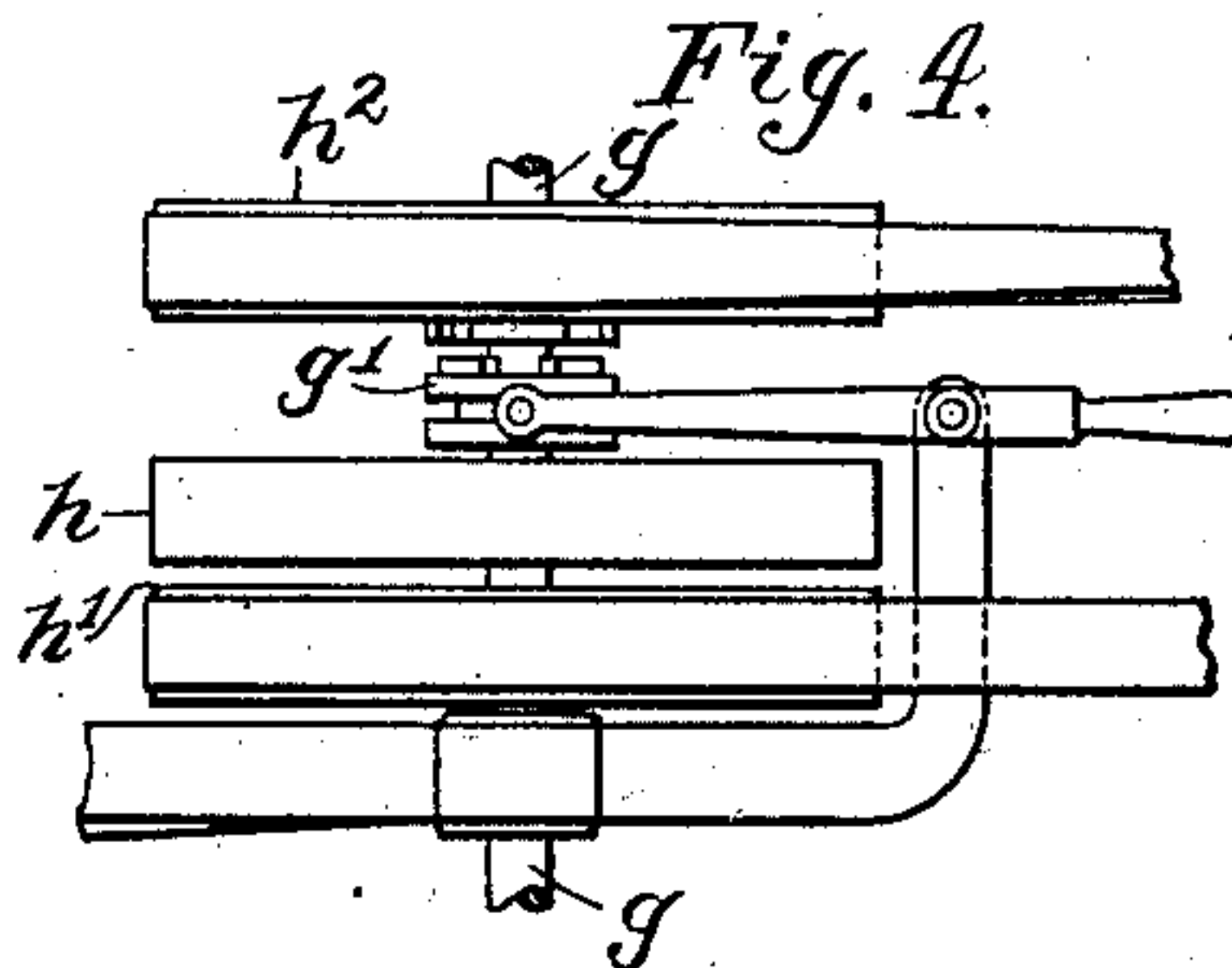
NO MODEL.

2 SHEETS—SHEET 1.

*Fig. 1.*



*Fig. 4.*



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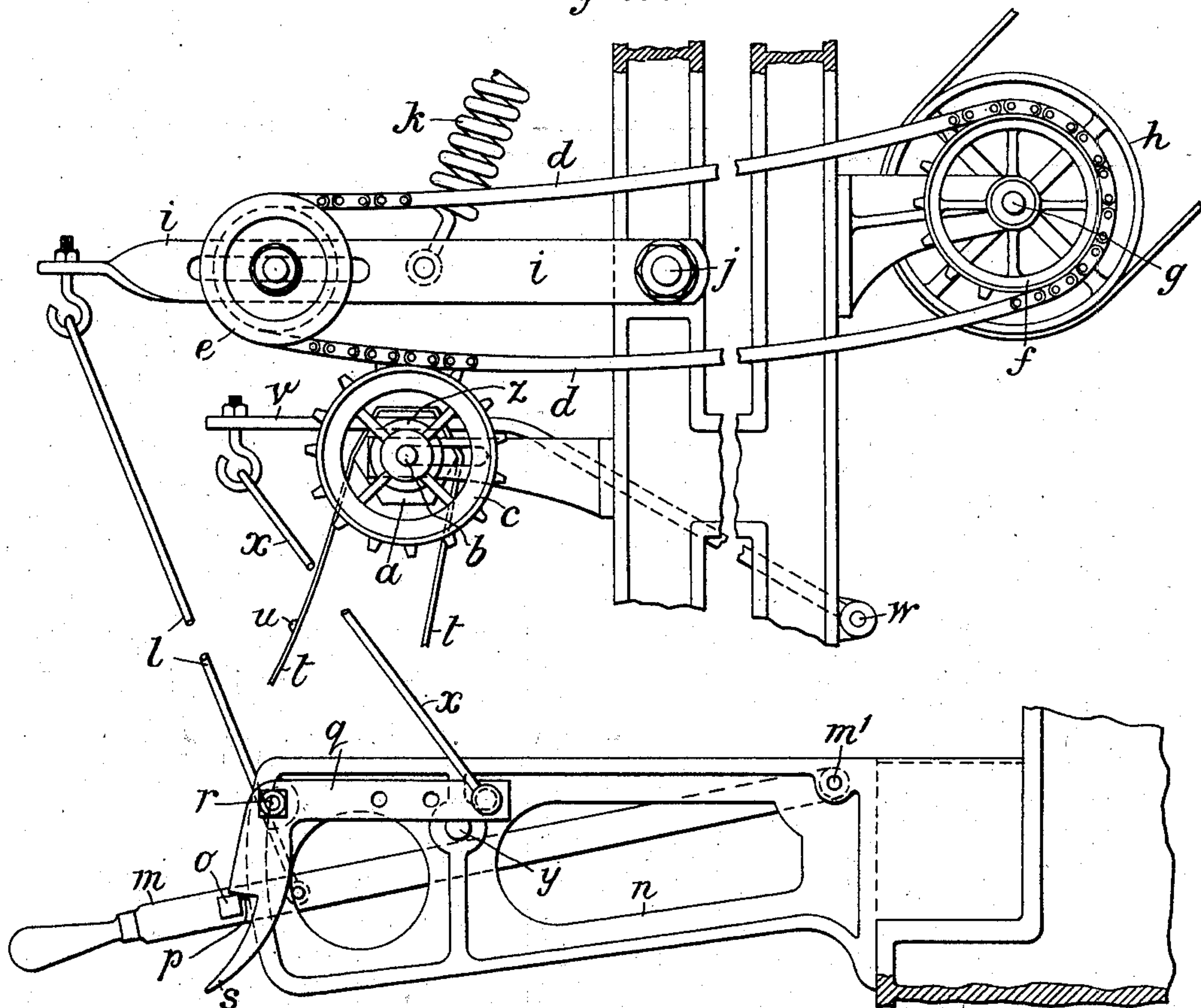
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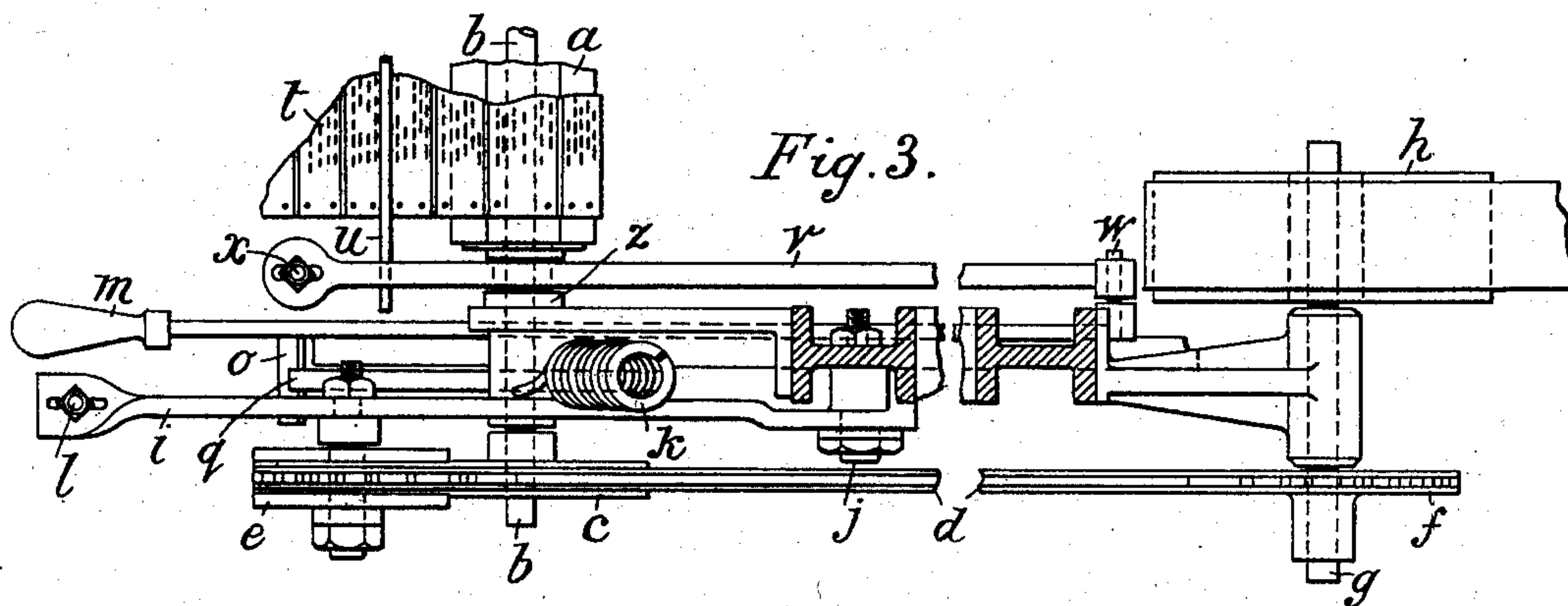
NO MODEL.

2 SHEETS—SHEET 2.

*Fig. 2.*



*Fig. 3.*



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## UNITED STATES PATENT OFFICE.

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## JACQUARD.

SPECIFICATION forming part of Letters Patent No. 757,342, dated April 12, 1904.

Application filed July 22, 1903. Serial No. 166,612. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM ALFRED PARDOE, a subject of the King of Great Britain and Ireland, residing at Batley Carr, Dewsbury, county of York, England, have invented new and useful Improvements in Jacquards, of which the following is a specification.

This invention relates to improvements in jacquards for Brussels-carpet squares or bordered-fabric-weaving looms and other looms and machines in which it is desirable to pass or run over backward or forward a certain number of cards without working from them; and the objects of the invention are, first, to enable the operative without having to mount the platform to cause the cylinder when at its outermost position to turn until the required card is facing the needles, when it will stop automatically and the loom be ready to start weaving, and, secondly, to enable motive power to be employed for pulling over cards in weaving bordered fabrics. I attain these objects by the mechanism illustrated in the annexed drawings, in which—

Figure 1 is a perspective view of a carpet-loom jacquard with the invention applied, the harness being omitted for the sake of clearness. Fig. 2 is a detached view, in side elevation, of the parts constituting the novel mechanism; and Fig. 3 is a plan of the same, the two latter figures being drawn to a larger scale. Fig. 4 is a detail.

For the purpose of the invention the jacquard-cylinder *a* has its axis *b* extended at one end, and mounted thereon is a chain-wheel *c*, adapted to be engaged with or disengaged from a driving-chain *d*. Said chain passes over a grooved pulley *e*, (hereinafter referred to,) and over a chain-wheel *f* on a counter-shaft *g*, which also carries a belt-pulley *h* (or fast and loose pulleys) and is driven from the main shafting of the factory. The pulley *e* is carried by a lever *i*, pivoted to the frame at *j* and arranged at a suitable height above the cylinder *a*, and it is held in a raised position by a spring *k*, in which position the chain *d* is out of engagement with the chain-wheel. To depress the lever *i*, and so bring about the engagement of the chain with the chain-wheel

*e*, and thereby drive the cylinder *a*, the said lever is connected by a wire or cord *l* (or other flexible connection) to a hand-lever *m*, pivoted at *m'* in a bracket *n*, projecting from the loom-frame and in a convenient position within reach of the operative. By depressing said hand-lever the engagement of the chain *d* with the toothed wheel *c* is effected. To keep the hand-lever depressed, it is provided with a pin *o*, adapted to engage a shoulder *p* on the short arm of an elbow-lever *q*, which is pivoted at *r* to the bracket *n*. To disengage the chain *d* by hand, the said short arm of the elbow-lever is prolonged and terminates in a trigger or finger-piece *s*, by which the elbow-lever can be pushed backward and the shoulder *p* released from the pin *o*, thereby leaving the hand-lever free to be returned by the spring *k* and the disengagement of the chain to be effected. In order, however, that this disengagement may be done automatically, any of the cards or their equivalent in the circle or chaplet *t* may each be provided with a wire or rod *u*, which projects beyond the edge of the card and is adapted when said card has reached the cylinder to strike against and raise a lever *v*, pivoted to the frame at *w* and having its free end resting upon a grooved or plain disk *z* on the cylinder-axis, said lever being bent and shaped, if necessary, so as to clear the lifting-board or any other element of the jacquard. The free end of the lever *v* is connected by a wire or cord *x* or other flexible connection to the long arm of the elbow-lever, the point of connection being adjustable along the arm, which for this purpose has three or more holes, so that, if necessary, the leverage may be altered. When the wire or rod *u* raises the lever *v*, the long arm of the elbow-lever *q* is raised, and the shoulder *p* on the other arm escapes from the pin *o* on the hand-lever, thus leaving the spring *k* free to act to return the hand-lever to the raised position and the chain to the disengaged position. The long arm of the elbow-lever *q* acts as a counterweight, and the downward movement of said arm is limited by its resting upon a stop *y* on the frame.

The counter-shaft *g* may be arranged to carry a central fast and two outside loose pul-



leys, having straight and crossed belts passing on to the main driving-shaft, and by means of an ordinary clutch-and-fork arrangement the chain  $d$  may be driven forward or backward.

5 Such an arrangement is shown in Fig. 4, in which  $h$  is the fixed pulley,  $h'$  the loose pulley, on which the straight belt is shifted to stop the loom, and  $h^2$  is the loose pulley, having a clutch-hub to gear with the clutch-piece  $g'$   
10 when it is desired to drive by means of the crossed belt.

When making a border, the loom weaves as usual, the driving-chain  $d$  being disengaged, as in Fig. 1, and to prevent the border when  
15 finished being repeated in the fabric the loom is stopped in the ordinary way, and remains so, with the card-cylinder forward or away from the needles. The operative then depresses the hand-lever  $m$  until the pin  $o$  engages with the  
20 shoulder  $p$  on the elbow-lever  $q$ , as shown in Figs. 2 and 3, whereby the hand-lever is retained and the driving-chain kept in engagement with the chain-wheel  $c$ , thus driving the card-cylinder by power and running over  
25 those cards that are not required in the work until a card (in the proper position of the circle or chaplet of cards) that has a wire or rod reaches the cylinder and acts upon the lever  $v$ , so effecting the automatic disengagement  
30 of the chain and stopping of the cylinder, the mechanism having returned to the position shown in Fig. 1. The required card for working is then in position and weaving is resumed and continued until the next border is reached,  
35 when the operation above described is repeated. In some cases—as, for instance, where the number of cards in the border greatly exceeds the number in the body of the pattern—it might be desirable in running over  
40 the cards to rotate the cylinder in the reverse direction. This can be effected by bringing the crossed belt on the counter-shaft  $g$  into action.

The term “outermost position” as employed in certain of the claims designates the position which the jacquard-cylinder  $a$  occupies when it is farthest from contact with the needles. At the commencement of each weaving operation the cylinder is “out,” with the  
50 cards hanging over it, and at its first movement it goes “in” against the needles, pressing the card which faces them against the needles. Then going out again and turning one face so as to put the next card opposite the needles  
55 it goes in to produce the next selection of harness determined by that card, and so on.

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

60 1. In a jacquard, the combination, with the cylinder, of means for turning said cylinder by power, when at its outermost position and when the loom is not weaving, and means for effecting the engagement, or disengagement,

of the driving means with, or from, said cylinder. 65

2. In a jacquard, the combination, with the cylinder, of means for turning said cylinder by power, when at its outermost position and when the loom is not weaving, means for effecting the engagement, or disengagement, of  
70 the driving means with, or from, said cylinder, and means for automatically stopping the cylinder.

3. In a jacquard, the combination with the  
75 card-cylinder, of a chain-wheel mounted upon the cylinder-axis, a chain-wheel on the power-shaft, a spring-controlled lever pivoted to the frame, a pulley carried by said lever, a chain passing over said pulley and over the chain-  
80 wheel on the power-shaft, and means for keeping the chain temporarily engaged with the chain-wheel on the cylinder-axis.

4. In a jacquard, the combination with the engaging and disengaging mechanism and with  
85 the driving mechanism, of a rod (or rods) secured to the circle or chaplet of cards, a lever adapted to be actuated by said rod (or rods) and connected with the hand-lever mechanism so as to automatically effect the disengagement  
90 of the cylinder from the power-shaft.

5. In a jacquard, the combination with the hand-lever of the engaging and disengaging mechanism, of an elbow-lever, a shoulder on the short arm of said elbow-lever, means for  
95 connecting the hand-lever with the chain-engaging mechanism, means for connecting the elbow-lever with the automatic chain-disengaging mechanism, and a pin on the hand-lever adapted, when engaged with a shoulder on  
100 the elbow-lever, to retain the hand-lever in the depressed position and thereby keep the cylinder engaged with the driving-shaft.

6. In a jacquard, the combination with the card-cylinder, a chain-wheel mounted upon its  
105 axis, a chain-wheel on the power-shaft, a spring-controlled lever pivoted to the jacquard-frame, an adjustable pulley carried by said lever, and a chain passing over said pulley and over the chain-wheel on the power-shaft,  
110 of a hand-lever, a flexible connection between said hand-lever and the spring-controlled lever, an elbow-lever acting in conjunction with the hand-lever for keeping this latter depressed and the chain engaged with the chain-  
115 wheel on the cylinder-axis, a releasing-lever actuated by rods on the cards or chaplet for automatically disengaging the chain from the chain-wheel on the cylinder-axis, and a flexible connection between the releasing-lever and  
120 the elbow-lever.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM ALFRED PARDOE.

Witnesses:

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EDWARD D. HEARN.