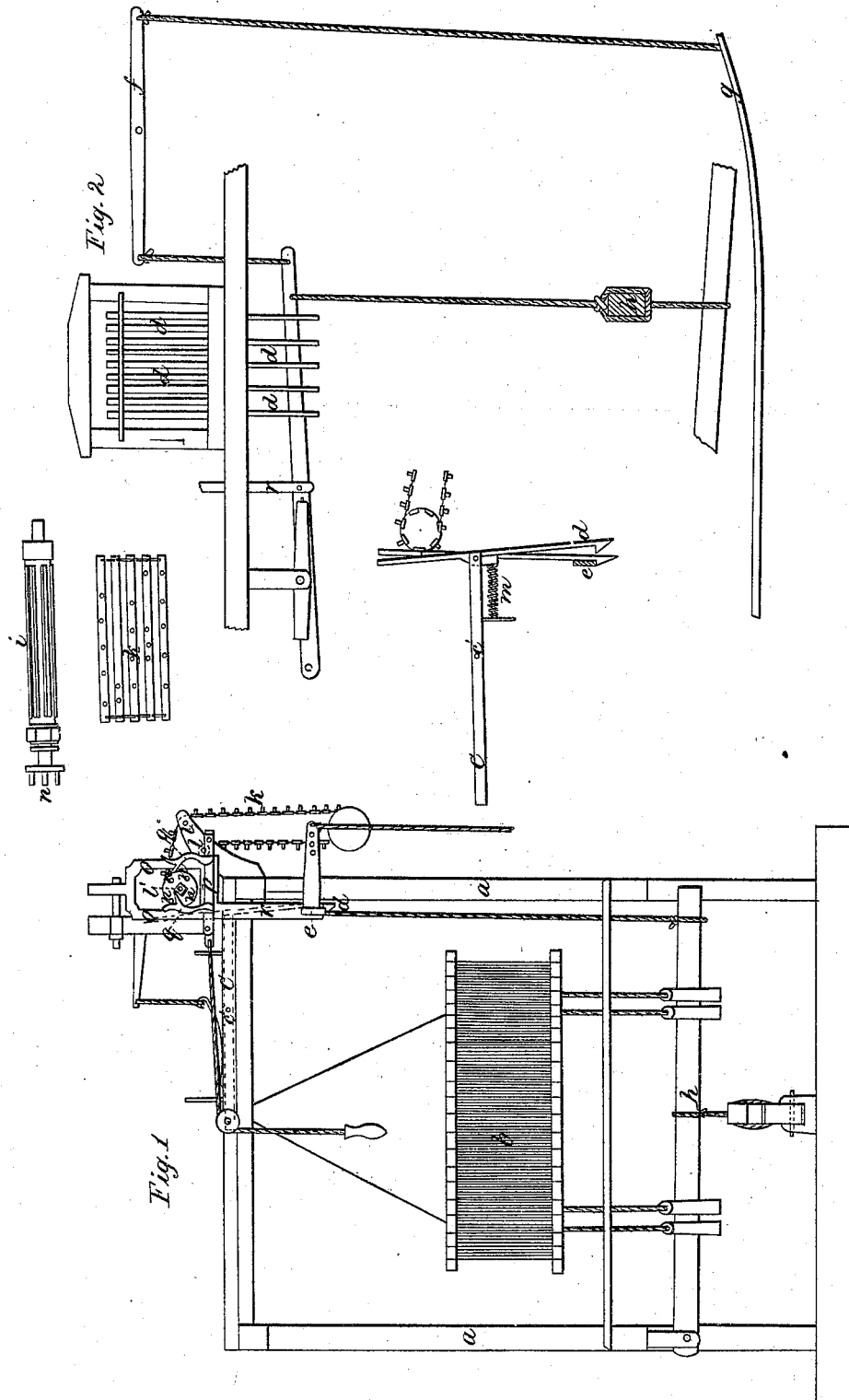


*G. M<sup>c</sup>Crue.*  
*Jacquard Motion for Loom.*

*N<sup>o</sup> 3309.*

*Patented Oct. 18, 1843.*



# UNITED STATES PATENT OFFICE.

GAVIN McCRAE, OF BALTIMORE, MARYLAND.

## WEAVER'S LOOM FOR WORKING ANY NUMBER OF HEDDLES.

Specification of Letters Patent No. 3,309, dated October 18, 1843.

*To all whom it may concern:*

Be it known that I, GAVIN McCRAE, of Baltimore, in the State of Maryland, have invented a new and useful Improvement in Hand-Looms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1, is a cross section; Fig. 2, a side elevation.

The nature of my invention consists in the apparatus by which I can raise any number of heddles in any pattern by means of one treadle.

The frame of my loom is constructed like those now in common use, and marked (*a*) in the drawing; the heddles (*b*) are hung to coupers (*a*) above, these coupers have their fulcrums at (*c'*), and in Fig. 1, are shown by dotted lines; to the outer ends of each couper an upright needle (*d*) is jointed by its center, the lower end of which has a hook on it, for a purpose hereafter described; the upper ends are flattened out so as to be acted on by pins on lugs as described below. A little above the hooks above named, when at rest, a trap-bar (*e*) stands, the fulcrum of which is in the front part of the loom; the other end is connected with a lever (*f*) supported at the back of the frame, and connected at its other end by a cord with a spring (*g*) attached to the floor. At the back end of the trap-bar a cord is fixed that connects it with a long march (*h*) below; this is connected with a treadle in the usual way.

Outside the needles (*d*), near their upper ends, a cylinder (*i*) is placed having its bearings in the posts set in the upper plate of the frame this cylinder has lags around its periphery at equal distances apart, and over this cylinder an endless chain of lags (*k*) passes each of which falls between the

lags attached to the cylinder (*i*). The endless belt then passes over pulleys (*l*) outside of the cylinder (*i*) and hangs down in each of the lags. There are as many holes as there are needles (*d*) in the frame, and corresponding with the number of heddles; in either of these holes short iron pins can be inserted, which stand out far enough to press in the upper part of the needle and thus carry the hook out of the reach of the trap-bar, by this arrangement any number of heddles can be raised at pleasure; the needles are drawn back by springs (*m*).

The trap-bar being hinged to the front post draws the back needles farther down than the front ones so that the shed will be raised even on the outside end of the cylinder (*i*) are four (more or less) pins (*n*) projecting. A square frame (*o*) which slides up and down in ways in the frame having the above named pins projecting through it; in the lower part of this frame there is a bar (*p*) which can be made to slide horizontally, and attached to which are hooks (*q*) like those of a jacquard frame, to turn the cylinder; the frame is made to play up and down by means of a connection (*r*) with the trap-bar. The cylinder can be made to turn either way by sliding the bar (*p*) so as to bring one or other of the hooks (*q*) into contact with the pins on the cylinder.

What I claim as my invention and desire to secure by Letters Patent is—

The combination of the endless chain of lags, having pins projecting therefrom in the manner described, with the needles; and also in combination with the above, the lever-acting catch-bar for raising an even shed in the manner set forth.

GAVIN McCRAE.

Witnesses:

W. F. LEYPOLD,  
JAMES McEVROY.