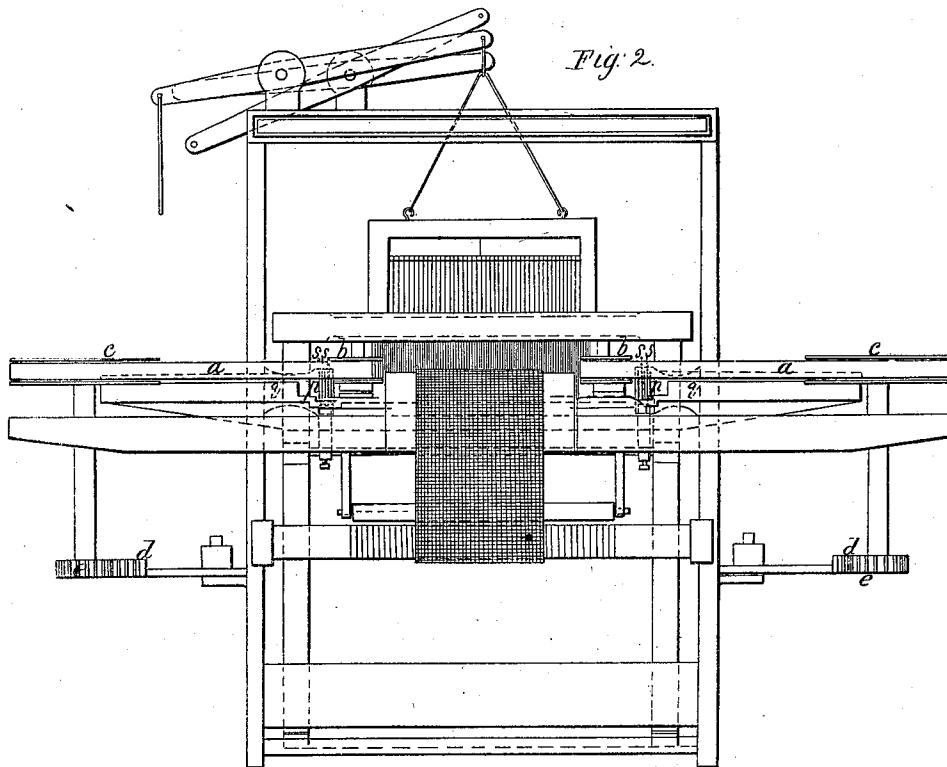
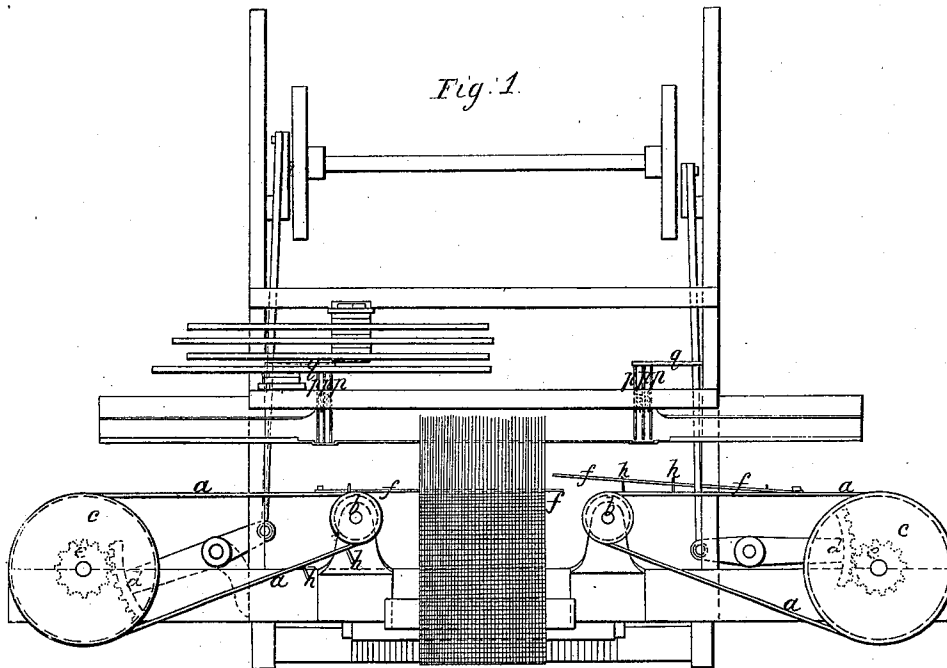


Sheet 1-2 Sheets.

*J. Johnson.*  
*Weaving Pile Fabric.*

*N<sup>o</sup> 14,285.*

*Patented Feb. 19, 1856.*



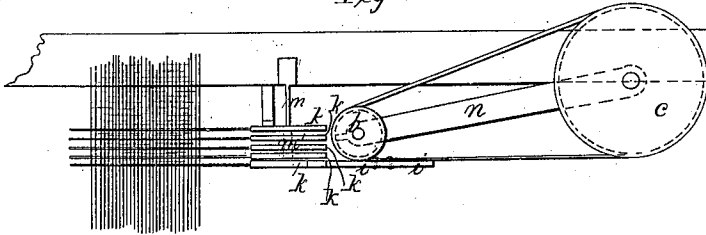
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*J. Johnson.*  
*Weaving Pile Fabric.*

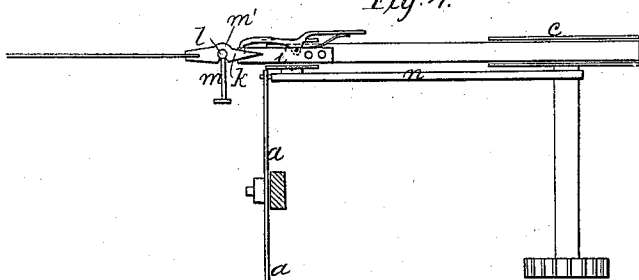
*N<sup>o</sup> 14,285.*

*Patented Feb. 19, 1856.*

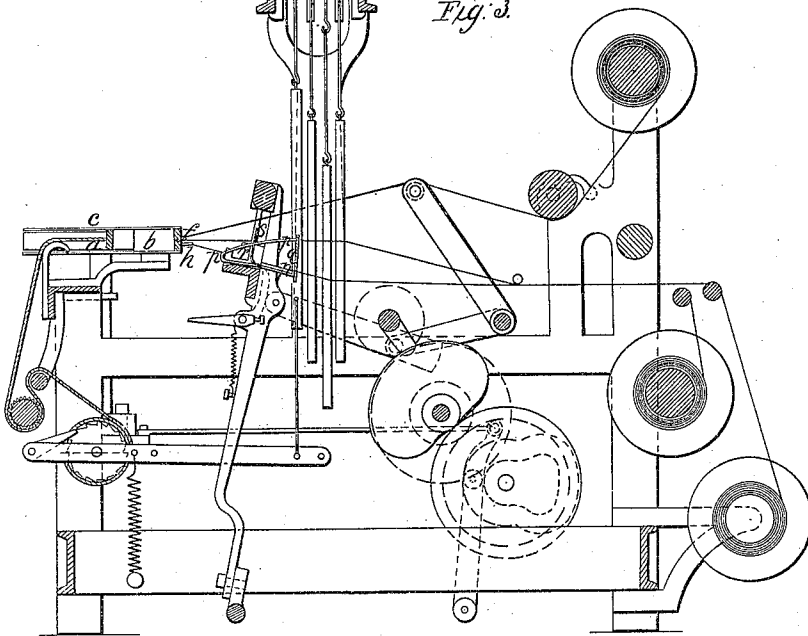
*Fig. 5.*



*Fig. 4.*



*Fig. 3.*



# UNITED STATES PATENT OFFICE.

JOHN JOHNSON, OF TROY, NEW YORK.

## POWER-LOOM.

Specification of Letters Patent No. 14,285, dated February 19, 1856.

*To all whom it may concern:*

Be it known that I, JOHN JOHNSON, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Looms for Weaving Tapestry and Velvet Carpetings; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, in which—

Figure 1 is a top plan. Fig. 2 is a front elevation. Fig. 3, is a side elevation.

My improvements consist in forming the sheds of the warp double, and also in the apparatus for laying the wires into the warp, and withdrawing them. The improvement for shedding the warp consists in elevating the pile warp above the ground or backing warp, so as to form two separate and distinct sheds at the same time, one above the other, as clearly shown at Fig. 3. This enables me to put in the wire above the ground warp, under the upper shed, while the shuttle is thrown through the lower shed, and thus obviate the necessity of missing a pick, for the purpose of inserting the wire, as heretofore been required. To effect this, the harness containing the pile warp is made to rise higher than the ground warp, having a double elevation, so as to have sufficient space to pass the wire through. This elevation of the warp, as well as most of the other gearing of the loom, is by well known machinery, and needs no particular description to enable persons well acquainted with tapestry looms to construct the same, and when the sheds are thus formed, the shuttle and wire pass through their separate sheds at the same instant, without interference with each other, or stoppage of the shuttle.

To carry the wires into and withdraw them from the warp, I employ an endless band or chain (*a*) passing around two pulleys (*b* and *c*). This band (*a*) has a reciprocating movement, given to it at proper intervals, from the cam shaft, shown in the drawing, by a segment rack (*d*), turning a pinion (*e*), on the shaft of pulley (*c*). The wire (*f*) is attached to the band, and is by this means thrust forward at the proper time, under the upper shed or pile warp, which is then bound in the ordinary way. The wire on one side being thus woven in,

that on the opposite side is carried into the warp in a similar manner, and the first wire drawn back, and again inserted in front of the other, and so the operation is repeated by inserting the wires alternately from either side as the work progresses. If the wire is long, it is supported at any number of intervals by projecting rests or pins (*h*) on the belt. This is very necessary, in order to steady and properly direct a long wire. When it is desired to use more than two wires the following modification may be adopted, shown at Figs. 4 and 5. Instead of attaching the wires to the endless belt, I affix a socket and catch (*i*), Fig. 4, into which a projecting piece (*k*), on the end of the wire fits. This piece (*k*) has a notch on the underside at (*l*), about three fourths of a circle in circumference, and opening on the under side. On the frame of the loom there is a stationary guide, composed of a standard (*m*), supporting a horizontal rod (*m'*) the size of the notch (*b*), above named, so that as the wires are delivered into the web, they slide over the rod (*m'*), and are thus steadied. When inserted, the catch on the endless belt releases them, and falling back, takes hold of the wire first inserted, which has passed beyond the guide rod (*m'*), and draws it out. To effect this backward and forward motion, I suspend the inner pulley (*b*), on the arm (*n*), that enters on the shaft of pulley (*c*), and then by connecting it with an upright lever (*o*), attached to its inner end, which has its fulcrum affixed to the loom frame, and its lower end connected in any convenient way with a cam on the cam shaft, that will work it at proper intervals.

Instead of the usual weft fork for stopping the loom, I employ a series of looped wires (*p*) firmly affixed to a bar (*q*) just behind the lay. The loops of wire extend forward between a vertical set of wires (*s*) projecting up from a rod lying along below the race beam, and parallel with it. When the weft thread is in, as shown by the red dot (*r*) Fig. 3 the fork wires (*s*), are moved backward, as they reach the bight of the loops (*p*), if the weft thread is broken, the fork wires pass through the loop, and allow the protector to throw off the spring shipper in the ordinary way, well known to loom makers.

I do not claim a double shed but what I do claim as my invention is—

1. Inserting the wires at the same instant the shuttle is thrown by which I save a pick  
5 by the employment therefor of a double shed in the manner set forth.

2. I also claim the vibrating belt, or its

equivalent, to which the wires are connected, arranged and combined, substantially as herein set forth.

JOHN JOHNSON.

Witnesses:

ALEXANDER A. BROWN,  
GEO. B. MARTIN.