

J. PATTERSON.

Machinery for Beetling Woven Fabrics.

No. 141,725.

Patented August 12, 1873.

FIG. 2.

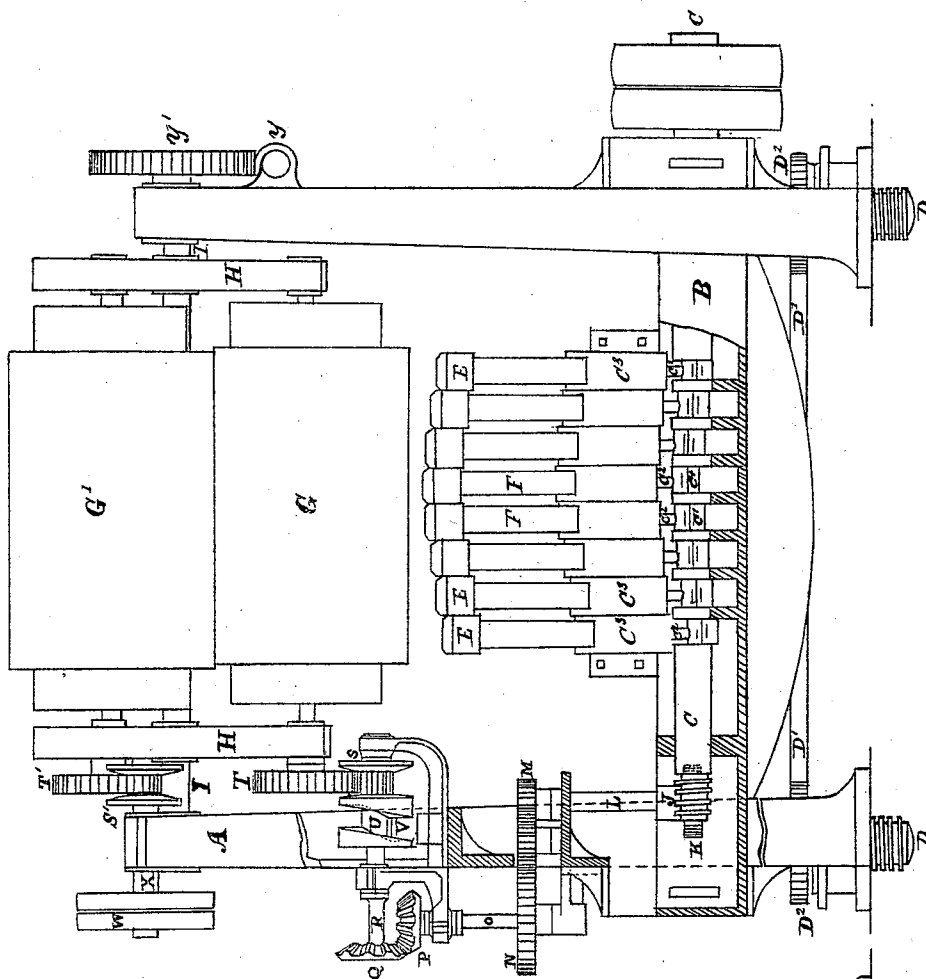
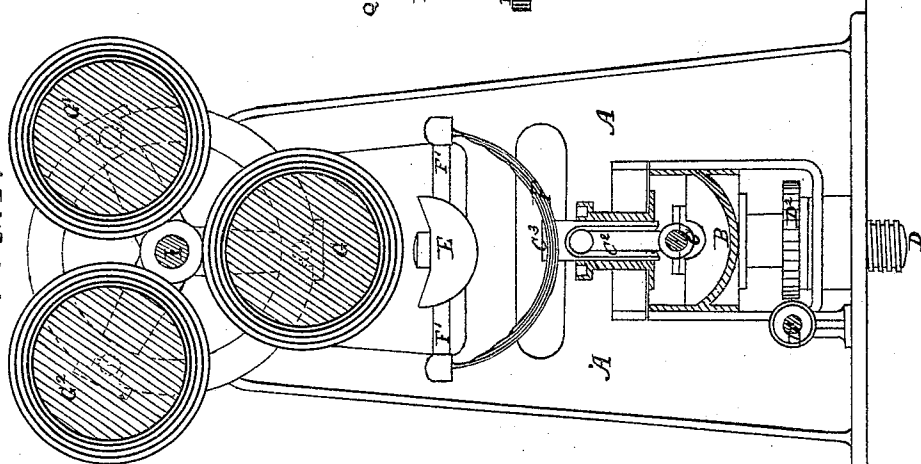


FIG. 1.



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JOHN PATTERSON, OF BELFAST, IRELAND.

IMPROVEMENT IN MACHINERY FOR BEETLING WOVEN FABRICS.

Specification forming part of Letters Patent No. **141,725**, dated August 12, 1873; application filed January 15, 1873.

To all whom it may concern:

Be it known that I, JOHN PATTERSON, of Belfast, county Antrim, Ireland, gentleman, have invented certain Improvements in Machinery for Beetling Woven Fabrics and Fibrous or other Materials, of which the following is a specification:

My invention relates to machinery made use of for beetling woven fabrics; and the nature thereof consists in certain novel combinations of the parts of the same, and in the mechanism made use of for adapting to such machinery certain devices described in the specification of the American patent granted to Thomas Shaw, No. 52,894, February 27, 1866, and of the British patent granted to Alfred Vincent Newton, No. 872, A. D. 1866; and, in order that my invention may be fully understood and readily carried into operation, I will proceed to describe its construction, as shown on the annexed drawing, reference being had to the figures and letters marked thereon.

Figure 1 is a transverse section, and Fig. 2 a side view, of my improved beetling-machine.

In these views, A A are the side standards, to which is fixed the bar B, supporting the shaft C on a series of bearings, which shaft may be driven by steam or other power. The box B may be acted upon by vertical screws D, which may be connected by a shaft, D¹, and worm-gear D², to vary the height of the shaft C according to the quantity of cloth wound on the cloth-beam. On the shaft C are as many eccentrics C¹ C¹ as there are stampers in the beetle. In this instance I have shown eight eccentrics, which follow each other in regular succession, and give motion to the stampers E E by means of the connecting-rods C² C², which are attached inside and actuate the hollow sliding blocks C³ C³, which are fixed and give a parallel motion to the springs F F, which carry the stampers or beetles E E, by means of the bridles or leather straps F¹ F¹, which pass through and control the stampers E.

The stampers E E are made, by preference, of a cast-iron block, into which a piece of wood is secured, but other materials may be used.

The fabrics to be beetled are wound on either of the two beams G and G¹ or G². The axles of these beams are supported in bearings in the disks H H, which are keyed on the cen-

tral axle or trunnion I supported in bearings in the side standards. In some cases it may be desirable to employ more than three cloth-beams.

During the operation of beetling the beam G is turned slowly round on its axis by the worm-wheel J on the end of shaft C, which works into the worm-wheel K on the lower end of the shaft L, which on its upper end carries the pinion M gearing into the wheel N on bottom of upright shaft O, on the upper end of which is the bevel-wheel P driving the wheel Q on the horizontal shaft R, on the other end of which is the flanged pinion S driving the wheel T, which is keyed on the axle of the beam G.

The lateral to-and-fro motion is given to the beam G during the operation of beetling by means of the diagonal grooved boss U fast to the flanged pinion S, the groove of the said boss fitting the bowl or friction pulley V, which is free to revolve on a stud fixed to a bracket on the side standard. The flanged pinion S and the grooved boss U are connected to the shaft R by a key and groove; consequently, as the shaft revolves, the bowl or friction pulley imparts a lateral to-and-fro motion to the boss U and pinion S, the flanges of which take hold of the wheel T, and thereby impart the same motions to the beam G.

The mode of operation is as follows: The cloth to be beetled is now supposed to be wound on the beam G, and so long as the driving-strap is on the fast pulley on the shaft C the stampers E will act in regular succession on the cloth-beam G, or in any other required succession, according to the relative position of the eccentrics on the shaft C; and as the cloth-beam receives a rotary as well as a to-and-fro motion, it is evident that every portion of the surface of the cloth-beam is acted upon by the stampers until the required beetling finish is obtained. The force of the blows can be regulated or modified by varying the velocity of the crank or eccentric shaft C, or the weight of the stampers.

After the fabric has been beetled on the beam G the central axle or trunnion I is operated upon by the worm-gear Y and Y', so as to move the disks H H and bring the beam G² into position for the stampers to act upon it,

while the cloth on the beam G which has been beetled is unwound from it upon the beam G¹ by means of the pulley W and the flanged pinion S' on the shaft X, the said flanged pinion S' gearing into the wheel T' on the axle of the beam G¹.

When necessary the fabric is unwound from its beam by means of the pinion S' and plaited down or otherwise disposed of, and in some cases it may be found desirable to air or cool the cloth as it passes from one beam to another by means of current of air produced by a revolving fan, or by taking it over suitable guide-rollers.

In some cases the lateral to-and-fro end motion of the beam on which the fabric is wound may be dispensed with by causing a lateral to-and-fro motion to be imparted to the stampers E E, and box B with its shaft C, which will produce the same effect, or by making the striking part of the stampers diagonal.

Having stated the nature of my invention,

and described the manner of performing the same, I claim—

1. The shaft C, box B, vertical screws D, eccentrics C¹ C¹, sliding blocks C³, springs F, stampers E, beams G G¹ G², and disks H H keyed to the trunnion I, combined as described.

2. The worm-wheels J and K, shafts C and L, pinion M, wheel N, shaft O, bevel-wheel P, wheel Q, shaft R, grooved boss U, flanged pinion S, and wheel T keyed to the axle of the beam G, all combined and operating together as and for the purposes described.

In witness whereof I, the said JOHN PATTERSON, have hereto set my hand this tenth day of December, one thousand eight hundred and seventy-two.

JOHN PATTERSON.

Witnesses:

PHILIP M. JUSTICE,
WILLIAM C. BATTEN.