(No Model.)

J. WALDER, Dec'd.

M. WALDER, Executrix.

LOOM.

2 Sheets—Sheet 1.

No. 602,491. Patented Apr. 19, 1898.

Fig. 1.

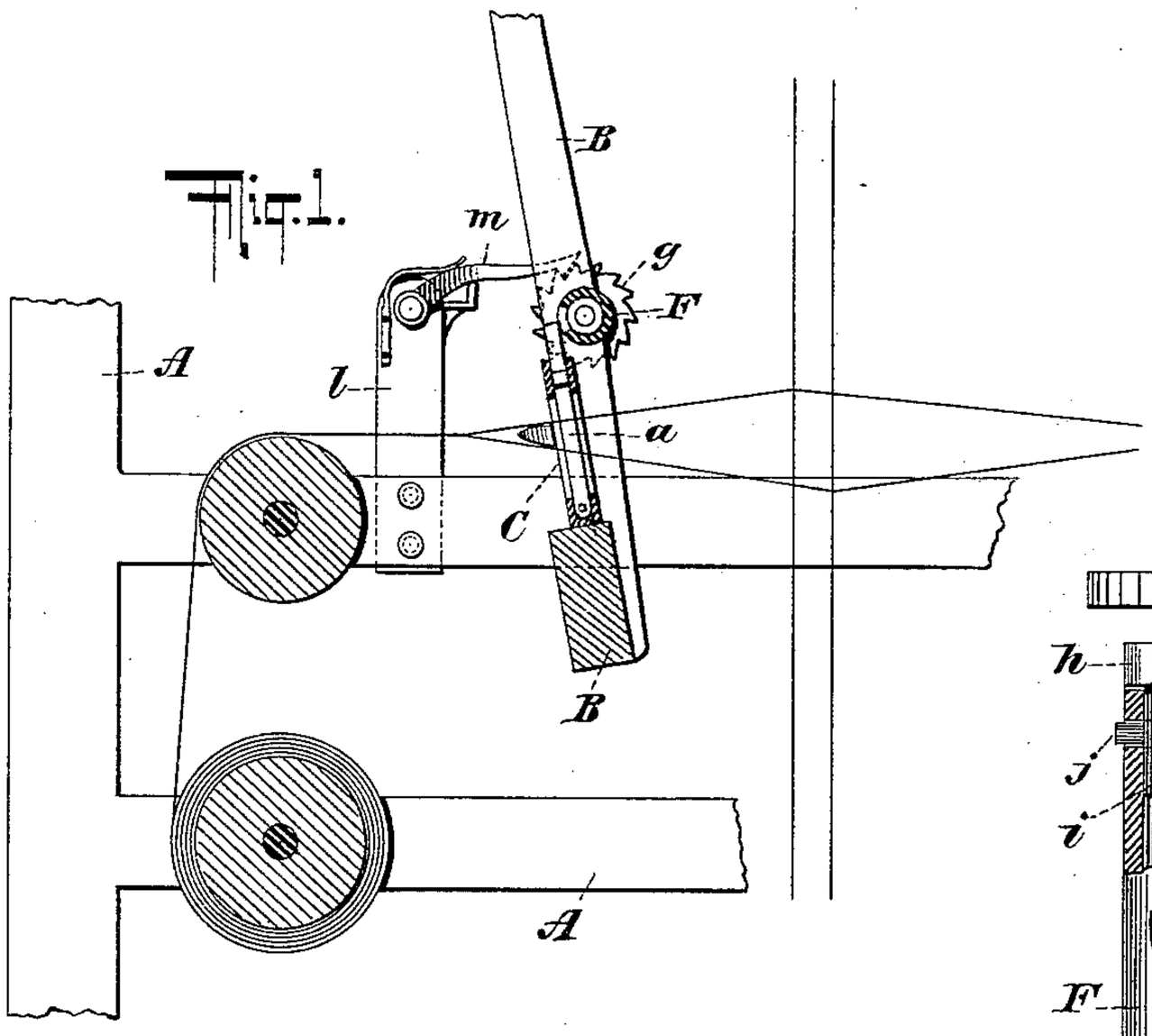


Fig. 4.

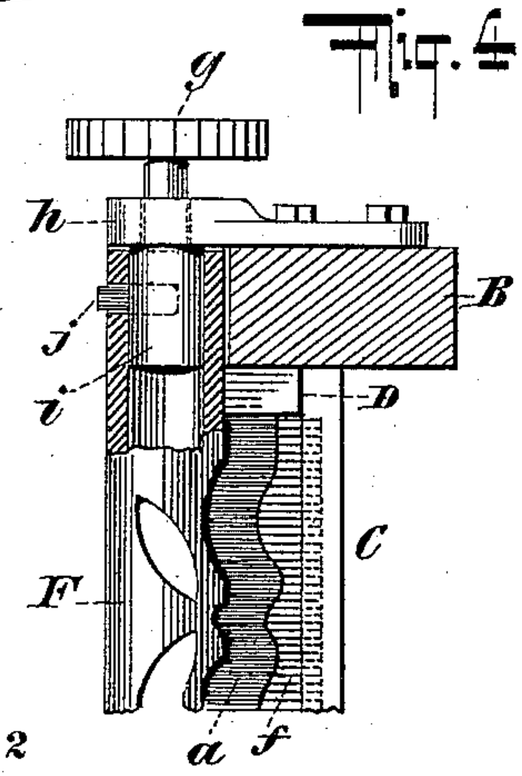


Fig. 2.

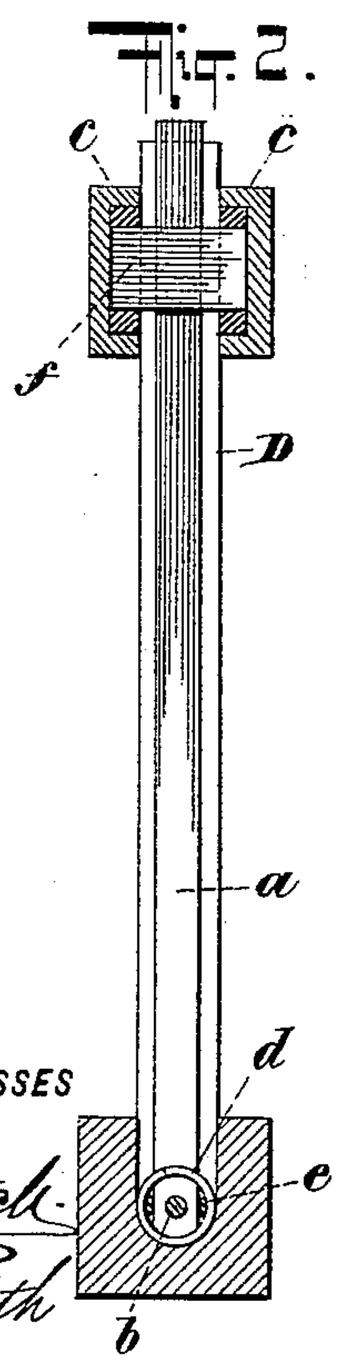


Fig. 3.

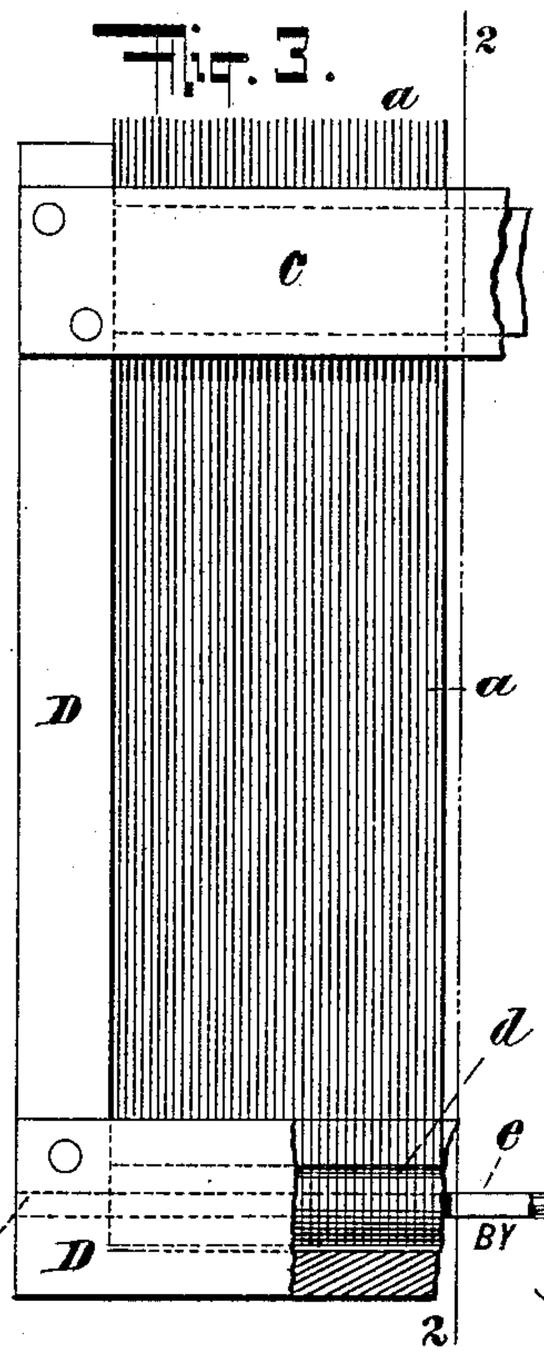
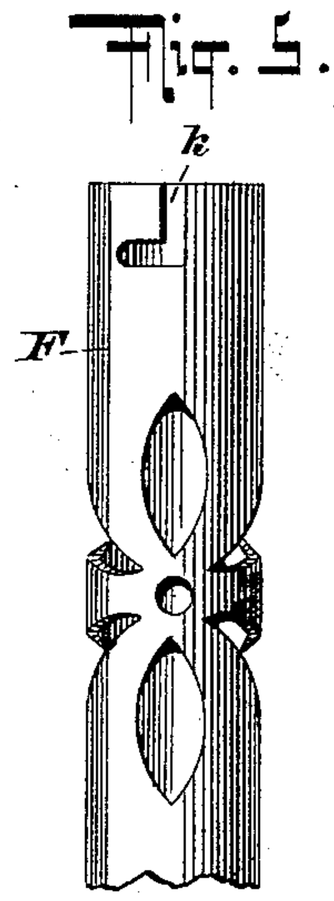


Fig. 5.



WITNESSES

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(No Model.) J. WALDER, Dec'd. 2 Sheets—Sheet 2.

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LOOM.

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Fig. 6.

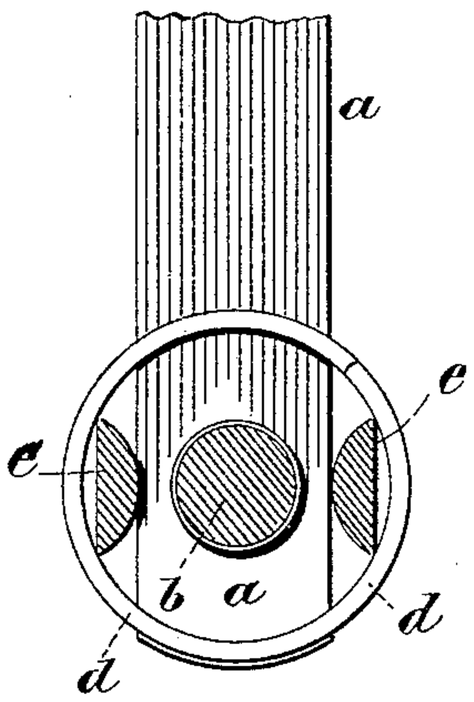


Fig. 7.

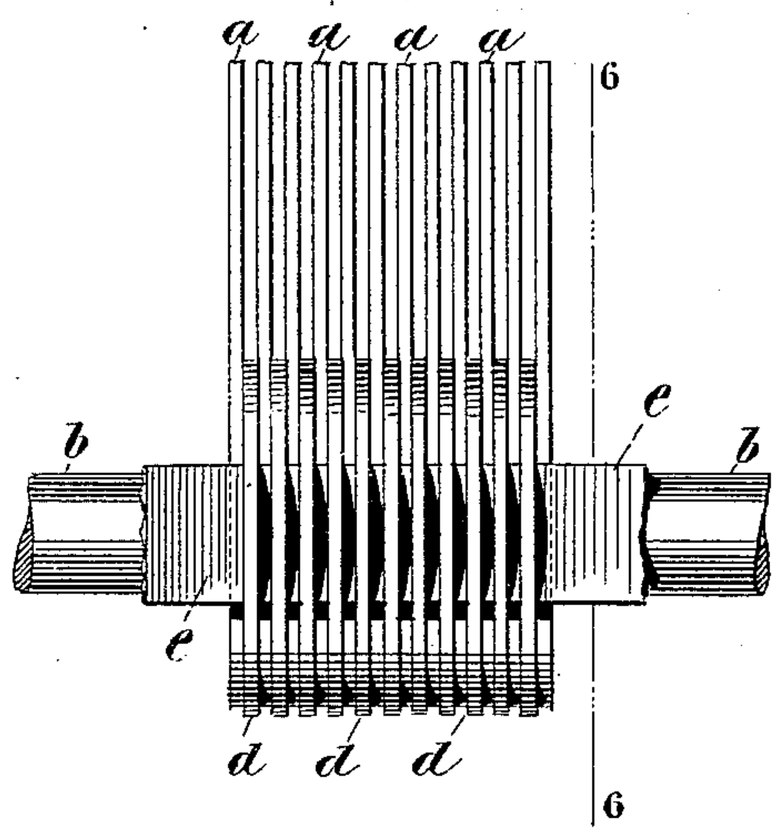
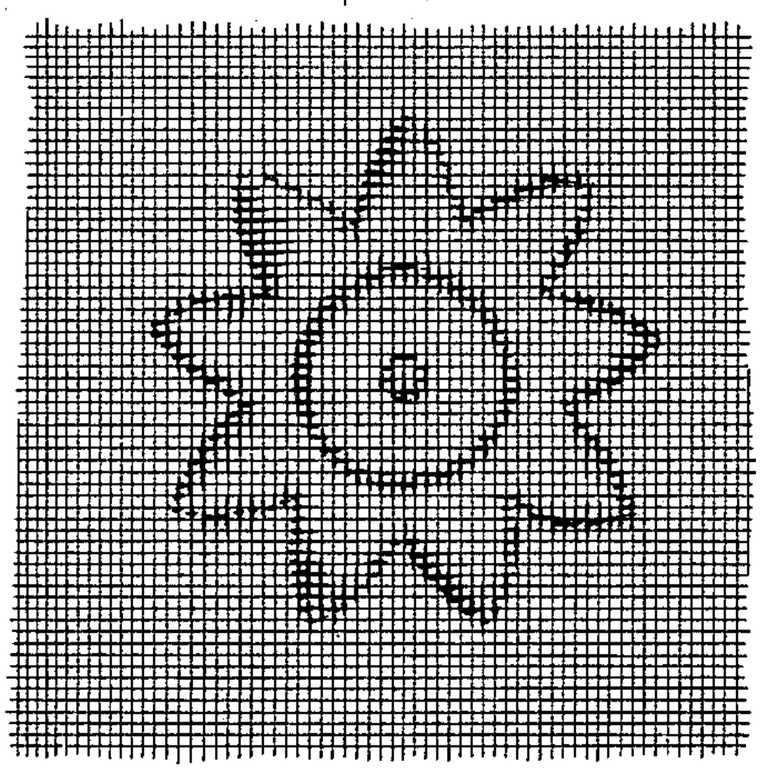


Fig. 8.



WITNESSES

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UNITED STATES PATENT OFFICE.

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LOOM.

SPECIFICATION forming part of Letters Patent No. 602,491, dated April 19, 1898.

Application filed July 22, 1896. Serial No. 600,103. (No model.)

To all whom it may concern:

Be it known that I, JACOB WALDER, a resident of Paterson, county of Passaic, State of New Jersey, have invented certain new and useful Improvements in Looms, of which the following is a specification.

My invention relates to looms; and the object of said invention is to provide a loom wherein pattern goods can be produced in a simple and efficient manner without the necessity of resorting to the use of complicated mechanism.

To this end my invention consists in certain details and arrangement and combination of parts hereinafter described and claimed.

In the accompanying drawings, wherein like parts are indicated by the same reference characters, Figure 1 represents a vertical longitudinal section of a sufficient number of parts of a loom to illustrate my invention. Fig. 2 is a vertical transverse section, on the line 2 2 of Fig. 3, on an enlarged scale, of a reed embodying my invention. Fig. 3 is a fragmental face view of the same. Fig. 4 is a top fragmental view of certain of the parts represented in Fig. 1. Fig. 5 is an enlarged detail side view of a portion of the pattern-cylinder. Fig. 6 is an enlarged fragmental end view showing the lower end of the reed and the manner in which the dents are mounted. Fig. 7 is a face view of the same. Fig. 8 is a face view of a portion of the material made in accordance with my invention.

In the drawings, A represents the framing of a loom, which may be of the ordinary or any preferred construction. To the batten B of the loom is secured a reed C in the usual manner. This reed C is provided with dents *a*, each of which is pivoted at one end to the framing of the reed D, as indicated at *b*, and is adapted to swing at the upper end thereof, in the direction of the plane thereof, between the side walls *c* of the framing of the reed D, the dents being properly spaced apart at the lower ends in any desired manner, but preferably by a coiled spring *d*, each convolution of which projects between two of the dents, as clearly indicated in Figs. 6 and 7. In addition to the coiled spacing-spring I find it expedient to employ side bars *e* between the spring and the edges of the dents of the reed. The dents are spaced apart at the upper ends thereof in any desired manner, but preferably by the spacing-strips *f*, each of which projects between two of the dents, the spacing-strips in themselves going to form a reed-like construction, which separates the upper dents in the reed proper and which I refer to herein as a "spacing-reed." On the batten is carried a ratchet-wheel *g*, which is adapted to rotate in the bearing *h* and is provided at its inner end with a plug-like extension *i*, from which projects a pin *j*. This pin is adapted to enter a slot *k* in a pattern-cylinder F and to secure said pattern-cylinder to the ratchet-wheel *g*, so as to rotate therewith. Upon a suitable projection *l*, extending from the frame A, is a pawl *m*, which is adapted to engage with the teeth of the ratchet-wheel *g*, as indicated in Fig. 1, and to step the pattern-cylinder around at each beat-up of the batten. The pattern-cylinder is so located that the periphery thereof extends against the dents of the reed, as indicated in Fig. 4, and limits the movement of the dents in a direction opposite to that in which the weft is beaten up.

While I have described in specific terms the construction of a pattern-cylinder and mechanism for rotating said cylinder, I would have it distinctly understood that any suitable mechanism might be employed for moving such pattern device.

Having described the construction of a loom embodying my invention, I will proceed to describe the operation thereof.

The weft-thread having been shot the batten is thrown so as to beat up the weft. When the weft is beaten up, the thread, instead of running straight across the loom from side to side in the ordinary manner, will follow the contour of the reed, which contour is determined by the pattern device, as clearly indicated in Fig. 4. Thus the weft-thread will determine or tend to produce the pattern which is produced upon the pattern device. After each beat of the batten the ratchet-wheel *g* is engaged by the pawl and is stepped around the extent of one or more teeth, so as to present a new portion of the pattern-cylinder to the reed to complete the pattern.

It will be observed that by connecting up

the pattern-cylinder with the ratchet-wheel in the manner shown the cylinders may be made interchangeable, so as to vary the patterns as desired.

What I claim, and desire to secure by Letters Patent, is—

1. In a loom, the combination of a batten, a reed, a frame for said reed independent of the batten, said reed having movable dents and means for maintaining the dents spaced apart at top and bottom and for limiting the backward-and-forward movement as well as the lateral movement thereof, a removable pattern-cylinder carried by the batten and adapted to contact directly with said movable dents and limit their movement in one direction, means for operating said cylinder automatically and means for connecting the pattern-cylinder with and disconnecting it from the operating means, whereby the pattern-cylinder is rendered interchangeable, substantially as described.

2. In a loom, the combination of a batten, a reed, a frame for said reed independent of the batten, said reed having movable dents and means for maintaining the dents spaced apart and for limiting the backward-and-forward movement as well as the lateral movement thereof, a removable pattern-cylinder carried by the batten and adapted to contact directly with said movable dents and limit their movement in one direction, means carried by the said batten for connecting the pattern-cylinder to and disconnecting it from the batten whereby said pattern-cylinder is rendered interchangeable and means independent of said batten for coöperating with the cylinder-connecting means to operate said cylinder, substantially as described.

3. A reed for looms, comprising a reed-frame, dents movable in the direction of the planes thereof or at right angles to the length of the reed, each of which dents is pivoted at one end in the said reed-frame and free to vibrate at the opposite end and means carried by the reed-frame for limiting the forward-and-backward movement of the dents, said dents projecting at the free ends beyond the reed-frame, substantially as described.

4. A reed for looms, comprising a reed-frame, independently-movable dents freely movable in the direction of their planes or at right angles to the length of the reed, and a spacing-reed carried by the reed-frame, the dents of which spacing-reed form spacing means for the movable dents of the reed proper, substantially as described.

5. A reed for looms, comprising a reed-frame, independently-movable dents freely movable in the direction of their planes or at right angles to the length of the reed, a single pivot upon which said dents are mounted and around which they are adapted to vibrate and a spacing-reed carried by the reed-frame, the dents of which form spacing means for the movable dents of the reed proper.

6. A reed for looms, comprising a reed-frame, independently-movable dents freely movable in the direction of their planes or at right angles to the length of the reed, a single pivot upon which said dents are mounted and around which they are adapted to vibrate, a coiled spring surrounding the said pivot for maintaining the movable dents properly spaced apart at one end, a spacing-reed carried by the reed-frame, the dents of which form spacing means for the movable dents at the free ends thereof, substantially as described.

JACOB WALDER.

Witnesses:
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JOHN BLUNTSCHLI.