

Hand-Loom.

N^o 80,047.

Patented Jul. 21. 1868.

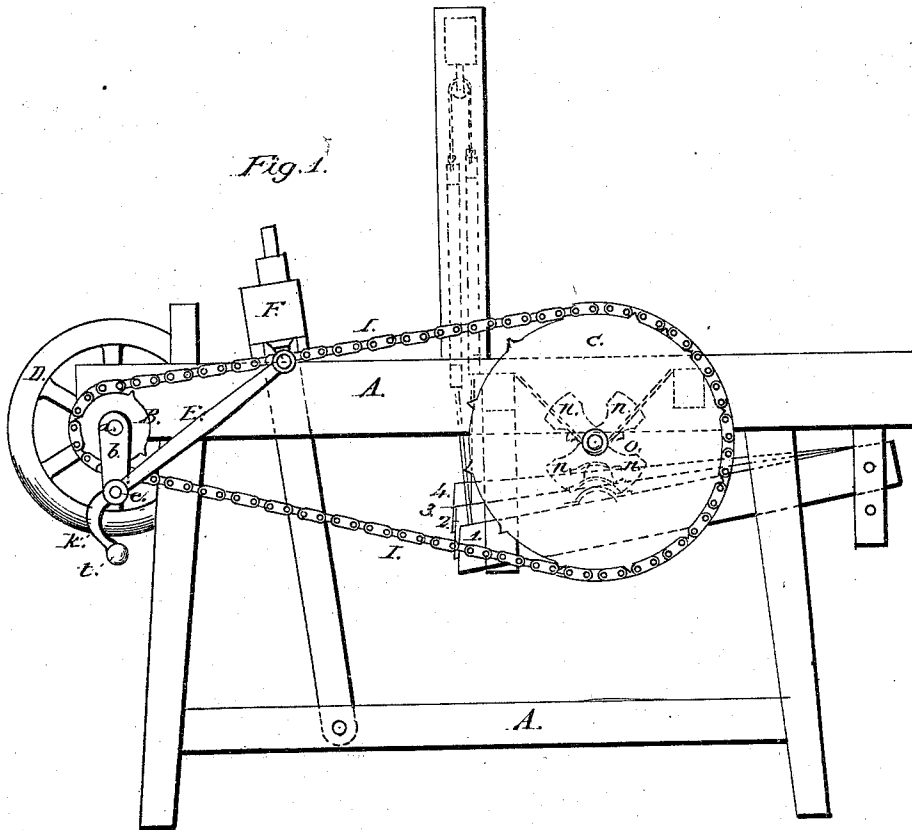


Fig. 1.

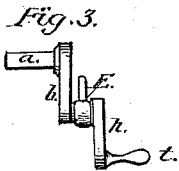


Fig. 3.

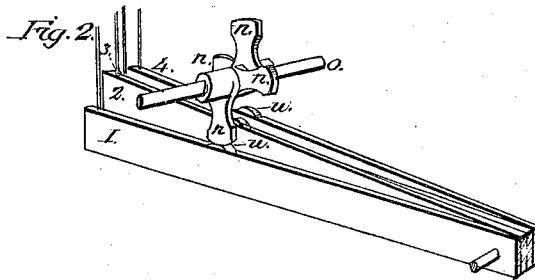


Fig. 2.

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Letters Patent No. 80,047, dated July 21, 1868.

IMPROVEMENT IN HAND-LOOM.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, JAMES ALBERTSON and SAMPLE C. BYERS, of Richmond, in the county of Wayne, and State of Indiana, have invented certain new and useful Improvements in Looms; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use our invention, we will proceed to describe it.

Our invention relates to looms for weaving cloth, and intended for use in families, and our invention consists in a novel construction and arrangement of the operating-mechanism, and cams for operating the treadles.

Figure 1 is a side elevation of a loom with our improvements applied, and

Figure 2 is a perspective view of the cams and treadles detached from the loom.

In constructing looms of this character, it has been customary to use a sliding cam for operating the treadles, and when such cams are used, the treadles are capable of being operated only in a certain fixed order. It has also been customary to so arrange the driving-shaft and the cam-shaft that each should make the same number of revolutions. In these two respects our loom differs from those heretofore made.

We construct a frame, A, of the usual form, and transversely across the front end we mount the driving-shaft *a*, on one end of which is secured a sprocket-wheel, B. Outside of this wheel is secured a compound crank, consisting of two parts, *b* and *h*, united by a wrist, *i*, as shown in fig. 3. The part *b* forms a short crank, to the wrist *i* of which is pivoted a connecting-rod or pitman, E, having its opposite end pivoted to the batten F.

The other portion, *h*, is rigidly attached to the outer end of the wrist *i*, and thus, in effect, forms an extension of the part *b*, the two parts, *b* and *h*, thus forming a crank by which the loom is operated, there being a handle, *t*, attached to the end of the crank for that purpose.

On the opposite end of the driving-shaft *a* is secured a balance-wheel, D, which is connected to the batten F on that side by a similar pitman, E, by which means the batten is moved to and fro at each revolution of the shaft *a*.

Another transverse shaft, *o*, is mounted in the frame, in rear of the harness, and on this shaft is secured a series of cams, *n*, the form of which is such that they can be turned forward or backward with equal facility, their form being clearly shown in figs. 1 and 2. Upon each of the treadles, at the point where the cam strikes it, are secured curved piece of metal *u*, upon which the cam strikes, as represented in fig. 2.

These cams are to be formed and secured to the shaft separately, so that they can be removed and have their order or relative positions altered at will. It will thus be seen that they may be so arranged on the shaft as to operate the treadles 1, 2, 3, and 4 in regular order, or in any other order desired, as, for instance, in the order 1, 3, 2, 4, or 1, 4, 2, 3, or 1, 4, 3, 2, and so on, and thus the loom may be made to produce a variety of cloths, such as cannot be produced on looms using the sliding cams, which are capable of working in a single fixed order only.

Upon the end of the cam-shaft *o* is secured a sprocket-wheel, C, which is driven by a chain, I, passing around it and the wheel B, on the driving-shaft *a*, as represented in fig. 1. This wheel C is made several times the size of the wheel B, (in this case four times,) whereby the cam-shaft makes but one-fourth of a revolution to each revolution of the driving-shaft.

It is obvious that the number of revolutions that the driving-shaft makes to one of the cam-shaft may be more or less, the only condition requisite, being that the batten shall be operated as often as a cam strikes a treadle.

By this arrangement of devices we dispense with all intermediate gear-wheels, and, while making a loom that is extremely simple, we, at the same time, produce one that is capable of producing a variety of styles of cloth.

It is obvious that, if desired, a pulley may be substituted for the crank, or that a pulley may be secured to the opposite end of the driving-shaft, and the loom be operated by power, if desired.

Having thus described our invention, what we claim is—

The combination of the driving-shaft, having the sprocket-wheel B mounted thereon, and having the batten connected thereto by pitmen E, with the cam-shaft, having the sprocket-wheel C and the cams *a* secured thereto, when said parts are all constructed and arranged to operate substantially as described.

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Witnesses:

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