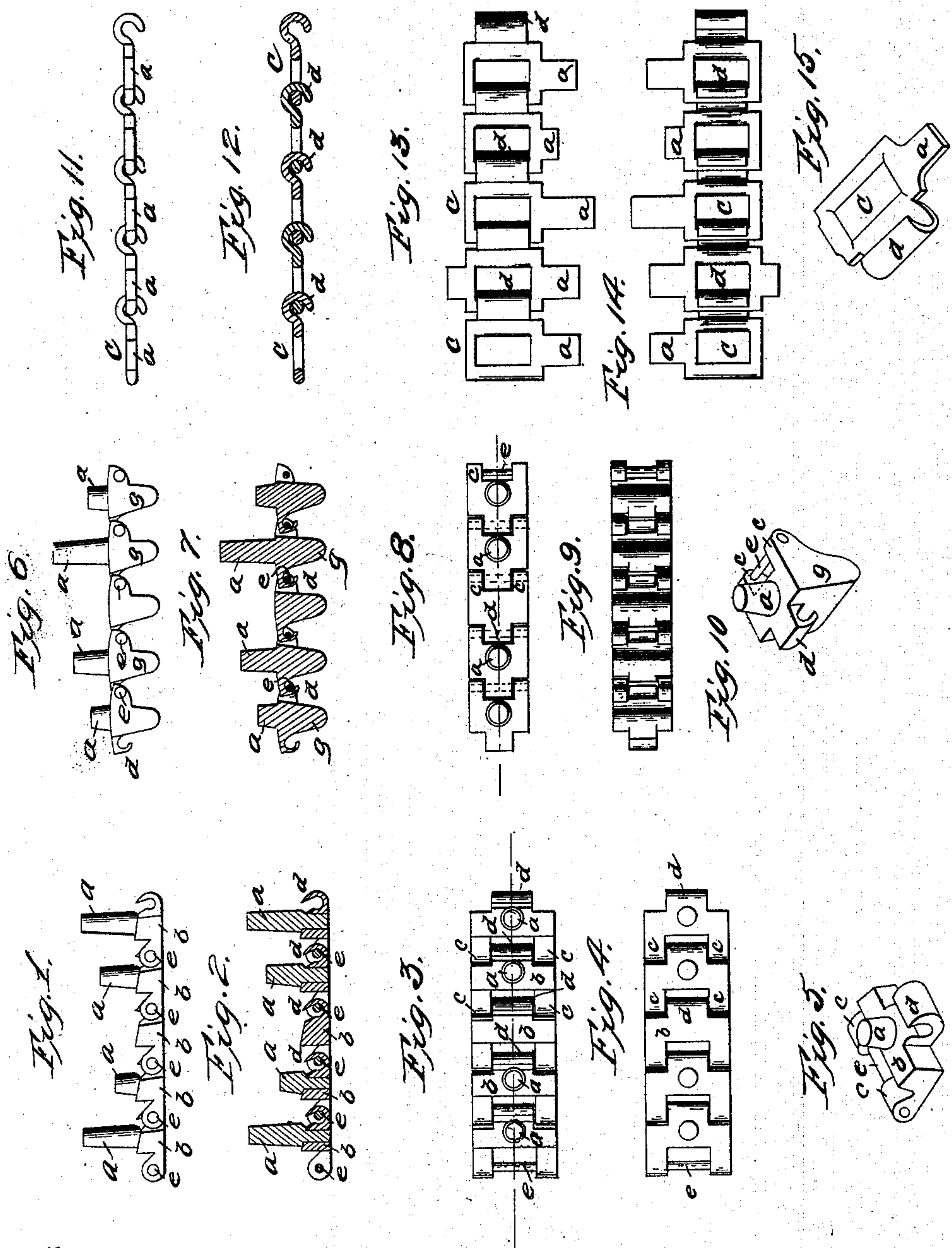


B. H. JENKS.
INDEX CHAIN FOR LOOMS.

No. 62,204.

Patented Feb. 19, 1867.



Witnesses:

R. H. Jenks
C. H. Jenks

Barton H. Jenks
by
Mason, Furnish & Hamann

C. B. Duff

United States Patent Office.

BARTON H. JENKS, OF BRIDEBURG, PENNSYLVANIA.

Letters Patent No. 62,204, dated February 19, 1867.

IMPROVEMENT IN INDEX CHAINS FOR LOOMS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, BARTON H. JENKS, of Bridesburg, in the county of Philadelphia, and State of Pennsylvania, have invented an Improvement in the Construction of Index Chains for Looms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of a portion of my improved chain.

Figure 2 is a sectional view of this chain.

Figure 3 is a top view.

Figure 4 is a bottom view.

Figure 5 is a perspective view of one of the links of the chain.

Figures 6, 7, 8, 9, and 10 show a chain having teeth formed on the links.

Figures 11, 12, 13, 14, and 15 represent a modification of the chain of figs. 1 and 6.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improvement in the construction of pattern or index chains for looms which are designed for weaving figured or fancy fabrics.

The object of my invention is mainly to connect together the links of an index or pattern chain in such manner that the links can be readily disconnected and connected at pleasure, and arranged in any desired order, according to the pattern which it is desired to weave, without the necessity of removing the pivot or coupling-pins of the links, said links being provided with knobs, pins, or other projections on their upper surfaces, or on their sides, as will be hereinafter described. Another object of my invention is to construct each one of the links composing an index chain for a loom in such manner that the chain can be moved over a stationary surface by means of pawls, or so that it can be moved by means of teeth formed on it, entering corresponding teeth formed on a rack or drum, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

The chain, represented in figs. 1, 2, 3, 4, 5, and 6, is made up of links, which are all of the same size and shape, the only difference between them being that the spurs or studs *a* vary in height for giving longer or shorter movements to the fingers or levers of the loom, as may be required. These studs *a* may be cast or otherwise applied to the upper parts of the links, or they may be cast or otherwise applied to the sides of the links. In fig. 2 these studs *a* are applied to the links so that they can be removed when desired, and others inserted in their stead. In fig. 7 these studs are represented as cast upon the links. In figs. 13, 14, and 15 the studs or projections are shown as formed upon the edges of the links. To the transverse portion *b* of the links *A* two ears *c c* are applied, so as to leave a space between them; and transversely through these ears is passed a pin, *e*, the ends of which are riveted so that it cannot be readily removed. On the opposite edge of the same link a hook, *d*, is formed for receiving the pin *e*, and entering the space between the ears of another link similarly constructed. These hooks *d* and pins *e* form the connections and joints between the links, and admit of the detachment of any one of the links of a chain from the others without removing the pivot pins *e*. There should be free play allowed between the connecting hooks and pins, and the ears or offsets and the hooks, so that the joints will articulate freely. In figs. 6, 7, 8, 9, and 10 I have represented an index chain, the links of which are constructed with teeth *g* on their lower sides, or those sides which are opposite the studs *a*. This chain forms a jointed rack, and is propelled by means of a wheel having depressions in its periphery for receiving said teeth *g*. The teeth or links *g* are connected together by hooks and eyes or pins, substantially as described for the link composing the chain of fig. 1. In figs. 11, 12, 13, 14, and 15 I have represented an open-linked chain, the several parts of which are connected together by hooks and pins or eyes, substantially as described for the links of the chains of figs. 1 and 6. These links *C* can be made from flat sheets of metal by means of suitable dies, and then finished, as represented in fig. 15. The studs *a* on these links project from the sides or edges instead of from the upper surfaces of the links, as above stated. These links *C* are made of the open or skeleton form represented, for the purpose of receiving through them teeth or projections formed on a wheel or drum, which is used for moving the links beneath or alongside of the fingers of the loom. By my invention the links of an index chain can be arranged in different relations to each other, according to the different heights or

lengths of the studs *a*, and the different figures which it is desired to weave. This cannot be conveniently nor quickly done with index chains hitherto constructed, as their links are connected together by pivot pins in such manner that it would be necessary to withdraw such pins before the links could be disconnected from each other, for which reason different chains have been used, according to the different patterns or figures which it is desired to weave.

The chain which I have described is designed for operating drop-shuttle boxes of looms for weaving fancy fabrics; and that part of the invention which relates to the connecting of the links by pins and hooks may be applied to the card patterns of Jacquard looms. Those links which have the studs *a* upon their upper faces, as shown in figs. 1 and 6, are used for operating a lever, which is arranged above them, so that the end of this lever will be raised more or less, according to the different lengths of links which are brought under it. The chain having the studs *a* applied to the edges of the links, as shown in figs. 11, 13, 14, and 15, is designed for vibrating a lever, which is held against the studs by means of a spring, and which is so arranged in relation to the studs as to be acted upon by them as they are successively brought opposite this lever. These open links *C* may have studs *a* upon both ends, of different lengths, so that, by reversing the chain or the links thereof end for end, different patterns can be woven. Fig. 15 shows one of the links *C* with a long stud on one end, and a shorter stud on the opposite end of it. The openings through these links *C* are designed for receiving teeth upon a drum, which drum is sufficiently narrow to allow the studs *a* to project from its side, so that these studs *a* will act upon a lever which is pressed against them. As the different lengths of studs are brought around by the said drum they press the lever outward a greater or less distance from the side of the drum, and thus produce the motions required for operating the drop boxes through the medium of well-known mechanism hitherto employed for this purpose.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Constructing the links of index chains for looms with hooks and eyes or pins, in such manner that the links can be readily separated from each other without removing said pins, substantially as described.
2. The construction of hooked links of index chains for looms with teeth upon them for entering spaces between the teeth of a wheel or rack for moving the links, substantially as described.
3. The construction of hooked links of index chains for looms with fast or movable studs *a*, whether such studs be applied to the outer or upper surfaces, or to the sides of the links, substantially as described.

BARTON H. JENKS.

Witnesses:

WILLIAM DOBSON,
JAMES HUGHES.