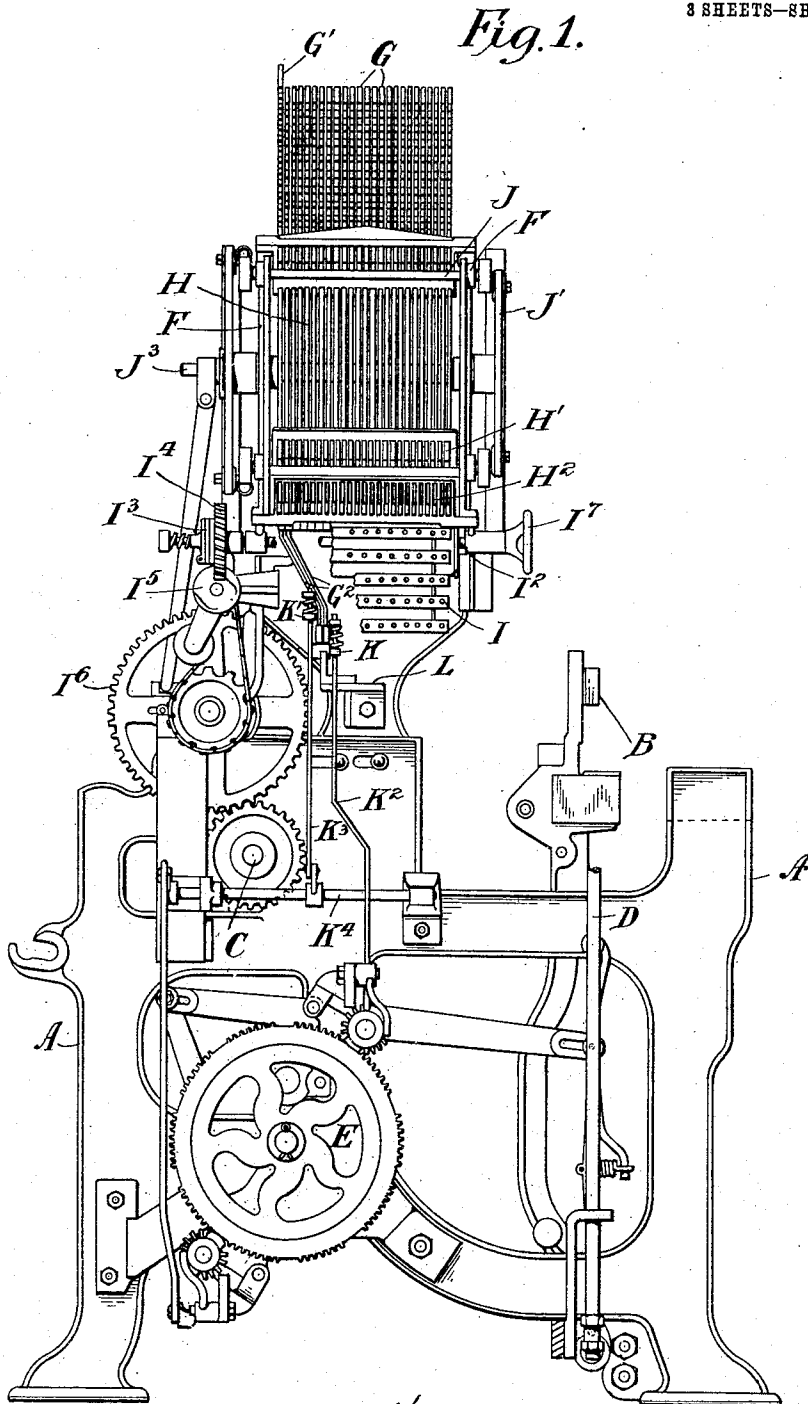


H. A. OWEN & A. K. PRATT.
PATTERN MECHANISM FOR LOOMS.
APPLICATION FILED SEPT. 28, 1906.

939,299.

Patented Nov. 9, 1909.

3 SHEETS—SHEET 1.



Attest:
Edgeworth
A. G. Kimball

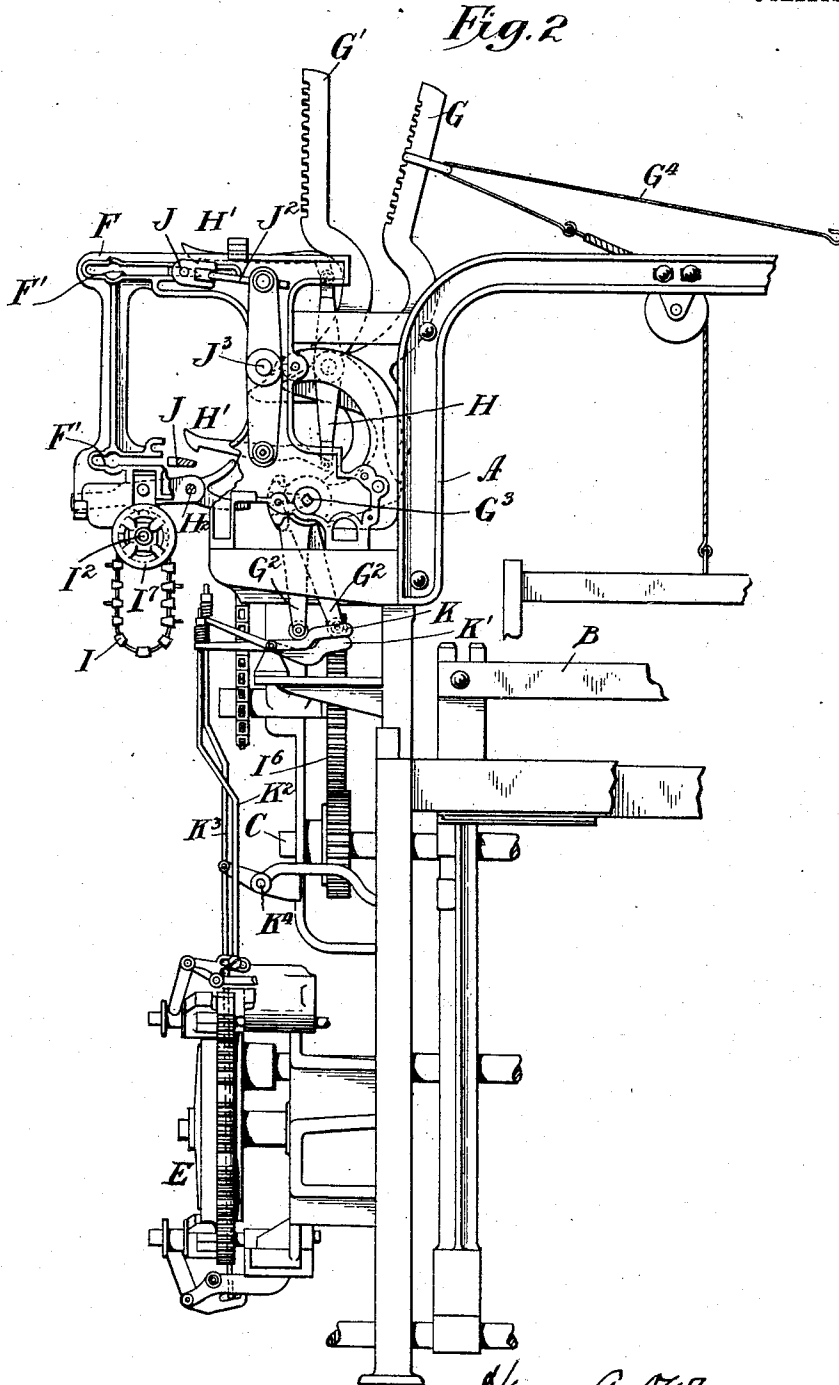
Henry A. Owen Inventors.
Albert K. Pratt
by *Arthur J. ...* Attys.

H. A. OWEN & A. K. PRATT.
 PATTERN MECHANISM FOR LOOMS.
 APPLICATION FILED SEPT. 28, 1906.

939,299.

Patented Nov. 9, 1909.

3 SHEETS—SHEET 2.



Attest:
Edgeworth
H. G. Kimball

Henry A. Owen Inventors:
Albin K. Pratt.
 by *McMahon* Att'ys.

939,299.

3 SHEETS—SHEET 3.

Henry A. Owen Inventors
Albert K. Prath
by McKim, Mead & White Attys.

UNITED STATES PATENT OFFICE.

HENRY A. OWEN AND ALBERT K. PRATT, OF WHITINSVILLE, MASSACHUSETTS, ASSIGNORS TO THE WHITIN MACHINE WORKS, OF WHITINSVILLE, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

PATTERN MECHANISM FOR LOOMS.

939,299.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed September 28, 1906. Serial No. 336,559.

To all whom it may concern:

Be it known that we, HENRY A. OWEN and ALBERT K. PRATT, citizens of the United States, both residing at Whitinsville, county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Pattern Mechanism for Looms, of which the following, taken in connection with the accompanying drawings, is a full, clear, and concise specification.

Our invention relates to pattern mechanisms of looms which employ shifting shuttle boxes in conjunction with the usual shed-forming pattern mechanism and consists in the arrangement and relative disposition of the several parts, hereinafter described, whereby a single set of pattern controlling elements and single operating means therefor may be effectively employed for controlling both the filling and the warp patterns.

More especially the invention consists in adapting certain of the elements of the ordinary dobby of pattern looms for controlling the drop-box motion, which enables such looms to be made with all the advantages of looms having separate drop-box pattern mechanisms without the disadvantage and expense of their more complicated construction.

Another object of the invention is furthermore to produce such a form of duplex control which is simple in operation and construction and which can be applied without material alteration, to existing looms.

In the drawings filed herewith only so much of the ordinary loom dobby is exhibited as is necessary to illustrate the practical application of our invention.

Figure 1 is a view in elevation of the dobby end of a pattern loom, parts of the pattern chain and chain drum being broken away to illustrate interior construction. Fig. 2 is a side elevation of Fig. 1, with parts of the dobby frame broken out; and Fig. 3 is an enlarged detail of the pattern chain and associated parts.

The general construction of the apparatus shown in the drawing will be recognized by those familiar in this art.

A represents the loom frame and B represents the lay thereof operated in the usual manner by the crank-shaft C.

The shifting shuttle boxes (not shown in

the drawings), which carry the different fillings to be woven into the cloth, are mounted in the usual way upon the rod D which travels back and forth in unison with the lay, and the adjustment or shifting of the boxes under the call of the pattern, is effected by the drop-box motion indicated generally by E. This mechanism is connected with the power shaft of the loom and is only called into operation when a change in the filling is desired, at which time it is coupled to its driving element to effect the change.

The loom dobby, attached as usual to the end of the frame A at its upper part, comprises two side-frames F, F, between which are mounted a series of pattern controlling levers G, G', the jack levers H carried thereby, the jack hooks H' pivoted on the ends of the levers, the indicator levers H² and also the pattern chain I which is carried upon its usual chain-drum by the cross-shaft I² journaled in the lower part of the dobby frame. The shaft I² is driven through the instrumentality of a slip clutch I³ by a worm gear I⁴, which latter meshes with a worm I⁵ driven by sprocket chain connection and gear I⁶ from the crank shaft C. On the opposite end of the pattern chain shaft there is a hand wheel I⁷ by means of which said shaft and consequently the position of the pattern chain, may be adjusted independently of its actuation by the worm gear I⁴, the said gear slipping on the clutch I³ during such adjustment. The pattern levers G are selectively operated in accordance with the arrangement of the pegs or protuberances on the pattern chain in well understood manner, through the instrumentality of the jack levers and hooks which are raised and lowered by the indicator levers H², into and out of connection with the reciprocating knife bars J, J, these knife bars being reciprocated in the slots F' of the frames F by means of the usual actuator arms J', J' and connections J² on the outside of the frames, which arms are carried upon the rock-shaft J³ and operated by the connecting rod J⁴ from the gear I⁶.

The parts above described are the usual parts of the dobby of familiar construction and have the same principle of operation. In accordance with our present invention the pattern chain H is provided with rows

of protuberances for controlling both the drop-box motion and the shed-forming mechanism. Preferably the protuberances which control the drop-box motion are located on the side of the chain which is toward the rear of the loom or adjacent the driving gear I⁴. The major part of the levers, such as G, are constructed the same as ordinary harness levers, being mounted on a common fulcrum or cross-shaft G³ of the dobby frame and connected at their upper ends with the cords G⁴ which operate the harnesses of shed-forming mechanism in well understood manner. The levers G', G' which correspond in position with the filling pattern protuberances on the pattern chain are similar to the shed-forming levers G, being also adapted to actuate harnesses if desired, but have, in addition, depending arms G² on the opposite or lower side of the fulcrum which are adapted to be connected with the drop-box motion E for producing shift of the boxes when operated. As shown in the drawings the depending arms G² are offset toward the front of the machine and have cam engagement respectively with two lifter levers K, K', mounted side by side on bracket L, and respectively connected through suitable springs with the lifting rods K², K³, and the latter, when operated, serve to shift the mutilated pinions of the drop-box motion E, by means of the rock-shaft K⁴ and connected links and cranks in the same manner as the said pinions are ordinarily shifted in looms having special drop-box pattern motions. The depending arms G² are provided with rollers to reduce the friction between the same and the lifter levers K K', the cam engagement of the arms with the levers being produced by the curve of the upper surface of the latter engaged by the rollers so as to rock the said levers on the fulcrums. But it will be understood that other forms of controlling means be-

tween the pattern controlling levers G', G' and the drop-box motion E may be employed with equal effect.

The pattern which is to be woven in a loom constructed as above described, depends for both warp and filling on the pegging of a single chain which is manifestly easy to adjust and attend, and in the case of a mis-pick there is no possibility of a confusion of the patterns when the chain has to be turned backward. The arrangement of the several pattern controlling levers in one frame and operated by a single train of gearing facilitates the cleaning and inspection of the machine and makes the pattern mechanism easy of comprehension by the operator.

Having described our invention, what we claim and desire to secure by Letters Patent is as follows:

In a loom pattern mechanism, a dobby comprising upright side frames disposed at the end of the loom frame and substantially parallel with the heddles thereof, a series of upright levers mounted to oscillate between said frames and adapted for operating the heddles and certain of said levers being provided with depending extensions, having connections with the drop-box motion, in combination with means for selectively and similarly operating all of said levers comprising a clutch-driven pattern-chain shaft with means for manually and independently rotating the same and a single pattern chain carried by said shaft between the aforesaid side-frames.

In testimony whereof, we have signed our names to the specification in the presence of two subscribing witnesses.

HENRY A. OWEN.
ALBERT K. PRATT.

Witnesses:

HARMON O. NELSON,
OSCAR L. OWEN.