

No. 623,604.

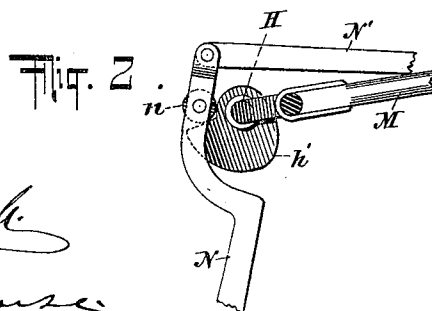
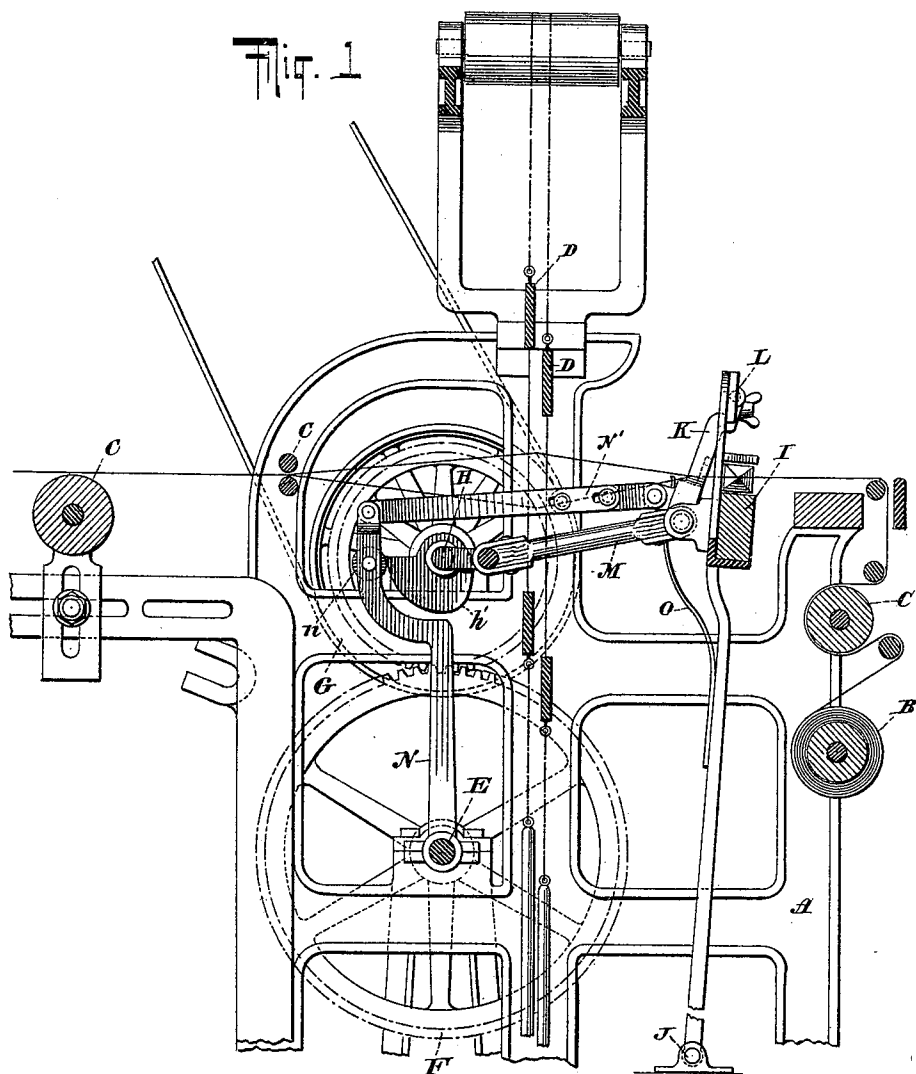
Patented Apr. 25, 1899.

E. HERZIG.
LOOM.

(Application filed Nov. 29, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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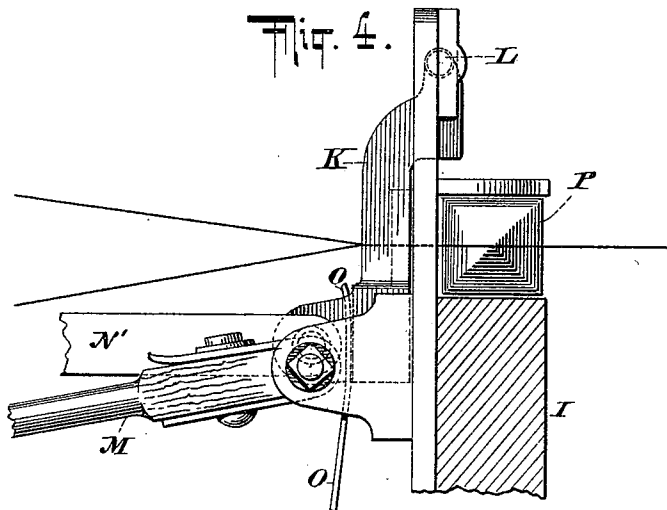
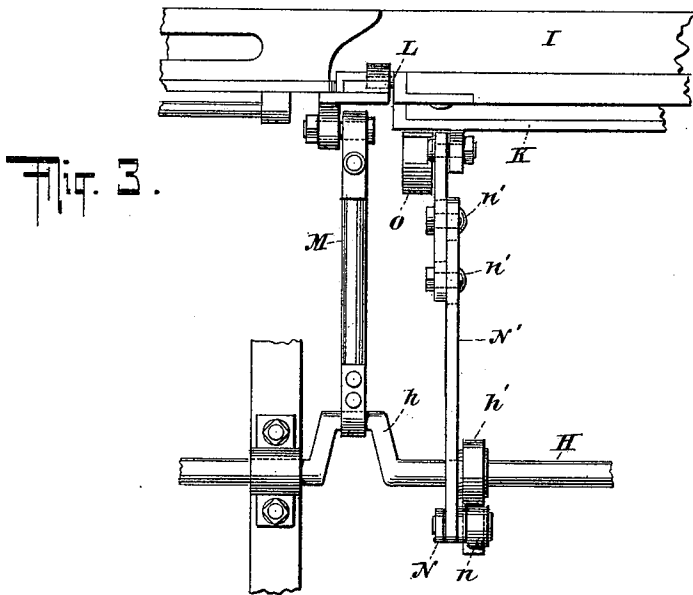
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UNITED STATES PATENT OFFICE.

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LOOM.

SPECIFICATION forming part of Letters Patent No. 623,604, dated April 25, 1899.

Application filed November 29, 1898. Serial No. 697,744. (No model.)

To all whom it may concern:

Be it known that I, EDUARD HERZIG, residing at Union Hill, Hudson county, State of New Jersey, have invented certain new and useful Improvements in Looms, of which the following is a specification.

In the accompanying drawings, forming part hereof, in which like letters of reference refer to like parts, I have shown a loom embodying one form of my invention.

In the drawings, Figure 1 is a side elevation, partly in section, of a loom embodying my invention. Fig. 2 is a fragmentary detail view of parts of the batten and reed actuating mechanisms in the positions which they assume at the instant of beating up. Fig. 3 is a plan view of a portion of the batten, reed, and their actuating parts in the position shown in Fig. 2; and Fig. 4 is an enlarged detail side view of the reed and batten.

In looms wherein the batten is operated by means of mechanical organisms giving a positive motion, and especially in a loom of the type shown, wherein a crank or cranks *h* are employed to swing the batten, it is well known that the beating-up action occurs when the cranks are approaching their dead-centers, the beating up being complete when the dead-centers are reached, so that the action of beating up the weft is a pressing action by reason of the fact that the cranks when approaching their dead-centers are imparting to the batten a very slow gradually-decreasing motion instead of a sharp quick stroke so desirable to properly beat up the weft. An examination of Figs. 1 and 2 will clearly develop this fact. In these figures it will be observed that the batten *I*, pivoted at *J*, is connected to the crank *h* by a pitman *M*, so that when the batten is swung forward the relative speed of the batten will be slowest at or near the ends of its stroke, for the reason that the crank is just then swinging to the dead-point, and consequently but for my improvement the beating-up action which occurs at this instant would be a slow pressing action.

The object of my invention is to obviate this defect in looms of the type described.

Referring to the drawings for a fuller description of the invention, *A* is the frame of the loom, which may be provided with any

usual take-up rollers *B*, guide and tension rollers *C*, &c., and heddles *D*.

E is the main or driving shaft of the loom, which is shown as provided with a gear-wheel *F*, meshing with a gear-wheel *G* on a crank-shaft *H*, which crank-shaft moves the batten, as will be hereinafter fully set forth.

I is the batten, which is shown in the present instance as pivoted at its lower end *J* below the shed and provided with a movable reed *K*, preferably pivoted at its upper end *L* to the upper end of the batten. The batten may be swung by any desired means, preferably by means of a pitman *M*, pivotally connected to the batten at one end and to a crank *h* on the crank-shaft *H*. A lever *N* is preferably secured loosely upon the shaft *E* and extends upward and is provided with a roller or bowl *n*, adapted to be operated upon by a cam *h'* on the crank-shaft *H*. This cam *h'* is formed with an abrupt "drop" between its highest portion and a lower portion. The lever *N* is preferably connected to the reed *K*, at or near the lower end of the said reed, by a draft connection, comprising a pitman or link *N'* for drawing upon the reed, which link is pivoted at one end to the actuating-lever *N* and at the other end to the reed. The link *N'* is shown as a two-part link adjustable in length by means of a set-screw and slot connection *n'*. (See Fig. 3.)

O is an actuating-spring for throwing the reed forward to give the beat-up motion.

It will be understood that the drawings are illustrations only and two or more cranks, cams, links, and pitmen may be employed.

The operation of the device shown is as follows: The crank *h* on the shaft *H* imparts to the swinging batten *I* the usual positive forward-and-backward motion. The reed, however, in its entirety does not fully partake of the forward motion of the batten, but as the batten moves forward is retracted by the cam *h'*, which swings the reed on its pivot *L*. When the crank *h* is on a dead-center and the batten is in its farthest forward or normal beating-up position, the bowl or roller *n* rolls or drops off the high portion of the cam onto a lower portion thereof and the reed is snapped sharply forward by the spring *O*, which has been put under tension by the re-

traction of the reed, and the batten and reed are then retracted by the crank. This sharp forward stroke of the reed is effective to properly beat up the weft instead of relying upon the very slow motion imparted to the batten by the crank as it is coming to its dead point or center. I provide the spring O as an auxiliary means for sharply snapping the reed forward at the proper instant to effect an efficient beating up. This operation will be obvious from the foregoing description and from Figs. 1 and 2, Fig. 1 showing the position of the parts when the beat-up is about to occur and Fig. 2 showing the position of the parts at the instant of beating up. It will likewise be understood that a suitable shuttle or shuttles P and driving mechanism are employed, as is usual in looms.

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

1. In a loom, the combination of a batten having a spring-actuated reed, means for moving the batten, and means for retracting the reed with respect to the batten against the tension of the reed-actuating spring, comprising a rotating cam *h'* having an abrupt drop from its higher to its lower portion, and a draft connection *N'* between the cam and the reed and acted upon by the cam in its rotation.

2. In a loom the combination of a batten having a spring-actuated reed, means for moving the batten, a rotating cam having an abrupt drop, a pivoted reed-actuating arm in engagement with the cam, and a draft connection between the actuating-arm and the reed.

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Witnesses:

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