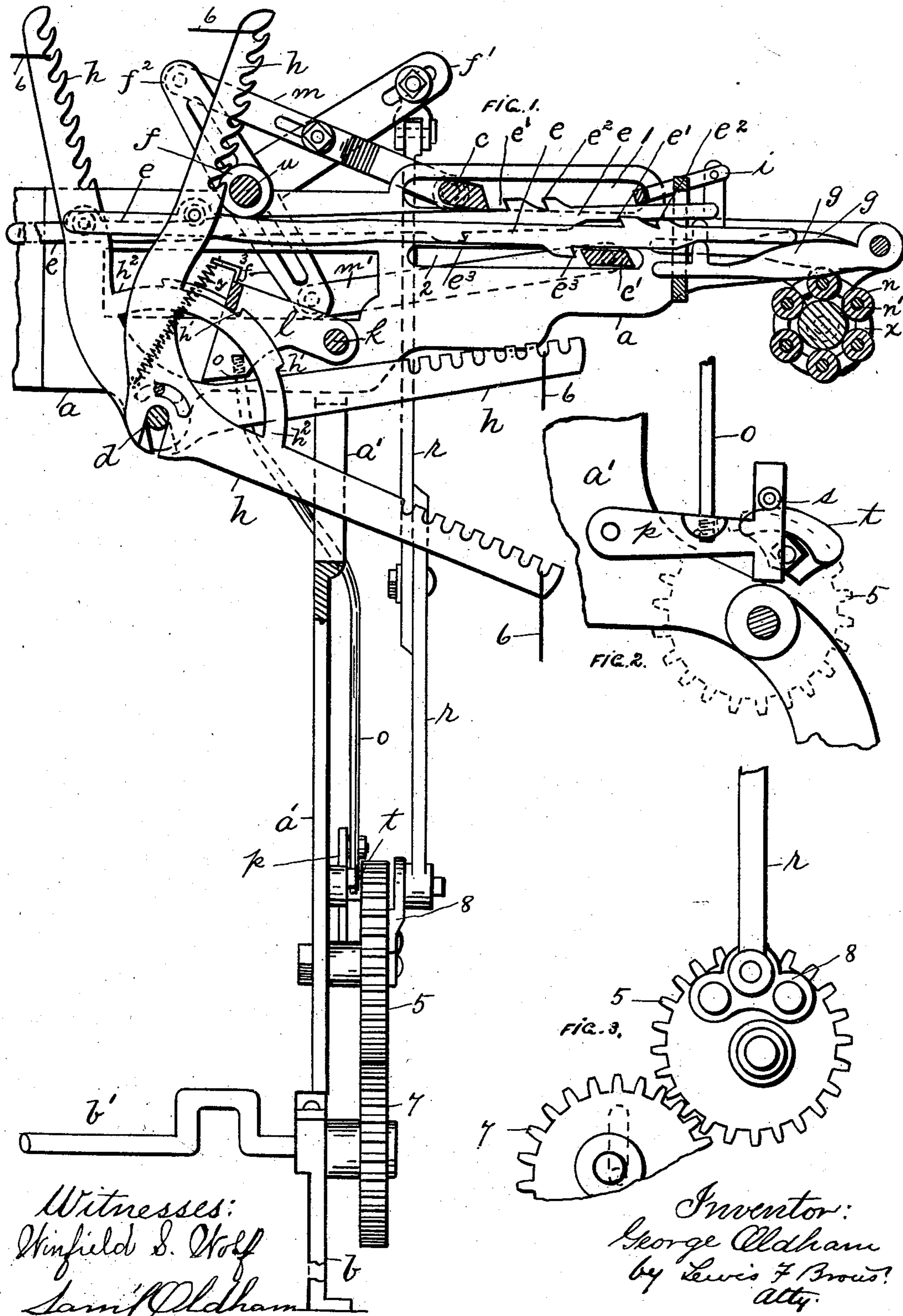


(No Model.)

G. OLDHAM.
SHEDDING MOTION FOR LOOMS.

No. 603,282.

Patented May 3, 1898.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE OLDHAM, OF PHILADELPHIA, PENNSYLVANIA.

SHEDDING-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 603,282, dated May 3, 1898.

Application filed January 14, 1895. Serial No. 534,804. (No model.)

To all whom it may concern:

Be it known that I, GEORGE OLDHAM, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Shedding-Motions for Looms, of which the following is a specification.

My invention has relation to an improvement in a shedding-motion for looms; and in such connection it relates particularly to the construction and arrangement of parts comprising said shedding-motion.

The principal object of my invention is to provide a shedding-motion of simple construction which shall be efficient in operation and shall positively control the movement and locking of the heddles.

My invention, stated in general terms, consists of a shedding mechanism for looms, constructed and arranged in substantially the manner hereinafter described and claimed.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part thereof, in which—

Figure 1 is a vertical sectional view of the frame containing the immediately connected and moving parts and shows them in the two directly opposite positions in operation. Fig. 2 is a face view of the movement controlling the double locking mechanism, and Fig. 3 is an end view showing a portion of the eccentric gear-wheel on the crank-shaft of the loom meshing with a similar eccentric gear and to which is pivoted a vertical rod for working the machine.

Referring to the drawings, *a* designates the frame of the shedding machine or engine, supported on the standard *a'*, resting on the loom-frame *b*, in which is journaled the crank-shaft *b'*. In the frame of the machine, near its inner end, is a transverse bar or bearing *d*, upon which swing a number of bell-crank levers or jacks *h*, to the upper arm of each of which is pivoted a draw-bar *e*, provided with three inclined notches *e'*, *e''*, and *e'''*, two upon its upper edge and one upon the lower edge. These draw-bars are acted upon at their outer ends, so as to be elevated or depressed by pivoted

feelers or small levers *g*, that are raised and allowed to fall by the large or small rolls or balls *n* of the pattern-chain *x*, the raising or lowering of the draw-bars placing the proper notches *e'* or *e'''* in a position to be engaged by the sweep of the reciprocating movement of transversely-arranged knives *c* and *c'*, sliding in slots 1 and 2 in the walls of the machine.

Connected to the outer end of the arm *f'* of the T-shaped rocker-arm *f* on the transverse bearing or shaft *u* is an adjustable depending connecting-rod *r*, having its lower end pivoted to the bracket 8 on the face of the eccentric gear-wheel 5. This rocker-arm *f* has adjustable connecting-rods *m* and *m'*, which are pivoted to the outer ends of the reciprocating transverse knives *c* and *c'*. These connecting-rods are in turn pivoted to the upper and lower arms *f''* and *f'''*, respectively, of the T-shaped rocker-arm *f*. Swinging upon the cross-bar *k*, also secured in the frame of the machine, is a locking-frame *l*, that passes over all the front edges of the whole number of jacks in the frame and is so constructed as to drop in front or in back, respectively, as shown, of shoulders *h'*, formed on a rib *h''* of preferably segmental shape and forming a part of each of the jacks *h*. An additional locking device, consisting of a pivoted arm or frame *i*, holds each jack firmly at the highest point assumed by any heddle-frame by dropping into the notch *e''* when the draw-bars *e* are shifted to the right, the frame *i* being disengaged from this notch *e''* when the pivoted feelers *g* are dropped by the pattern-chain *x*. A vertical rod *o* connects the locking-frame *l* at the bottom with a T-shaped pivoted lever *p* on the standard *a'*, the said lever being provided with a roller *s*, which is operated upon at times to raise and lower the rod *o* by the cam *t*, secured to the inner face of the eccentric gear-wheel 5.

In the operation of the machine, connections being made at 6 with the heddle-frames, in the usual manner, of all witches or other form of heddle-motions, the power supplied by the crank-shaft of the loom is communicated by means of the depending arm *r*, through the eccentric gears 7 and 5, to the vibrating T-shaped arm *f* and by means of the connecting-rods, as described, reciprocates the transverse

knives c and c' , and as each or any number of jacks are drawn forward or pushed backward by means of the notched draw-bars e to their full stroke the locking-frame l rests in
 5 a position on the face of the rib h^2 to engage the extension-shoulders h' at either point for a sufficient space of time to secure an evenly high or low point to all heddle-frames and locking all the jacks firmly at either the forward or backward point in keeping with the
 10 heddle-frames or harness that are moved or remain stationary to suit the pattern or weave. The cam t is so constructed and timed as to operate the roller s , which in turn raises and
 15 lowers the locking-frame l by means of the vertical rod o .

As heretofore explained, the locking-frame l is constantly raised and lowered by the rod o , and the jacks are therefore all simultaneously released or locked. When certain of the
 20 heddle-frames are not required to be moved subsequently from their highest point downward, they are locked in position to prevent accidental misplacement by causing the frame
 25 i to engage the notch e^2 , this being accomplished by means of the levers g , which raise and hold the draw-bars e above, so as not to be engaged by the reciprocating knife c' . A spiral spring y of sufficient tension is secured at one end to the locking-frame l and
 30 at the other end to the loom-frame a and serves to prevent accidental misplacement of the locking-frame l . The heddle-frames have a direct lift and pull-down, the notched bars
 35 pushing back the jacks by means of the lower knife when forcing the proper heddle-frames downward.

Having thus described the nature and ob-

ject of my invention, what I claim as new, and desire to secure by Letters Patent, is— 40

1. In a heddle-motion for looms, the combination of the notched bell-crank levers or jacks constructed as described, notched draw-bars adapted to operate said jacks, transverse knives adapted to operate the draw-bars, and
 45 a locking-frame, with an eccentric gear adapted to operate the knives, an operating-rod adapted to raise and lower the locking-frame, a lever pivoted to the loom-frame and adapted to raise and lower the operating-rod, and a
 50 cam carried by the eccentric gear and adapted to operate the lever, substantially as and for the purposes described.

2. In a heddle-motion for looms, the combination of the jacks, a shouldered rib formed
 55 on said jacks radially to the point of support, notched draw-bars adapted to operate the jacks, transverse knives adapted to operate the draw-bars, and a locking-frame adapted to engage the shoulders of the rib of the jacks,
 60 with the eccentric gear adapted to operate the knives, an operating-rod adapted to raise and lower the locking-frame, a lever pivoted to the loom-frame and adapted to raise and lower the operating-rod, a roller carried by
 65 said lever, and a cam carried by said eccentric gear and adapted to bear against said roller to thereby raise the lever, substantially as and for the purposes described.

In testimony whereof I affix my signature 70 in presence of two witnesses.

GEORGE OLDHAM.

Witnesses:

WM. B. HILT,
 LEWIS F. BROUS.