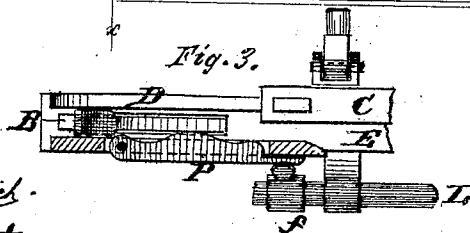
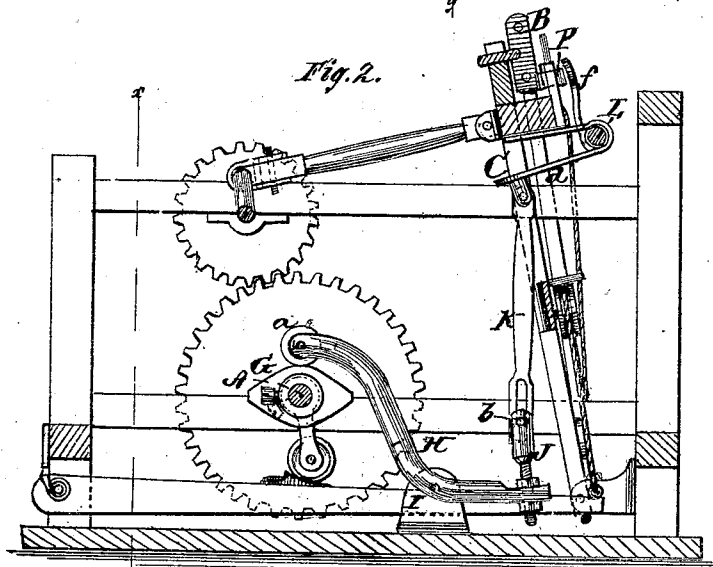
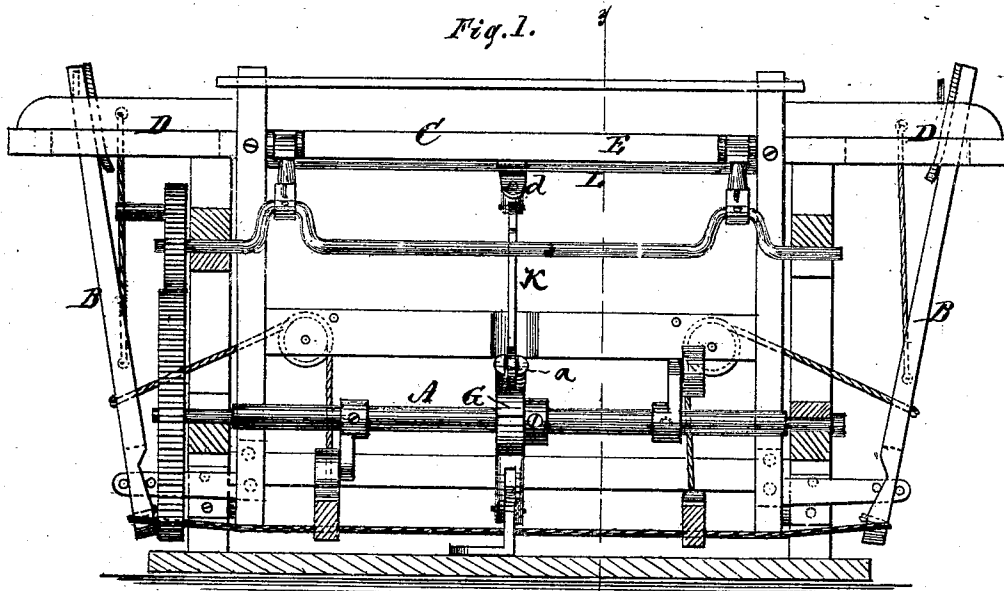


W. C. MACOMBER.
Loom-Shuttle Relief-Mechanisms.

No. 145,882.

Patented Dec. 23, 1873.



WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLIAM C. MACOMBER, OF MYSTIC RIVER, CONNECTICUT.

IMPROVEMENT IN LOOM-SHUTTLE RELIEF MECHANISMS.

Specification forming part of Letters Patent No. **145,882**, dated December 23, 1873; application filed December 8, 1873.

To all whom it may concern:

Be it known that I, WILLIAM C. MACOMBER, of Mystic River, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Shuttle-Binders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a shuttle-binder for looms and the mechanism for operating the same, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a rear elevation, and Fig. 2 a transverse vertical section, of a loom embodying my invention. Fig. 3 is a plan view of one of the shuttle-boxes.

A represents the main shaft of a loom, upon which are the devices for operating the picker-staffs B B. C represents the lathe with the shuttle-race E and shuttle-boxes D D, all of said parts being constructed and arranged in any of the known and usual ways, and hence need no description here. On the shaft A is secured a two-pointed cam, G, which operates against a curved lever, H, pivoted to a rest, I, on the floor. The upper rear end of the curved lever H is provided with a roller or wheel, *a*, to work on the cam G. The lower front end of the lever H is provided with a shackle, J, into which passes the lower end of a connecting-rod, K. This end of the rod is slotted, and a pin, *b*, is passed through the slot in the rod and through the shackle, thus connecting the two and allowing the rod to slide up and down in the shackle. The upper end of the rod K is connected to an arm or finger, *d*, projecting from a rod or shaft, L, which is hung in suitable boxes near the upper edge on the front side of the lathe C. This rod or shaft L is provided with two fingers, *f f*, which press against the latches or binders P in the shuttle-boxes D. This device binds and relieves the shuttle instantaneously. The

cam G on the shaft A can be so adjusted as to stop the shuttle at any given point. As the lever passes either point of the cam it relieves the shuttle from all pressure, requiring no extra power to start it out of the box, thus forming a positive binder and a positive relief, the cam having two points, each acting on the curved lever H in turn to draw the connecting-rod K down and turn the shaft L, so as to press the fingers *f f* against the latches P P. These latches are closed at any given point to stop the shuttle by friction, thus avoiding all recoil of the shuttle and all knocking off of the filling, saving a large amount of the wear and tear of the picker, and also of the whole loom, as it takes less power to run the loom.

This binder operates the protecting rod or shaft L only when the shuttle is in the box, the shackle J being constructed so as to allow the connecting-rod K to pass down inside of it when the wheel *a* is on the small part of the cam and the shuttle is between the two boxes. The weight of the connecting-rod is all that is necessary to hold the fingers *f* against the shuttle-binders. As the shuttle enters the box it lifts the rod K to its proper position in the shackle, and the curved lever passing over the point of the cam closes the latch and stops the shuttle at any point required, and relieves it as soon as the lever has passed over the point.

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

1. In combination with a shuttle-binder for looms and the mechanism for operating the same, the shackle J, slotted connecting-rod K, and pin *b*, constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the cam G, lever H, with roller *a*, shackle J, connecting-rod K, and shaft L with arm *d*, and fingers *f f*, all constructed substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WM. C. MACOMBER.

Witnesses:

JNO. P. C. MATHER,
FRED. A. HOLMES.