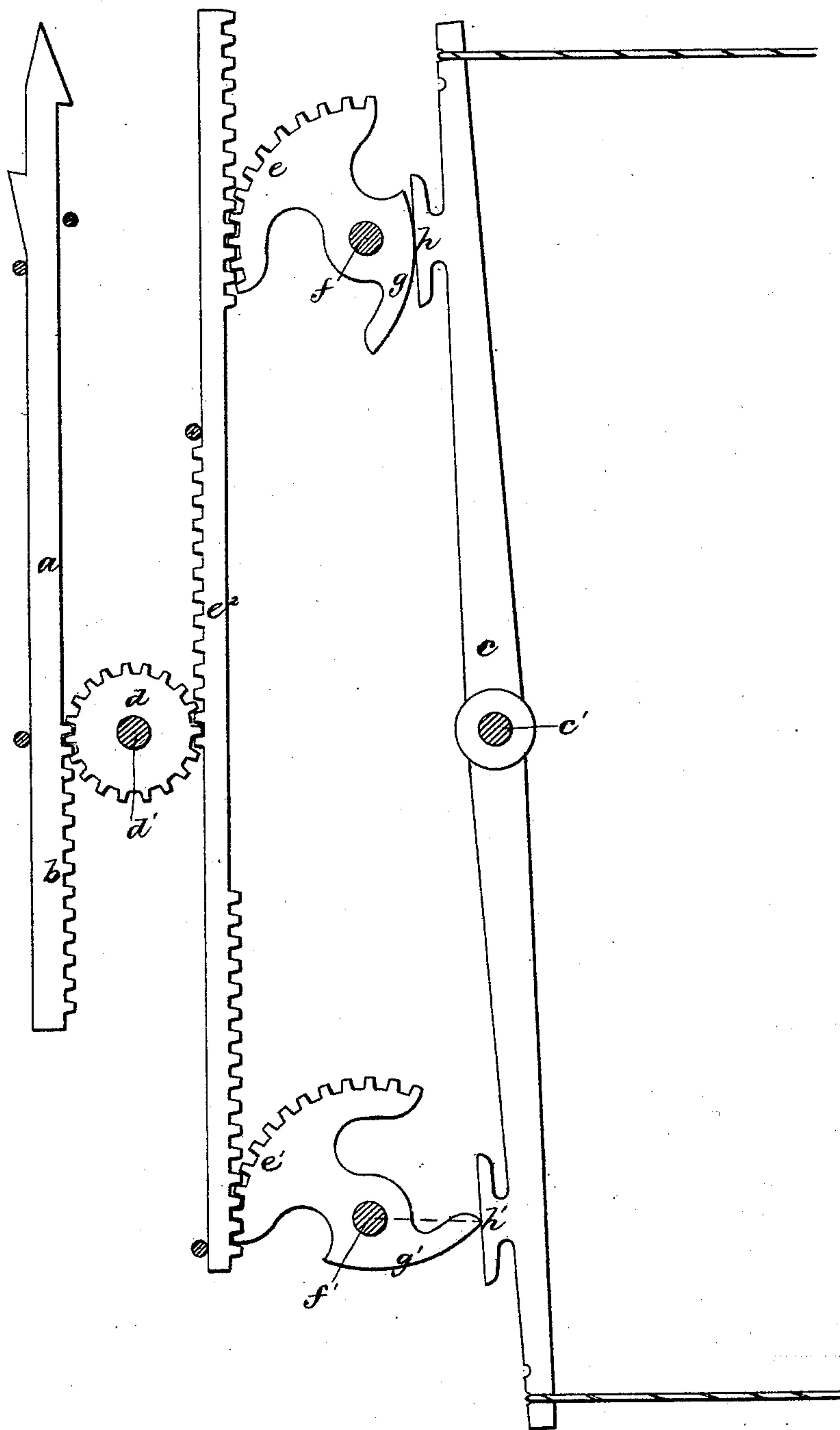


E. WADE.
Shedding Mechanism for Looms.

No. 223,198.

Patented Dec. 30, 1879.



Witnesses.
E. B. Fairchild
Geo. W. Pierce.

Inventor
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UNITED STATES PATENT OFFICE.

EDWARD WADE, OF LAWRENCE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO HENRY B. THOMPSON, OF SAME PLACE.

IMPROVEMENT IN SHEDDING MECHANISMS FOR LOOMS.

Specification forming part of Letters Patent No. **223,198**, dated December 30, 1879; application filed October 2, 1879.

To all whom it may concern:

Be it known that I, EDWARD WADE, of Lawrence, in the county of Essex and State of Massachusetts, have invented certain Improvements in Shedding Mechanisms for Looms, of which the following is a specification.

This invention relates to mechanism for operating the heddles of open-shed or fancy looms, and has for its object to provide improved means whereby such heddles can be operated with small expenditure of power and can be held positively at each extreme of their movement to keep the shed open.

To these ends my invention consists in the improved mechanism which I will now proceed to describe and claim.

The accompanying drawing, forming a part of this specification, represents a side view of my improved mechanism.

In the drawing, *a* represents the jack, which is worked up and down by a lifter and depressor under control of a pattern-chain in the usual manner—for example, as shown in the patent to O. W. Kenison, November 4, 1879, No. 221,321. Said jack is provided with a rack, *b*, at its lower portion.

c represents a heddle-lever, which is pivoted at *c'* to a suitable support, and is connected, in the usual manner, with a leaf of heddles by cords extending from the upper and lower ends of the lever over pulleys to the leaf of heddles.

d represents an idle-pinion, journaled at *d'*, and meshing with the rack *b*.

e² represents a vertical double rack, which is adapted to reciprocate vertically, and is provided on one side with teeth meshing with the teeth of the pinion *d*, and on the other side with two series of teeth, which mesh with segment-racks *e e'*, which are pivoted on supports *f f'* and form parts of cams *g g'*, said segments and cams rotating together.

The cams *g g'* engage with bearings *h h'* on the heddle-lever *c*, and are so arranged that when one projects outwardly in a substantially horizontal direction the other will project in a substantially vertical direction, so that one end of the lever *c* is held away from

the support of the outwardly-projecting cam and the other end of said lever is permitted to move toward the support of the other cam, as shown in the drawing.

The jack being worked up and down in the manner above indicated, its motion is imparted, through the pinion *d* and double rack *e²*, to the sector-racks *e e'* and cams *g g'*, causing said cams to oscillate on their supports, one moving outwardly while the other is moving inwardly. The heddle-lever is thus oscillated and caused to operate its leaf of heddles in the usual manner.

When the parts are in the positions shown the point of the outwardly-projecting cam, which bears against the lever *c*, is on a line with the support of the cam, which line is about at right angles with the surface of the heddle-lever, against which the cam bears, so that the cam cannot be turned on its support by any pressure that may be exerted against it by the heddle-lever; hence the outwardly-projecting cam locks or holds the lever with great firmness, and thus holds the shed open, the lever being always at the extreme point of its movement when held by one of the cams. There is, therefore, no possibility of the shed being closed by the accidental displacement of the heddle-operating mechanism.

The described mechanism operates easily, positively, and with little friction.

The weight of the jack is counterbalanced by the double rack *e²*, so that when the jack is raised its weight has no tendency to operate the mechanism between it and the heddle-lever.

The cams can be made as long and with as much inclination as may be desired, and when arranged near the ends of the heddle-lever they acquire sufficient leverage to enable them to move the heddle-lever very easily.

If desired, the surfaces of the cams and the corresponding surfaces of the heddle-lever may be chilled to prevent them from wearing rapidly.

It will be understood that the parts shown constitute a mechanism for operating one leaf of heddles, and that any desired number of

such mechanisms may be located side by side in a suitable frame or holder to operate a corresponding number of heddles.

I claim—

In combination with a heddle-lever, *c*, and as a means for oscillating the same and holding it positively at each end of its movement, the cams *g g'*, provided with segment-racks *e e'*, the double rack *e²*, the pinion *d*, and the reciprocating jack *a*, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 27th day of September, A. D. 1879.

EDWARD WADE.

Witnesses:

CHAS. A. DE COURCY,
PETER W. LYALL.