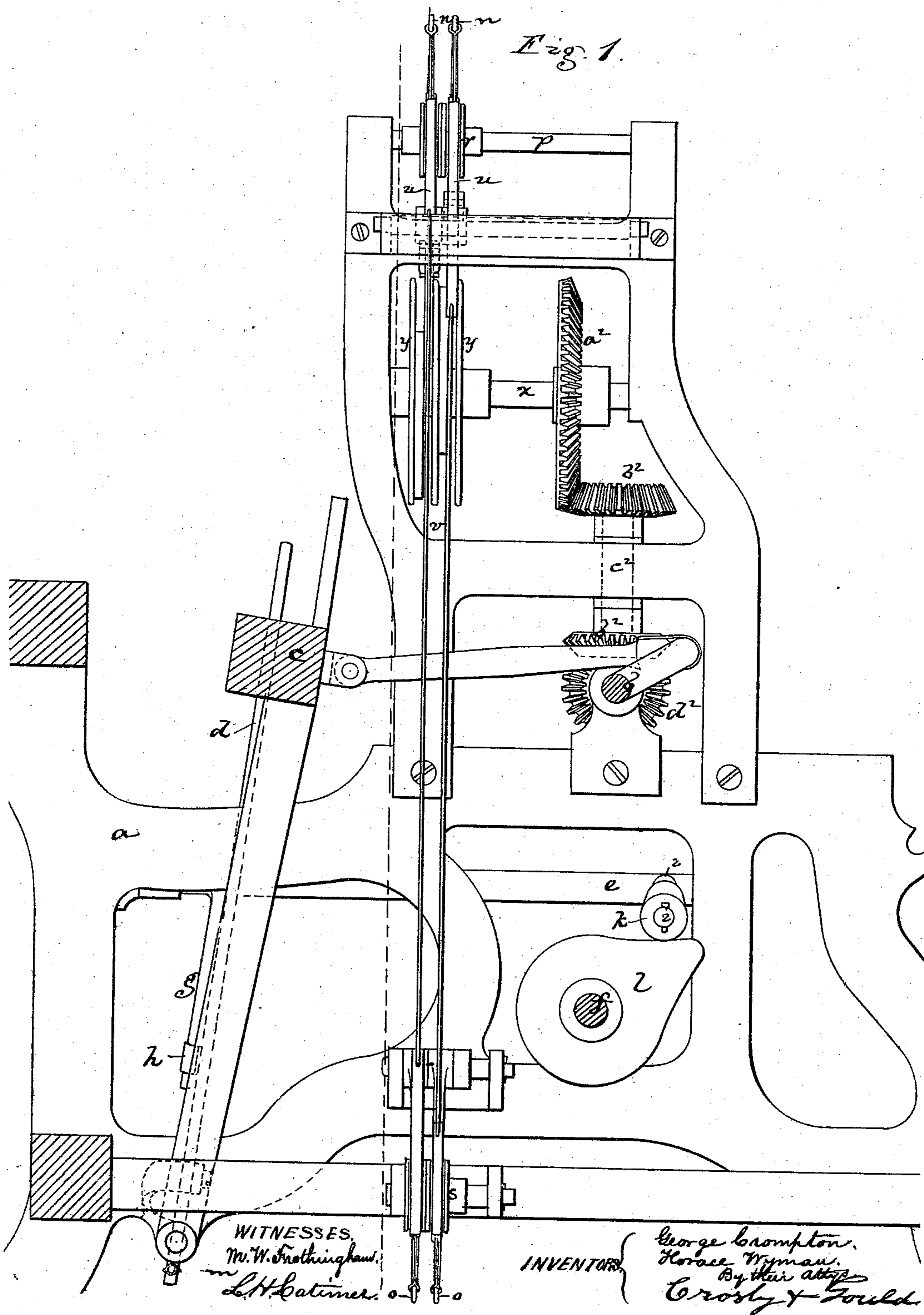


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Looms.

No. 157,677.

Patented Dec. 15, 1874.

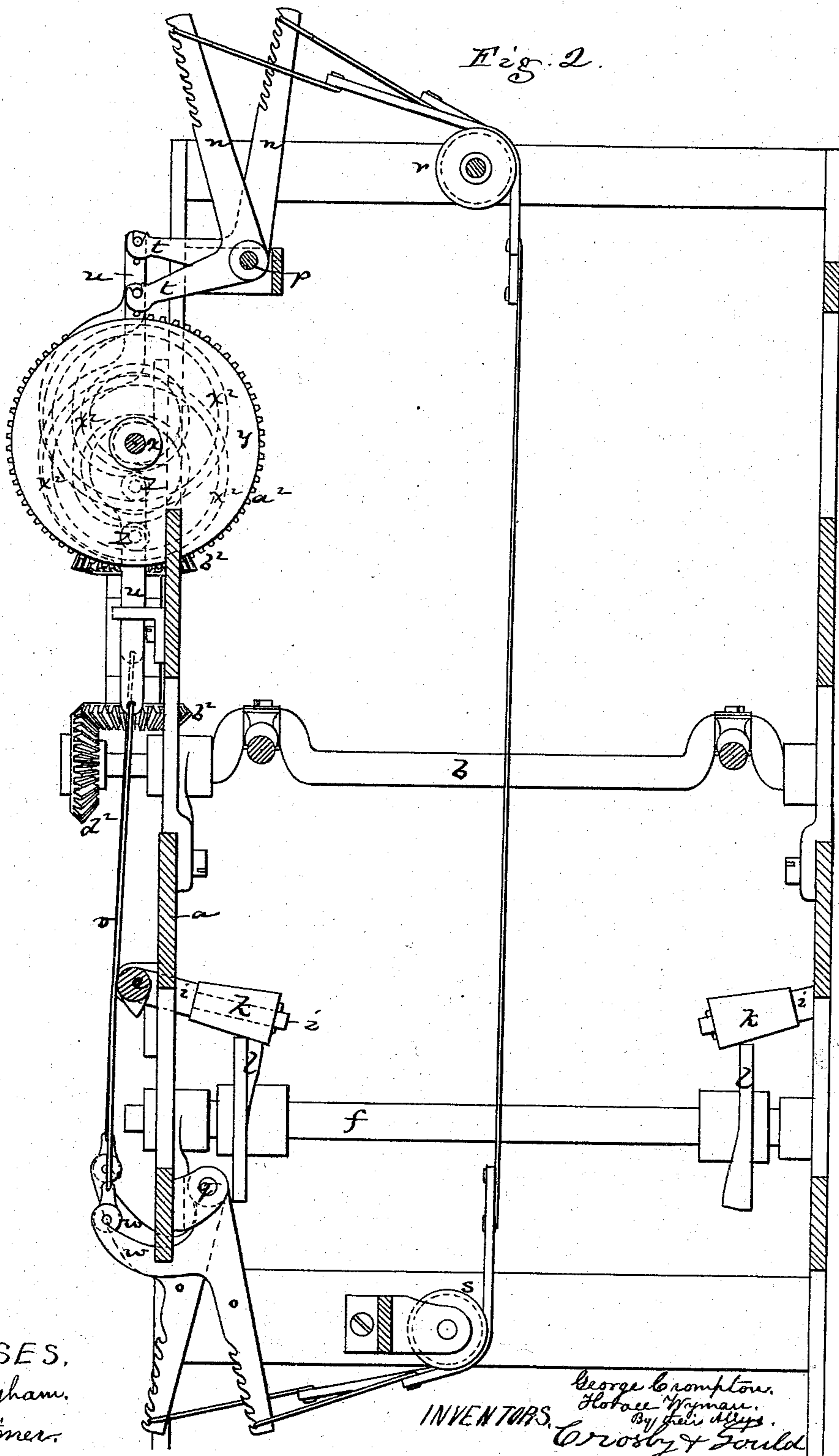


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WITNESSES,
M. W. Frothingham,
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INVENTORS,
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UNITED STATES PATENT OFFICE.

GEORGE CROMPTON AND HORACE WYMAN, OF WORCESTER, MASS.

IMPROVEMENT IN LOOMS.

Specification forming part of Letters Patent No. 157,677, dated December 15, 1874; application filed April 16, 1873.

To all whom it may concern :

Be it known that we, GEORGE CROMPTON and HORACE WYMAN, both of Worcester, in the county of Worcester and State of Massachusetts, have invented certain Improvements in Looms; and we do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of our invention sufficient to enable those skilled in the art to practice it.

The invention relates to details of construction or arrangement of parts of the mechanism of looms, one portion of the invention relating to the picker-motion, and one portion to the harness-motion.

The drawing represents, in sectional elevations, a loom, or part of a loom, embodying our invention.

a denotes the loom-frame; *b*, the crank-shaft; *c*, the lathe; *d*, one of the picker-staves; *e*, one of the shafts connected to and working the picker-staves; *f*, the cam-shaft. Each shaft *e* has an arm, *g*, connected to the picker-staff by a strap, *h*, and an arm, *i*, that carries the roll *k*, operated by the cam *l*, to turn the shaft *e* and throw the picker-staff forward, the spring *m* returning the staff and shaft to normal position.

The conical roll, being held down by the stress of the spring, is struck by the cam projection as the latter rotates, and is thereby raised to operate the picker and throw the shuttle.

As usually arranged, the roll is placed in, or nearly in, a vertical plane extending through the center of the cam-shaft, and the motion of the cam, in striking it in such position, is abrupt and like a blow, the roll needing simply to be raised, whereas the blow is imparted laterally.

In our invention we place the roll in the plane of one side of the concentric periphery of the cam-wheel, so that the base of the cam projection strikes the roll as the cam rises, thereby simply lifting the roll, or imparting to it only the motion said roll is necessarily to have, instead of lifting it by a lateral movement or blow, which blow tends to throw the roll forward, and only lifts it because of the inclination of the cam. In the motion imparted by our construction, there is no strain whatever upon the roll or the bearings of the shaft, from which extends the arm that carries the roll.

The arrangement of the roll constitutes one part of our invention.

In the harness mechanism, angled harness-levers *n o* are employed, the upper levers, *n*, turning on a stationary pin, *p*, and the lower ones on a stationary pin, *q*. The upwardly-extending arms of the upper levers are connected to the harness-leaves by cording extending over guide-sheaves *r*, and the downwardly-extending arms of the bottom levers are connected to the bottoms of the harness-leaves by cording extending under guide-sheaves *s*. To outwardly-extending arms *t* of the upper levers, links *u* are jointed, the lower ends of said links being connected, by wires or cording *v*, to arms *w*, extending from the bottom levers; and these links are bent, as seen at Fig. 2, opposite to a shaft, *x*, upon which shaft are fixed disks *y*, each having an eccentric or cam groove, *x*², into which extends a pin, *z*, from the adjacent link, the eccentrics or cams being formed to give the proper and respective movements to the harness-levers to form the successive sheds.

By means of a bevel-gear, *a*², on the shaft *x*, bevel gears *b*² *b*² on a vertical intermediate shaft, *c*², and a bevel-gear, *d*², on the shaft *b*, the shaft *x*, to actuate the harness-levers, is driven from the crank-shaft *b*.

The angle harness-levers, connected and driven as shown, and the arrangement of the driving mechanism, constitute the other features of our invention.

We are aware that it is not new to operate the picking-shaft by means of a wiper-arm arranged to rotate in a plane perpendicular to such shaft to strike a pin upon it.

We claim—

1. The angle-levers *n o*, links *u*, constructed as described, and moving in a plane perpendicular to their shaft, the connecting wires or cords, cams or eccentrics *x*², and pins *z*, all combined and arranged substantially as shown and described.

2. The picking-shaft *f*, connected with a vertical picking-stick, in combination with the cam *l* and roll *k*, the said roll being raised by the cam in a direction tangent to a circle coincident, or nearly coincident, with the circumference of the plate *l*.

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Witnesses:

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