

(No Model.)

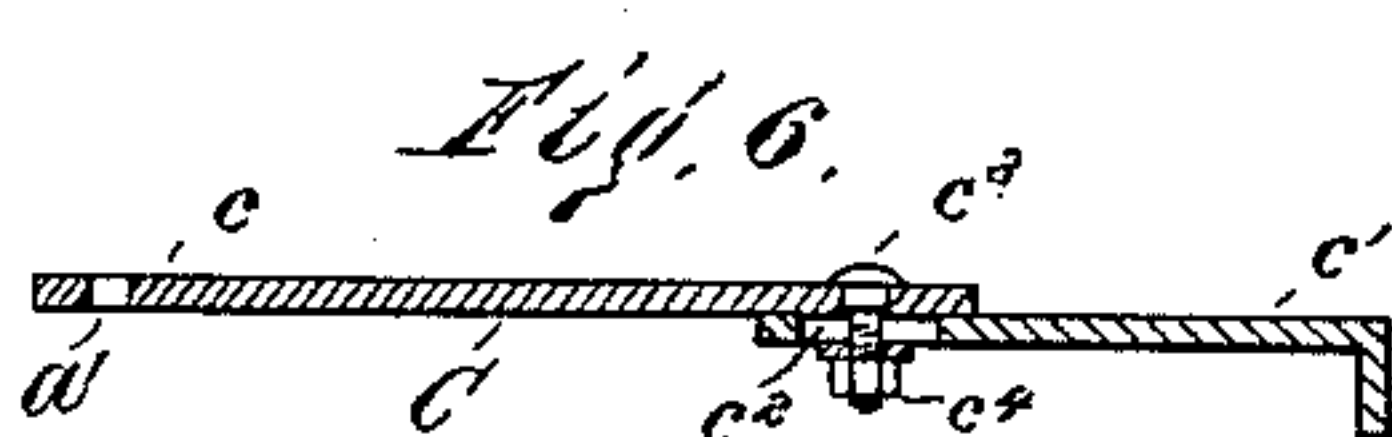
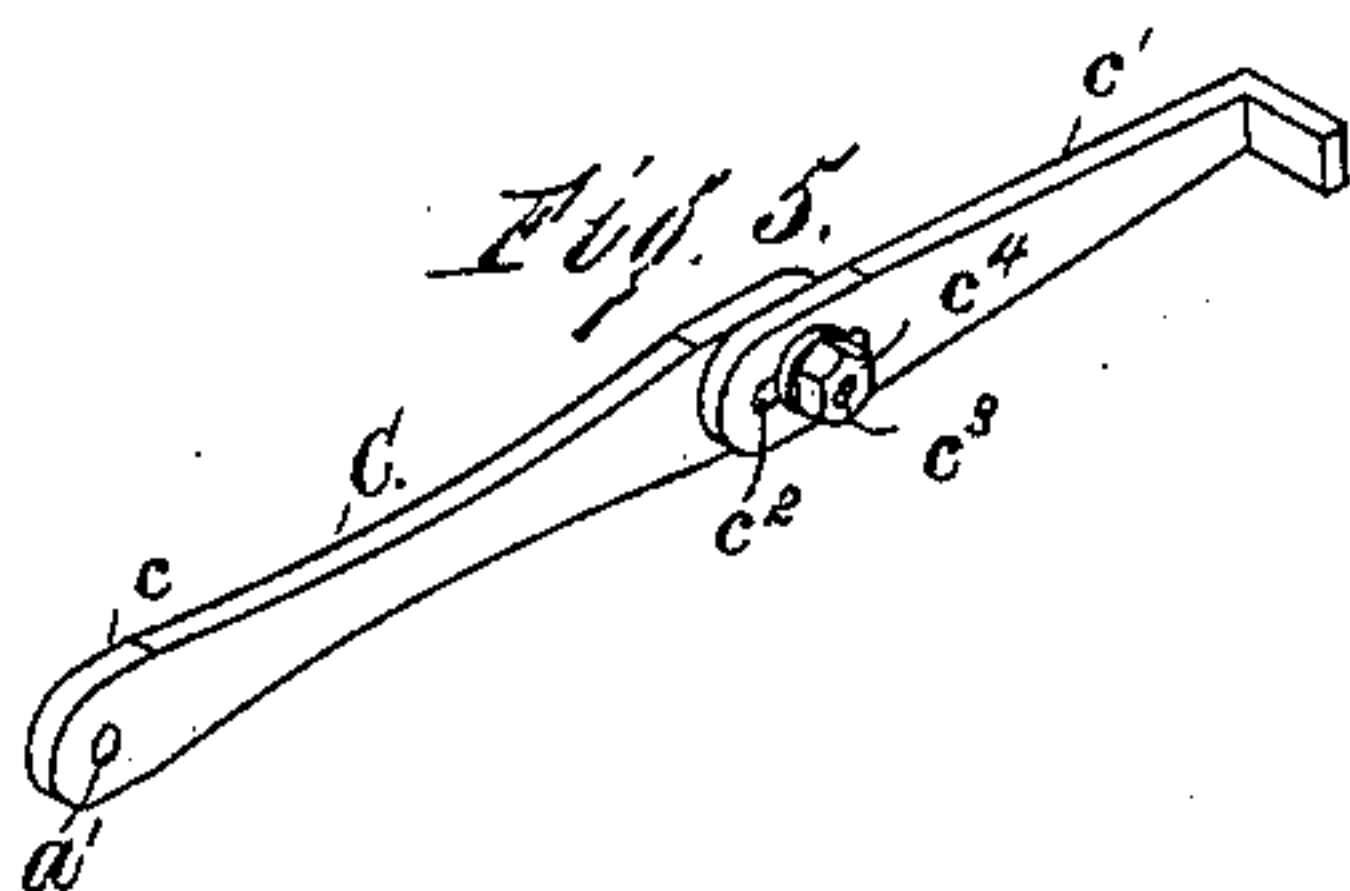
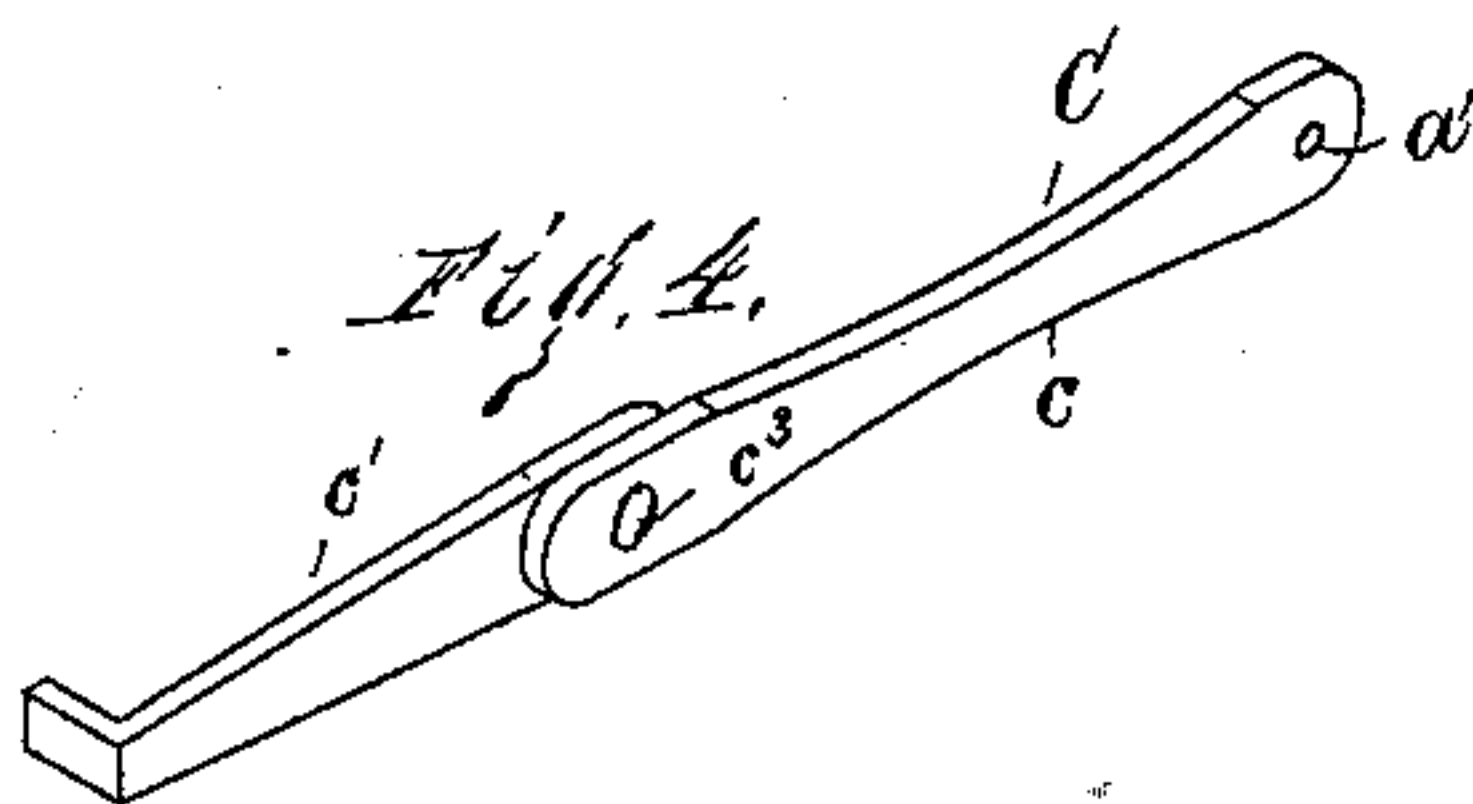
2 Sheets—Sheet 2.

D. M. COLLINS.

MEANS FOR OPERATING PICKER STAFFS IN POWER LOOMS.

No. 333,729.

Patented Jan. 5, 1886.



Witnesses—

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INVENTOR—

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By Albert M. Moore,
His Attorney.

(No Model.)

2 Sheets—Sheet 1.

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Fig. 2.

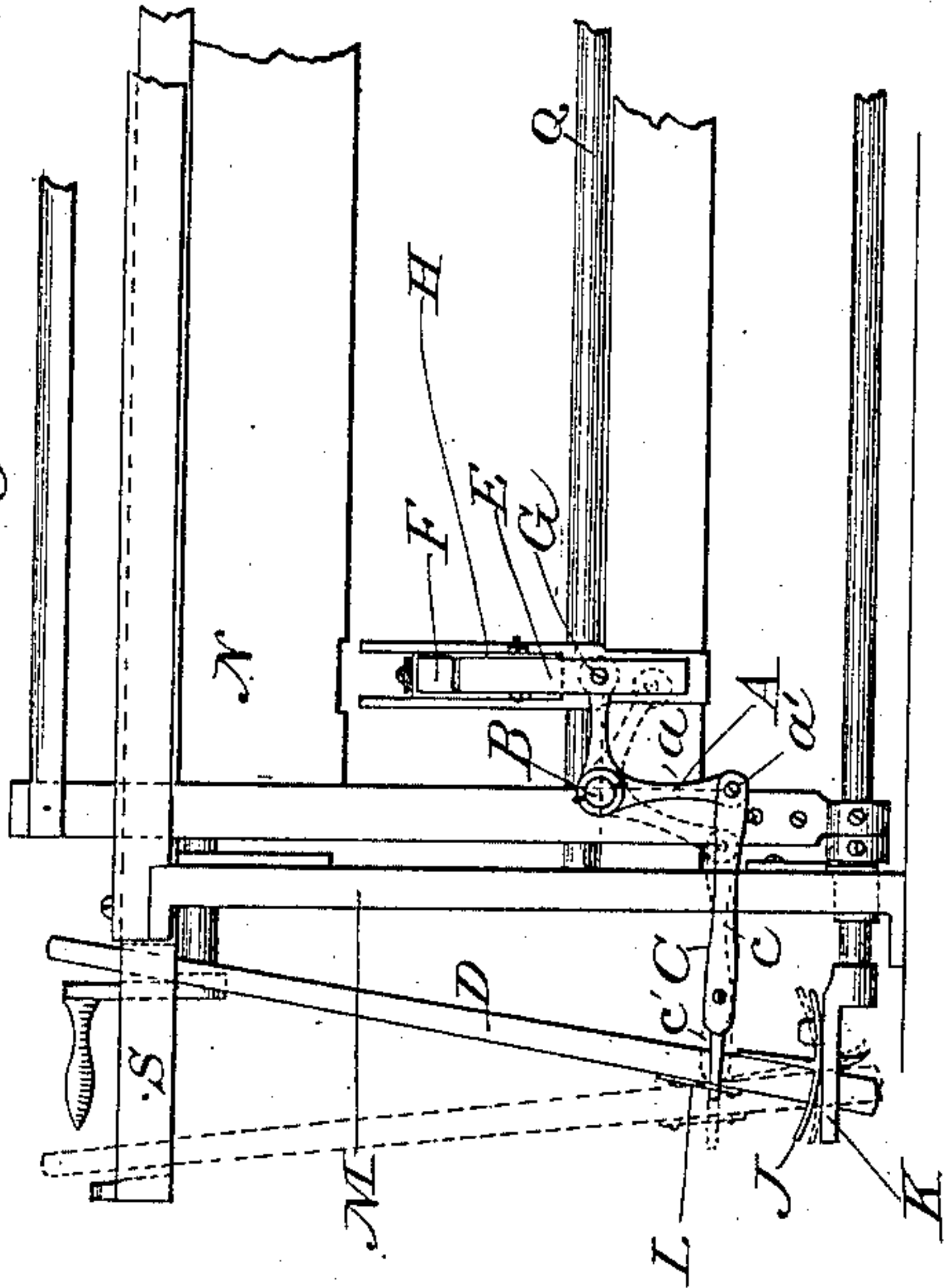


Fig. 1.

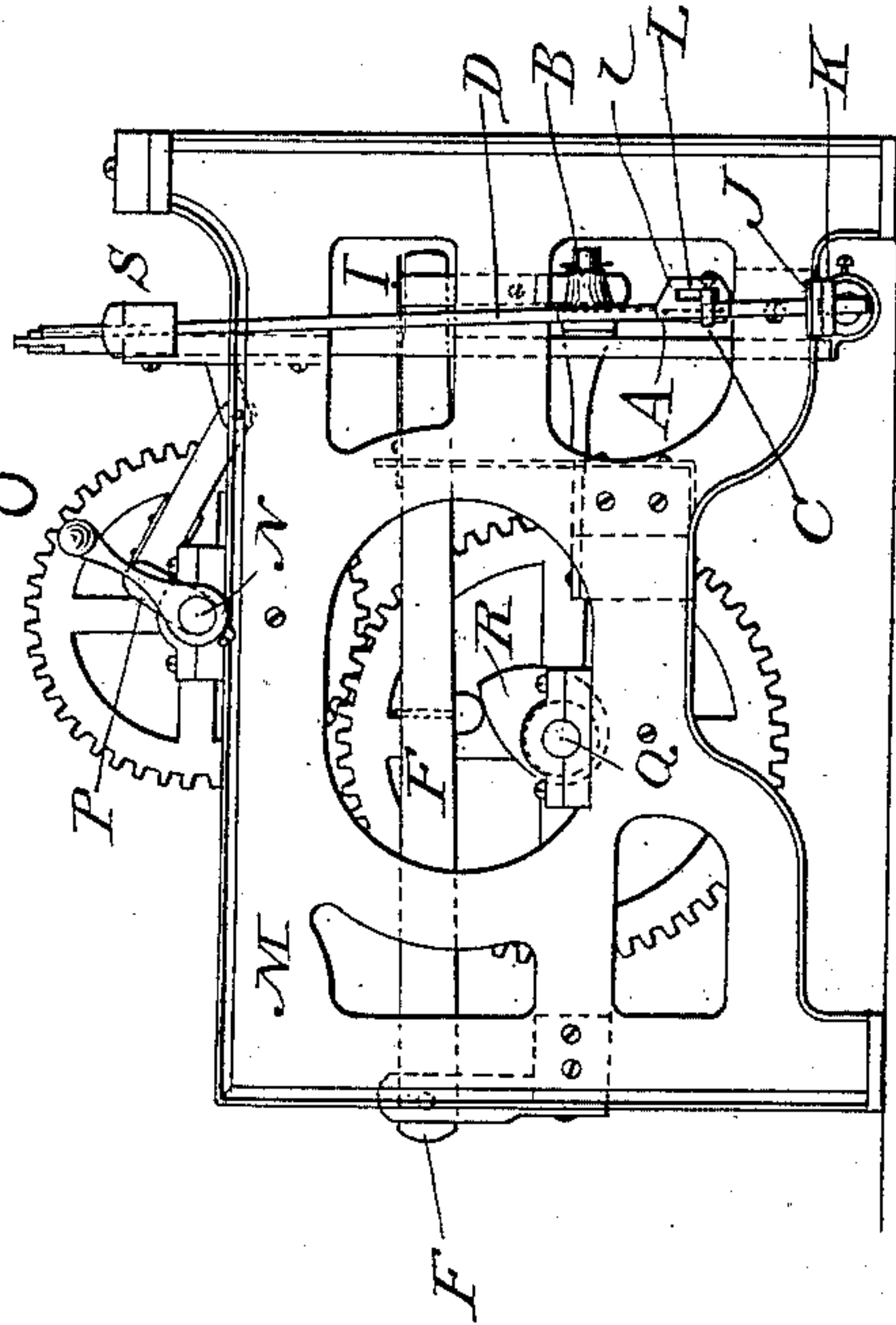
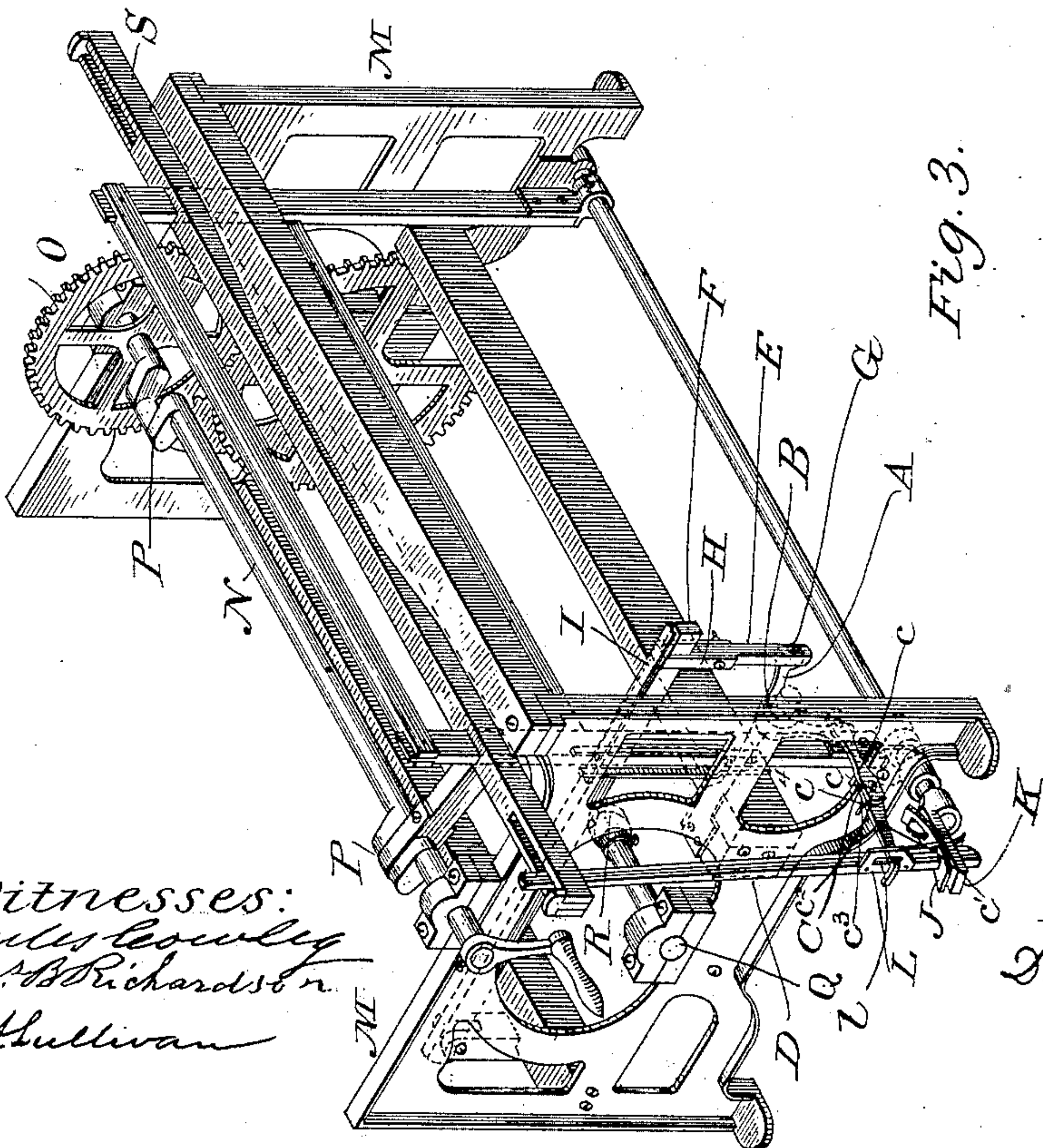


Fig. 3.



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UNITED STATES PATENT OFFICE.

DAVID M. COLLINS, OF LOWELL, MASSACHUSETTS.

MEANS FOR OPERATING PICKER-STAFFS IN POWER-LOOMS.

SPECIFICATION forming part of Letters Patent No. 333,729, dated January 5, 1886.

Application filed May 5, 1883. Serial No. 94,080. (No model.)

To all whom it may concern:

Be it known that I, DAVID M. COLLINS, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Means for Operating Picker-Staffs in Power-Looms, of which the following is a specification.

My invention relates to means for operating picker-staffs in power-looms; and it consists in the combinations hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a left-hand end elevation of the main portion of a loom with my invention applied thereto; Fig. 2, a front elevation of the left-hand end of the loom shown in Fig. 1; and Fig. 3 is an oblique view of the said loom, showing the picker-staff and the devices for actuating the same at one end of the loom only; Fig. 4, an isometric view of the connecting-rod; Fig. 5, a reverse isometric view of said rod, and Fig. 6 a central horizontal section of said rod.

The loom-frame M, main shaft N, gears O, cranks P, cam-shaft Q, its picker-operating cam R, the lay S, as well as the picker-staff D, its rocker J, the rocker-bed K, and the cam-operated lever F are all of the usual construction and operation.

It is customary to operate the picker-staff D to throw the shuttle by a leather strap, (provided with a loop surrounding the picker-staff above its pivoted lower end,) which strap passes under a pulley below the free end of the cam-lever and is attached to said free end of said lever. Such straps rapidly wear out, and are expensive in first cost and require frequently to be repaired or replaced, and a spring and strap are required to throw the picker-staff out for a new pick. I obviate these objections and dispense with the spring and strap by connecting the cam-lever F to a bell-crank lever, A, pivoted at B on the sword of the lay, by means of a rigid yoke-rod, E, (preferably of wood, for lightness,) which is provided at its upper end with a yoke or loop, H, of metal, bolted thereto, which yoke reaches over the free end of the cam-lever F, and is held in place on said cam-lever by the flat spring I, (also preferably of wood,) secured at its rear end by bolts or screws to the top of said cam-lever, and pressing upon the top of said yoke H, the lower end of said rod E being pivoted

at G to the said lever A. The yoke H may be moved nearer to or farther from the free end of the cam-lever F, (with the effect of increasing or diminishing the throw of the picker-staff, as will appear hereinafter.) The outer down-hanging arm, a, of the bell-crank lever is pivoted at a' to the connecting-rod C, (preferably of wood,) so that raising the cam-lever in the usual manner by the revolution of the cam-shaft swings the bell-crank lever and draws the connecting-rod C in toward the middle of the loom.

The picker-staff D has secured to its outer face, above the rocker J, a plate, L, (preferably of rawhide, to lessen noise and wear,) which projects in front of the picker-staff and is slotted at l. Through the slot l projects the outer end of the connecting-rod C, which is provided with a bent or enlarged outer end too large to pass through said slot l, so that the above-described endwise motion of the rod C toward the middle of the loom draws the upper end of the picker-staff D suddenly inward, as shown by the full lines in Fig. 2, and throws the shuttle.

The connecting-rod C is made in two lengths, c c', which lap beyond each other, as shown in Fig. 3, but more clearly shown in Figs. 4 to 6, the overlapping part of one, c, of said lengths being provided with a longitudinal slot, c², and the other, c', with a stud, c³, which reaches through said slot, and has a threaded end on which a nut, c⁴, is turned against the slotted length to bind the two lengths rigidly together. After the shuttle is thrown and the cam-lever (being no longer sustained by the cam) falls, the rod C is pushed outward, and the outer end of the inner length, c', of the connecting-rod C strikes against the inner face of the slotted plate L, secured to said picker-staff, and throws said picker-staff outward into the position shown in dotted lines in Fig. 2, obviating the necessity of the usual spring and strap.

It will be seen that the distance of the yoke from the fulcrum of the cam-lever will determine the force with which the picker-stick is thrown, and that the amount of motion of the picker-stick is limited by the distance between the outer ends of the lengths of the connecting-rod.

I claim as my invention—

1. The combination of the lay, the cam-shaft,

the cam secured thereto, the cam-lever, the bell-crank lever pivoted on said lay, means, substantially as described, for connecting said cam-lever and said bell-crank lever, the picker-staff, the plate secured thereto and provided with a slot, and the connecting-rod formed in two overlapping lengths secured to each other where they overlap, the outer length passing through said slot and having a bent outer end, and the outer end of the inner length adapted to strike against said plate in its outward motion and to throw said picker-staff outward, as and for the purpose specified.

2. The combination of the lay, the cam-shaft, the cam secured thereto, the cam-lever, the bell-crank lever pivoted on said lay, means, substantially as described, for connecting said cam-lever and said bell-crank lever, the picker-staff, the plate secured thereto and provided with a slot, the connecting-rod formed in

two overlapping lengths, one of said lengths being provided with a slot and the other with a threaded stud, and a nut adapted to be turned upon said stud and to bind said lengths together, as and for the purpose specified.

3. The combination of the lay, the cam-shaft, the cam secured thereto, the cam-lever, the bell-crank lever pivoted on said lay, the yoke-rod pivoted to said bell-crank lever and provided with a yoke embracing said cam-lever, the spring secured to said cam lever and pressing upon said yoke, the picker-staff pivoted at its lower end on said lay, and the rod connecting said picker-staff and bell-crank lever, as and for the purpose specified.

DAVID M. COLLINS.

Witnesses:

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