

(No Model.)

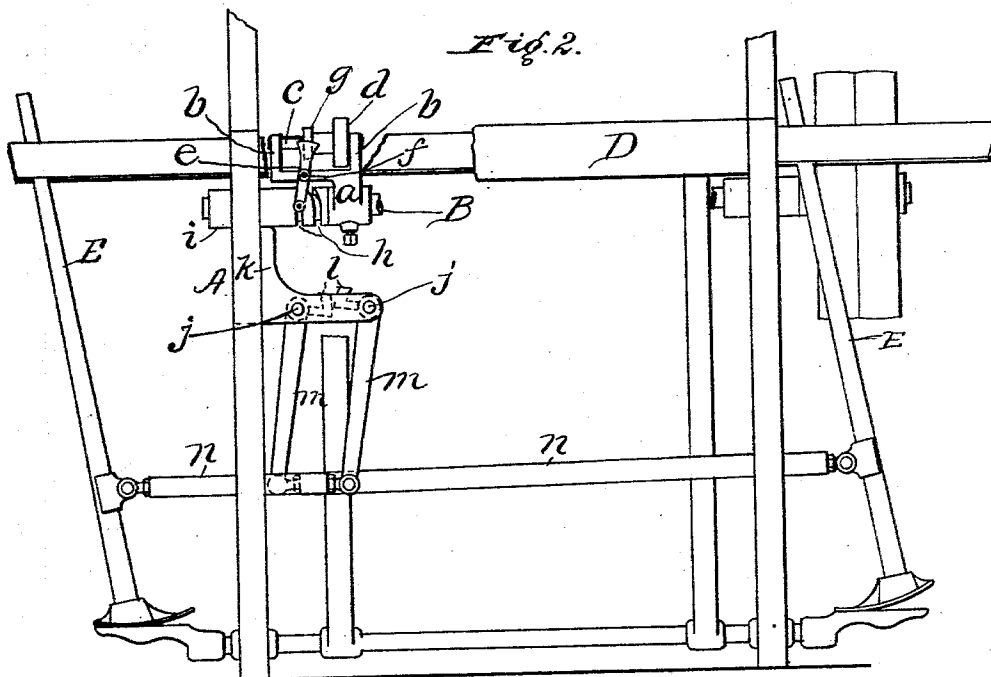
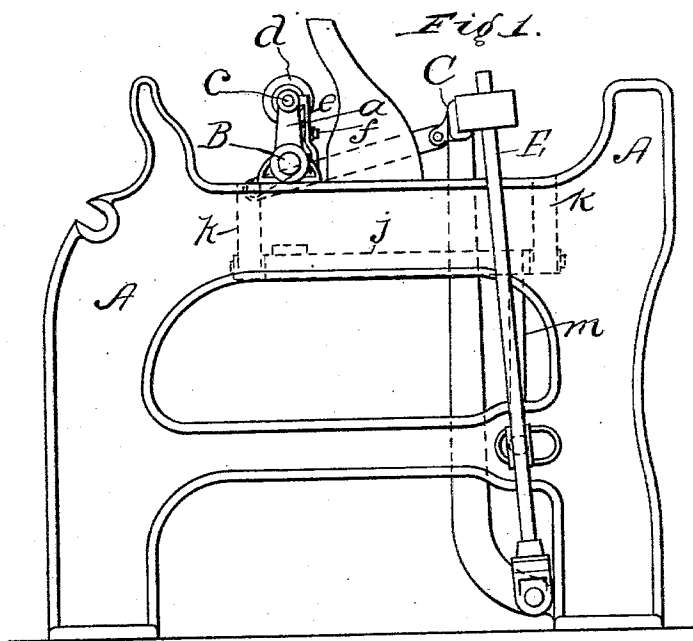
2 Sheets—Sheet 1.

C. F. PERHAM.

PICKER OPERATING MECHANISM FOR LOOMS.

No. 562,654.

Patented June 23, 1896.



WITNESSES.

Kirkby Hyde.

Marcus B. Haas

INVENTOR

Chas F. Perham

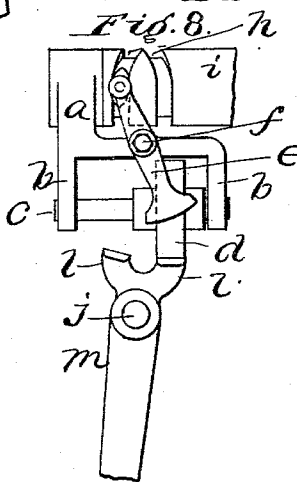
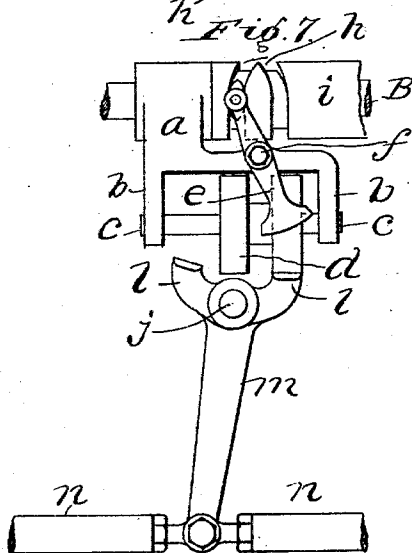
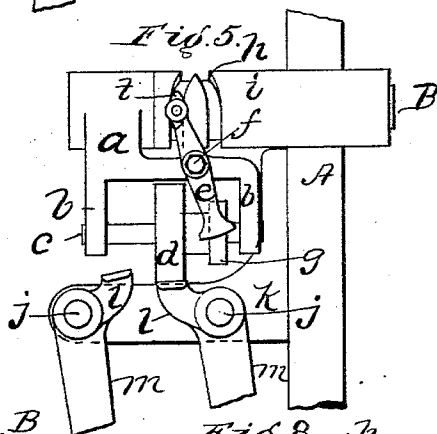
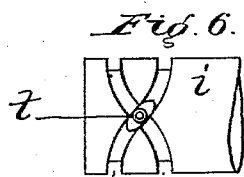
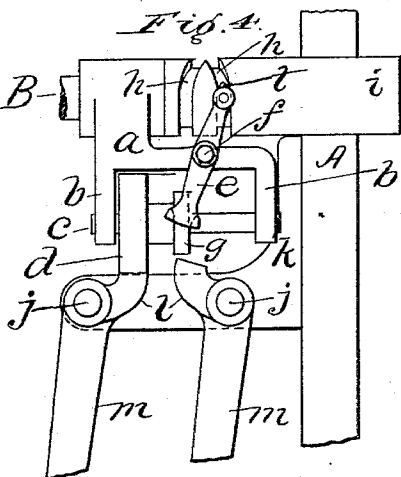
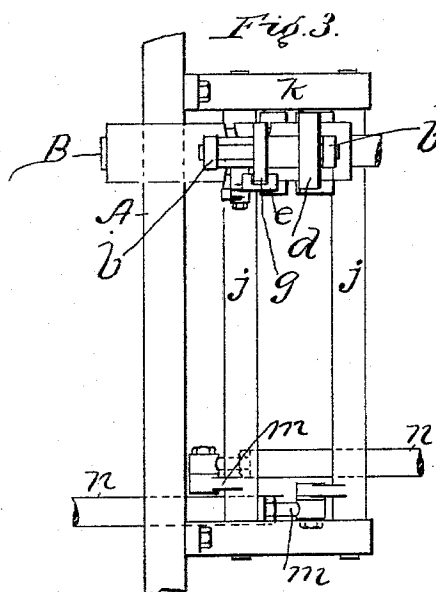
By Arthur W. Crossley
24 ATTORNEY.

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WITNESSES.

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Marion Bellamy.

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UNITED STATES PATENT OFFICE.

CHARLES FOSTER PERHAM, OF LOWELL, MASSACHUSETTS.

PICKER-OPERATING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 562,654, dated June 23, 1896.

Application filed June 8, 1895. Serial No. 552,131. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FOSTER PERHAM, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Picker-Operating Mechanism for Looms, of which the following is a specification.

This invention has relation to means for operating the pickersticks or staves of looms for the purpose of "picking," throwing, or impelling the shuttle through the shed in the operation of weaving.

It is the object of the invention to provide a picker-motion system in which the picker-staves may be operated directly from the crank-shaft instead of through the medium of a cam-shaft, whereby the construction may not only be greatly simplified, so as to reduce the cost of manufacture and repairs as well as the liability of breakage, but also lessen the power necessary for the operation of the loom and give more room for the warp and cloth beams and other essential parts of the machine.

To these ends the invention consists of a loom embodying in its construction means connected with the picker sticks or staves, constructed and arranged so that they may be operated upon to actuate the staves in order to impel the shuttle through the shed, and movable means, as a wiper or other suitable or equivalent device, directly connected with and operated by the crank-shaft for acting upon the picker-staff-operating means to move or actuate the picker-staves, all as I will now proceed to describe in detail, and then point out with particularity in the appended claims.

Reference is to be had to the annexed drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 is an end view of so much of a loom as it is necessary to show, illustrating a way of constructing and applying my improvements. Fig. 2 is a front view of the same, a part of the crank-shaft, breast-beam, and lay being shown as broken away, so as to the better illustrate the invention. Fig. 3 is a detail plan view of the principal parts of the invention. Figs. 4 and 5 are

rear views of most of the parts shown in Fig. 3, illustrating most of the movable parts in different positions in order to explain the mode of operation of the invention. Fig. 6 is a detail plan view of a part of the bearing-box or an extension of the bearing-box of the crank-shaft provided with cam-grooves, for a purpose fully explained hereinafter. Figs. 7 and 8 are detail views in rear elevation of modified forms of parts of the improvements, hereinafter particularly referred to. Figs. 3 to 8, inclusive, are drawn to a scale considerably larger than Figs. 1 and 2.

In the drawings, A designates the loom-frame.

B is the crank-shaft, by which the lay C is operated through the medium of the usual or suitable connecting means.

D is the breast-beam, and E E are the picker sticks or staves supported at their lower ends, as shown, or it may be in any other suitable or equivalent manner, so as that when their upper ends are moved inward to act upon to impel the shuttle through the shed said upper ends may move in a line parallel with the line of movement of the shuttle.

Keyed upon the crank-shaft by means of a set-screw, as shown, or it may be by a spline or other means, is a bracket *a*, journaled in and extending between the arms *b b* of which is a short shaft or pin *c*, supporting a wiper *d*, which is adapted to be moved from side to side thereon between the said arms. The form herein shown as given to the wiper is that of a disk or wheel which is adapted to rotate upon the shaft *c*, as well as to slide longitudinally thereon, though in some instances I have contemplated constructing the wiper as an incline or curved cam simply shiftable on the shaft *c*.

e is a lever fulcrumed at *f* on the bracket *a*, and having one end loosely engaged with a collar or flange *g*, connected with the hub of the wiper *d*, or otherwise suitably connected with the said wiper, so that in moving the lever on its fulcrum it may move the wiper from side to side on its pin or shaft. The other end of the said lever is provided with a traveler *t*, pivoted to the lever and adapted to move in a double cam-groove *h*, formed in the box or an extension of the box *i*, forming a bearing for the crank-shaft. The grooves

h extend parallel with each other for part of the way around the box and then for the balance of the way on lines crossing each other, as shown in Figs. 4 to 8.

5 *j j* are rock rods or pins journaled in brackets *k k*, connected with the loom-frame, which rods or pins have upwardly-projected crank-arms *l l*, secured to their outer ends, the ends of which arms extend into the path
10 of the wiper *d* when it is shifted to the extremes of its allowed movement longitudinally on its supporting shaft or pin. To the other ends of the rods *j j* are secured the upper ends of arms *m m*, the lower ends of
15 which are connected with straps, or it may be rods or cords *n n* with the picker-sticks *E E*.

The form and arrangement of the parts just described are such that the arms *l l* and *m m* form levers of which the rock-rods *j j*
20 are the fulcrums, one of the said levers being connected with one picker-stick and the other lever with the other picker-stick.

It will now be seen that as the crank-shaft *B* is rotated by the pulley thereon, or by
25 other means to operate the loom, the bracket *a* will be rotated, revolving the wiper *d* around the shaft, and as the traveler *t* crosses from one cam-groove to another, as it were, the lever *e* will be moved upon its fulcrum, so as
30 to shift the wiper *d* from side to side on its supporting-pin, and cause it to act first upon the end of one of the crank-arms *l* and then upon the other, actuating one of the arms *m* and the picker-stick operatively connected
35 therewith, so as to pick the shuttle through the shed, and then the other.

Instead of having two rock-rods *j* and two arms *m*, I may have a single rock-rod *j*, with which both crank-arms *l* may be connected,
40 and a single arm *m*, secured at its lower end with the straps *n*, connecting it with the picker-sticks, as shown in Fig. 7, in which case I may have two wipers on the shaft or pin *c*, so arranged that they may be shifted
45 by the lever *e* in a manner that will cause one wiper at one revolution to act upon one arm *l* and the other wiper at the next revolution to act upon the other arm *l*, one wiper being inactive while the other arm is opera-
50 tive, or I may have the modified construction last described, and employ a single wiper *d*, with a construction and arrangement of parts by which it will be caused to act first upon
55 one arm *l* and then upon the other, as shown in Fig. 8. I have also contemplated arranging a lever *l m* and wiper and operative connections on one side of the loom for operating one picker-stick and another lever and wiper
60 on the other side for operating the other picker-stick. These variations in the form and arrangement of the parts referred to serve as examples to show the changes that may be made in my invention without departing from the nature or spirit of the im-
65 provements made by me.

In all of the mechanisms which I have above referred to as embodying my inven-

tion, it will be observed that the wiper or wipers intermittingly engage the pick-actuating mechanisms, so as to move the latter in
70 an opposite direction each time the crank-shaft revolves, the shifting of the wipers taking place when the latter are disengaged.

By my invention it will be seen that I make it possible in the organization of a loom to en-
75 tirely dispense with the usual cam-shaft for operating the picker-staves or their equivalents, thus greatly simplifying the construction and cost of manufacture of the loom, giving more room for the warp-beam and cloth-
80 roll, and lessening the liability of breakage of parts, to the end of rendering the machine more durable than heretofore. Besides this, the loom is made much easier of operation, is more quickly and easily stopped, and is re-
85 lieved of much of the shock and jar that is occasioned by the abrupt cams of the picker motion on the cam-shaft in looms of ordinary construction. In my invention the wiper
90 makes double the number of revolutions of the ordinary cams on the cam-shaft, and hence it is not necessary to make the said wiper so abrupt or blunt, or to act with the same suddenness, so as to create the same shock or jar.
95

Other obvious beneficial results follow in the use of my invention, which it is considered unnecessary to set forth herein.

Having thus explained the nature of the invention and described a way of construct-
100 ing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. A loom comprising in its construction,
105 picking means for propelling the shuttle through the shed, a lay-operating crank-shaft, a shiftably-supported wiper revolvably connected with the crank-shaft, a pivoted lever adapted to shift the wiper on its support,
110 means for operating the lever, and means operatively connected with the picking means upon which the wiper is adapted to act to operate the latter.

2. A loom comprising in its construction,
115 picking means for propelling the shuttle through the shed, a lay-operating crank-shaft, a shiftably-supported wiper connected with the crank-shaft, a pivoted lever adapted to shift the wiper on its support, means for op-
120 erating the lever, levers upon which the wiper is adapted to act, and means operatively connecting the last-mentioned levers with the picking means.

3. A loom comprising in its construction,
125 picking means for propelling the shuttle through the shed, and having two arms, a crank-shaft, and mechanism mounted directly on, and revolving with, the crank-shaft, and intermittingly engaging said arms alter-
130 nately.

4. A loom comprising in its construction, picking means for propelling the shuttle through the shed, and having two arms, a

crank-shaft, a shiftable wiper mounted on the
crank-shaft to revolve therewith and adapted
to intermittingly engage said arms, and means
for shifting said wiper at each revolution of
5 the shaft.

In testimony whereof I have signed my
name to this specification, in the presence of

two subscribing witnesses, this 2d day of
March, A. D. 1895.

CHARLES FOSTER PERHAM.

Witnesses:

ARTHUR W. CROSSLEY,
C. C. STECHER.