

(No Model.)

G. CROMPTON & H. WYMAN.  
MECHANICAL MOVEMENT.

No. 339,620.

Patented Apr. 13, 1886.

Fig. 1.

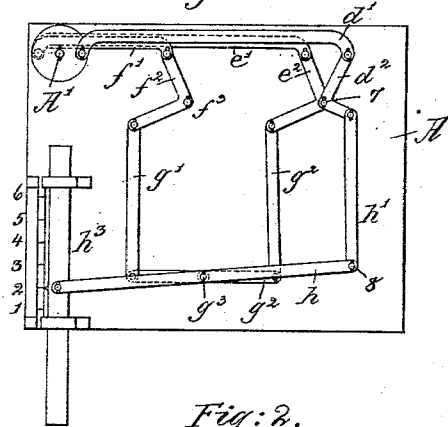
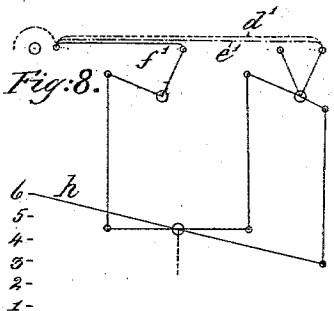
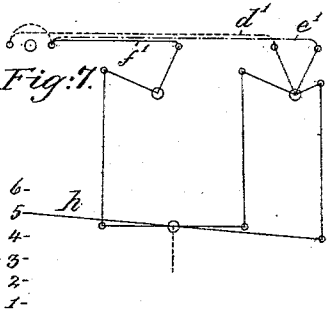
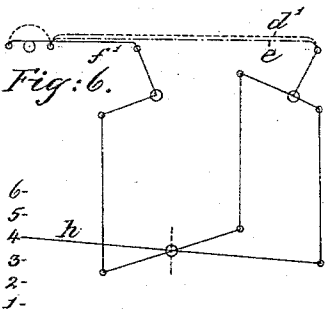
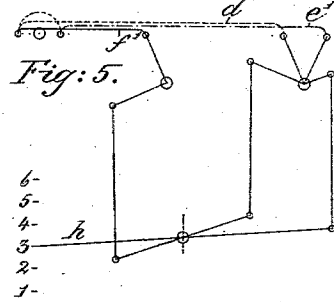
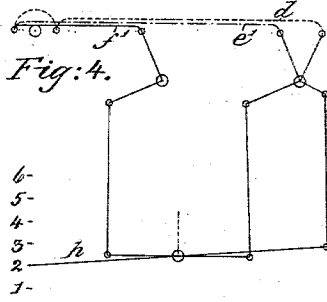
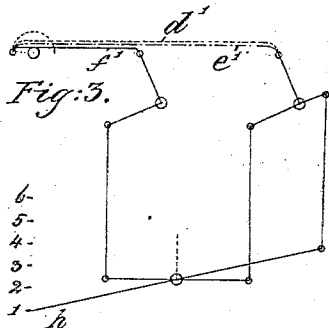
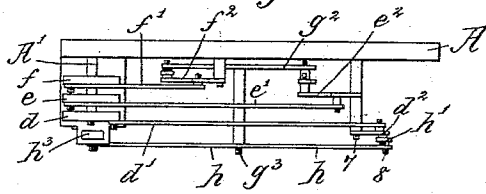


Fig. 2.



Witnesses.  
Arthur Zippertsen.  
John P. C. Printz

Inventors.  
George Crompton  
Horace Wyman  
by Leroy Gregory Attys.

# UNITED STATES PATENT OFFICE.

GEORGE CROMPTON AND HORACE WYMAN, OF WORCESTER, MASSACHUSETTS, ASSIGNORS TO SAID GEORGE CROMPTON.

## MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 339,620, dated April 13, 1886.

Application filed January 22, 1886. Serial No. 189,436. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE CROMPTON and HORACE WYMAN, both of Worcester, county of Worcester, and State of Massachusetts, have invented an Improvement in Mechanical Movements, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of a mechanical movement whereby a main lever may have one of its ends placed in six different positions and be retained in any one of its said positions, the end of said lever being readily movable from any one to any other of the said six positions, the movement of the end of the said lever from any one to any other of its six positions being made in the same time.

In this invention a main lever of the first order has its fulcrum upon a cross-bar, the opposite sides of which have joined to it links, which at their other ends are joined to levers of the first order, (preferably elbow-levers,) in turn attached to connecting-rods actuated by crank-pins of toothed wheels, the rear end of the said main lever having joined to it a link which is in turn joined to an elbow-lever joined to a connecting-rod actuated by the crank-pin of a semi-rotating wheel.

The particular features in which this invention consist will be hereinafter described, and pointed out in the claim at the end of this specification.

Figure 1 in elevation represents a mechanical movement embodying this invention; Fig. 2, a top or plan view thereof; and Figs. 3 to 8, inclusive, are diagrams showing different portions of the main lever.

The frame A, supposed to be part of the frame of a machine in which the mechanical movement herein to be described is employed, has a stud, A', upon which are placed wheels *d e f*, each provided with a crank-pin. These wheels in practice will be toothed at their peripheries, and will be turned a semi-rotation in one and then in the opposite direction at the desired time by means of long gears, substantially such as described in United States Patent No. 281,842, dated July 24, 1883, to which reference may be had. The crank-pin of the wheel *d* has attached to it a connecting-rod, *d'*, which is jointed to a

lever, *d'*, pivoted at 7. The crank-pin of the wheel *e* is provided with a connecting-rod, *e'*, which is pivoted to a lever, *e'*, having its fulcrum at 7. The crank-pin of the wheel *f* has a connecting-rod, *f'*, which is jointed to a lever, *f'*, pivoted at *f'*. One end of the lever *e'* has attached to it a link, *g*, and one end of the lever *f'* has attached to it a link, *g'*. The opposite ends of the said links *g g'* support a cross-bar, *g'*, having a fulcrum-stud, *g'*, upon which is mounted the main lever *h*, a lever of the first order, the rear end of the said lever having jointed to it at 8 a link, *h'*, which in turn is jointed at its other end to one end of the elbow-lever *d'*.

As herein shown, the outer end of the main lever *h* has jointed to it a slide-rod, *h'*, and the outer end of the said lever and with it the slide-rod may be moved into any one of six positions designated by the numbers 1 2 3 4 5 6.

Referring to Fig. 3, the main lever in full lines is shown at station 1, and the crank-pins of all the wheels *d e f* are at the left of the stud A'.

To place the lever *h* with its end at station 2, as in Fig. 4, it is only necessary to partially rotate the wheel *d* and move the elbow-lever *d'* into the position shown in the diagram, Fig. 4, and as in full lines, Fig. 1.

To place the end of the lever at station 3, as in the diagram Fig. 5, the wheel *e* will be turned partially from its position, Fig. 4, to place its crank-pin at the right of the stud A', and the wheel *d* will be turned to place its stud at the left of the said stud, the other wheels remaining as in Fig. 4.

To bring the end of the lever to station 4 from the position shown in Fig. 5, both wheels *d e* will be turned to place their crank-pins at the right of the stud A', the wheel *f* having its crank-pin left at the left, as in Fig. 6.

To place the end of the lever *h* at station 5, the parts occupying the position Fig. 6 will be changed by turning the wheel *d* to place its crank-pin at the left of the stud A', and the wheel *f* will be partially rotated to place its crank-pin at the right of the stud A'.

To bring the end of the lever *h* opposite station 6, as in Fig. 8, the parts represented in Fig. 7 will be changed by partially rotating all the wheels *d e f* until all their crank-pins are at the right of the stud A'.

Should it be desired to move the lever *h*

from station 3 to station 5, (see Figs. 5 and 7,) it is only necessary to partially rotate the wheel *f* and place its crank-pin at the right-hand side of the stud *A'*.

5 Assuming all the crank-pins of the wheels to be at the left of the stud *A'*, as in Fig. 3, the end of the lever *h* then being at the station 1, the end of the said lever may be immediately brought in one move to station 6 by  
10 simultaneously turning all the wheels *d e f* and placing their crank-pins at the right of the stud *A'*.

In the diagrams the connecting-rod *f'* is shown by full lines, the connecting-rod *e'* by  
15 a series of dots, and the connecting-rod *d'* by a series of dots and dashes.

Among other things for which the mechanical movement herein described is especially applicable is the movement of shuttle-boxes  
20 in looms, or for the movement of a lever or rod which for any reason is at times to have a variable throw or stroke.

We do not broadly claim a cross-piece supported at both ends and supporting a longer  
25 lever having a link attached to it; nor do we

broadly claim an elbow-lever and a link for one end of two levers.

We claim—

Three semi-rotating wheels having crank-pins, three connecting-rods, three levers of the  
30 first order to which they are joined, a link supported by each of the said levers, a cross-piece connected with two of the said links and supporting a stud or fulcrum for the main lever,  
35 combined with a main lever having its fulcrum on the said cross-piece and joined to one of the said cranks, whereby by the movement of the said levers by the connecting-rods the front end of the main lever may be placed in  
40 any one of six positions, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEO. CROMPTON.  
HORACE WYMAN.

Witnesses:

J. B. SYME,  
J. A. WARE.