

(No Model.)

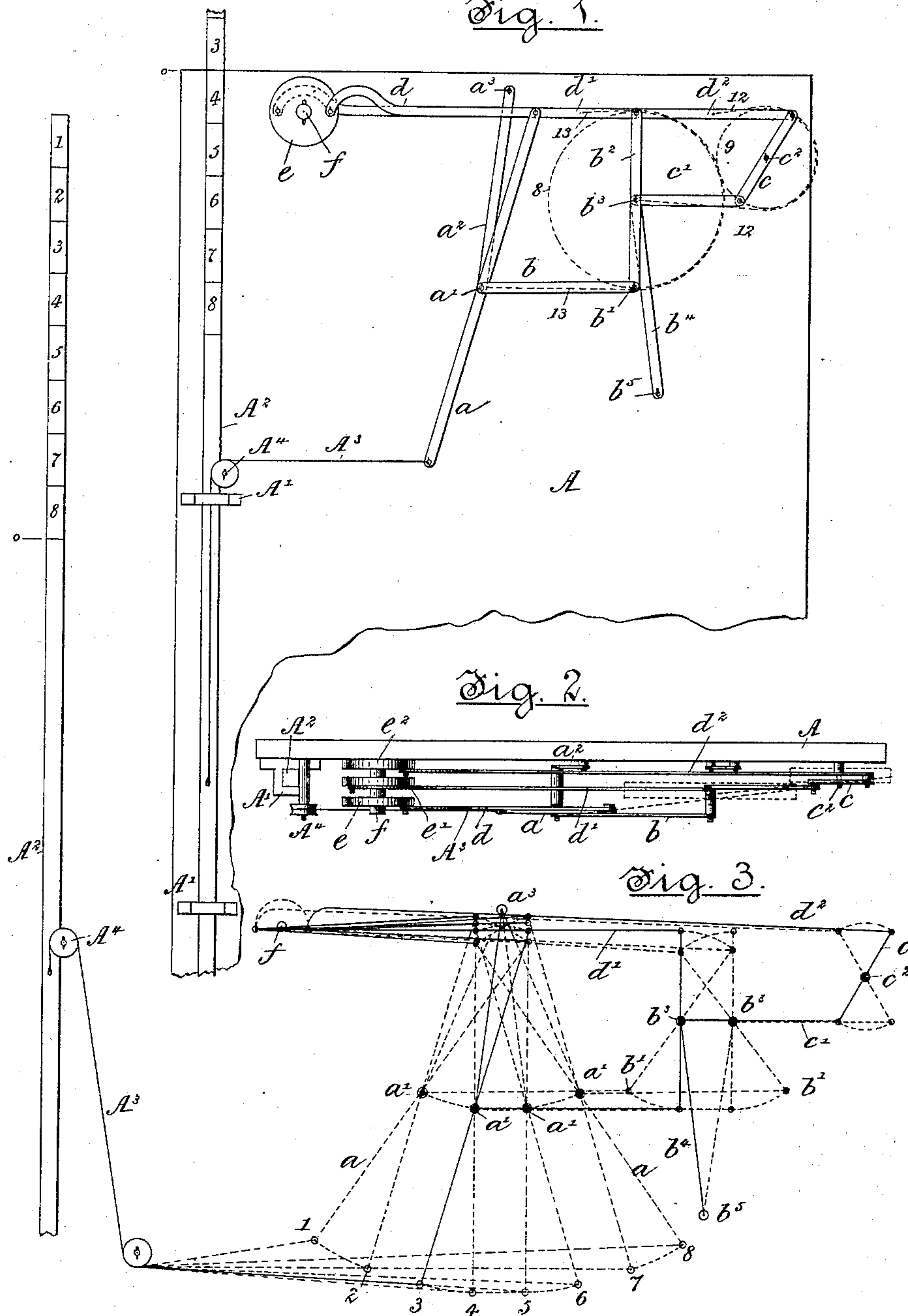
G. CROMPTON & H. WYMAN.

MECHANICAL MOVEMENT.

No. 336,625.

Patented Feb. 23, 1886.

Fig. 1.



Witnesses:

John A. Renne

Frederic L. Emerson

Inventors

George Crompton

Per; Horace Wyman

Crosby Gregory
Atty's

UNITED STATES PATENT OFFICE.

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

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 336,625, dated February 23, 1886.

Application filed September 11, 1885. Serial No. 176,857. (No model.)

To all whom it may concern:

Be it known that we, GEORGE CROMPTON and HORACE WYMAN, both of the city and county of Worcester, 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 novel and simple mechanism whereby a bar or rod may be reciprocated for different distances in one or the other direction, and be left at rest in either one of several defined positions, the time occupied in the movement of the rod being the same, whether it is made to pass from one to its next position or from its extreme positions.

In another application, Serial No. 176,856, filed concurrently herewith, we have shown a main lever mounted on an auxiliary lever, the fulcrum of the latter being made movable independently, so that the free end of the auxiliary lever might have four rather than two positions, as heretofore, thus enabling the rod or bar to occupy six or more positions, as would not be the case if the fulcrum of the main lever were not movable.

In this present invention, instead of supporting the lever, which is joined by cord or chain with the bar or rod to be moved over different distances, as described, the said lever has its fulcrum on a radius-bar, the said bar next the fulcrum of the said lever, which we shall call the "main lever," being joined with a link which is attached to the end of a secondary lever having its fulcrum on a radius-bar, and herein we have shown a second link attached to the said radius-bar at the fulcrum of the second lever, the said second link being attached to a third lever. The main and the second and third levers referred to are each joined by a connecting-rod to a crank capable of being moved in one and then in the opposite direction for a little more than a semi-rotation, and there remain at rest.

Our invention consists in a mechanical movement, including a main lever, a radius-bar to support the fulcrum of the said main lever, a second lever, a link to connect it with the fulcrum of the main lever, and a radius-bar to

support the fulcrum of the second lever, combined with two cranks and connecting-rods by which to move the said levers, the movement of the second lever moving the fulcrum of the main lever and the radius-bar supporting it, as will be described.

Figure 1 in elevation represents devices combined to produce our improved mechanical movement, the upper end of the rod or bar being broken off to save space on the drawings; Fig. 2, a top view thereof; and Fig. 3 a diagram to be referred to, the said figure showing the entire rod or bar which is to be moved by the levers or devices fully shown in Figs. 1 and 2 and represented by lines in Fig. 3.

In the drawings, the board A, supposed to be part of a machine or framing, has guides A', to guide the rod or bar A², which is to be moved, as will be described, over a distance indicated by one or more of its spaces, 1 2 3 4 5 6 7 8, the said rod or bar by the devices to be described being capable of being left with any one of its spaces in what we will call "working position," opposite the working-line o.

The cord or chain A³ (herein shown as the means for joining the rod or bar with the main lever a) is extended over the pulley A⁴; but instead of the said cord or chain any other suitable but common or usual mode of connecting a lever and rod may be used. The main lever a has its fulcrum a' at the lower end of a radius-bar, a², pivoted at a³. The link b at one end is joined to the fulcrum a' of the lever a, and by pivot-pin b' to the lower end of the second lever, b², having its fulcrum b³ on a radius-bar, b⁴, pivoted at b⁵.

As herein described, to increase the range of movement of the rod or bar A², we have connected the upper end of the radius-bar b⁴ and fulcrum of the second lever, b², with a third lever, c, by a second link, c', movement of which lever on its fulcrum c² effects the movement of the fulcrum of the second lever, b². The upper ends of the levers a, b², and c are joined, respectively, by connecting-rods d d' d², in turn connected, respectively, with the cords e e' e², (shown herein as mounted loosely on the same stud f;) but in practice each of the said cranks will be toothed at its periphery, will have its fulcrum on a vibrator, movement of which at the proper times will place the teeth of the

crank in engagement with one or the other of two partial gears, all as shown in United States Patent No. 281,842, dated July 24, 1883, to which reference may be had.

5 As a modification, the levers b^2 and c and the links b and c' may be omitted, and instead we may use two disks or pulleys, (shown by the dotted circles 8 9 described from the centers of the said levers,) and in such event the connecting-rod d^2 will have attached to it a cord, (shown by the dotted line 12,) it being passed about the disk 9 and attached to the radius-bar b^4 , the connecting-rod d having attached to it a cord, 13, which is extended about the disk or pulley 9, and attached to the radius-bar a^2 or lever a near the fulcrum a' .

We claim—

1. The main lever a and the radius-bar to support the pivot for the said main lever, link b , the second lever, and the radius-bar to hold the pivot or fulcrum for the second lever, combined with the two connecting-rods joined with

the main and second levers, and with means, substantially as described, to move the said connecting-rods, as set forth.

2. The main lever a and the radius-bar to support the pivot for the said main lever, link b , the second lever, and the radius-bar to hold the pivot or fulcrum for the said second lever, and the third lever or link between it and the radius-bar carrying the pivot for the second lever, combined with the three connecting-rods joined to the main lever and to the second and third levers, and with means, substantially as described, to operate the said connecting-rods, as set forth.

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

GEO. CROMPTON.
HORACE WYMAN.

Witnesses:

HENRY E. HILL,
JOHN B. SYME.