G. CROMPTON & H. WYMAN.

Shuttle Box Motion for Looms.

No. 229,969. Patented July 13, 1880.

Fig:1.

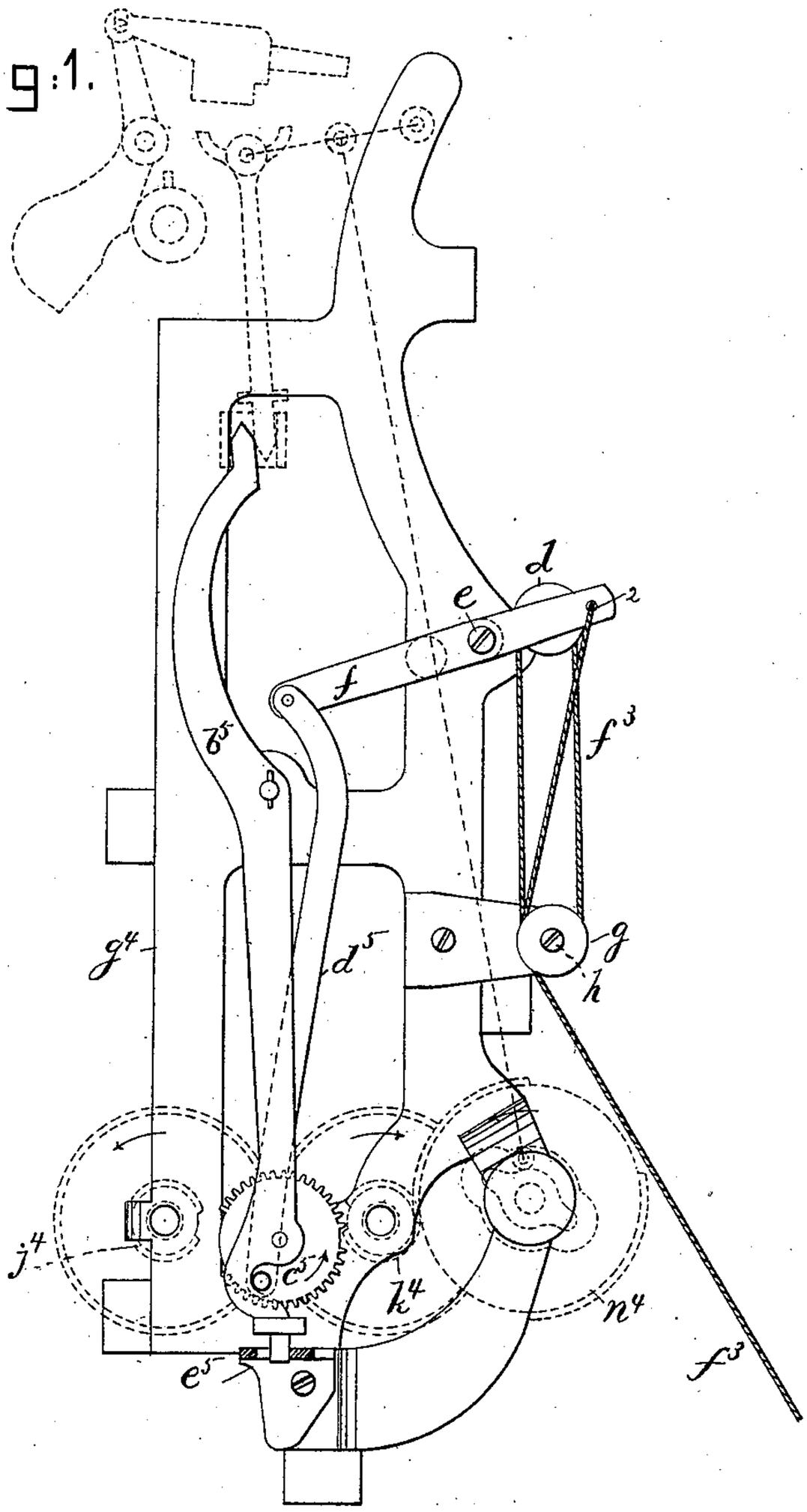


Fig:2.

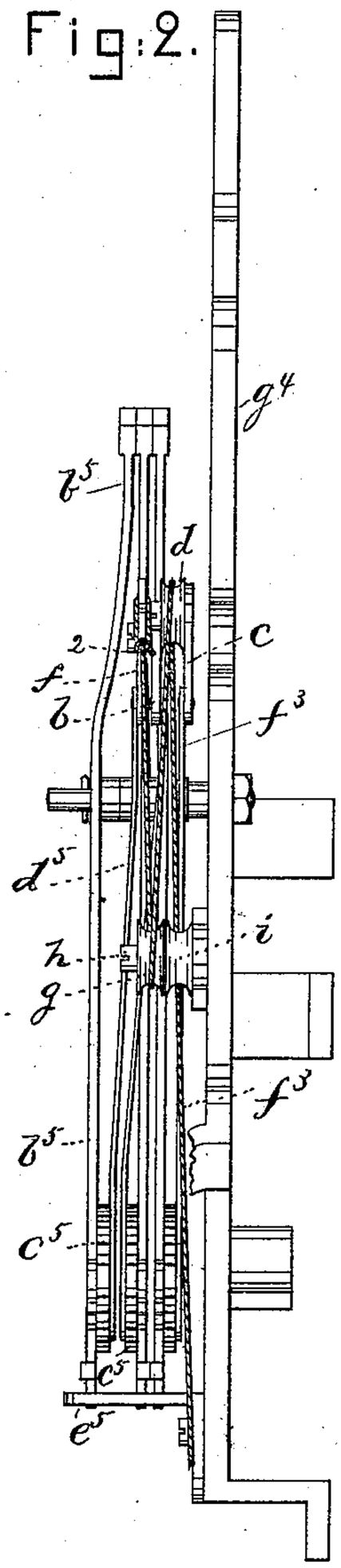
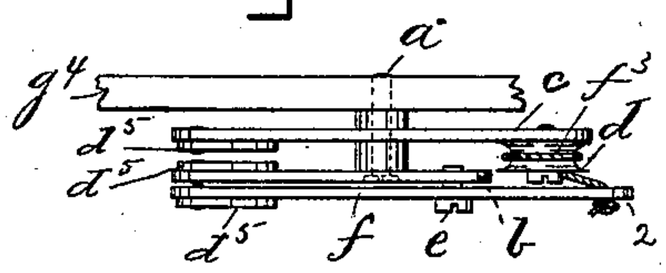


Fig:3.



Witnesses.

L. F. Connor.

Frank Cleary Jr.

Inventor

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by Crosby & Gregory Attys.

UNITED STATES PATENT OFFICE.

GEORGE CROMPTON AND HORACE WYMAN, OF WORCESTER, MASS.

SHUTTLE-BOX MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 229,969, dated July 13, 1880.

Application filed December 8, 1879.

To all whom it may concern:

Be it known that we, GEO. CROMPTON and HORACE WYMAN, of Worcester, county of Middlesex, State of Massachusetts, have invented an Improvement in Shuttle-Box Motions for Looms, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to fancy-looms for weaving, and has special reference to means for operating the shuttle-boxes, and, as herein shown, the apparatus is adapted to operate a series of six boxes.

In this embodiment of our invention we have employed a series of toothed cranks adapted to be actuated by rotatable gear, such as shown and described in United States Patent No. 209,714, dated November 5, 1878. To the said toothed cranks are joined the usual connecting-rods which actuate the main and auxiliary and secondary shuttle-box levers.

This invention is also an improvement upon the invention described in another application filed by us in the United States Patent Office November 21, 1879, to which reference may be had, as it shows fully the mechanism for operating the shifting-levers in accordance with the demands of the pattern-surface.

Figure 1 represents, in side elevation, a sufficient portion of a loom to illustrate our present improvement; Fig. 2, a rear elevation thereof, and Fig. 3 a detail showing the shuttle-box levers in top view.

The frame-work g^4, shifting-levers b^5, toothed cranks c^5, toothed gears j^4 k^4, gear-wheel n^4, connecting-rods d^5, selectors, (shown at top of Fig. 1 in dotted lines,) and their actuating devices are the same as in our application before referred to, and we wish it to be understood that the toothed cranks and their actuating mechanism, while being the same as in our application, are also substantially the same as in the patent referred to.

It will also be understood that the cord, chain, or flexible connection f^3 is the same as in our said application, and that it is to be extended about sheaves on the lay, as therein specified, and connected with the shuttle-box rod. These sheaves, shuttle-box rod, and boxes, being common, are not herein shown.

Premising that the shifting-levers b^5 are moved at the proper times to throw the toothed cranks into engagement with one or the other of the rotatable toothed gears j^4 or k^4, we will now describe our present improvements.

Upon the center a we have pivoted the auxiliary shuttle-box lever b and the secondary lever c, having the sheave d, and upon the auxiliary lever b we have placed the fulcrum-pin e for the main shuttle-box lever f. Each of these levers is attached, as described, to one of the connecting-rods d^5, actuated by one of the toothed cranks c^5. One end of the shuttle-box cord, chain, or connection f^3 is attached to the end of lever f at 2, and, after passing about the sheave g on the stud h, is passed up over the sheave d, carried by the secondary lever c, and thence down under the sheave i and other suitable sheaves on fixed fulcra to the shuttle-box rod, substantially as in our application referred to.

The main and auxiliary levers b f, being well known in looms, need not be further described than to say that by their movements through the toothed cranks and connecting-rods d^5, the cord or chain f^3, extended to and connected with the shuttle-box rod, will operate the said levers in opposition, together or separately, so as to command any one of four shuttle-boxes; and to command any one of six shuttle-boxes, to which the invention herein described is expressly designed, we have combined with the common main and auxiliary levers the secondary lever c, with its sheave d, the latter, by its operation upon the shuttle-box chain between the main lever and the sheaves g i, moving the chain sufficiently to enable it to shift the tier of shuttle-boxes for two cells. The boxes descend by gravity.

I claim—

1. In a loom provided with a tier of drop shuttle-boxes, the main and auxiliary levers b f, the secondary lever c, its sheave d, the sheave g, and other sheaves to receive and guide the shuttle-box connection f^3, combined with shuttle-box connection f^3, a series of connecting-rods, one for each of the said levers, and means for operating the connectors, substantially as described.

2. The main lever mounted upon the auxiliary lever, the auxiliary lever b, and the secondary lever provided with a sheave, d, both

levers being mounted upon the same fulcra, and a tier of shuttle-boxes, combined with sheave *g* and the box-connection f^3, adapted to be extended about the said sheaves and be attached to a tier of shuttle-boxes, guiding-sheaves for the box-connection, and a series of connecting-rods and shifting-levers, one for each shuttle-box lever, and means to operate the connecting-rods, as and for the purpose 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:
J. B. SYME,
J. A. WARE.