

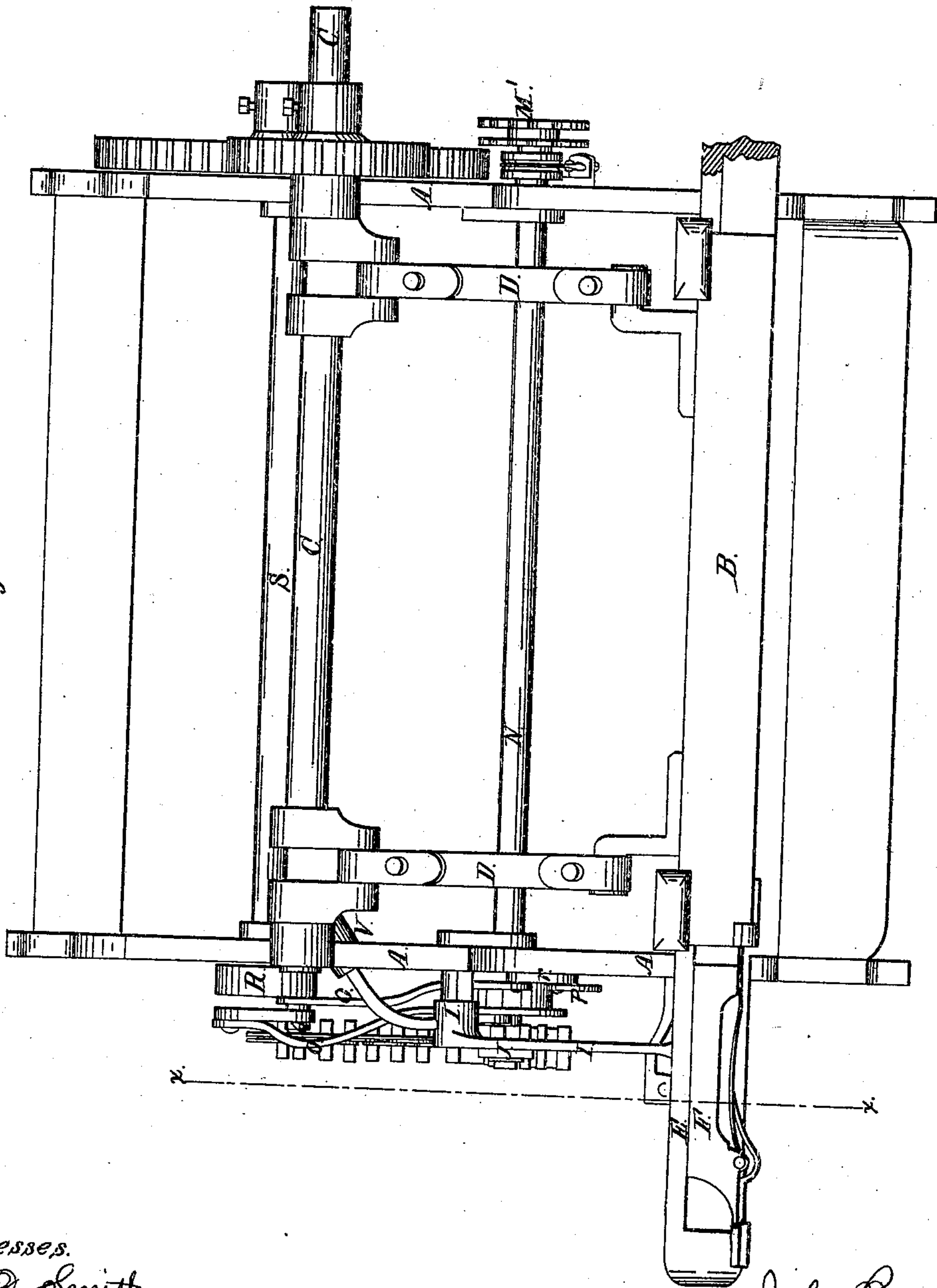
J. Braun.
Shuttle Box.

Sheet 1-2 Sheets.

N^o 53,265.

Patented Mar 20, 1866.

Fig. 1.



Witnesses.

E. D. Smith

Alex. A. C. Hancock

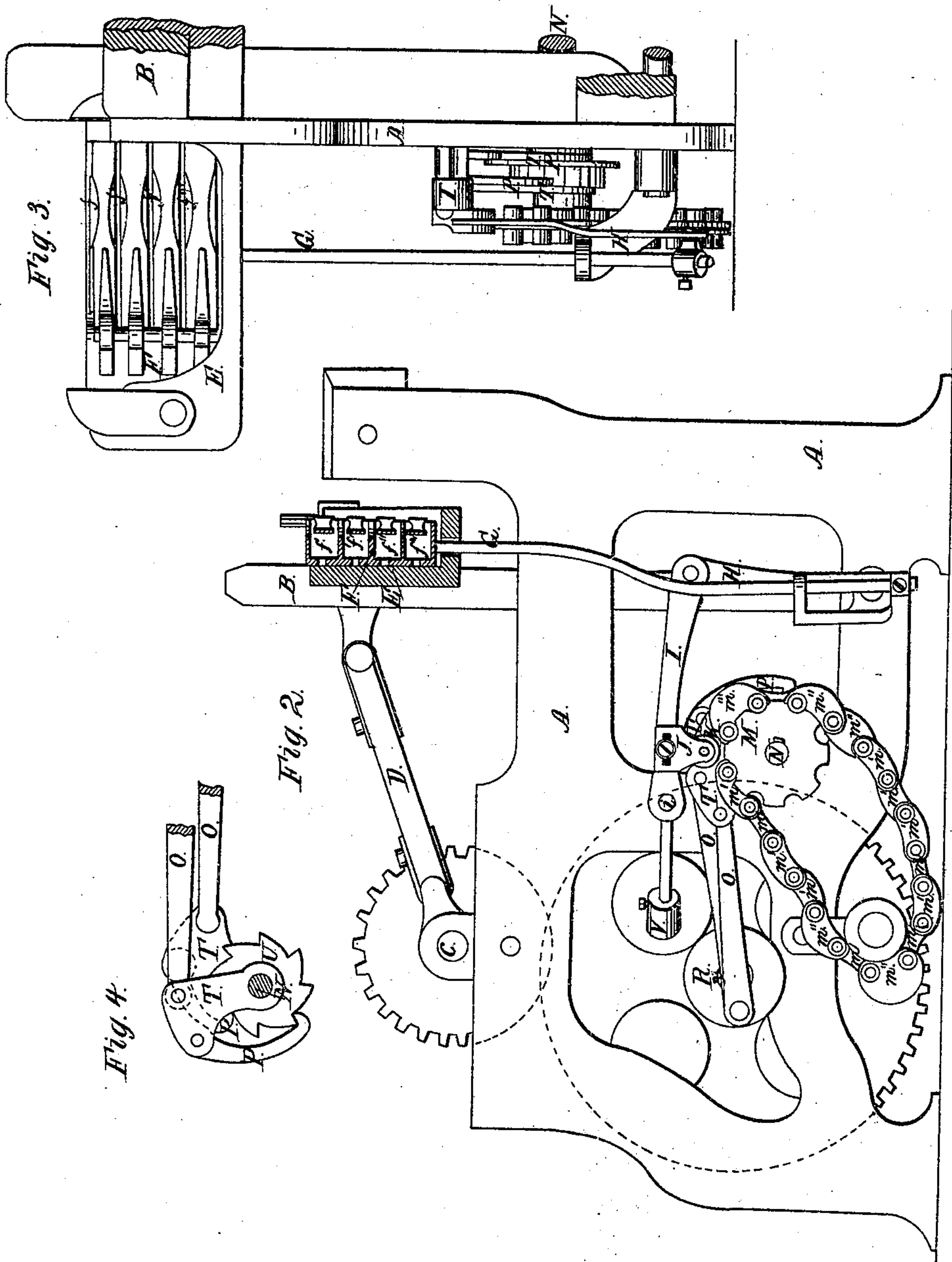
John Braun
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Attorney

J. Braun. Shuttle Box.

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Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN BRAUN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN LOOMS.

Specification forming part of Letters Patent No. 53,265, dated March 20, 1866.

To all whom it may concern:

Be it known that I, JOHN BRAUN, of the city and county of Philadelphia, and State of Pennsylvania, have made new and useful Improvements in Looms; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, sufficient to enable one skilled in the branch of manufacture to which it appertains to construct and use the same, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is a top view or plan. Fig. 2 is an end elevation, the shuttle-box holder being in section on the line *xx*, Fig. 1. Fig. 3 is a front elevation of a portion of the loom. Fig. 4 is a detached view of the two hook-connectors which operate the ratchet-wheel on the pattern-chain shaft.

Similar letters in the different figures indicate corresponding parts.

A is the frame of the loom, and B the lay, which receives its backward and forward motion from the top shaft, C, by means of the crank and connecting-rod D. The lathe has at each end a recess or holder, E, which contains a shuttle-box, F, which has compartments *f f' f'' f'''*, adapted to receive four shuttles furnished respectively with threads of varying colors. Each shuttle-box F moves vertically in its recess at the end of the lay, being actuated from below by the lifting-rod G, whose lower end is supported by the rod H from the counterbalanced lever I, which is pivoted to the loom-frame at *i* and rests, by means of the bracket J and roller K, upon the pattern-chain L.

The pattern-chain L is formed of links *m m' m'' m'''*, which pass over the chain-wheel M on the shaft N, which is driven by means of two hooked connectors, O O, attached to a wrist, Q, on a pulley, R, of the main shaft S. The connectors O O are respectively attached to the pivoted blocks T T, which carry hooks P P, which actuate the ratchet-wheel U on the pattern-wheel shaft N. The motion of the ratchet-wheel is intermittent, and when both hooks P P are connected therewith two motions of the ratchet-wheel occur to one motion of the main shaft. This occurs when the loom is running pick-and-pick—that is, the picker at each end

of the lathe running at the same time. When the loom is running single-pick one of the hooks P is disconnected, and then the chain-shaft makes one-sixteenth of a revolution to one revolution of the top shaft, C. When running pick-and-pick the chain-shaft moves one-eighth of a revolution and the chain one link to one revolution of the top shaft.

To describe the chain more particularly, it consists of a series of links, *m m'*, &c., which are pivoted together and are made of different widths, so as to project variously beyond the medial line, or that which passes through the series of bolts which connect the links, so that as they pass over the wheel M they raise to a greater or less extent the lever I, which causes the vertical motion of the shuttle-box.

The chains are one on each side of the machine, though but one is represented in the drawings, the chain-wheel M' on the unfurnished side being shown ready for the attachment of the pattern-chain, both chains being driven by one shaft, N, and one set of hooked connectors, O P.

The chains on the respective sides are so arranged relatively to each other that when a certain shuttle is thrown an empty box shall be on the other side to receive it; and each chain contains one-half of the pattern, they acting alternately.

The shuttles being four in a vertical series, the width of the links is made to correspond in number, and the links *m m' m'' m'''* may be said to correspond to the shuttles *f f' f'' f'''*, respectively, for as the wider link raises the shuttle-box to the greatest height the lowest shuttle of the series will be parallel with the shuttle-race and exposed to the picker.

To preserve the exact relation between the width of the links and the vertical movement of the shuttle-box, the roller K in the bracket J is made adjustable toward and from the pivot *i*, so that a given width of link may have a greater or lesser lifting effect upon the counterbalanced lever I, and the floor of the compartment occupied by the required shuttle may exactly correspond with the race-board of the lay.

The weight V on the rear end of the lever I acts as a counter-balance to the weight of the shuttle-box, and when a box of lesser weight is used—say one containing but three shut-

ties—the weight V is slipped nearer to the pivotal point *i* of the lever I.

The arrangement of the links on the chain may be made according to the required pattern within a certain compass of changes, each link representing a certain shuttle and the links following in a consecutive order, according to plan.

By dislocating the chain and reversing it so as to turn it inside out a different pattern may be obtained, and the pattern is capable of being taken to pieces and rearranged, or duplicate chains having patterns ready arranged may be kept in reserve.

Having described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

The combination of the ratchet-wheel U, the pattern-chain wheel M, and the two hooked connections from the main shaft, as and for the purpose described.

To the above specification of my improvement in looms I have signed my hand this 26th day of July, 1865.

JOHN BRAUN.

Witnesses:

EDWARD H. KNIGHT,
OCTAVIUS KNIGHT.