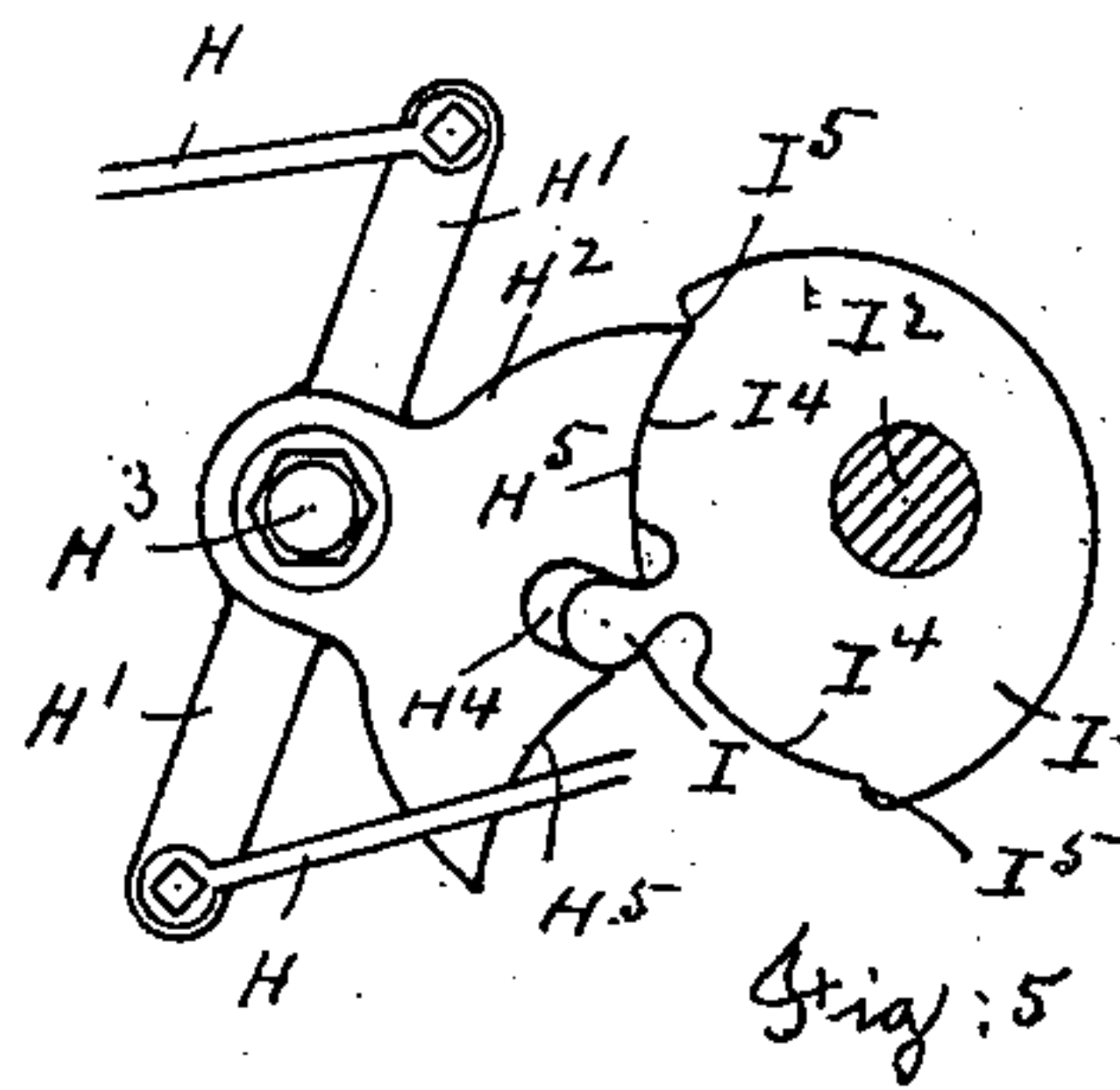
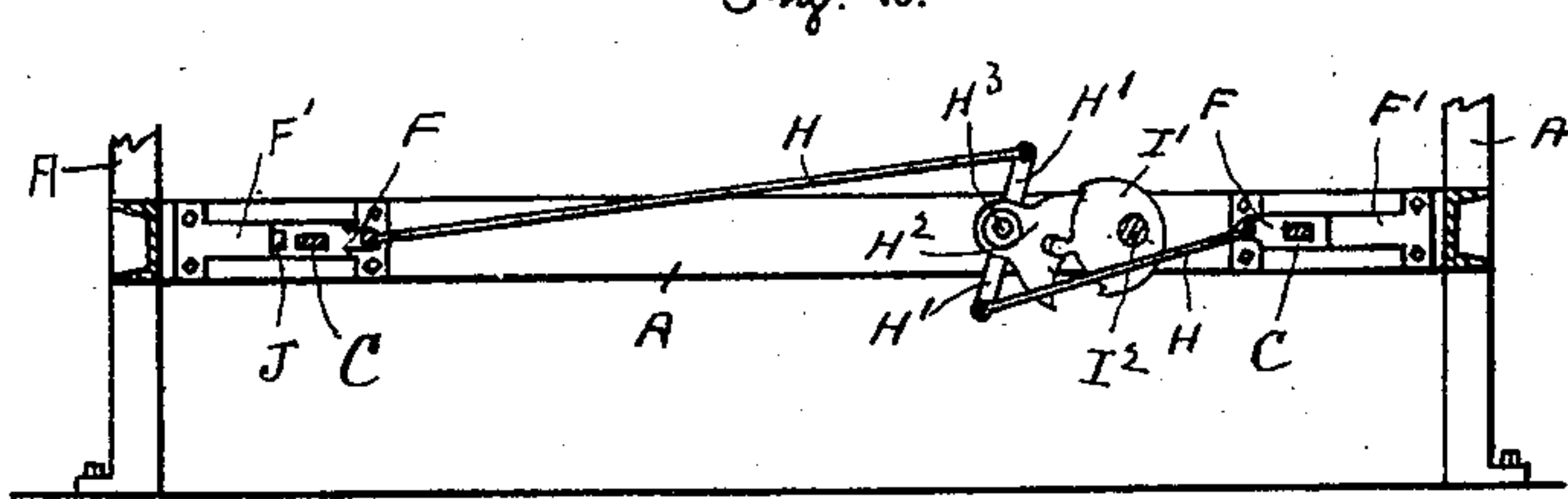
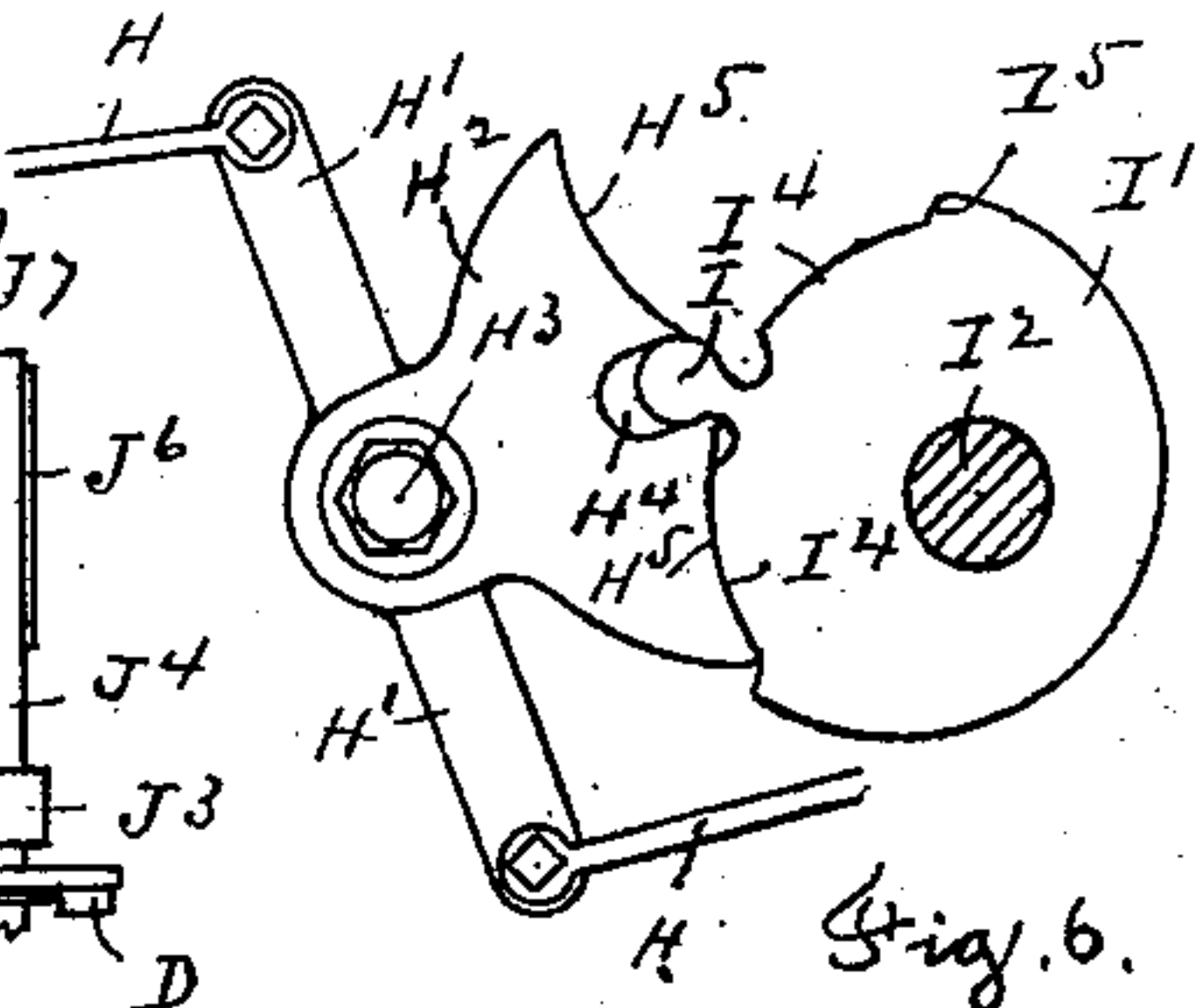
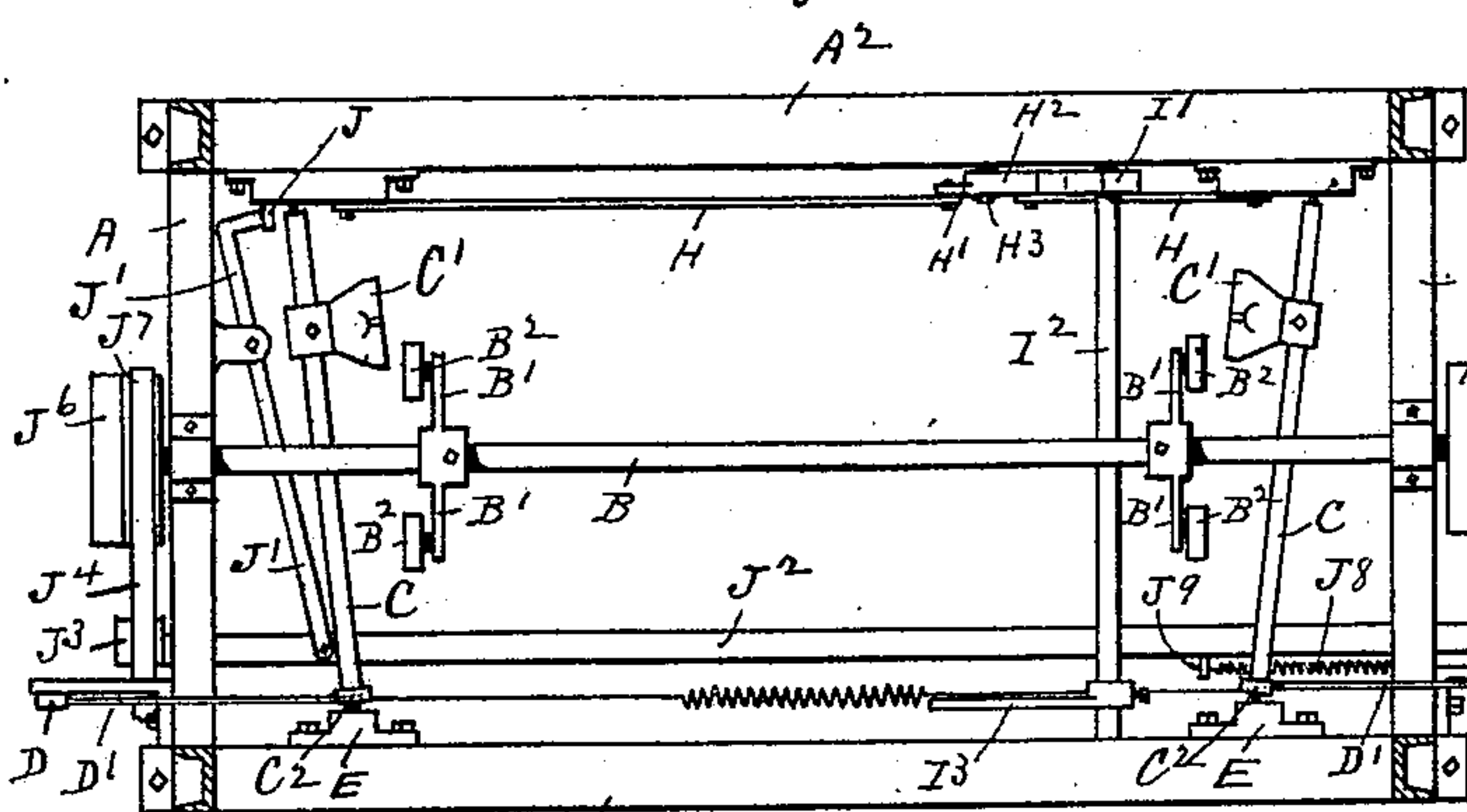
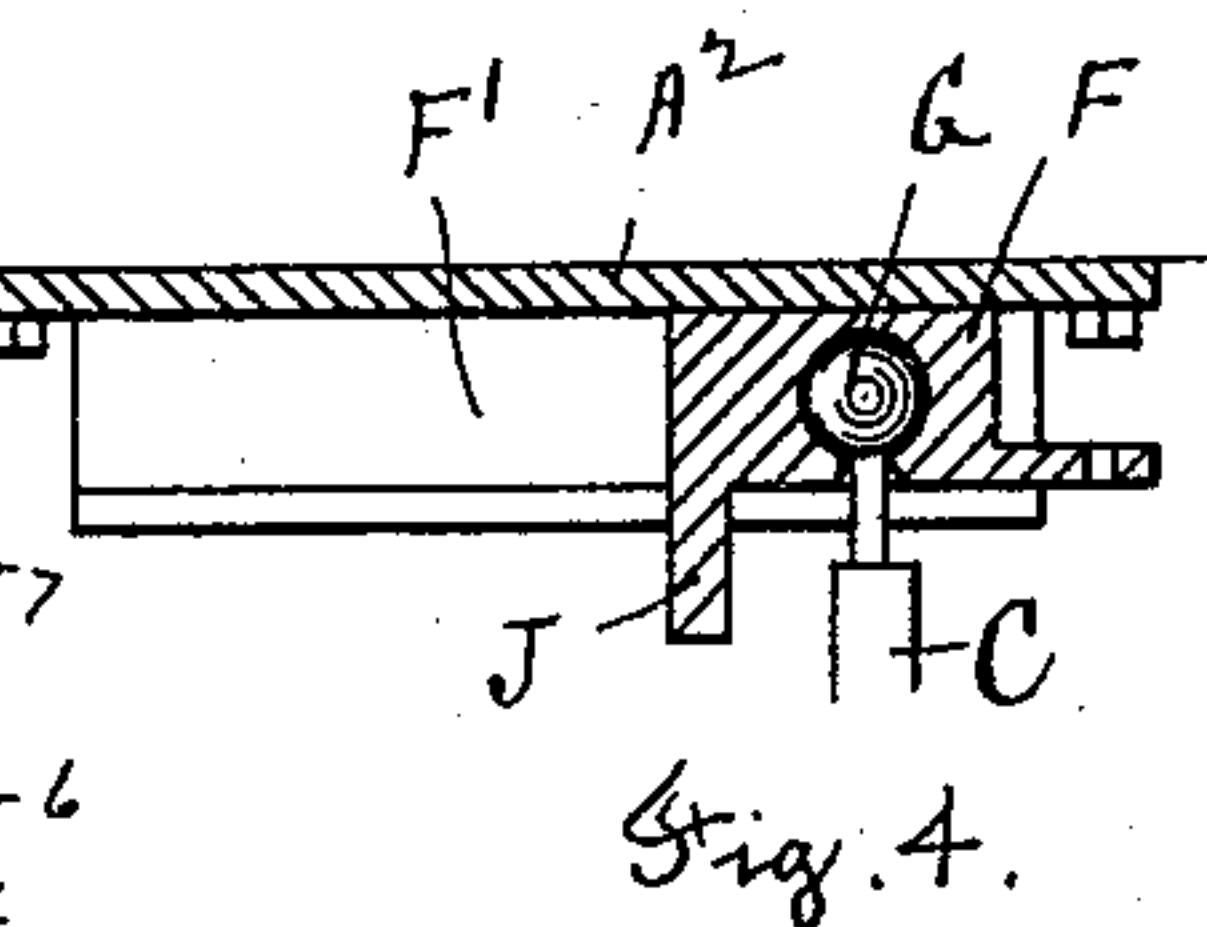
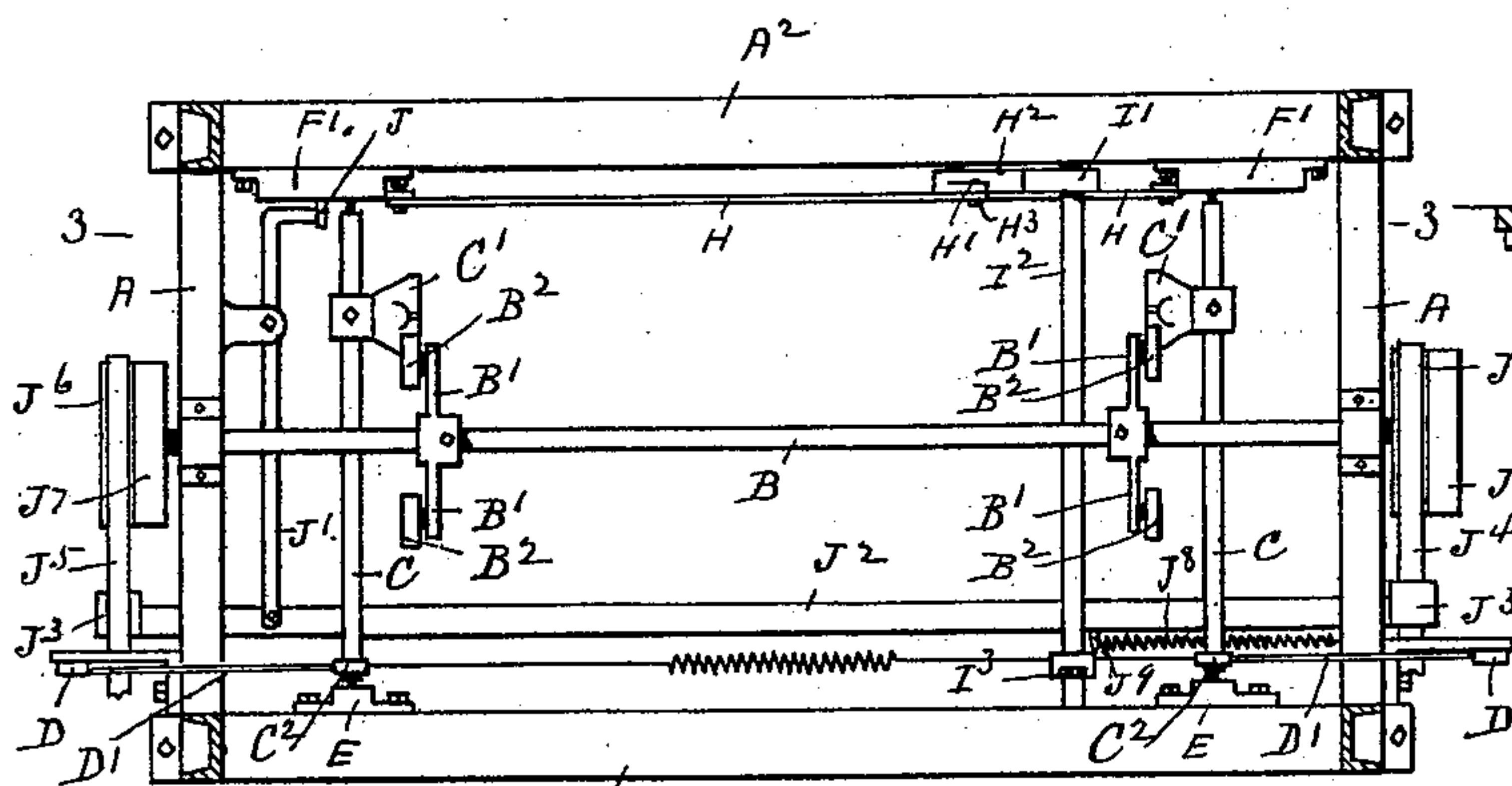


(No Model.)

J. F. WICKS & B. S. ROY.
SHUTTLE ACTUATING MECHANISM FOR LOOMS.

No. 563,345.

Patented July 7, 1896.



Witnesses
A. Whiting
Emma Kester.

Inventors
Joseph F. Wicks
Basil S. Roy.

By their Attorney
Rufus B. Fowler.

UNITED STATES PATENT OFFICE.

JOSEPH F. WICKS AND BOZIL S. ROY, OF WORCESTER, MASSACHUSETTS.

SHUTTLE-ACTUATING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 563,345, dated July 7, 1896.

Application filed July 7, 1894. Serial No. 516,839. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH F. WICKS and BOZIL S. ROY, citizens of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in a Shuttle-Actuating Mechanism for Looms, of which the following is a specification containing a full, clear, and exact description of our invention, and accompanied by drawings, forming a part of the specification, in which—

Figure 1 is a horizontal sectional view showing the lower portion of a loom containing that portion of the shuttle-actuating mechanism which embodies our invention, the several operating parts being shown in their normal positions when the loom is in operation. Fig. 2 represents the same view as shown in Fig. 1, but with the rocking picker-shafts shifted so as to carry the shoes attached to the picker-shafts out of the path of the sweeps carried upon the rotating shaft of the loom. Fig. 3 is a vertical sectional view on line 3 3, Fig. 1, showing a portion of the mechanism by which the picker-shafts are shifted. Fig. 4 is a central sectional view of one of the sliding blocks in which one of the picker-shafts is journaled. Fig. 5 represents a portion of the picker-shaft-shifting mechanism, on a larger scale than that represented in Fig. 3, with the parts shown in position when the picker-shafts are held in engagement with the driving power; and Fig. 6 represents the same parts as shown in Fig. 5, but in the position assumed when the picker-shafts have been carried out of engagement with the driving power.

Similar letters refer to similar parts in the different figures.

The object of our present invention is to provide means for disconnecting the shuttle-actuating mechanism from the driving power so the remaining parts of the loom can be run without driving the shuttle through the warp shed, and also to provide means by which the disengagement of the shuttle-actuating mechanism shall simultaneously operate a shipping mechanism connected either with the driving-pulleys of the loom or with other operating parts, as hereinafter set forth.

Referring to the accompanying drawings, A A denote the side frames of a loom, and

A' A² front and rear girths connecting the side frames.

B is a rotating shaft carrying the radial arms or "sweeps" B', the free ends of which are provided with rolls B², journaled upon fixed studs held in the arms B'.

C C represent the rocking picker-shafts journaled in bearings at their ends and having arms or "shoes" C', arranged in position to be struck by the rolls B² as the sweeps are rotated by the shaft B. The rocking picker-shafts C are provided with arms C², connected with the picker-staves D by straps D' in the usual and well-known manner. As the shaft B rotates, the shoes C' will be struck by the rolls B² twice during each rotation of the shaft B, depressing the shoes D, thereby imparting a short, quick rocking motion to the picker-shafts C, which through the arms C² and straps D' will communicate a quick angular movement to the picker-staves D, causing the shuttle to be thrown across the raceway.

The purpose of our present invention is to provide means for disconnecting the picker-shafts C C by carrying the shoes C' out of the path of the rolls B², so the rotation of the shaft B will cease to actuate the picker-staves D, and also to provide means whereby the disengagement of the picker-shafts C will be made to simultaneously operate a shipping mechanism which can be adapted to reverse the motion of the loom, as hereinafter described, or to reverse the motion of some of its operating parts, as, for example, the pattern mechanism by causing the pattern-chain to run backward instead of forward.

It is not new to disengage the shuttle-actuating mechanism from the driving power by carrying the shoes C' out of the path of the rolls B², but the particular mechanism by which we accomplish this result, so far as we are aware, is new, and we also consider it to be new to provide means whereby the disengagement of the shuttle-actuating mechanism is made to simultaneously operate a shipping mechanism.

The forward ends of the picker-shafts C C are held by blocks E E, attached to the girth A', and the rear ends are supported by blocks F F, sliding horizontally in ways F' upon the rear girth A².

Held within spherical sockets in the blocks

E and F are balls G, one of which is shown in Fig. 4, those in the remaining blocks being duplicates, and the ends of the picker-shafts C C are journaled in the balls G, so as to slide sufficiently therein in order to permit a slight angular movement of the picker-shafts C by means of the rotation of the balls G within their sockets. The sliding blocks F F are attached by links H H to the radial arms H', projecting from the opposite sides of a plate H², pivoted upon a stud H³, held by the rear girth A². The plate H² is provided with a notch H⁴, which is engaged by a spur I, projecting radially from a plate I', attached to a shaft I², journaled in bearings on the girths A' and A² and provided with a hand-lever I³, by which the shaft I² is rocked. The plate I' is provided with concentrically-curved surfaces I⁴ I⁴ and projecting shoulders I⁵ I⁵, and the plate H² is provided with concave surfaces H⁵ H⁵, adapted to fit the curved surfaces I⁴ I⁴. The rotation of the shaft I² imparts an angular motion to the radial arms H' H', rocking them back and forth between the positions shown in Figs 5. and 6, the angular movement of the arms H' being limited by the engagement of the plate H² with the shoulders I⁵ I⁵. When the arms H' H' are in the position shown in Figs. 3 and 5, the sliding blocks F F are drawn toward each other so as to hold the picker-shafts C C parallel and at right angles with the rotating shaft B, as shown in Fig. 1; but when the arms H' H' are in the position shown in Fig. 6 the sliding blocks F F are moved from each other, carrying the rear ends of the picker-shafts and bringing them into the position shown in Fig. 2, with the shoes D held out of the path of the rolls B².

One of the sliding blocks F F is provided with a projecting arm J, which, as the block is moved to disengage the shuttle-actuating mechanism, is brought against the end of a pivoted lever J', thereby imparting an angular movement to the lever, which can be made to actuate any desired shipping mechanism. In the accompanying drawings the end of the lever J' is pivoted to a sliding shipping-bar J², carrying belt-eyes J³, inclosing the driving-belts J⁴ and J⁵, which run in opposite directions and are alternately shifted from the loose pulleys J⁶ to the tight pulleys J⁷ on the shaft B by the reciprocating motion of the shipping-bar. The sliding motion of the boxes will actuate the lever J' to slide the shipping-bar J² in one direction, and its motion is reversed, when the lever J' is released, by means

of a spring J⁸, attached at one end to a fixed portion of the loom and at its opposite end to a pin J⁹, carried by the sliding shipping-bar J².

The arrangement of oppositely-running belts and shipping mechanism, as shown in the accompanying drawings, is represented for purpose of illustrating one method of practically applying the angular movement of the lever J' to actuate a shipping mechanism by which the motion of the loom is reversed; but it will be obvious that instead of reversing the motion of the loom by means of a shipping-bar and oppositely-running belts the same result can be secured by the application of any known shipping mechanism to actuate a friction or other clutching mechanism, or the shipping mechanism, instead of being directly connected with the driving power of the loom, can be employed to reverse the motion of a pattern-chain, the reversing of the motion of the pattern-chain being a well-known and commonly-practiced method employed for the purpose of reversing the action of the harness-frames in order to allow a portion of the woven fabric to be picked out.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination with the rocking shafts C, C, provided with movable bearings F, F, of a shipping mechanism connected with said movable bearings and consisting of a notched plate H² pivoted upon a fixed stud H³ and having radial arms H', H', links connecting said radial arms with said movable bearings, rocking shaft I², plate I' attached to said rocking shaft I² and having a spur I engaging said notched plate, said plate H² having concave edges H⁵, H⁵, and said plate I' having convex edges I⁴ and shoulders I⁵, by which the motion of said plate H² is limited, substantially as described.

2. In a loom, the combination with a rocking picker-shaft C held in a movable bearing capable of a sliding motion, whereby the position of said picker-shaft is varied, of a pivoted lever arranged in the path of said movable bearing and a shipping mechanism operatively connected with said pivoted lever by which the movement of said picker-shaft will actuate said shipping mechanism, substantially as described.

JOSEPH F. WICKS.
BOZIL S. ROY.

Witnesses:

RUFUS B. FOWLER,
EMMA KESTER.