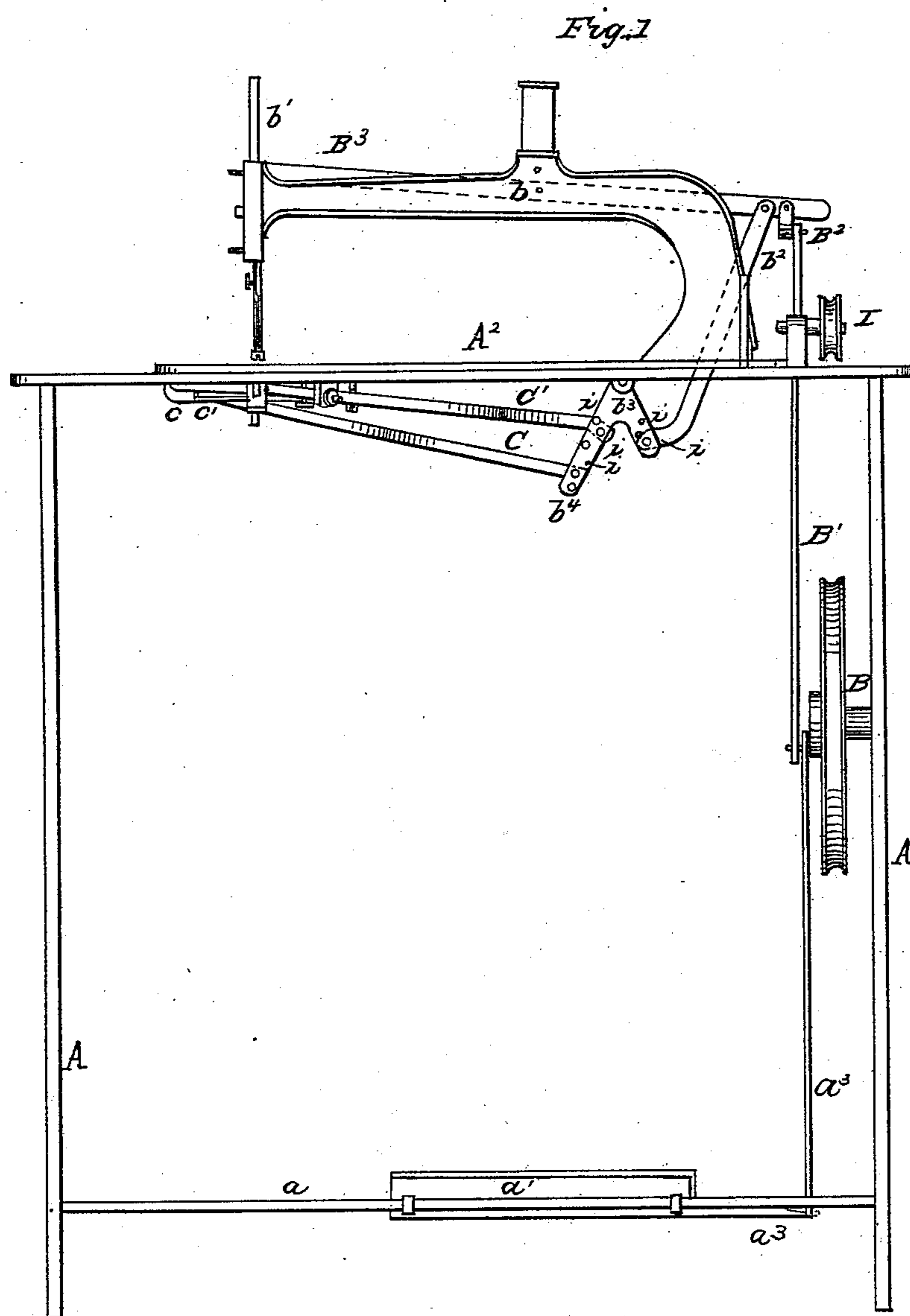


G. W. HOFFMAN.
Sewing Machine.

2 Sheets—Sheet 1.

No. 94,112.

Patented Aug. 24, 1869.



Witnesses
Horace Peckard
Chas F Brown

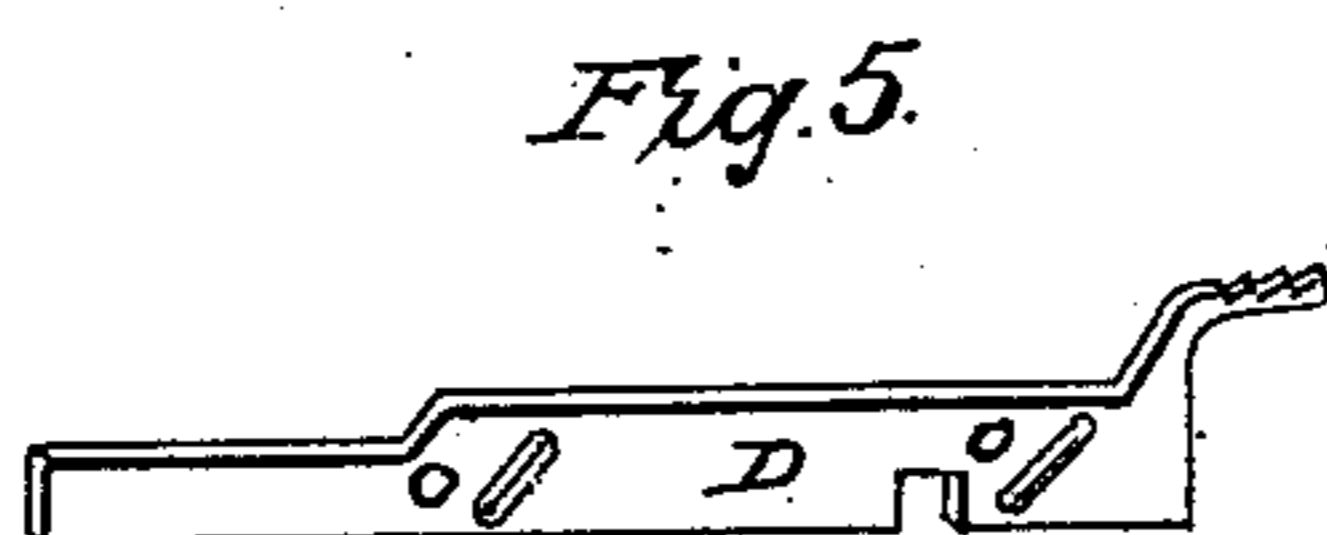
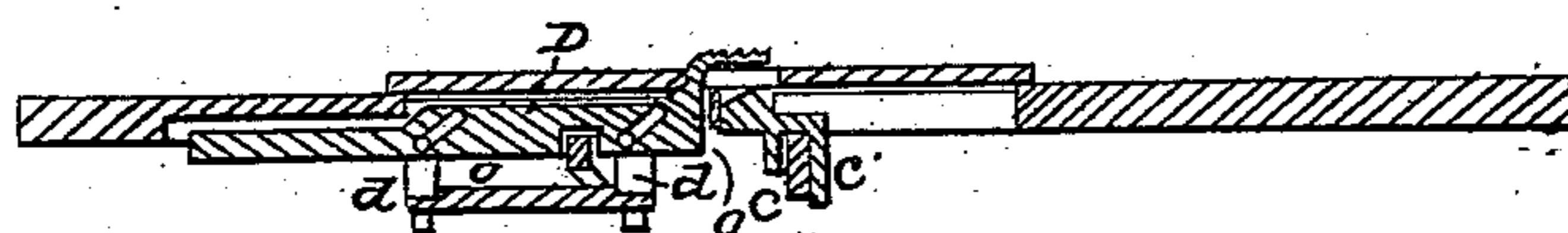
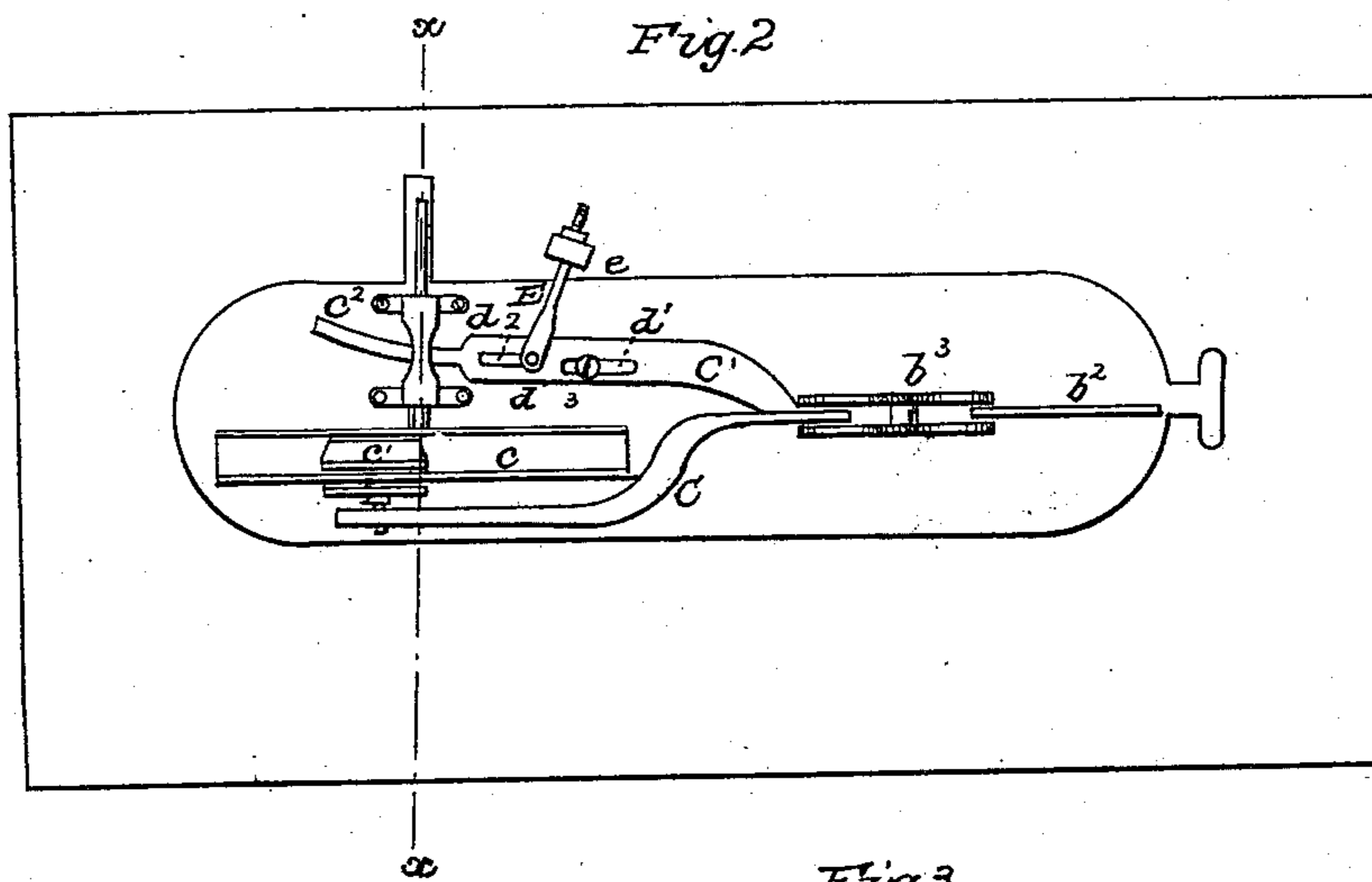
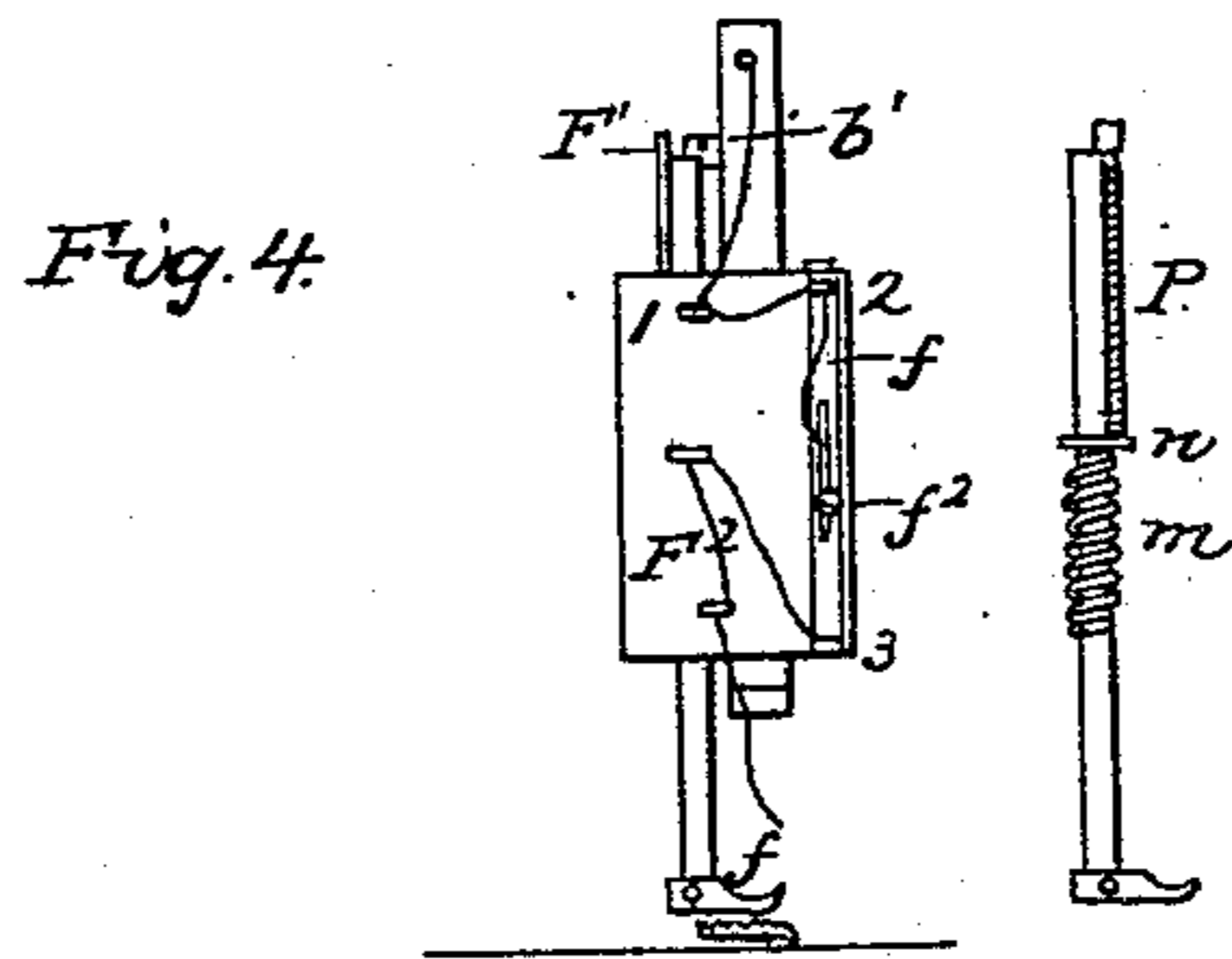
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G. W. Hoffman by
J. M. Beadle atty

G. W. HOFFMAN.
Sewing Machine.

2 Sheets—Sheet 2.

No. 94,112.

Patented Aug. 24, 1869.



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United States Patent Office.

GEORGE W. HOFFMAN, OF HICK'S MILLS, ILLINOIS.

Letters Patent No. 94,112, dated August 24, 1869.

IMPROVEMENT IN SEWING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GEORGE W. HOFFMAN, of Hick's Mills, in the county of De Kalb, and State of Illinois, have invented new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to an improved arrangement, whereby the operation of sewing is effected by a series of connecting-rods, eccentrically attached to the driving-wheel, which imparts motion to the needle-arm, and thence, through a bell-crank lever, to the shuttle and feed-devices the use of belting being mainly avoided, as will hereinafter more fully appear.

In the drawings—

Figure 1 is a side elevation of my invention;

Figure 2 is a plan view, inverted;

Figure 3 is a section through line $\alpha \alpha$, fig. 2; and

Figure 4 is a view of the head of the machine, showing the presser and tension-device.

Figure 5 represents the feed-dog removed.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and operation.

A A¹ represent the side-frames, upon which is secured the table A².

Attached to the frames A A¹ is the longitudinal rod α , upon which is pivoted the pedal α^1 , attached, by the projection α^2 , to the connecting-rod α^3 .

This latter is eccentrically attached to the driving-wheel B, which is suitably journaled in the frame A¹.

B¹ represents another connecting-rod, attached to the wheel B at the same point as the rod α^3 .

Both rods, α^3 and B¹, are provided with a number of orifices at the ends which are attached to the wheel, by means of which the length of stroke may be regulated.

The wheel B is also provided with orifices at different distances from its centre, for a similar purpose.

The rod B¹ extends upward through an elongated slot in the table A², and is pivoted to a lug, B², which depends from the rear end of the needle-arm B³, which is pivoted within the slotted gooseneck b , and is suitably attached to the needle-bar b^1 .

b^2 represents a connecting-bar, slightly curved at its lower end, which is pivoted at its upper end to the needle-arm B³, and passing downward through the bed-plate, is pivoted at its lower end to the bell-crank lever b^3 , which is slotted vertically, pivoted to the under side of the bed-plate, and provided with orifices i , &c., by means of which the shuttle and feed-movements are regulated.

To the long arm b^4 of the bell-crank lever b^3 is piv-

oted the bent rod C, through which motion is imparted to the shuttle-carrier c^1 .

This latter is of the form shown in fig. 3, and runs on the longitudinal strip c .

C represents another bent rod, one end of which is pivoted to the long arm of the lever b^3 , above the rod C, and the other end is slightly bent outward, as shown at c^2 , and passes through a slot in the transverse feed-bar D, and imparts a slight lateral motion thereto.

An upward motion is imparted to the same by means of the slots $o o$, which incline upward, and through which the feed-bar is attached to the standards d .

$d^1 d^2$ represent slots in the rod C', through the former of which the set-screw d^3 passes, which regulates the direction in which the arm runs, while through the latter passes a rod, attached to the arm E, which latter passes through the projection e , and is provided with a screw-thread and nut, by means of which the end of the rod c^1 may be made to run more or less parallel with the shuttle-carrier, thereby regulating the feed and length of stitch.

F represents the presser-foot, which is operated by the cam-lever F¹, and is provided, within the face-plate, with a spiral spring, m , which bears against the sliding head n .

P is a screw, which extends from the upper end of the bar to the sliding head n , and regulates the force of the spring, by raising or depressing the head, thereby adjusting the foot for light or heavy work.

The tension is effected by means of the slotted plate f , which slides vertically in the face-plate F², and is provided with a set-screw, f^2 , and two projections, 2 and 3, one at the top and the other at the bottom, which are provided with eyes, through which the thread runs, passing first through an eye in the upper end of the needle-bar, thence downward, through an eye projecting from the face-plate, and after it leaves the slotted plate f , through the projection H on the face-plate, after which it passes through the eye of the needle.

I represents the pulley which operates the spooling-device, which is connected with the driving-wheel by suitable belting passing through the table.

The operation of my invention is as follows:

The treadle being worked, causes the wheel B to revolve, thus imparting a vibratory vertical motion, through the rod B¹, to the needle-arm B³, which operates the needle-bar b^1 .

This motion is communicated, by means of the bar b^2 , to the bell-crank lever b^3 , which imparts a horizontal longitudinal motion to the connecting-rods C and C', the former of which transmits the same to the shuttle-carrier c^1 , while the latter, by means of its bent end, imparts a lateral movement to the feed-bar

D, to which an upward movement is added by means of the inclined slots above described.

When the spooling is being performed, the rod B¹ should be disconnected from the wheel B, in order to suspend the motion of the other parts. This can be done by simply removing a pin, and is an important advantage.

The whole arrangement is adjustable to any required extent, and is both simple and easily operated.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The above-described arrangement for operating the shuttle and feed-devices, consisting substantially

of the connecting-bar b², adjustable bell-crank b³, and rods C and C', in combination with the needle-arm B², arranged and operated as and for the purpose set forth.

2. The feeding-dog D and reciprocating rod C', for operating it, in combination with the adjustable arm E, for varying its movement laterally, and, consequently, the feeding-motion, substantially as set forth.

This specification signed and witnessed, this 16th day of April, 1869.

GEORGE W. HOFFMAN.

Witnesses:

G. W. FORD,

F. T. BERTRAND.