2 Sheets—Sheet 1.

T. A. MACAULAY.

SEWING-MACHINE.

No. 185,399. Patented Dec. 19, 1876.

Plate I.

Fig 1.

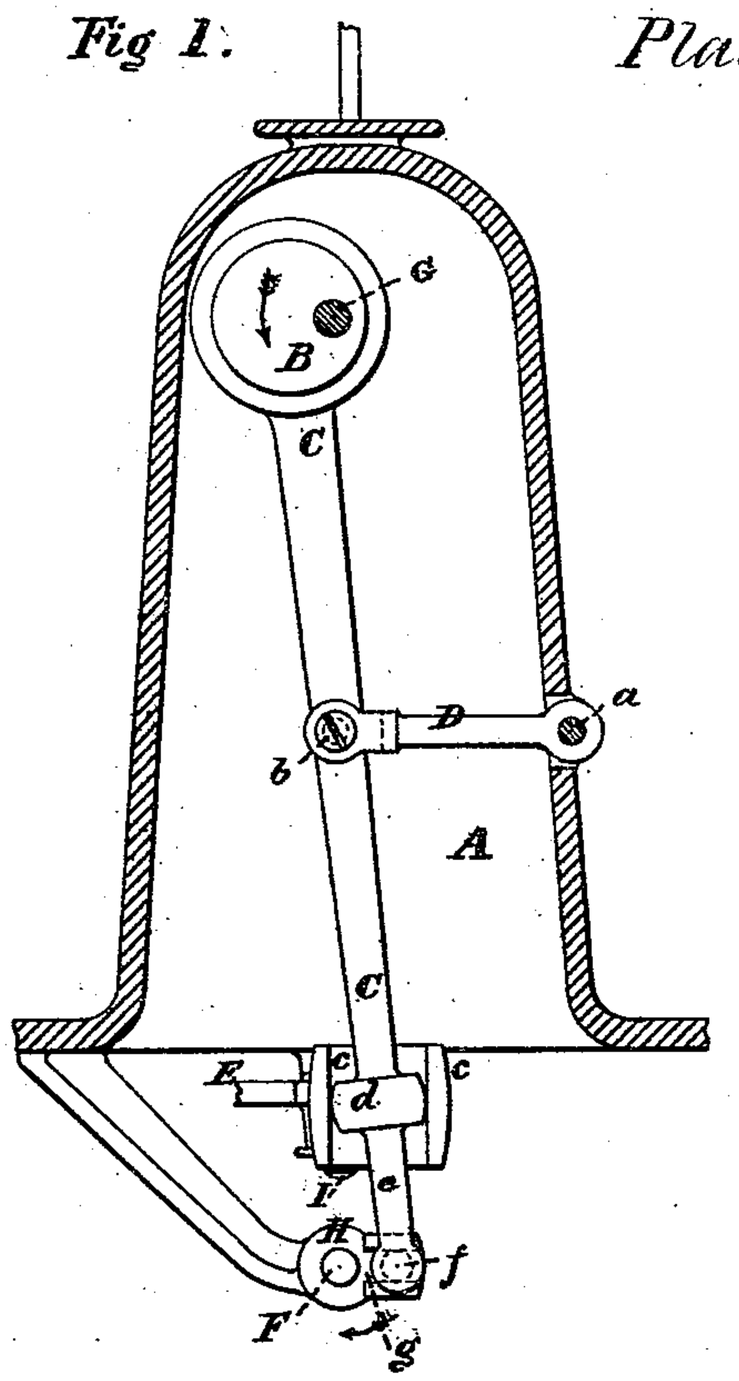


Fig 2.

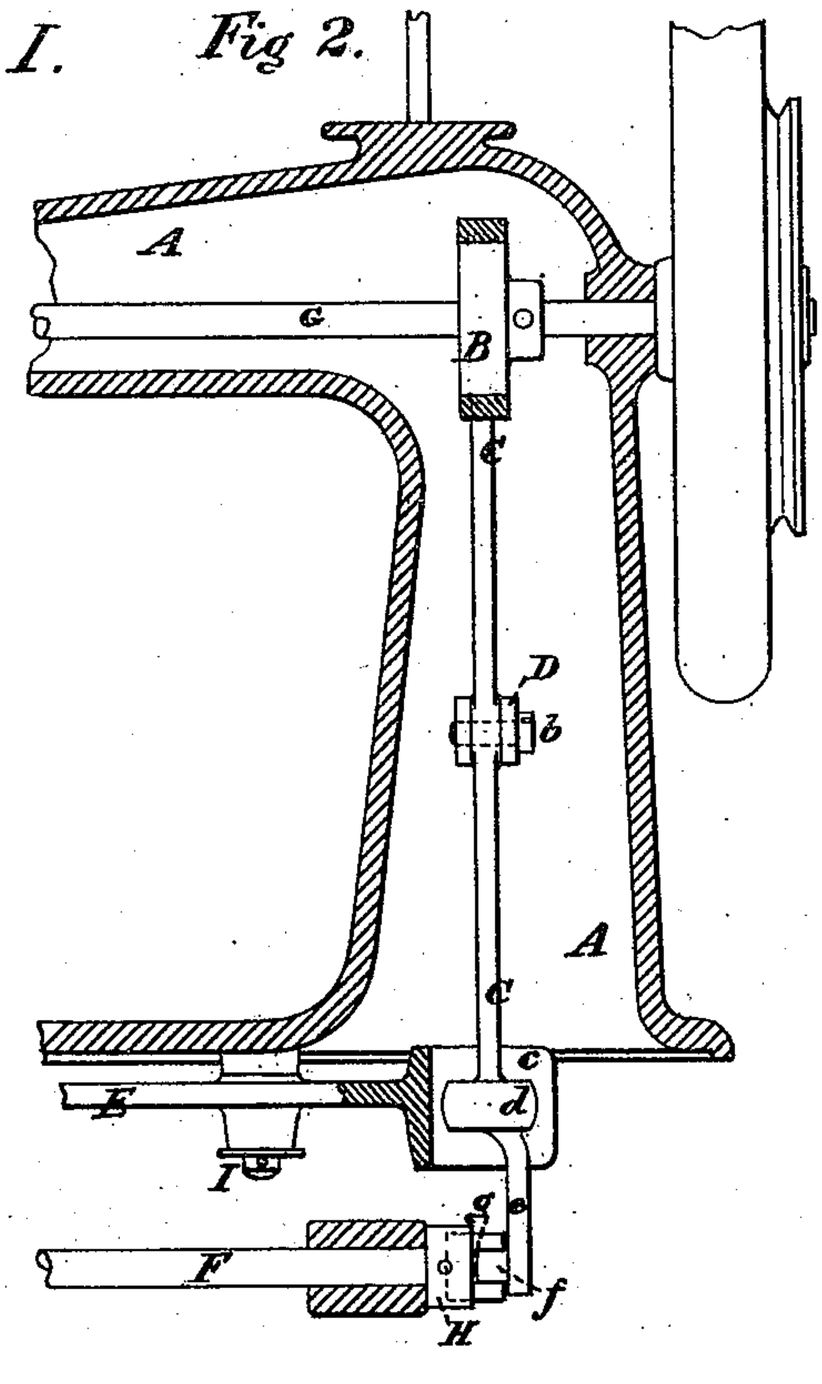


Fig 4.

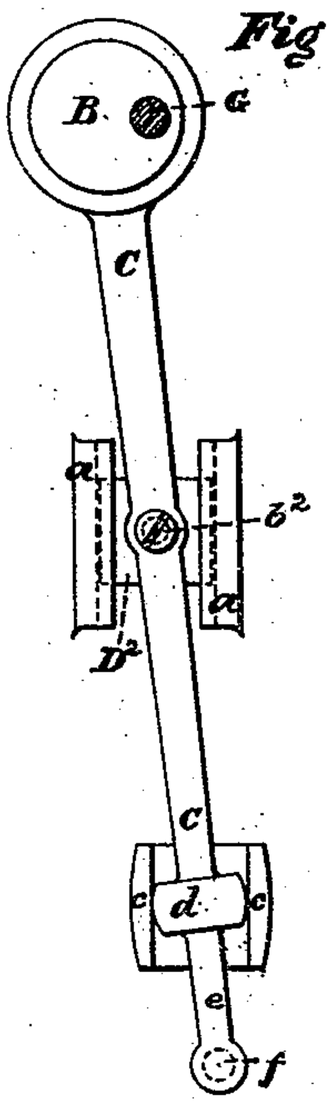


Fig 3.

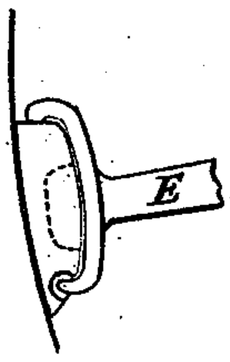
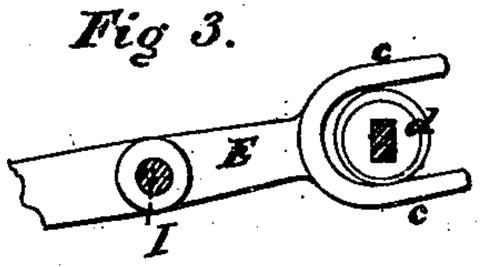


Fig 3.



Witnesses.

Walter W. Scott

Hugh Battany

Inventor.

Thos A. Macaulay

2 Sheets—Sheet 2

T. A. MACAULAY.

SEWING MACHINE.

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Fig. 8.

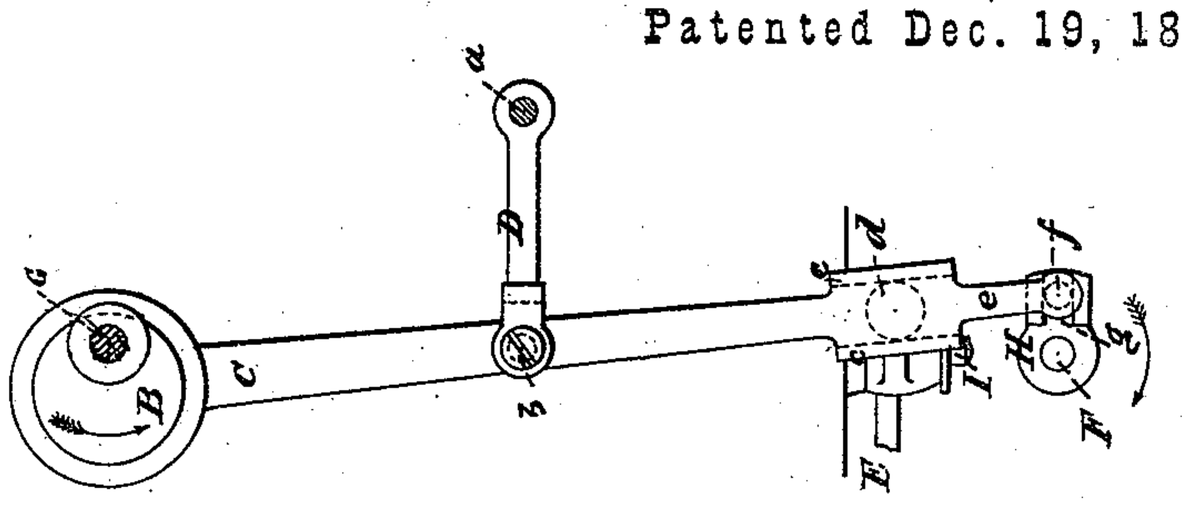


Fig. 7.

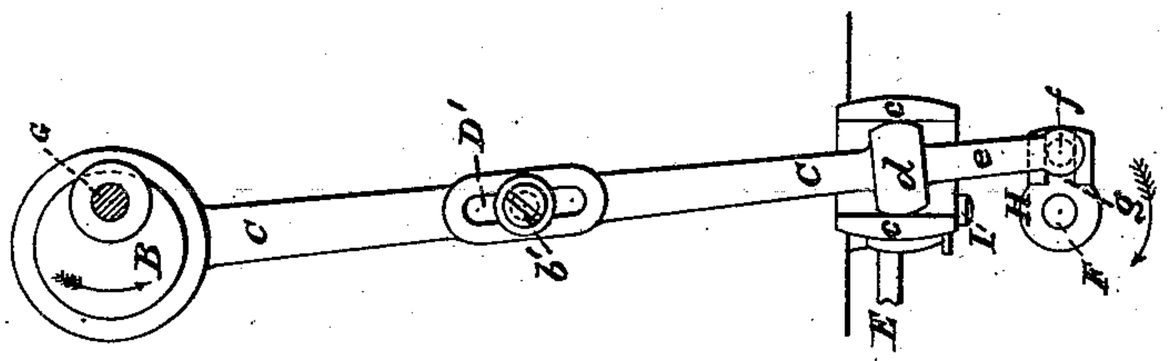


Fig. 6.

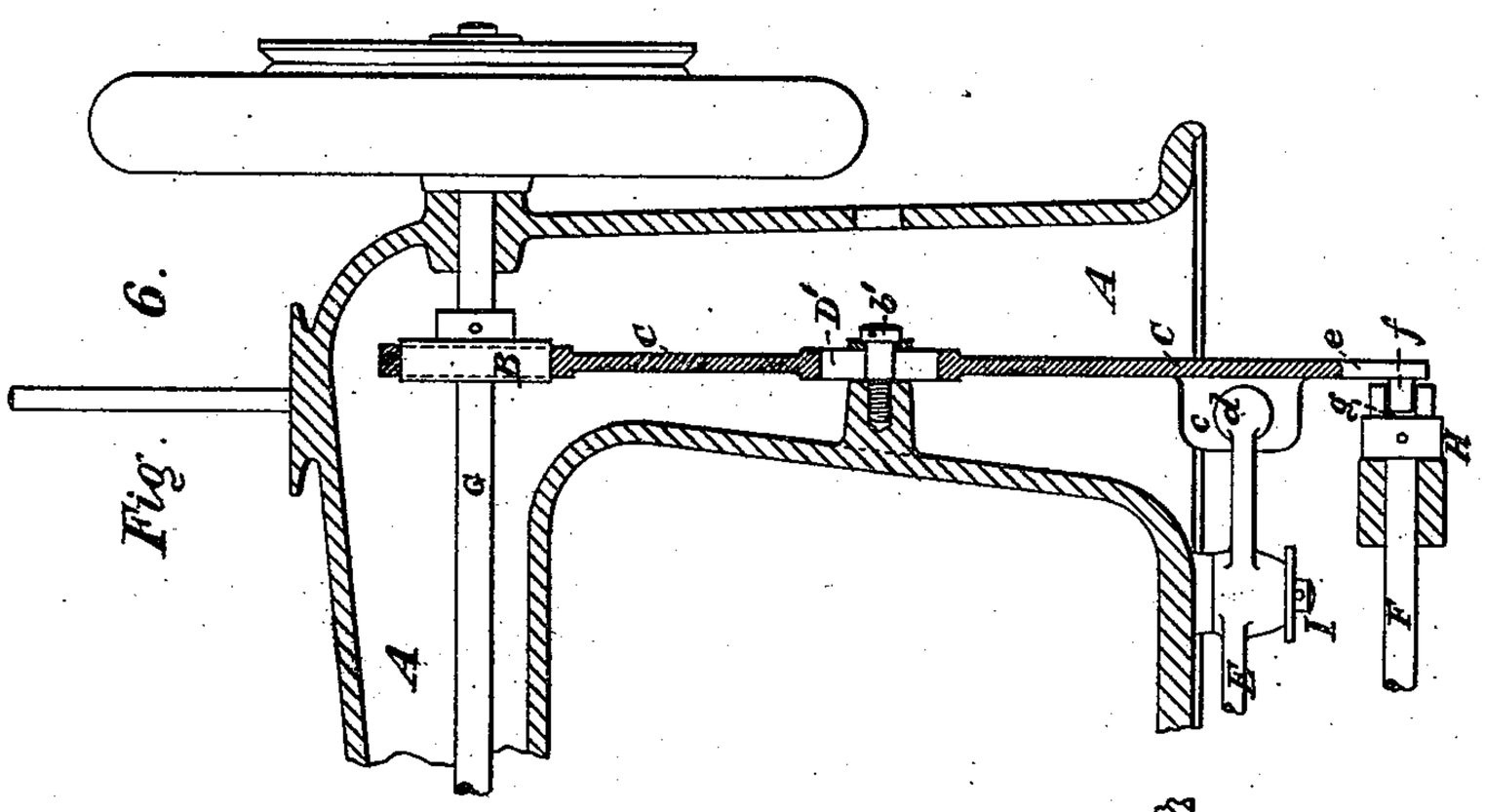
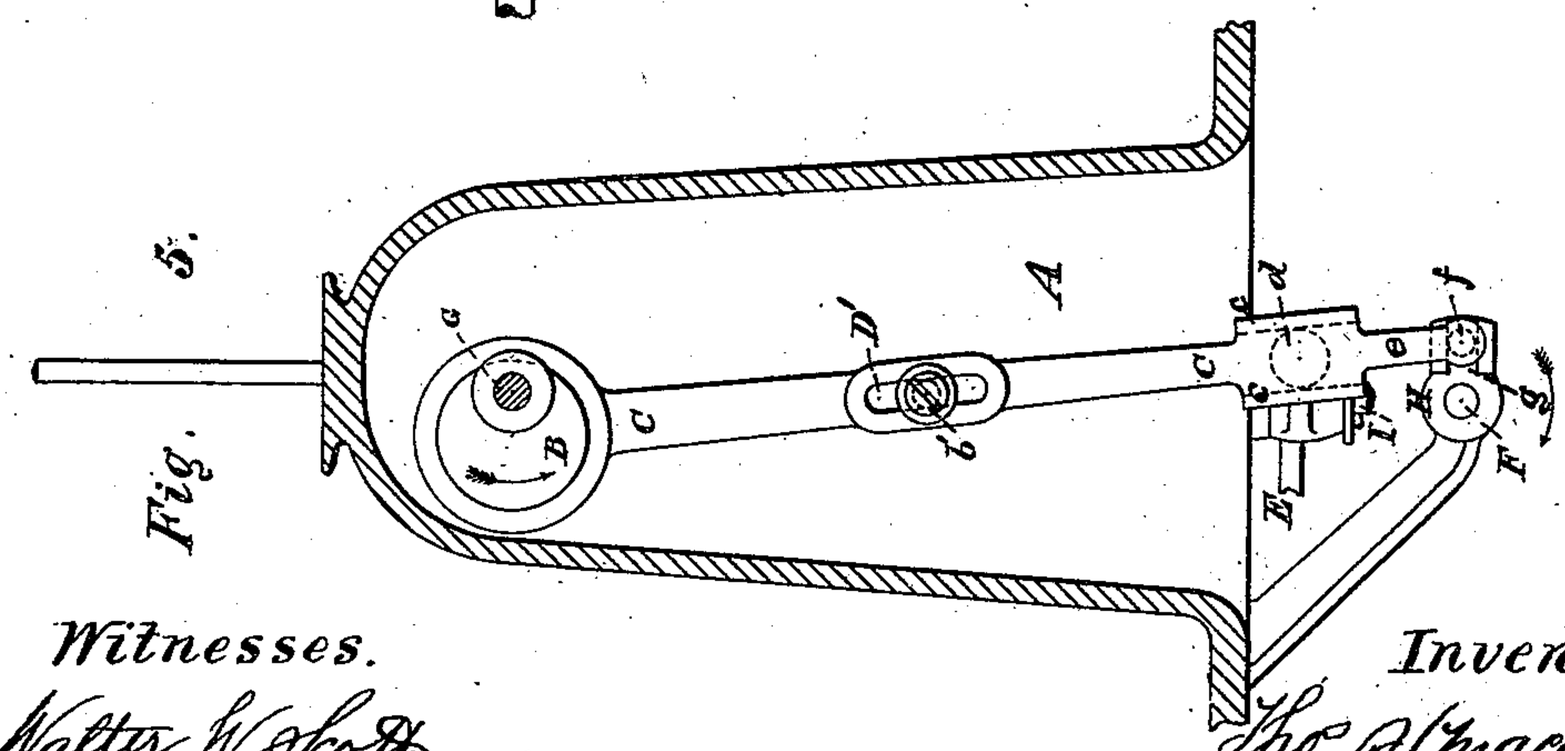


Fig. 5.



Witnesses.

Walter H. Scott

Hugh Lallary

Inventor.

Tho. A. Macaulay

UNITED STATES PATENT OFFICE.

THOMAS A. MACAULAY, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **185,399**, dated December 19, 1876; application filed October 13, 1876.

To all whom it may concern:

Be it known that I, THOMAS A. MACAULAY, of the city, county, and State of New York, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawings, forming part of the same.

Similar letters refer to like parts.

The object of my invention is, first, to provide a simple and durable mechanism to operate the shuttle of a sewing-machine; and, second, to provide an efficient and durable device to operate the feed mechanism of a sewing-machine; and consists in the combination and arrangement of parts, as hereinafter pointed out in the claims.

In the drawings, Figs. 1 and 5 are vertical cross-sections of the frame of the machine. Figs. 2 and 6 are vertical transverse sections. Fig. 3 is a plan of the shuttle-lever with bed of machine removed. Figs. 4, 7, and 8 are end elevations of equivalent mechanism to Figs. 1 and 5.

A is the frame of the machine; B, an eccentric on the main shaft G of the machine; C, a connecting-rod; D, Figs. 1, 2, and 8, a radius-bar; D^1, in Figs. 2, 5, 6, and 7, a slot answering the same purpose; D^2, in Fig. 4, a sliding block; E, the shuttle-lever; F, the feed-shaft; G, the main shaft of the machine; H, a slotted crank on the rear end of the feed-shaft; I, the fulcrum-stud of the shuttle-lever. *a*, in Figs. 1 and 8, is a fulcrum-pin of the radius-bar. D^1, in Figs. 5 and 7, is a guide-slot, in which the sliding block b^1 moves. *b*, in Figs. 1 and 8, are pins connecting the radius-bar with the connecting-rod C C. b^1, in Figs. 5 and 7, a fulcrum-pin on which C vibrates. In Fig. 4 b^2 connects the sliding block D^2 with the connecting-rod C C. *c c*, in Figs. 1, 2, 3, 4, and 7, is a slot or opening in the shuttle-lever E, in which the ball *d* of the connecting-rod C C works to give a reciprocating movement to the shuttle-lever E. In Figs. 5, 6, and 8 the ball *d* is on the shuttle-lever E, and the slot *c c* is in the connecting-rod C C.

Motion being given to the machine by the rotation of the main shaft G carrying the eccentric B, a vertical motion is given to the connecting-rod C C. The connecting-rod C C being connected at *b* to the radius-bar D, or at b^1 or b^2 to its equivalent mechanism above described, receives a lateral movement, which it imparts to the shuttle-lever E by the ball *d* working up and down the slot *c c* of the shuttle-lever E. The extension *e* of the connecting-rod C C, as a result of the vertical and lateral movements of the lever C C, describes an elliptic circle around the center of the feed-shaft F, and by the connection of the slotted crank H to the extension *e* by the pin *f* a rotary motion is given to the feed-shaft F for operating by any suitable means the feed of the machine.

I have now fully described my invention and the manner of carrying it into effect.

What I claim is—

1. In combination with the lever C C, the radius-bar D, or its equivalent, and the shuttle-lever E, the said lever C being jointed directly to the shuttle-lever, whereby a reciprocating motion is imparted to the said shuttle-lever, substantially as shown and described.

2. In combination with the main shaft G, the feed-shaft F, the shuttle-lever E, the lever C C, and the radius-bar D, or its equivalent, the said lever C being jointed directly to the shuttle and to the feed-shaft, whereby a rotary motion of the main shaft G imparts an equal and opposite rotary motion to the feed-shaft F and a reciprocating motion to the shuttle-lever E, substantially as set set forth.

THOMAS A. MACAULAY.

Witnesses:

HUGH CALLARY,

WM. KEYES.