

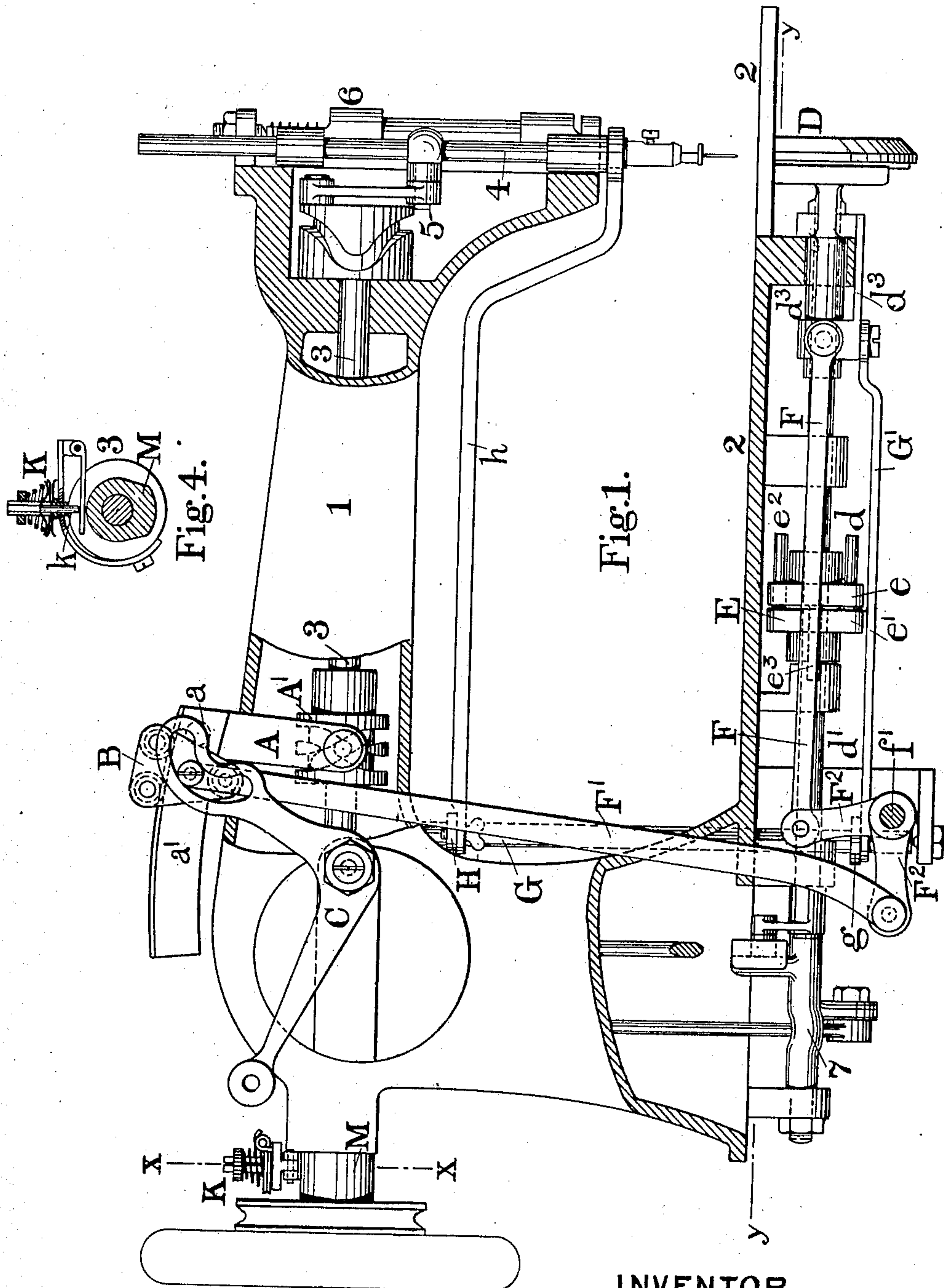
No. 892,643.

PATENTED JULY 7, 1908.

R. BROWN.
SEWING MACHINE.

APPLICATION FILED FEB. 4, 1907.

2 SHEETS—SHEET 1.



WITNESSES.

E. Howard
Joseph Bates.

INVENTOR.

Robert Brown
by C. L. Owsen
att'y

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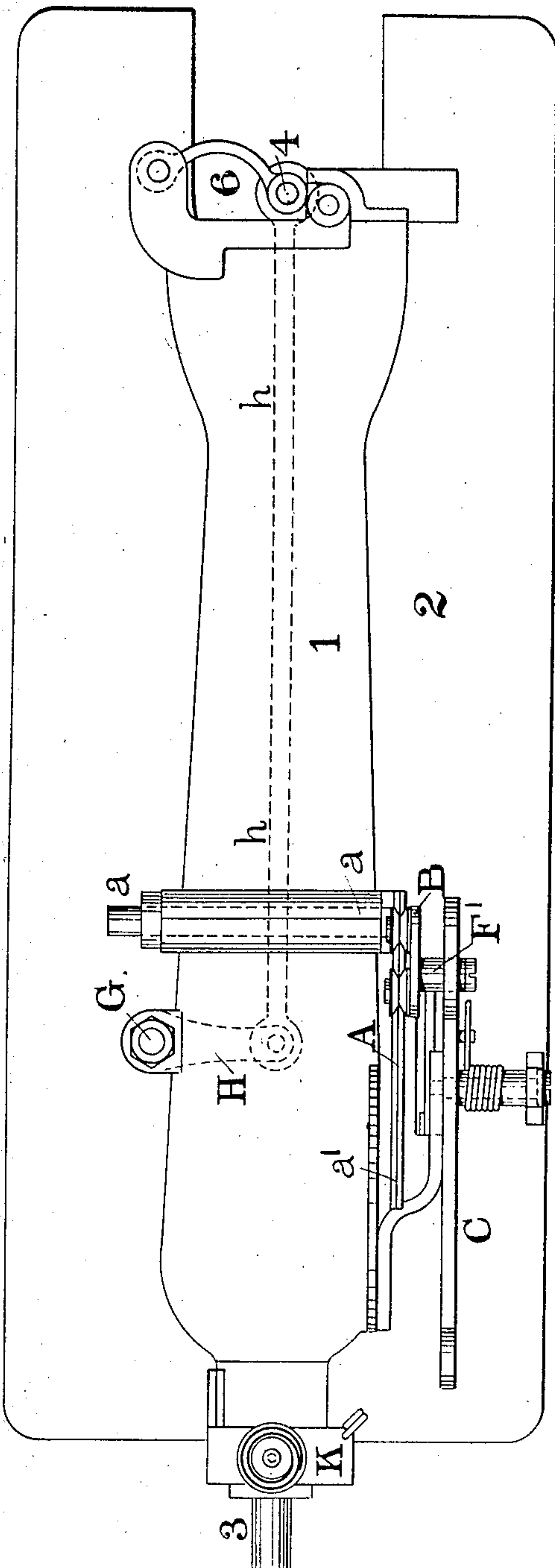


Fig. 2.

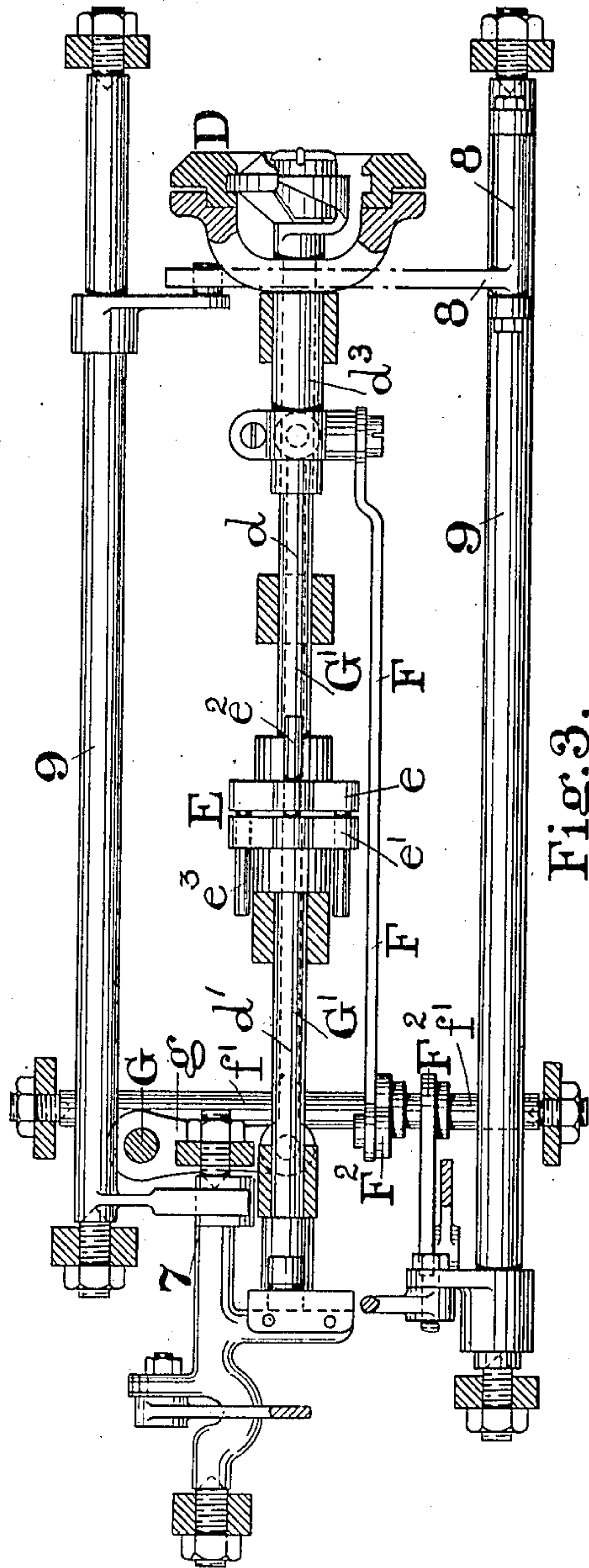


Fig. 3.

WITNESSES.

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Joseph Bates.

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UNITED STATES PATENT OFFICE

ROBERT BROWN, OF BELFAST, IRELAND.

SEWING-MACHINE.

No. 892,643.

Specification of Letters Patent.

Patented July 7, 1908.

Application filed February 4, 1907. Serial No. 355,637.

To all whom it may concern:

Be it known that I, ROBERT BROWN, British subject, and resident of Belfast, Ireland, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

This invention relates to sewing machines of the type in which fancy stitch and embroidery work is done by means of an oscillating needle bar operated by a quadrant lever and cam.

The invention is designed to provide a reciprocating movement to the shuttle synchronously with the movement of the needle bar and needle to maintain the relative positions of the needle and shuttle constant and improvements in the constructions of the needle oscillating mechanism whereby the same is connected with the shuttle to give the desired movement to the latter.

It consists essentially of an oscillating lever worked by a cam on the main shaft connected with the shuttle shaft which is divided into two lengths with a suitable coupling to allow the shuttle bracket and shuttle to be moved forward and backward simultaneously with the needle bar, and a connection therefrom to connect with the needle bar to give the desired oscillating movement thereto.

The invention will be fully described with reference to the accompanying drawings forming part of the specification.

Figure 1. is a side elevation of the sewing machine partly in section (from the back). Fig. 2. is a plan of same. Fig. 3. is a sectional plan on line $y-y$ Fig. 1. below the base plate 2. Fig. 4. is a transverse sectional elevation on line $x-x$ Fig. 1.

The main parts of the sewing machine such as the head 1, the base plate 2, the driving shaft 3, the needle bar 4, the needle bar crank 5, the needle bar frame 6, the counter driving shaft 7, the feed bar 8 and the feed shafts 9 are all of the ordinary construction and will require no further description. The presser and presser foot are of ordinary construction and are not shown on the drawings.

The oscillating lever A, by which the desired oscillating movement is imparted to the needle bar 4, I construct of bell crank L or T form pivoted at a and the free member a' of the lever is employed to transmit the necessary movement. The lever A is oscillated by a cam A' on the driving shaft 3 in the

usual way. On the member a' of the lever A a traversing cradle or carriage B is mounted which can be moved to or from the center of oscillation a to shorten or lengthen the throw of the needle bar.

The carriage or cradle B is moved along the arm of the lever A by a lever C which is connected by a link with a treadle or other means for moving it up and down.

To give a reciprocating movement to the shuttle carrier D and to the shuttle carried therein corresponding with the oscillation of the needle bar the shuttle shaft is divided into two lengths d d' with a coupling E between them which permits of the part d being reciprocated longitudinally as it rotates with the part d' . The coupling comprises two plates e e' affixed to the shafts d d' respectively provided with pins e^2 projecting from the face of one and pins e^3 projecting from the face of the other, and each with holes or notches through which the pins on the other project. On the shaft d a sleeve and bracket d^3 is fitted behind the shuttle bracket or carrier D and the two are connected together or fixed together.

The sliding carriage or cradle B is connected with the shuttle carrier D and the bracket d^3 by the connecting rod F F' and the bell crank lever F^2 on the rocking shaft f' so that the movement of the oscillating lever A is thereby transmitted to the shuttle shaft d and the shuttle carrier D.

The shuttle carrier D and bracket d^3 are also connected to an upright rocking shaft G by a link or connecting rod G' and an arm g whereby the shaft G is rocked as the shuttle carrier D is reciprocated. The rocking movement of the shaft G is transmitted to the needle bar 4 by the arm H thereon and the link or connecting rod h so that the movement of the lever A is thus simultaneously transmitted to the shuttle carrier and needle bar which thereby always retain the same relative positions.

A tension device K is fitted over the driving shaft with a pin k passing through to a cam M on the driving shaft 3 by which the tension on the thread is periodically relieved as the needle oscillates to and fro.

What I claim as my invention and desire to protect by Letters Patent is:—

In a sewing machine for fancy stitch and embroidery work the combination with the needle bar 4, the driving shaft 3, the cam A' thereon and the oscillating bell crank lever

A provided with vertical and horizontal members, of a carriage B mounted upon the horizontal arm of the said lever, a bell crank lever F^2 upon the rocking shaft f' , a connecting rod F^v to connect the carriage with the bell crank lever F^2 , a connecting rod F to connect the said bell crank lever with the shuttle carrier, a shuttle carrier D upon a shuttle shaft d capable of longitudinal movement while rotating, a coupling E, to connect the shuttle shaft d with the driving shaft d' , a connecting rod G' , arm g , rocking

shaft G, arm H thereon, and connecting rod h to connect the shuttle carrier with the needle bar 4 and cause it to oscillate, simultaneously with the shuttle carrier substantially as described. 15

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

ROBERT BROWN.

Witnesses:

JOHN QUINN,
ROBERT MENORY.