C. B. TRUE.

SEWING-MACHINE.

No. 184,560. Patented Nov. 21, 1876.

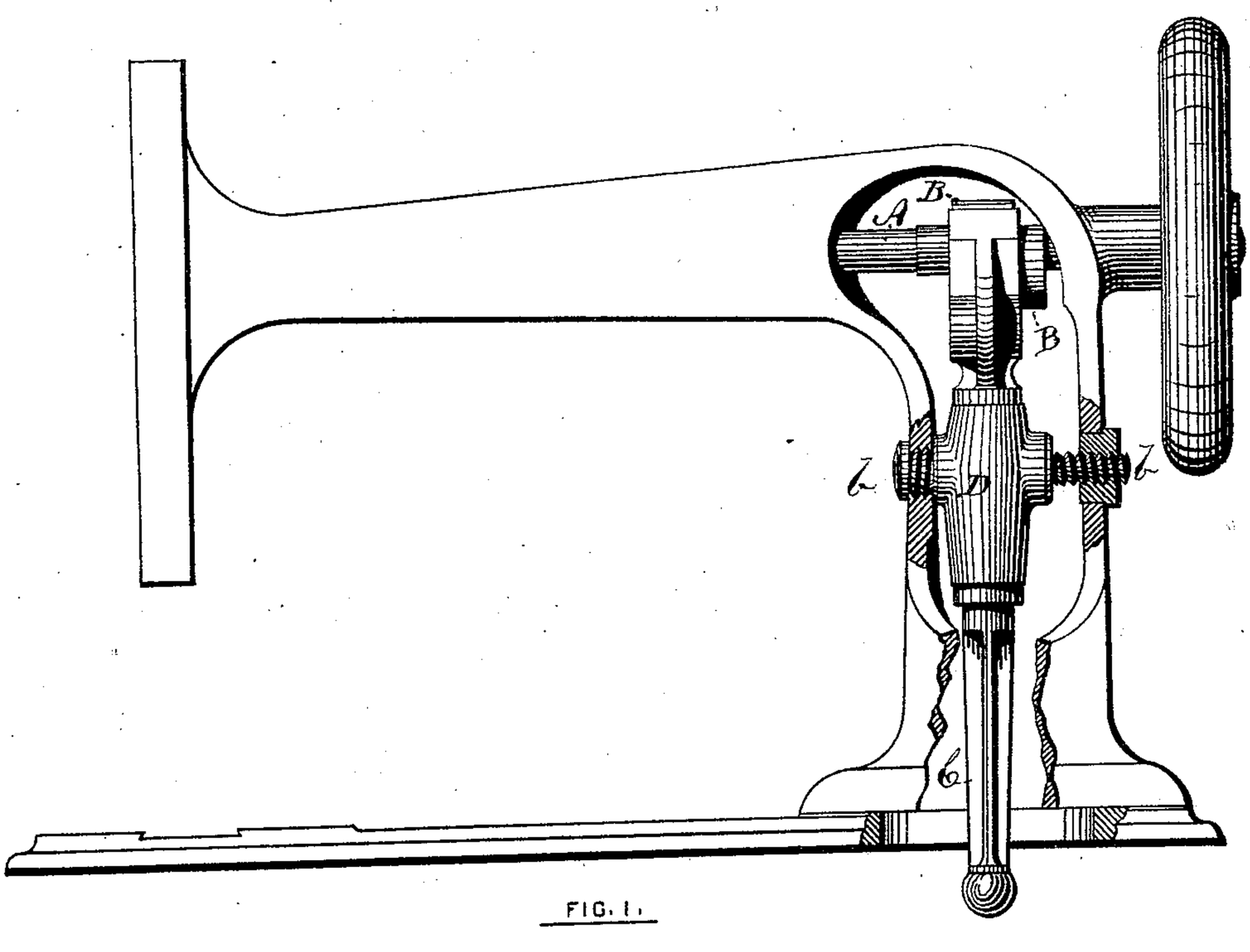

FIG. 1.

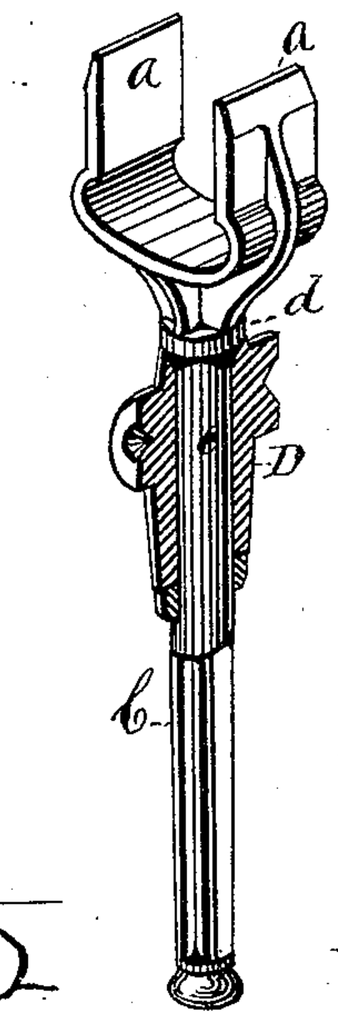

FIG. 2.

WITNESSES

George Fuller

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CYRUS B. TRUE, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **184,560**, dated November 21, 1876; application filed September 19, 1876.

To all whom it may concern:

Be it known that I, CYRUS B. TRUE, of the city and county of Providence, in the State of Rhode Island, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following specification, taken in connection with the drawings, making a part of the same, is a full, clear, and exact description thereof.

My invention relates to an improvement in the means for communicating motion from the working-shaft of a sewing-machine to the lever, which is located usually underneath the bottom plate of the machine-head, and vibrates the shuttle-carrier.

The device frequently employed for connecting these two parts of a sewing-machine is a lever hung upon pivots, so as to vibrate in a plane transversely with the axis of the working-shaft. The upper end of this lever is forked, and a cam placed on the shaft eccentrically, and revolving between the legs of the fork, causes the lever to vibrate, while the lower end of this lever, being jointed to the shuttle-carrier lever, gives to the latter its movement.

This connection in sewing-machines is very difficult of accurate adjustment, and great nicety of construction is required, as it is evident that, unless the face of the cam on the working-shaft, and the faces of the fork, are exactly parallel with the axis on which the lever vibrates, the connection will work with undue resistance, from the tendency of the parts under such conditions to bind.

My improvement consists in so mounting the forked lever that it shall be able to have, if necessary, a motion upon its longitudinal axis independent of the vibratory motion which it has upon its transverse axis, and thus enable any want of exact conformity in parallelism between the cam-face, the faces of the forks, and the axis through the pivots, upon which the lever vibrates, to be compensated for. In other words, my vibratory forked lever, which operates the shuttle-carrier, is self-adjusting not only with relation to the axis of the working-shaft, but also with relation to the axis on which the lever vibrates.

Referring to the drawings, A is the working-shaft of a sewing-machine head. B is the cam, mounted on said shaft, and which revolves between the faces *a a* of the forked lever C, Fig. 2, to give such lever the necessary vibratory movement.

Instead of having the transverse arms, which are supported on the pivot-centers, a part of the forked lever, as heretofore, I attach them to a separate sleeve, D. This sleeve is mounted on the pivot-pins *b b* in the same way in which the forked lever has heretofore been mounted.

A cylindrical hole is made through the longitudinal axis of the sleeve D, and the portion of the forked lever marked C is nicely fitted therein, so that while the lever can be turned upon its axis, there will be no space between the exterior surface of that part of the lever and the interior surface of the sleeve.

A shoulder, *d*, formed on the lever, rests upon the upper end of the sleeve, and maintains the lever at the proper elevation relatively to the actuating-cam. The lower end of the lever is connected, by a ball-and-socket joint, with the horizontal arm or lever underneath the bottom plate of the machine-head, for operating the shuttle-carrier in the usual way.

From the foregoing it is evident that the forked lever thus constructed is rendered self-adjusting to any difference in parallelism which may exist between the working-shaft A and the axis of vibration of the sleeve D, and consequently the difficulties heretofore attendant upon the nice adjustment of the axis of the working-shaft to the axis upon which the sleeve vibrates are avoided.

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

The combination, in a sewing-machine, of the working-shaft, and a vibratory forked lever, which operates the shuttle-carrier, is provided with an axis, and is self-adjusting with relation to its own axis and the axis of the working-shaft, substantially as described.

CYRUS B. TRUE.

Witnesses:

GEORGE FULLER,

ROBT. A. PEARSON.