(No Model.)

A. SWASEY & H. M. LUCAS.

FEED MECHANISM FOR SCREW MACHINES.

No. 585,894. Patented July 6, 1897.

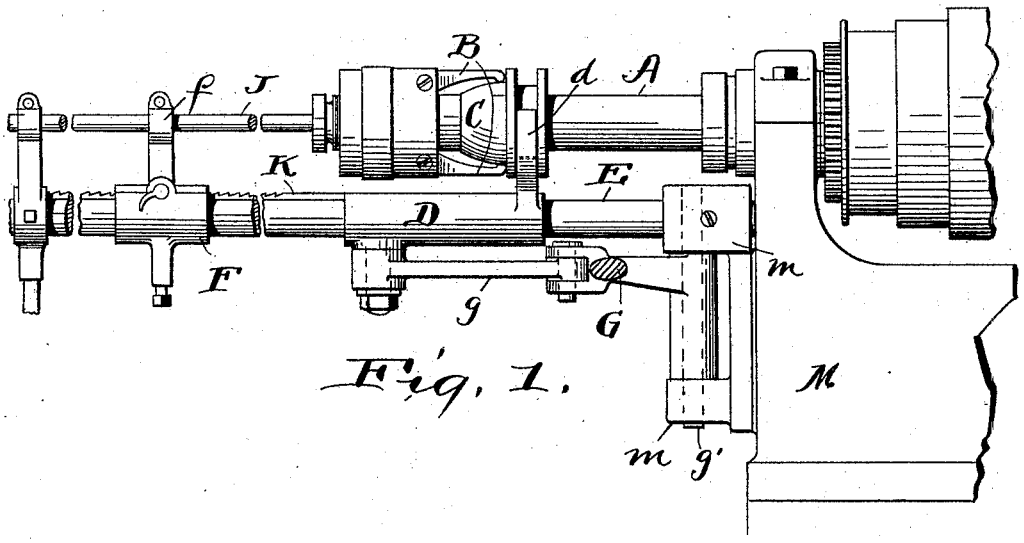

Fig. 1.

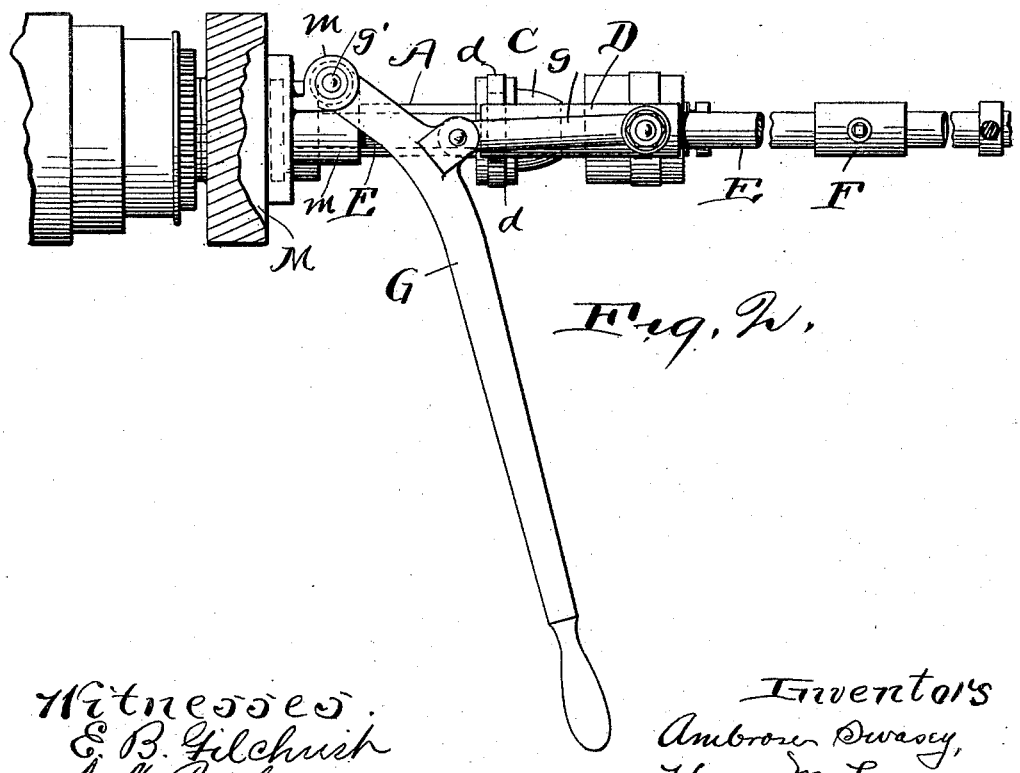

Fig. 2.

Witnesses:
E. B. Gilchrist
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UNITED STATES PATENT OFFICE.

AMBROSE SWASEY AND HENRY M. LUCAS, OF CLEVELAND, OHIO, ASSIGNORS TO AMBROSE SWASEY AND WORCESTER R. WARNER, OF SAME PLACE.

FEED MECHANISM FOR SCREW-MACHINES.

SPECIFICATION forming part of Letters Patent No. 585,894, dated July 6, 1897.

Application filed April 9, 1897. Serial No. 631,443. (No model.)

To all whom it may concern:

Be it known that we, AMBROSE SWASEY and HENRY M. LUCAS, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Feed Mechanisms for Screw-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention is for an improvement in screw-machines or lathes having wire or stock feeding mechanism and a tubular live-spindle which incloses a secondary spindle and gripping collet or chuck. (Not shown.)

The invention relates to the mechanism adapted for operating the chuck and wire-feeding mechanism; and it consists in the construction and combination of parts hereinafter described.

Heretofore a simple lever of the second class has been employed to slide a sleeve along a fixed rod, which sleeve operates the wire-feed ratchet-slide and the cone which moves the chuck-operating levers. The objection to such a lever for this purpose is that it moves the said sleeve with the least possible power and fastest motion when the greatest power is needed—viz., when the chuck is being closed—and with the greatest power and slowest motion when rapid motion is an advantage—viz., when the stock is being fed forward.

The object of our invention is to reverse the conditions named, whereby greatest power and the fastest movement are respectively produced at the time when such power and motion are most effective.

In the drawings, Figure 1 is a front elevation of so much of a screw-machine as discloses our invention, and Fig. 2 is a bottom plan view of the same parts which are shown in Fig. 1.

The tubular live-spindle A contains (although it is not shown) a longitudinally-movable spring-chuck plunger of common form, which is moved by the two levers B B, said levers being of the ordinary construction and pivoted in the usual manner to a collar on the spindle A. These levers are operated by the sliding cone C. The cone is moved by the forks *d* on a guided slide D, said slide being, as shown, a sleeve which is movable upon the fixed guide-rod E. The wire-feeding mechanism is of common form, consisting of the ratchet-slide K, which is moved backward and forward by the sleeve D, snd the sleeve F, which slides upon rod E, and has dogs (not shown) for engagement with the ratchet-slide, and has a clamp *f*, which takes hold of the stock J. This particular form of wire-feeding mechanism is not essential to the invention.

A hand-lever G is pivoted at one end on a vertical pivot *g'* to a bracket or brackets *m m*, fixed at the end of the machine-frame M. A link *g* is pivotally connected at one end with the said lever G, and at the other end with a stud on the under side of the sleeve D. The lever and link constitute a toggle which operates to move the sleeve in the following manner, viz: When the toggle is being bent, it moves the sleeve D toward the machine-frame, which results, first, in moving the cone C to release the chuck-levers B B, and then in moving the wire-feeding mechanism forward with increasing rapidity. When the toggle is being straightened, it moves the sleeve D in the reverse direction, thereby retracting the wire-feeding mechanism, and finally when the toggle is nearly straight, and consequently has the greatest power, completing the movement of cone C to set the chuck-levers B B. The first movement of the described mechanism in one direction releases the work from the chuck, and then the wire is fed rapidly forward, and the last movement of said mechanism in the opposite direction sets the chuck, this act requiring and by the described mechanism receiving the greatest power.

Having described our invention, we claim—

In a lathe, the combination of the guided slide D which is adapted to operate the wire-feeding mechanism and the chuck-operating mechanism, with a hand-lever pivoted to fixed support adjacent to the machine-frame, and a link pivotally connected with said sleeve and with the said lever, substantially as and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

AMBROSE SWASEY.
HENRY M. LUCAS.

Witnesses:
JOHN WEBER,
L. B. STOAFFER.