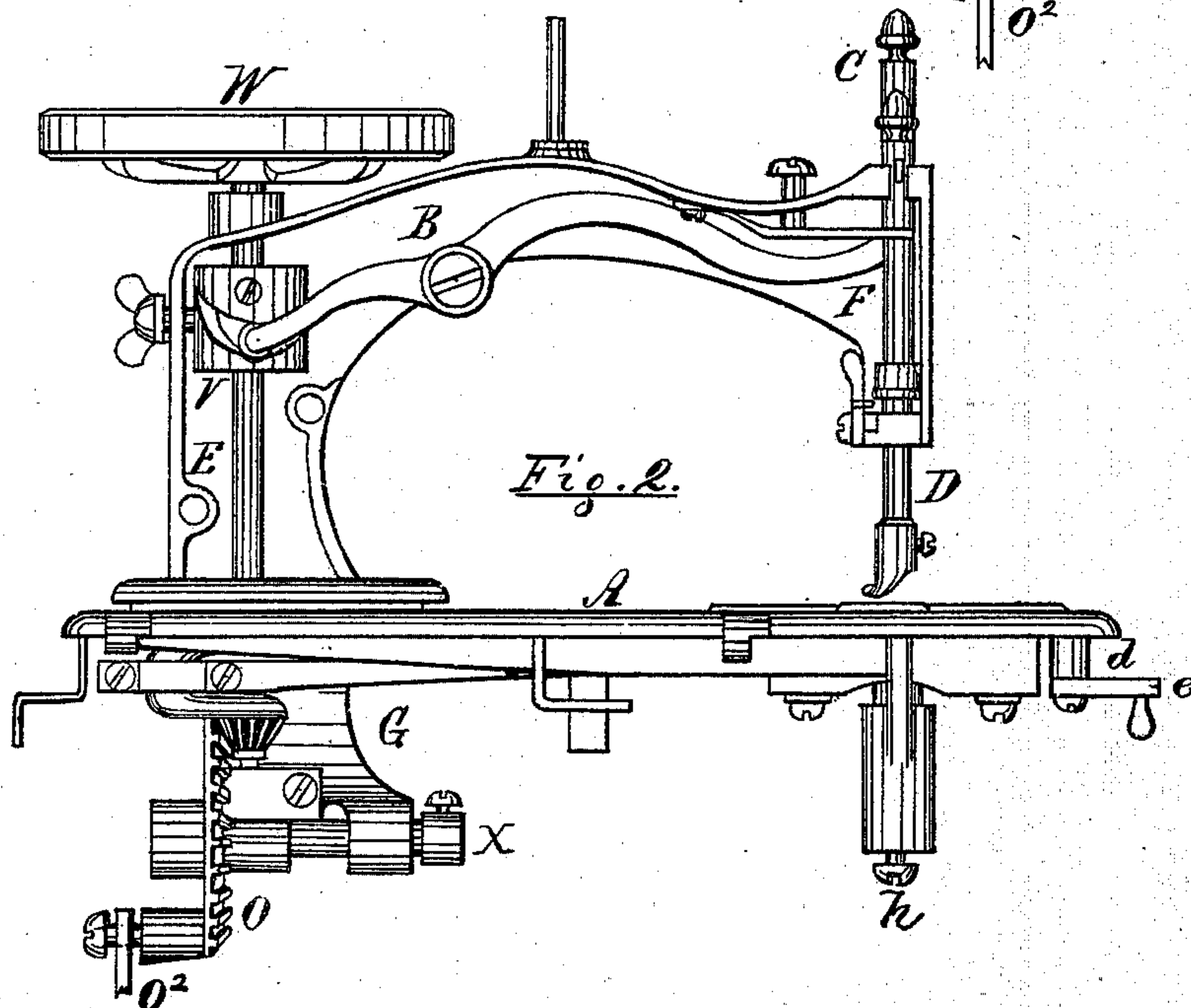
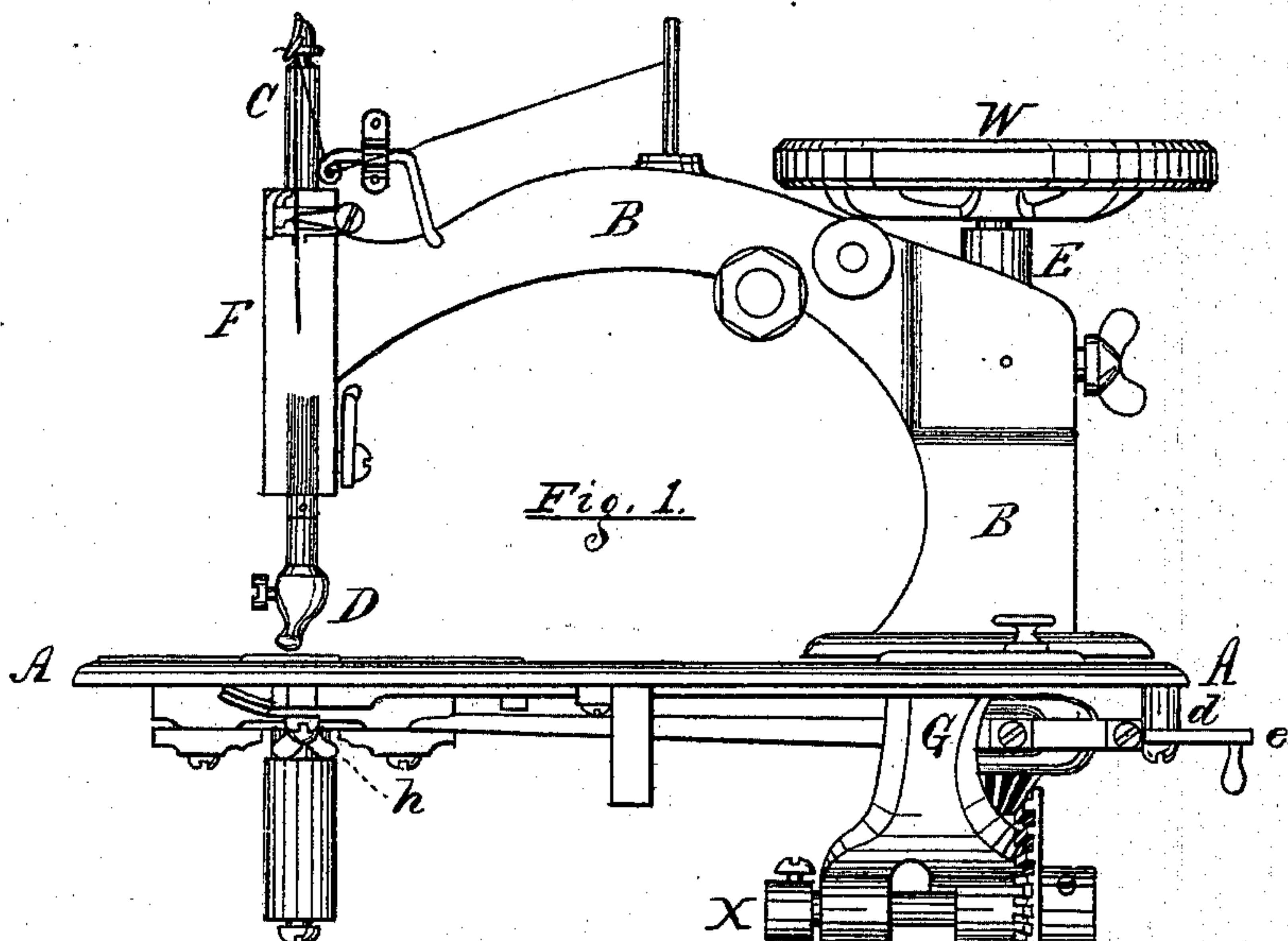


L. GRISWOLD.
Sewing-Machines.

No. 146,761.

Patented Jan. 27, 1874.



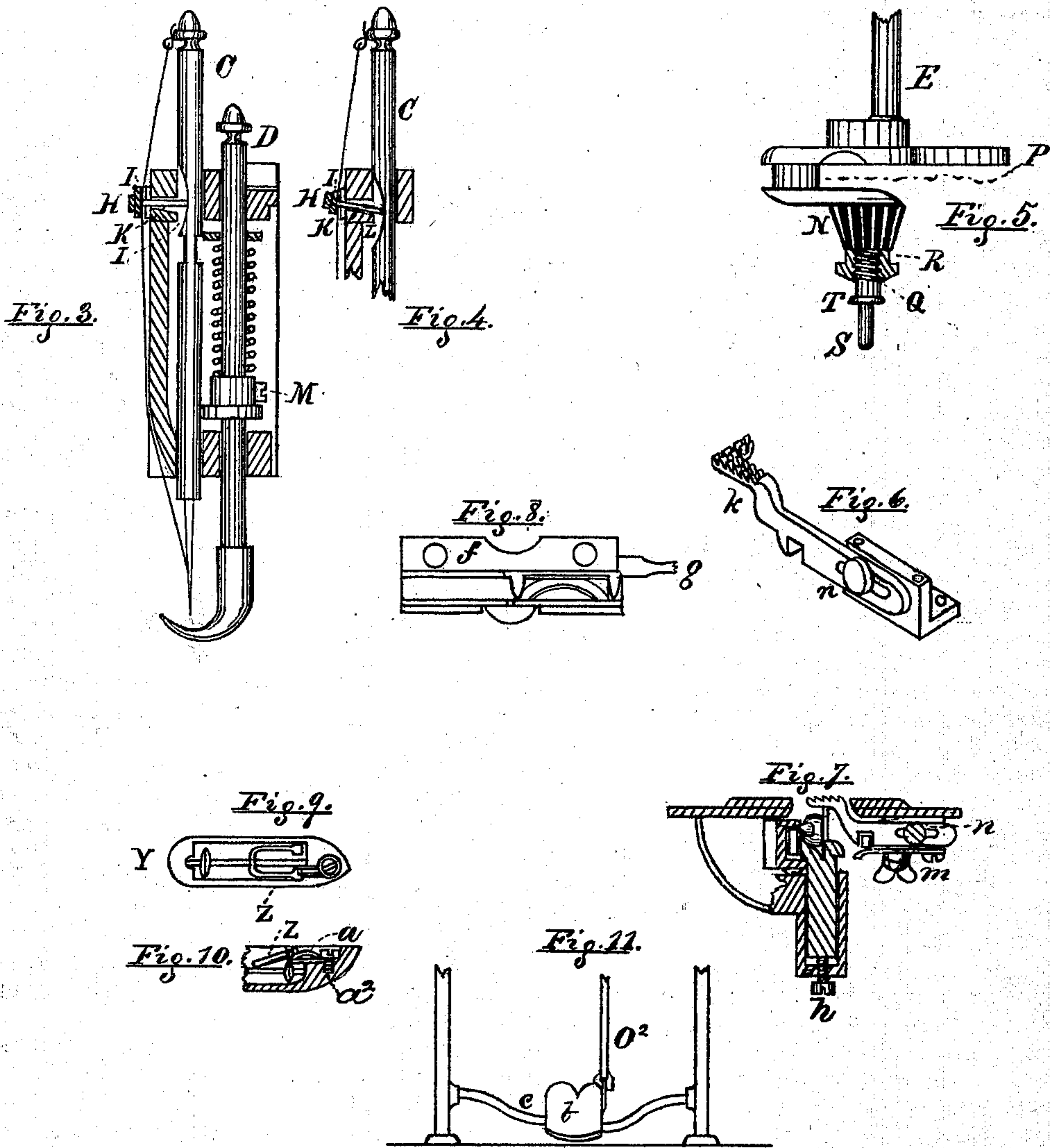
Witnesses
Arthur Gill
Leaham Levy

Inventor
L. Griswold

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UNITED STATES PATENT OFFICE.

LEO GRISWOLD, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **146,761**, dated January 27, 1874; application filed June 21, 1873.

To all whom it may concern:

Be it known that I, LEO GRISWOLD, of the city, county, and State of New York, have invented certain Improvements in Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

The nature of my invention consists, first, in the peculiar construction and arrangement of the driving-gear, a horizontal driving-shaft, and a vertical transmitting-shaft, having a rawhide pinion and a fly-wheel thereon, and formed with a crank; second, in the shuttle-case provided with a detached race on which the shuttle moves, and which is provided with a single adjusting-screw, all substantially as hereinafter set forth.

In the accompanying drawings, Figure 1 is a side elevation of a sewing-machine constructed with my improvements; Fig. 2, a side elevation thereof, looking in the opposite direction; Fig. 3, a central vertical section of the case which bears the needle and presser-bars, showing the said bars in elevation; Fig. 4, a partial section, corresponding with the view in Fig. 3, but showing the "take-up" device in a different position; Fig. 5, a view of a portion of the vertical transmitting-shaft, showing its pinion, crank, and left-handed screw and nut; Fig. 6, a view in perspective of the doubly-adjustable cloth-feeding device; Fig. 7, a vertical section across the shuttle-case and race, showing also the cloth-feeding device; Fig. 8, a top view of the shuttle-case; Fig. 9, a top view of the shuttle; Fig. 10, a partial longitudinal section of the same; Fig. 11, a view of the driving-treadle, showing its arrangement on a curved shaft.

Like letters designate corresponding parts in all of the figures.

A represents the cloth-plate on which the working parts are mounted; B, the needle and presser-plate arm; C, the needle-bar; D, the presser-bar; E, the vertical transmitting-shaft; F, the bearing-case for the needle and presser-bars; G, a bracket beneath the cloth-plate, to support the driving-shaft and gear; H, the take-up device composed of a spring-disk, I, and laterally-vibrating pin K, operating in connection with the cam-recess L in the

needle-bar; M, an adjustable collar on the presser-bar, to adjust the force of the pressing-spring; N, the raw-hide pinion on the transmitting-shaft E; O, the bevel driving-gear, matching into the pinion N, and provided with a crank-pin to receive a connecting-rod, O², which extends up from the treadle *b*, with its downwardly-curved shaft *c*; P, a crank on the transmitting-shaft E, for operating the shuttle; Q, a left-handed screw, and R the nut upon the said screw; S, a steel step, or journal, on the lower end of the vertical shaft E; T, a hard-steel collar on the shaft above the journal to sustain the shaft and make it run light and with but little wear; V, a cam on the transmitting-shaft for operating the needle-bar; W, a fly-wheel situated on the upper end of the vertical shaft E; X, the horizontal driving-shaft; Y, the shuttle; Z, a swinging-bar or plate in the shuttle, provided with a spring, *a*, and adjusting-screw *a*², for holding the bobbin in the shuttle and regulating the tension of the bobbin-thread. The horizontal driving-shaft X, by having a crank-pin on its driving-gear wheel O, receives the power from the treadle without additional parts, and the said bevel driving-gear wheel transfers the power to the vertical transmitting-shaft E, which, being partly below and partly above the cloth-plate A, is in the best possible position for transmitting motion to the needle as well as to the shuttle and the cloth-feeding device. The rawhide pinion N renders the motion of the driving and transmitting devices nearly noiseless. The left-handed screw Q and nut R are effectually prevented from unscrewing by the revolving motion of the shaft E being in the opposite direction and tending rather to tighten than to unscrew them. The fly-wheel W is upon the transmitting-shaft E, which revolves faster than the driving-shaft X, and may be made lighter and smaller, with equal effect, than if it revolved more slowly. The needle-bar, shuttle, and cloth-feeding devices are all operated directly from the transmitting-shaft E. The shuttle-case *f*, in which the shuttle-driver *g* slides, has a separate or detached race on which the shuttle moves. The case is so made as to hold this detached race in position and allow it to be adjusted up and down therein. A single screw, *h*, pass-

ing up through the bottom of the case, adjusts the race to the height required.

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

1. The combination with the driving-gear O, on the horizontal driving-shaft X, and a crank-pin for the reception of the treadle-rod O², of the vertical stepped transmitting-shaft E, provided with the rawhide pinion N, and crank and cam for operating the shuttle carrier-rod and needle-lever, and with a fly-wheel, W, on

its upper end, all constructed and arranged substantially as and for the purpose herein specified.

2. The combination of the shuttle-case *f* with its detached race on which the shuttle moves, and the single adjusting-screw *h*, substantially as and for the purpose herein specified.

LEO GRISWOLD.

Witnesses:

ARTHUR NEILL,
ABRAHAM LEVY.