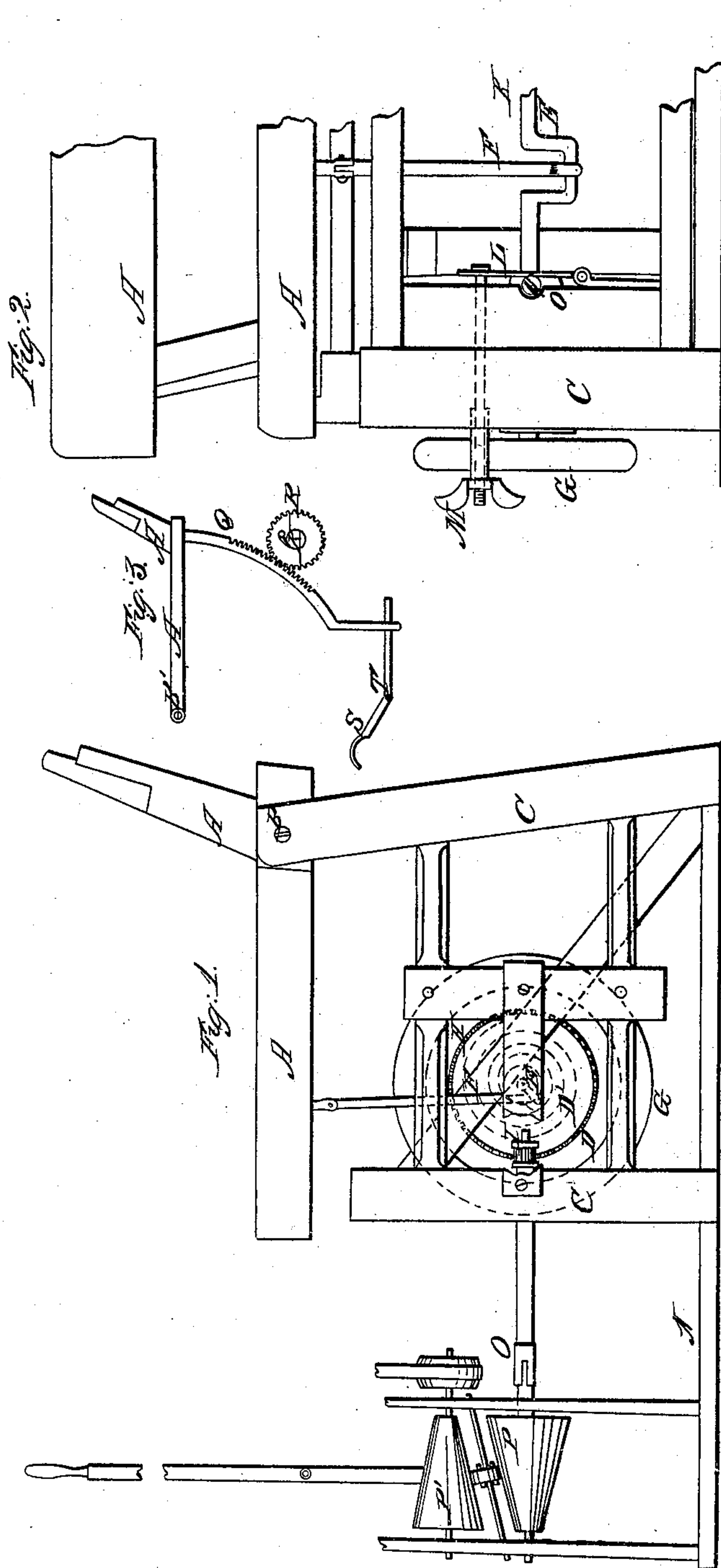


S. J. Baird

Motive Power for Sewing Mach.

N^o 85,504.

Patented Jan. 5, 1869.



Witnesses:
C. M. Parks —
W. R. Singleton

Inventor:
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UNITED STATES PATENT OFFICE.

SAMUEL J. BAIRD, OF STAUNTON, VIRGINIA.

MOTIVE POWER FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 85,504, dated January 5, 1869.

To all whom it may concern:

Be it known that I, SAMUEL J. BAIRD, of Staunton, in Augusta county, in the State of Virginia, have invented a new and Improved Mode of Propelling Sewing-Machines and other Machinery; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure 1 is a side elevation of the machine. Fig. 2 is a front view of the crank, fly-wheel, and friction-brake.

The nature of my invention consists in employing the weight of the operator as a power for winding up a spiral spring inclosed in a cylindrical drum, or otherwise so arranged and connected that the unwinding of the spring shall communicate motion to the machine.

To enable others skilled in the art to make and use my invention, I proceed to describe its construction and operation.

A is the chair seat and back, which is occupied by the operator. It is connected with the frame of the machinery, C, by a hinge or joint at B, upon which it moves as a fulcrum.

D is a cylinder or drum, inclosing a spiral spring, D'.

F is a pitman, fastened at the upper end by a hinge or joint to the under side of the seat at the front and at the lower end to the crank E, which connects with the shaft K passing through the drum. To this shaft the inner end of the spiral spring is fastened, as is the other end to the inner surface of the drum.

A fly-wheel, G, is attached to the end of the shaft. A crown-wheel and pinion, H and I, are connected with the drum, and convey movement from it to the connecting-rod O.

When, therefore, the operator takes his seat in the chair A, a gentle movement of the body backward and forward gives a rocking motion to the seat, which, vibrating on the fulcrum B, causes the alternate ascent and descent of the pitman, by means of which a rotary motion is given to the crank and shaft E and K. The spring is thus wound up in the drum, and the shaft being held by a ratchet and detent,

the power thus exerted is stored in the spring, and is expended in its gradual unwinding by the revolution of the drum. The motion thus imparted is transmitted to the machinery, to be operated by means of the crown-wheel, pinion, and connecting-rod O, by a belt or any other means employed for such purposes.

The velocity of the motion may be regulated by a thumb-screw, L', controlling the friction-brake L, operating upon the connecting-rod O, and by the conical pulleys P P', or by any other similar appliances; and the machine may be arrested by a brake, rubber, or other suitable means applied to the fly-wheel of the machine.

The foot-board N is designed to prevent the spring from carrying the frame C upward from the floor, in connection with the backward-rocking motion of the operator.

The fly-wheel G not only serves by its momentum to aid in rotating the shaft K, but is within reach of the hand for leverage to the same purpose, and thus obviates any difficulty in carrying the pitman and crank past the dead-centers.

A modification, of which Fig. 3 is an illustration, will supersede the crank and pitman. In this arrangement, the seat A, instead of resting upon the joint or fulcrum B, Fig. 1, at the back of the seat, is similarly connected by the joint B', Fig. 3, at the front, upon which the seat revolves in rocking. The rack Q is fastened firmly to the bottom of the seat at the back, and is bent in the segment of a circle, of which B' is the center. The teeth of the rack play in those of the pinion R, which revolves upon the shaft K. The pedal-lever S, revolving upon its fulcrum T, passes freely through the lower end of the rack.

When, therefore, the operator assumes his seat, his weight, thrown backward in the chair, carries the rack downward, and causes the pinion R to revolve, carrying with it, by the force of a ratchet and detent, the shaft K, which, revolving in the drum D, Fig. 1, winds up the spring in the same manner as by the pitman and crank. The operator then leaning forward, with his foot resting upon the pedal S, the power of the lever thus applied carries

up the rack and seat, the pinion returning freely upon the shaft and taking hold by its detent for a second movement downward.

The other parts of the machinery to be as already described.

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

In machines operated by means of springs,

the mode of winding said springs by means of the weight of the operator, in a rocking motion, substantially as above described, and to the purposes herein indicated.

SAMUEL J. BAIRD.

Witnesses:

C. M. PARKS,

W. R. SINGLETON.