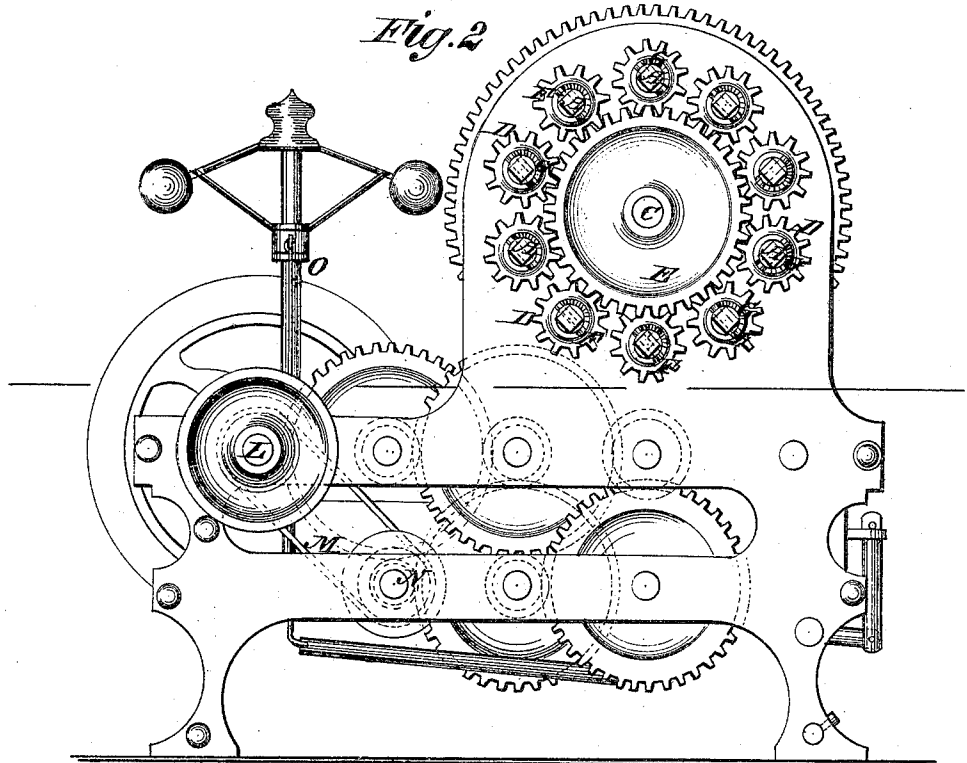
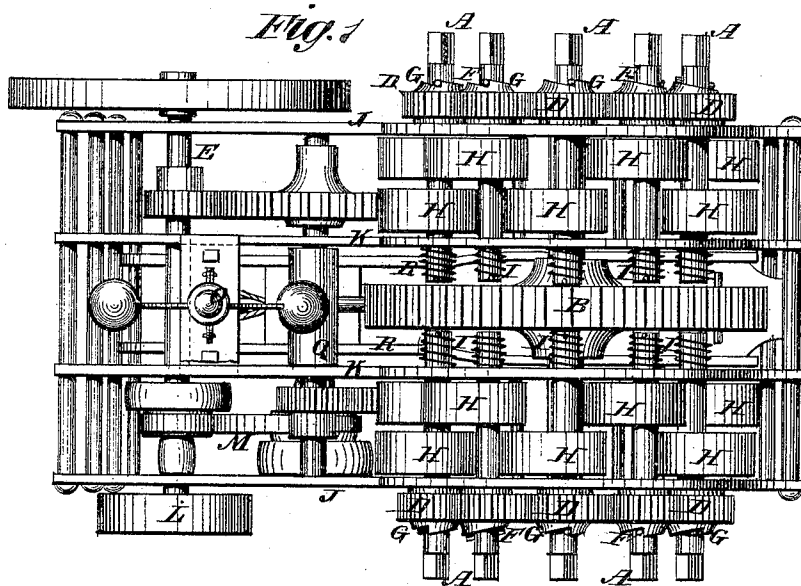


C. M. FRAHM & W. SCHARNWEBER.

SPRING-POWER.

No. 172,412.

Patented Jan. 18, 1876.



WITNESSES:

Francis M. Apple.
Alex. Roberts.

INVENTORS.

Wm. Scharnweber
Chas. M. Frahm

BY

Munn & Co.
ATTORNEYS.

C. M. FRAHM & W. SCHARNWEBER.

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Fig. 3.

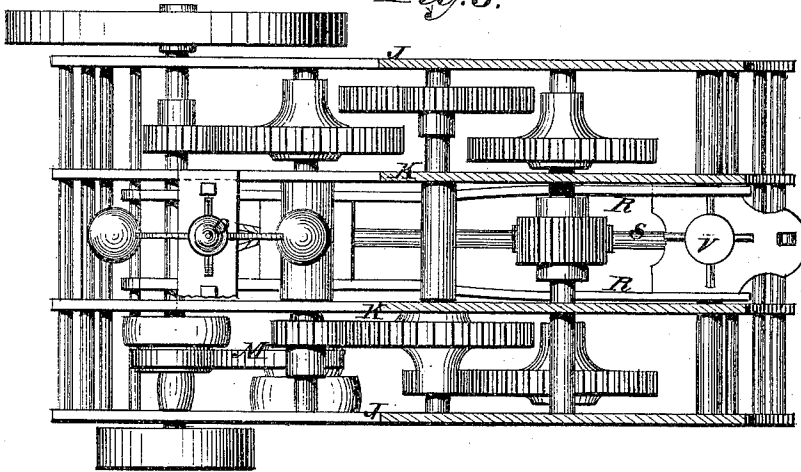
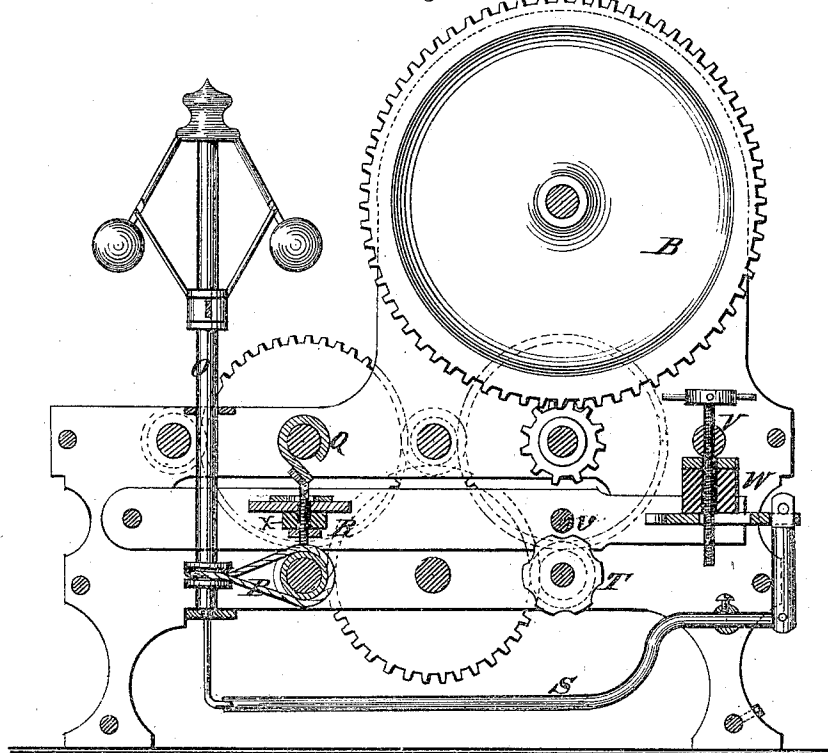


Fig. 4.



WITNESSES:

Francis M. Ardy,
Alex. F. Roberts

INVENTORS.

INVENTORS.
Wm. Scharnweber
Chas. M. Frahm

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES M. FRAHM AND WILLIAM SCHARNWEBER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN SPRING-POWERS.

Specification forming part of Letters Patent No. **172,412**, dated January 18, 1876; application filed December 18, 1875.

To all whom it may concern:

Be it known that we, WILLIAM SCHARNWEBER and CHARLES M. FRAHM, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Spring-Power, of which the following is a specification:

This invention is a contrivance of the arrangement of a series of coiled springs and gears, whereby a large number can be arranged in a small space, and each spring can be wound up independently of the others, and while the machine is running; and the invention also comprises a simple arrangement of regulating apparatus and stop mechanism, all as hereinafter described.

Figure 1 is a plan view, Fig. 2 is a side elevation, Fig. 3 is a horizontal section, and Fig. 4 is a longitudinal section, of the improved machine.

Similar letters of reference indicate corresponding parts.

A represents a couple of series of spindles on opposite sides of the main driving-wheel B, and arranged around its axis C, each spindle having a pinion, D, gearing with a wheel, E, on said axis. The pinions are loose on the spindles, and clutch on pins F, by their notched hubs G, which are spirally cut, so that the spindles will turn independently of the pinions for winding up the springs H, one of which is mounted on each spindle. The spindles slide a little endwise to allow the clutch-pins to pass over the notched hubs of the pinions, and the spiral spring I draw them back. The spring-spindles are arranged in the housing-frames J K, which are placed far enough apart to allow the alternate arrangement of the springs of each series in two different planes, so that the spindles can be arranged closer together, and more springs can be arranged in one series around a wheel, E, of a given size than can be in one plane. The motion is transmitted to the pulley-shaft L by a suitable train of gears, to be transmitted therefrom in any approved way to the ma-

chine to be driven. From the pulley-shaft a belt, M, is run to the shaft N for working a governor, O, which is to regulate the speed by the friction-brake, Q, which it works by the levers R and S. The machine is stopped by the notched wheel T, rod v, and the screw V, the screw being turned, so as to press the rod v, which is on the brake-levers R, down into the notches of the wheel, which is geared indirectly with the main driver B, so as to stop the machine. W is a spring by which the screw V is connected to the brake-levers, to afford relief to them in case the rod v is screwed down on the face of the stop-wheel.

There is also a spring, X, on the rod connecting brake Q with the levers R, to afford easy action. Two or more springs may be arranged on each spindle, provided the length of the spindle is increased.

The machine is designed for operating sewing-machines, lathes, churns, and any other machines for which a light power is required, and, if desired, it can be made large and strong for heavier work.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. One or more series of coiled springs, H, spindles A, pinions D, clutches F G, and coiled springs I, combined and arranged with a transmitting-wheel, E, substantially as specified.

2. The combination of the brake Q, levers R S, and governor O, with a spring-power machine, substantially in the manner described.

3. The adjusting-screw V, rod v, stop-wheel T, and levers R, combined with a spring-power machine, substantially as specified.

4. The combination of spring W with the screw V, lever R, rod v, and stop-wheel T, substantially as specified.

CHAS. M. FRAHM.

WILLIAM SCHARNWEBER.

Witnesses:

AUSTIN CLEMENT,
ROCKWELL SAYER.