

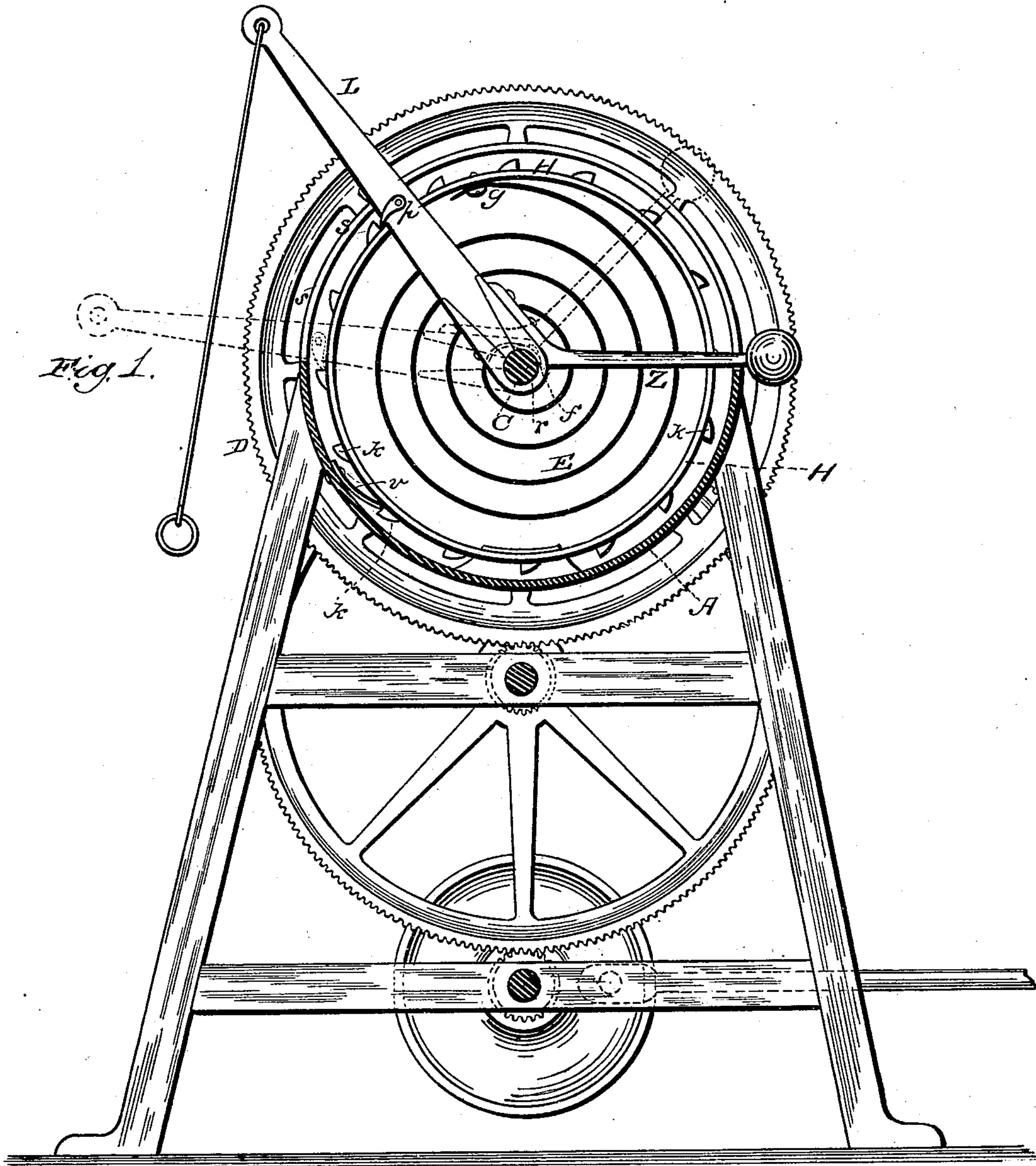
(No Model.)

2 Sheets—Sheet 1.

J. FEARN.
SPRING MOTOR.

No. 272,830.

Patented Feb. 20, 1883.



WITNESSES
E. H. Bates,
Philip Lemasi.

INVENTOR
John Fearn,
by Anderson & Smith
his ATTORNEYS

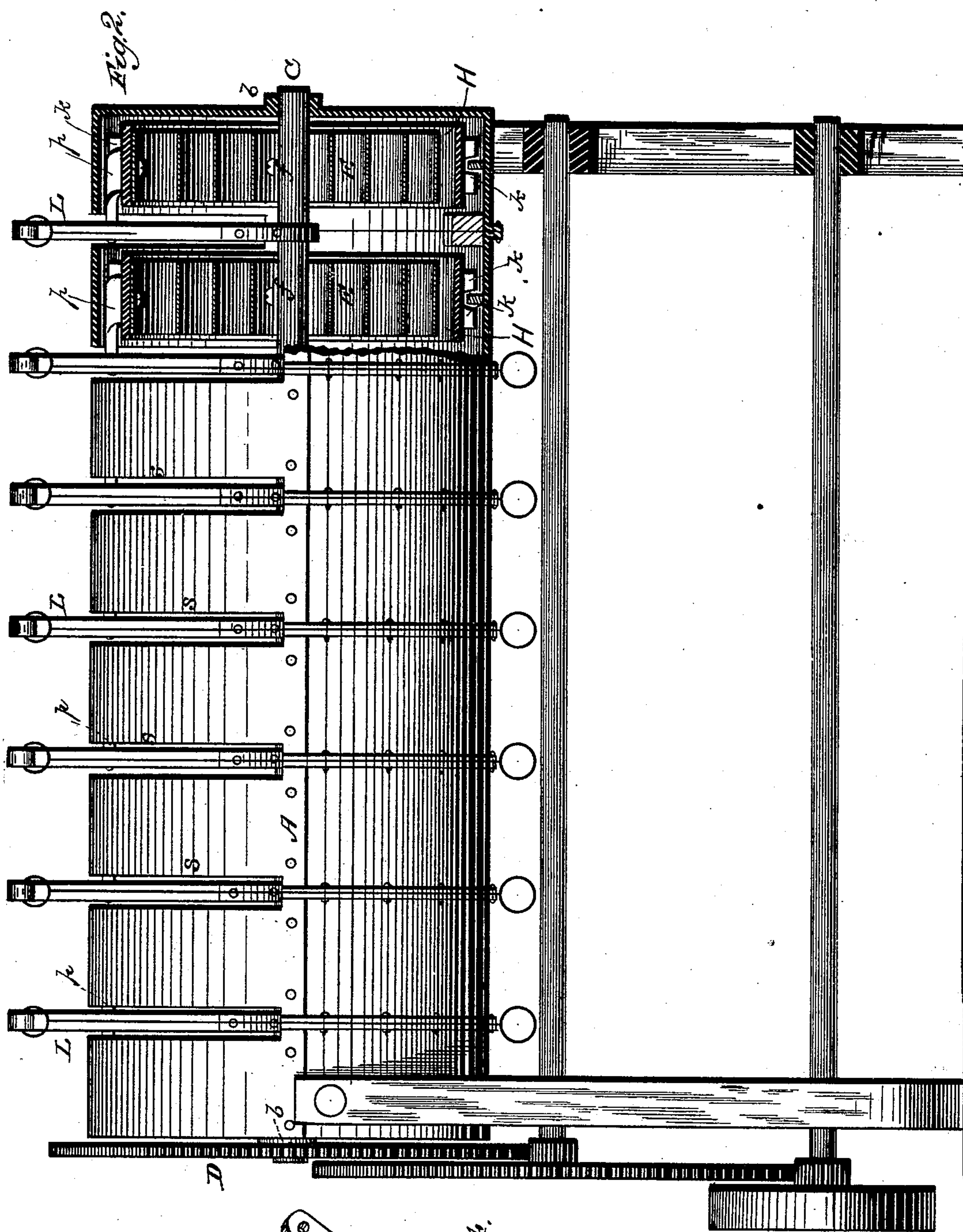
(No Model.)

2 Sheets—Sheet 2.

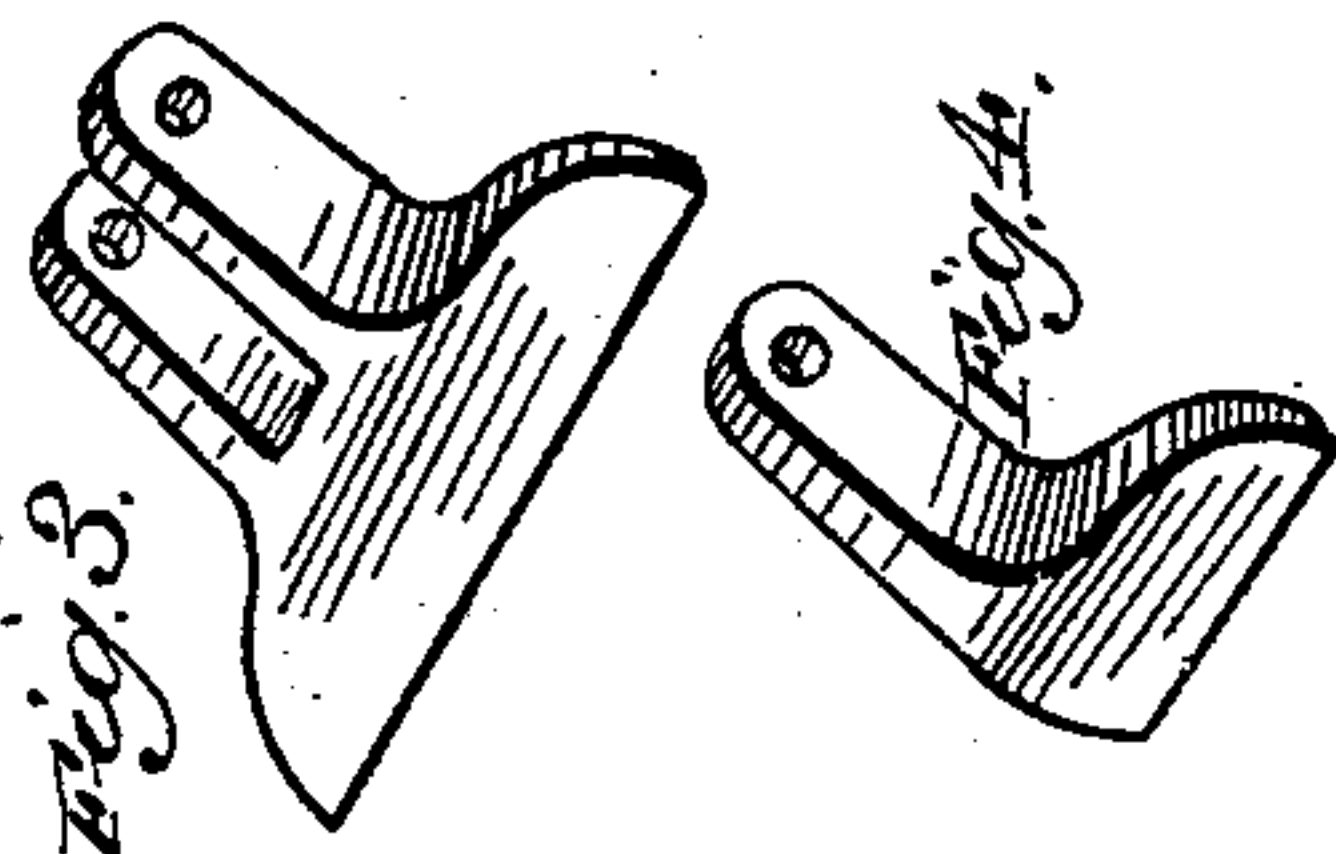
J. FEARN.
SPRING MOTOR.

No. 272,830.

Patented Feb. 20, 1883.



WITNESSES
E. H. Bates
Philip C. Mason



INVENTOR
John Fearn,
by Anderson & Smith
his ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN FEARN, OF WASHINGTON, DISTRICT OF COLUMBIA.

SPRING-MOTOR.

SPECIFICATION forming part of Letters Patent No. 272,830, dated February 20, 1883.

Application filed January 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN FEARN, a citizen of the United States, resident at Washington, in the District of Columbia, have invented certain new and useful Improvements in Spring-Motors; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a cross-sectional view of my motor. Fig. 2 is a side view of the same, part sectional. Fig. 3 is a perspective view of the double pawl, and Fig. 4 is a perspective view of the single pawl.

This invention has relation to spring-motors; and it consists in the construction and novel arrangement of a series of springs, all connected to the main shaft and independent of each other, with reference to a series of winding devices which are respectively adapted to wind one or two springs only of the series; and the invention further consists in providing, in connection with a series of springs independently connected to the main shaft, a number of ratchet-rings concentric to the main shaft and carrying the outer ends of the springs, check-pawls, and operating-levers pivoted on the main shaft and respectively carrying single or double pawls to engage the teeth of a single ring or of two rings, all as hereinafter set forth.

In the accompanying drawings, the letter A designates a cylindrical case, which may be built in sections in any convenient manner, said case being provided with central bearings, b, at its ends for the main shaft C, which may be directly connected to mechanism. Usually, however, it is preferred to provide this shaft with a driving toothed wheel, D, which is in engagement with other gearing, as indicated in the drawings.

To the shaft C are fastened the springs E, each spring being fastened to the shaft independently by its inner end, as indicated at f. The springs are arranged in series along the shaft, being coiled in planes at right angles to its length. The outer ends, g, of the springs are respectively attached each to a ring, H, having outer ratchet-teeth, k. These ratchet-rings H are independent of each other, and are

guided by the cylinder or suitable bearings. Each ring is operated by a lever, L, carrying a pawl, p, which engages the teeth of the ring. The handle end of the lever extends through a slot, s, in the case-wall, and the inner end of the lever is pivoted on the main shaft, as indicated at r. A check-pawl, v, attached to the interior wall of the cylinder, serves to hold the ratchet-ring during the winding and after the spring has been wound up. In some cases each lever L may be provided with a double pawl designed to engage two adjacent ratchet-rings at the same time. Usually each lever is provided with a counterbalance-arm, Z, which relieves the operator of the weight of the lever in the upward movements, and also serves to keep the springs and ratchet-rings in relative position; or each ratchet-ring may be provided with lateral walls inclosing the spring.

It is intended by this invention to provide a spring-motor of great power, which can be easily and readily wound, as in the winding each spring (or, when double pawls are used, pair of springs) is wound by the operation of an independent lever and ratchet-ring.

In constructing the machine it is preferred to provide rib-bearings in the case for the ratchet-rings, the teeth of said rings being made double, and the parts of each tooth separated by an interspace, whereby the rib is engaged.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. A spring-motor consisting of a series of coiled springs, all attached to the main shaft, and each having an independent lever winding device, substantially as specified.

2. A spring-motor having, in connection with a series of springs independently attached to the main shaft, a series of independent ratchet-rings respectively attached to the outer ends of said springs and concentric to the main shaft, a series of independent check-pawls, and a series of independent operating-levers pivoted on the main shaft and respectively carrying single or double pawls to engage the teeth of a single ring or of two adjacent rings, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

Witnesses:

JOHN FEARN.

PHILIP C. MASI,
THEO. MUNGEN.