C. L. Spencer.

Mechanical Movement.

No. 87,217. Patented Feb. 23, 1869.

Fig. 1.

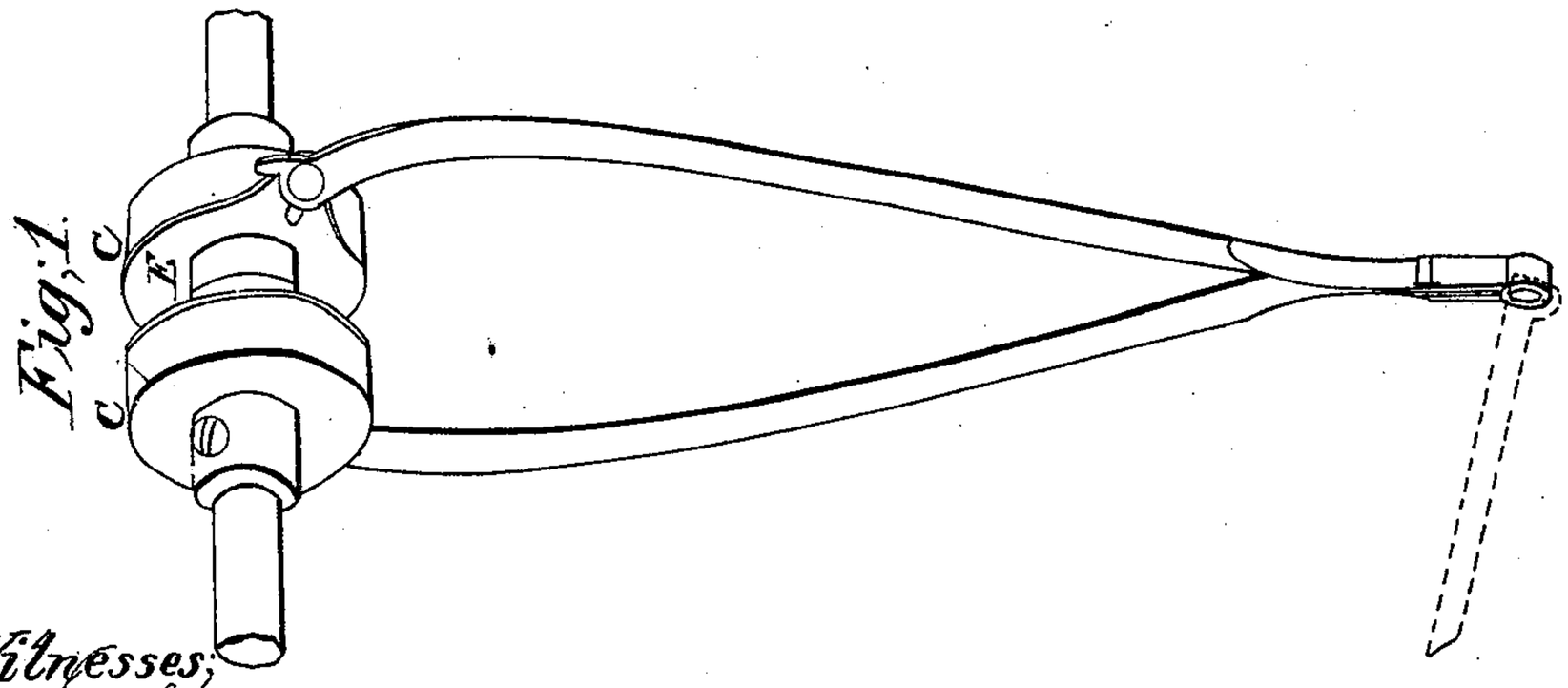

Fig. 2.

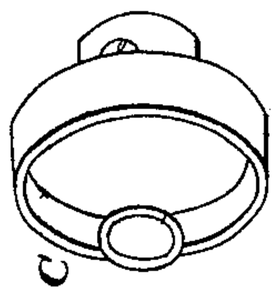

Fig. 3.

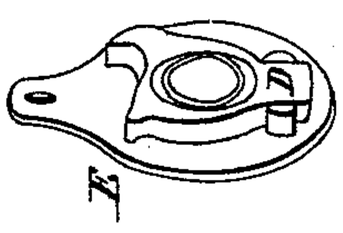

Fig. 4.

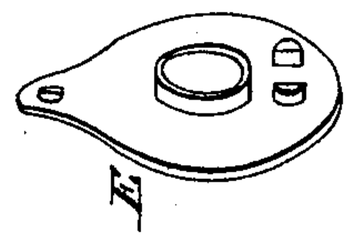

Fig. 5.

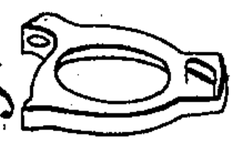

Fig. 6.

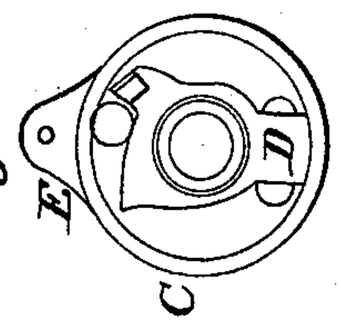

Fig. 7.

Witnesses;
D. N. Greene
P. B. Stiness Jr.

Inventor;
Charles L. Spencer

UNITED STATES PATENT OFFICE.

CHARLES L. SPENCER, OF PROVIDENCE, RHODE ISLAND.

APPARATUS FOR CONVERTING A RECIPROCATING INTO A ROTARY MOTION.

Specification forming part of Letters Patent No. **87,217**, dated February 23, 1869.

To all whom it may concern:

Be it known that I, CHARLES L. SPENCER, of the city and county of Providence, in the State of Rhode Island, have invented a new and useful improvement in the mechanism of a pawl-working ratchet used in converting a reciprocating motion into a rotary motion; and I do hereby declare the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure 1 represents a perspective view of my improvement, as attached to a shaft. Figs. 2, 3, 4, 5, 6, and 7 are detailed parts.

In the accompanying drawing, C, Fig. 2, is a cup, cast with two hubs, the outer one having a set-screw fitted to it for fastening to a shaft. The inner hub is turned true with the inside surface of the flange of cup C. On this hub is fitted loosely the disk E, Fig. 4. This disk is made with a hub extending from its center, and to it the cam D, Fig. 5, is fitted with an oval hole, so as to be independent of and slide upon the face of disk E, and it is held from turning by two studs, as shown in Fig. 3, these studs being attached to or cast on disk E, as shown in Fig. 4.

The lower surface of cam D is made concentric with the inside surface of flange on cup C, as shown in section, Fig. 6, and such cam D, in combination with a roller or some equivalent device for the same purpose acting with a spring, forms a compound pawl, which, when used in connection with connecting-rods attached to a treadle, Fig. 1, enables a reciprocating motion to be converted into a rotary motion in one direction.

A device for a similar purpose, consisting of a suitable roller and spring, used together with cup C and a fixed instead of an independent cam, riveted or cast on disk E, is shown in Letters Patent issued to me September 29, 1863, No. 1,547; antedated, March 4, 1862. In that invention reliance is had entirely upon anti-friction rollers in combination with such fixed cam.

By such arrangement, which is no part of my present improvement, when the rollers become worn (which is often the case) they slip on the inner surface of the flange on cup C, and the desired effect will not be produced.

My improvement consists in a device obviating this defect, by securing a greater friction-surface, and is obtained by the use of an independent cam, D, constructed and arranged as above described, in connection with a suitable wedge or roller in combination with the disk E and cup C, so that the lower or periphery surface of cam D is pressed against the inner surface of flange on cup C, holding the whole clutched together when moving in one direction, and liberated when moving in the opposite direction.

With this improvement there is no liability of slipping in case of the wearing of the roller, as the cam D can be made wide enough on its lower surface to press against one-third of the circumference of flange on cup C, thus making a powerful friction clutching-pawl, being available for indefinite applications or purposes in producing rotary motion.

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

The independent cam D, in connection with a suitable binding-roller and spring, Fig. 7, or equivalent device, in combination with disk E and cup C, the whole being arranged to operate substantially as described, and for the purposes specified.

CHARLES L. SPENCER.

Witnesses:

GEO. H. LINCOLN,

GEO. R. BURDON.