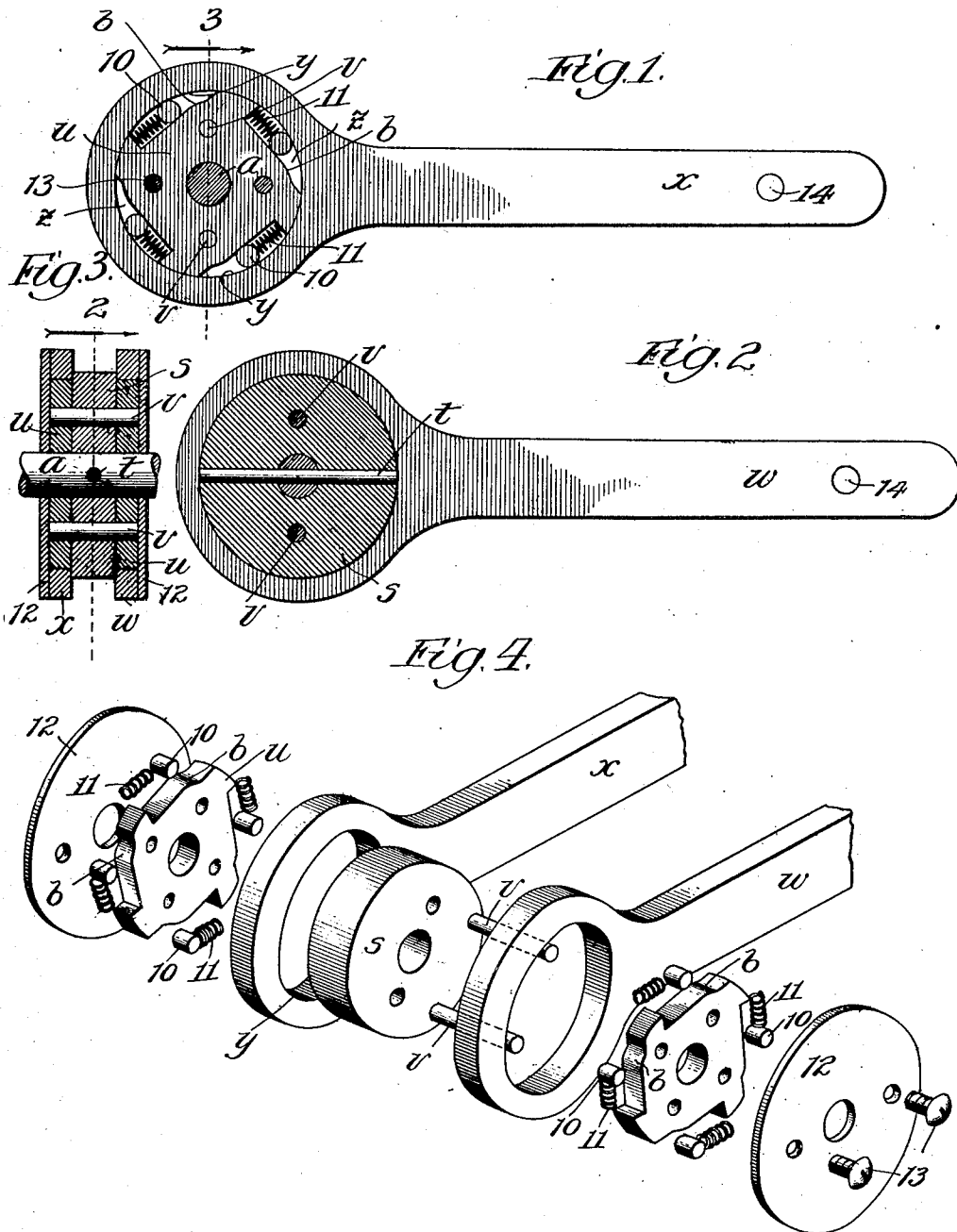


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INTERMITTENT GRIP MECHANISM.
APPLICATION FILED JUNE 21, 1906.

918,451.

Patented Apr. 13, 1909.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHRISTIAN JOHNSON, OF ELGIN, ILLINOIS.

INTERMITTENT GRIP MECHANISM.

No. 918,451.

Specification of Letters Patent.

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Original application filed April 15, 1904, Serial No. 203,286. Divided and this application filed June 21, 1906.
Serial No. 322,731.

To all whom it may concern:

Be it known that I, CHRISTIAN JOHNSON, a citizen of the United States, residing at Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Intermittent Grip Mechanism, of which the following is a specification.

This invention relates particularly to intermittent grip mechanism used in connection with winding devices for spring motors for automatic piano players, and especially to the construction and arrangement of details and parts as will hereinafter more fully appear.

The principal object of this invention is to provide a simple, economical and efficient intermittent grip mechanism used in connection with a safety clutch, as set forth in my Patent No. 825,323, application No. 203,286, of which this application is a division, though it will be understood that this intermittent grip may be used at any place where such devices are necessary.

In the accompanying drawings—Figure 1 is an elevation, partly in section, of my improved intermittent grip. Fig. 2 is a sectional view, taken on the line 2 of Fig. 3. Fig. 3 is a sectional detail, taken on the line 3 of Fig. 1. Fig. 4 is a perspective view of the disassociated parts of the mechanism, showing the relative arrangement thereof before the parts are assembled.

In the drawings I illustrate a double lever mechanism having frictional engagement with an arbor or part to be rotated, all of which permits rotation in one direction while rotation in the other direction is prevented. To this end I provide a centrally located wheel or disk *s* rigidly secured by means of a pin *t* to the arbor or part to be rotated.

Ratchets *u* are provided and rigidly secured, by means of dowel pins *v*, to each face of the centrally located disk. Two operating levers *w* and *x* are provided, each of which has a bored hub portion *y* rotatably mounted in position around the periphery of the ratchets, as shown particularly in Figs. 3 and 4. These bored hub portions are so mounted as to provide a plurality of

ratchet spaces *z* between the ratchets and the bored hub portions of the operating levers, and in these ratchet spaces are movably mounted rollers 10. Interposed between these rollers and the shoulders of the ratchets are helically coiled springs 11, so arranged that as the operating lever mechanisms are vibrated in the direction indicated by the arrow in Fig. 1, the rolls cause a gripping action to take place between the lever and the ratchet, so as to carry the arbor around in one direction. It will be seen from an examination of the detail view shown in Fig. 4 that the ratchets are secured to the faces of the centrally located disk in the same manner. By this arrangement one of the operating levers *w* can be vibrated in one direction, while the operating lever *x* is vibrated in the other direction, thus giving a constant step by step rotation to the key arbor *a*. To hold the parts of the operating levers in position—in other words, to prevent the displacement of the operating levers, rolls and springs 11 from operative position—face plates 12 are provided and rigidly secured to the faces of the ratchets, by means of headed screws 13. It will be observed that the ratchets adjacent the shouldered portions are provided with offsets or depressions *b*, for the purpose of maintaining the angle between the face of the ratchet portion *u* and the inner face of the ring *y* small enough to secure positive binding in case the roller wears away to a less diameter than it now has.

I claim:

In a mechanism of the class described, a disk, ratchet wheels adjacent thereto on the opposite faces, transverse studs through the disk and the ratchet wheels, a central shaft fixed to said disk, levers having hub portions surrounding said ratchet wheels, spring pressed rollers between the said hub portions and the ratchets, and retaining plates attached to the outside faces of the ratchet wheels.

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Witnesses:

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