H. Ehrenfeld,

Clutch.

No. 26,261. Patented Nov. 29, 1859.

Fig 1.

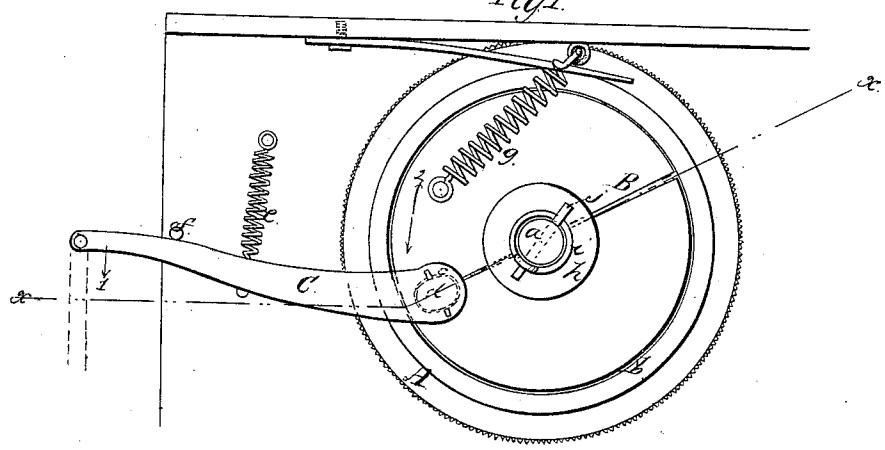


Fig 2.

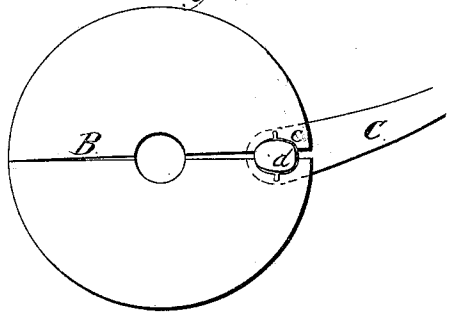
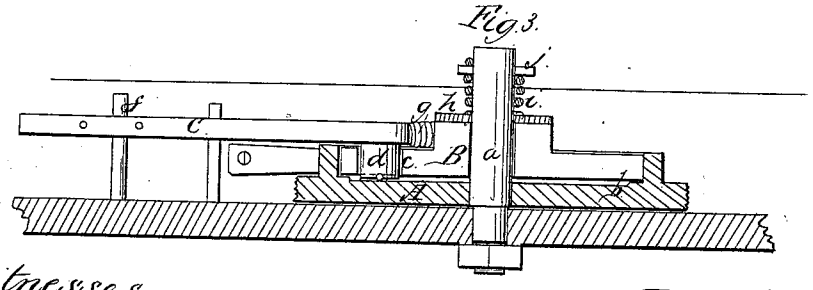


Fig 3.



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IMPROVEMENT IN MACHINES FOR CONVERTING RECIPROCATING INTO INTERMITTENT ROTARY MOTION.

Specification forming part of Letters Patent No. **26,261**, dated November 29, 1859.

To all whom it may concern:

Be it known that I, HENRY EHRENFELD, of the city, county, and State of New York, have invented a new and Improved Device for Converting Reciprocating into Intermittent Rotary Motion; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a front elevation of my invention. Fig 2 is a detached back view of the friction-plates and the lever, which form the chief part of my invention; and Fig. 3, a transverse view of my invention, taken in the plane indicated by the line *x x*, Fig. 1.

Similar letters in the three views indicate corresponding parts.

This invention consists in arranging, in a recess formed by the wheel or roller to which the intermittent rotary motion is to be imparted, a circular plate that fits closely into said recess, and which is cut or split open through its center, and furnished with an oblong hole forming a socket for an oblong pin attached to the lever, which serves to communicate motion to the wheel, so that the slightest reciprocating or oscillating motion imparted to the outer end of said lever causes the oblong pin, as it turns in its socket, to force the edges of the plate tightly up to the sides of the recess, and to bind in the same as long as the strain exerted on the lever continues, whereas when the power relaxes, the plate recedes independent from the wheel, whereby an intermittent rotary motion is imparted to the wheel or roller as long as the reciprocating or oscillating motion of the lever lasts.

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

A represents a wheel or roller, which turns freely on a pin or axle, *a*. This wheel is furnished with a recess that serves to receive a circular plate, B, which fits closely into said recess and covers the pin *a*, as clearly shown in Figs. 1 and 3. When left to itself, this plate can be rotated freely in said recess, and independent from the wheel or roller A. This plate is split open or cut through in its center in such a manner that the two halves can be sprung apart on one side—that is, on that side on which the plate is provided with an oblong hole, *c*, which forms a socket for an oblong pin, *d*, that is firmly secured in one end of a lever, C, which serves to communicate motion to the wheel. The other end of this lever connects with the source of power, which imparts a reciprocating or oscillating motion to the lever in the direction indicated by arrow 1 in Fig. 1, and a spring, *e*, serves to keep the lever up to a stop, *f*, when no power is exerted on the same.

The plate B is subjected to the action of a spring, *g*, which has a tendency to turn the same in the direction of arrow 2, and said plate is kept in the recess *b* by means of a washer, *h*, forced down on the plate by a spiral spring, *i*, which fits over the pin *a*, being kept in its place by a pin, *j*, as clearly represented in Fig. 3.

The friction created by the washer *h* and plate B prevents the wheel A moving spontaneously; and if the outer end of the lever C is moved in the direction of arrow 1, the oblong pin *d* on the inner end of the same is turned in its socket *c*, forcing the two halves of the plate B apart, and causing them to bind in the recess *b*, so that the slightest motion of the outer end of the lever in the direction of arrow 1 causes the wheel to rotate in the direction of arrow 3. As soon as the power relaxes, the lever C, together with the plate B, are drawn back to their original position by the action of the springs *e* and *g*. During this retrograde motion of the plate B no power is exerted on the same, which would cause its edge to bind in the recess *b* of the wheel, and the latter remains stationary.

This device is applicable to many useful purposes—as, for instance, to drive the feed-wheel of a sewing-machine, or any other wheel in which an intermittent but direct rotary motion is required—and the distinguishing features of my device are that it is exceedingly simple in its construction and perfectly sure in its action, and that it does not lose in the least in its effectiveness when the working parts of the same wear out, until the plate should become so small that the pin *d* can be turned all round in its socket *c*, without causing the edge of the plate to bind in the recess *b* of the wheel.

It will be easily understood that the plate B may either be made out of two halves, as represented in the drawings, or out of one piece cut through in its center far enough to allow that end in which the oblong socket is made to be spread apart by the action of the oblong pin *d* on the lever C.

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

The plate B, or its equivalent, arranged with a socket, *c*, and cut or split through its center, as described, to operate in combination with the wheel A and lever C, which latter is furnished with an oblong pin, *d*, or its equivalent, substantially in the manner and for the purpose specified.

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