G. W. BAKER.
Safety-Clutch.

No. 220,955. Patented Oct. 28, 1879.

Fig 2.

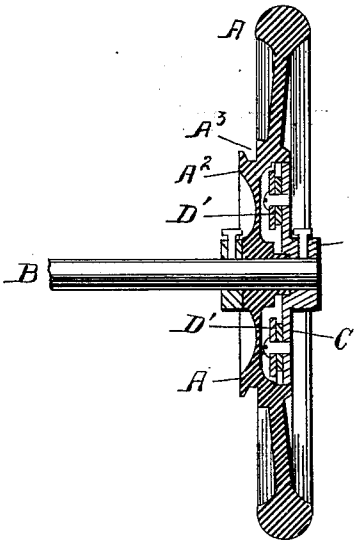
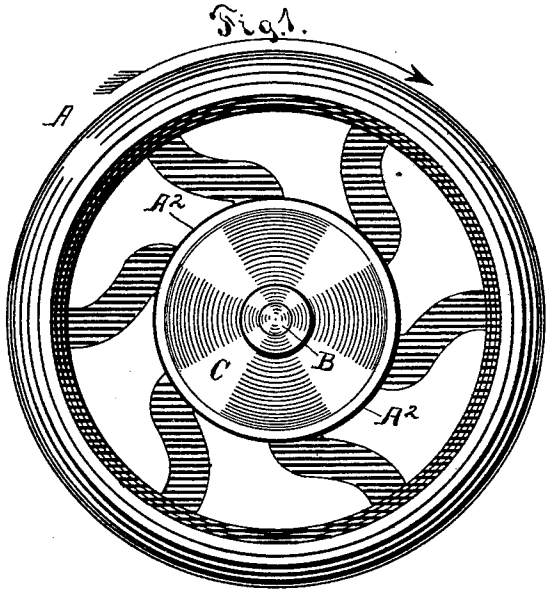
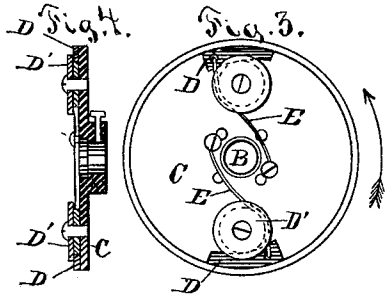


Fig 1.





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UNITED STATES PATENT OFFICE.

GEORGE W. BAKER, OF CLEVELAND, OHIO.

IMPROVEMENT IN SAFETY-CLUTCHES.

Specification forming part of Letters Patent No. **220,955**, dated October 28, 1879; application filed September 2, 1879.

To all whom it may concern:

Be it known that I, GEORGE W. BAKER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Safety-Clutches; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to a safety-clutch to be used in connection with a fly or drive wheel, that shall operate to prevent the wheel from turning its shaft excepting in one direction; and while the device is clearly applicable to any machines wherein a backward movement is desired to be prevented, I have designed the present device for use upon sewing-machines.

My invention consists in the improved construction hereinafter described and claimed for accomplishing the above result.

In the drawings, Figure 1 is a front or face view of my device. Fig. 2 is a view in vertical cross-section thereon; Fig. 3, a detached face view of the friction-clutch arrangement; and Fig. 4 is a view, in vertical cross-section, of the part shown in Fig. 3.

In the said drawings, A is the drive wheel, and B its shaft. The wheel A is itself loosely fixed upon a shaft, B, so that were it not for the clutch mechanism it would turn idly upon said shaft in either direction.

The wheel A is constructed with an enlarged hub portion, A^2, within the cavity of which is located the clutching mechanism. This clutching mechanism is attached to the plate or disk C, which fits within and incloses the cavity of the hub A^2.

The clutching mechanism is shown in detail at Figs. 2, 3, and 4 of the drawings, consisting, essentially, of one, two, or more wedges, D, held in position by light springs E. These wedges are placed between the inner rim-surface of the hub A^2 and stationary blocks D'.

In order to prevent lateral displacement of the wedges D, I prefer constructing the blocks D' with a flange, so that the wedges D shall rest upon said blocks between the said flange and the disk C.

The friction between the clutching mechanism and the wheel A is between the outer circular faces of the wedges D and the inner face of the chamber of the hub A^2.

In Fig. 3 the arrow shows the direction that the wheel A can turn idly—that is, without revolving its shaft B—while the solid arrow indicates the direction that the wheel must take to revolve the shaft B; for when it takes this direction the friction between the wedges D and the chamber of the hub A^2, by being forced between the stops D and the said inner walls of said hub-chamber, operates to unite the clutching mechanism, the hub A^2, the shaft B, and the wheel A into a single structure, operating as a solid wheel.

The plate C, to which the clutching mechanism is attached, is rigidly fixed upon the shaft B, while, as before mentioned, the wheel A revolves loosely upon said shaft.

I do not limit myself to the employment of two wedges, D, and the mechanism actuated therewith. As before described, one, two, or more of these wedges and their operating mechanism may be provided, as necessity or fashion may dictate; for in running very light wheels a single wedge would often suffice, whereas in very heavy machinery several might be required.

The two wedges D and their mechanism D' E (shown in Fig. 3 of the drawings) are mere duplications, the one of the other.

The spring E, while permitting the wedge D to yield in the direction of the broken arrow, retains this wedge in its place between the stop D' and the hub A^2, so as to clutch and unite the hub A^2 and the plate C whenever moving in the direction indicated by the solid arrow.

For use in sewing-machines, to which I design more particularly to adapt my invention, the arrangement shown and described serves a very useful purpose; for it is never desirable to reverse the motion of a sewing-machine mechanism; and by the use of my device this reverse motion can never be had unless intentionally produced; for whether the wheel A is turned by hand or by the operation of a belt upon its pulley portion A^3, the result will be, as already specified, that the shaft B will only be turned when the wheel A travels in the direction indicated by the solid arrow in Fig. 3.

Of course, if it is desired that the shaft B should operate in the opposite direction from that herein shown the arrangement of parts, as shown in Fig. 3, need only to be reversed.

What I claim is—

1. The combination, with a revolving shaft, a drive-wheel loosely mounted thereon and formed with a chambered hub, and a circular plate rigidly secured on the shaft within said hub-chamber, of a stop projecting from the plate, a wedge fitting between the stop and the rim-edge of the hub-chamber, together with a spring, which maintains the wedge in said position while the drive-wheel is on the forward revolution, substantially as set forth.

2. The combination, with a revolving shaft, a drive-wheel loosely mounted thereon and formed with a chambered hub, and a circular plate rigidly fastened on the shaft, of a flanged stop-wheel pivoted on the inner face of the plate, a wedge fitted between said flanged wheel and the edge of the hub-chamber, together with a spring adapted to maintain the wedge in said position while the machine is revolving forward, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE W. BAKER.

Witnesses:

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