

No. 810,938.

PATENTED JAN. 30, 1906.

W. HANKE.  
SAFETY DEVICE.  
APPLICATION FILED FEB. 9, 1905.

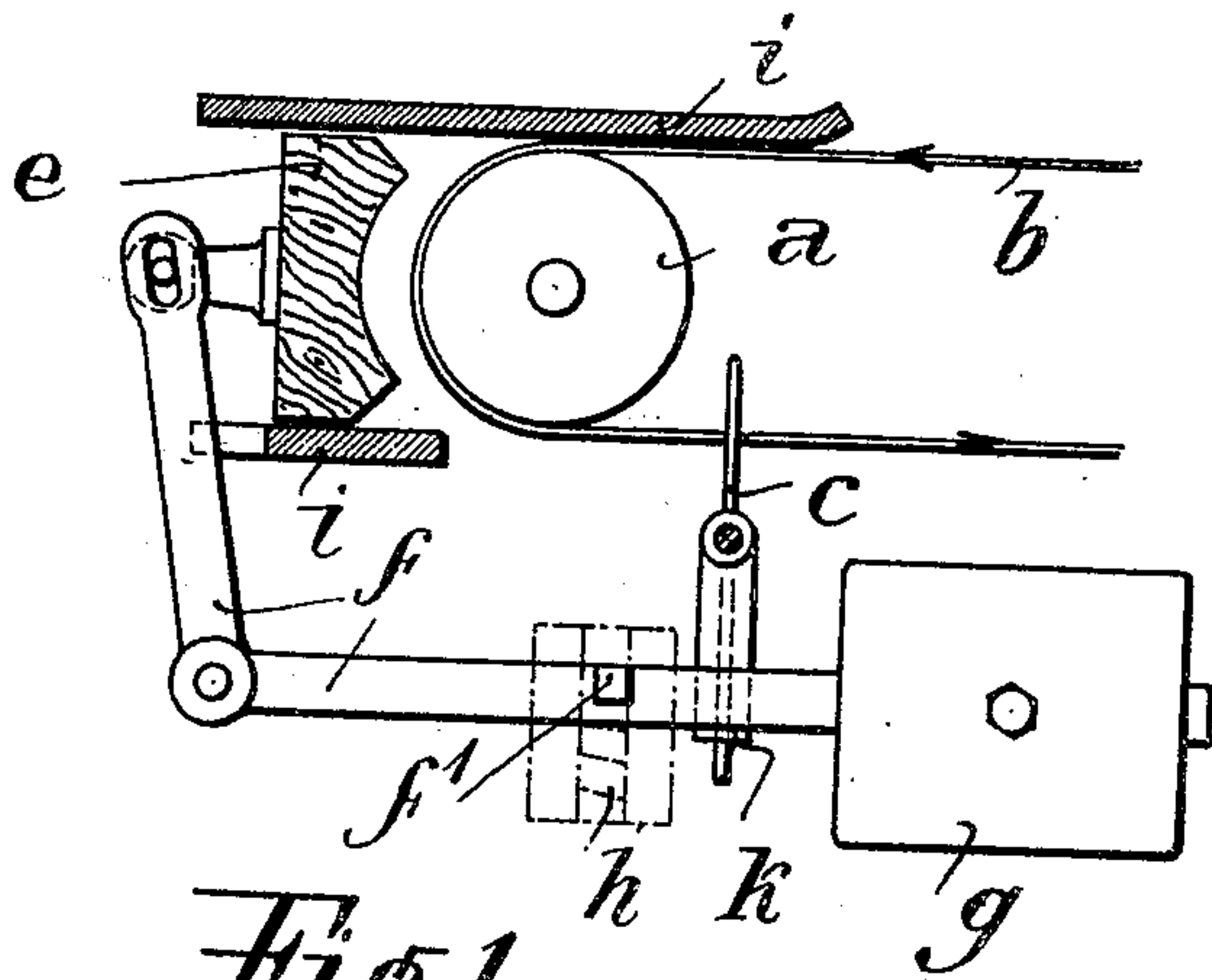


Fig. 1.

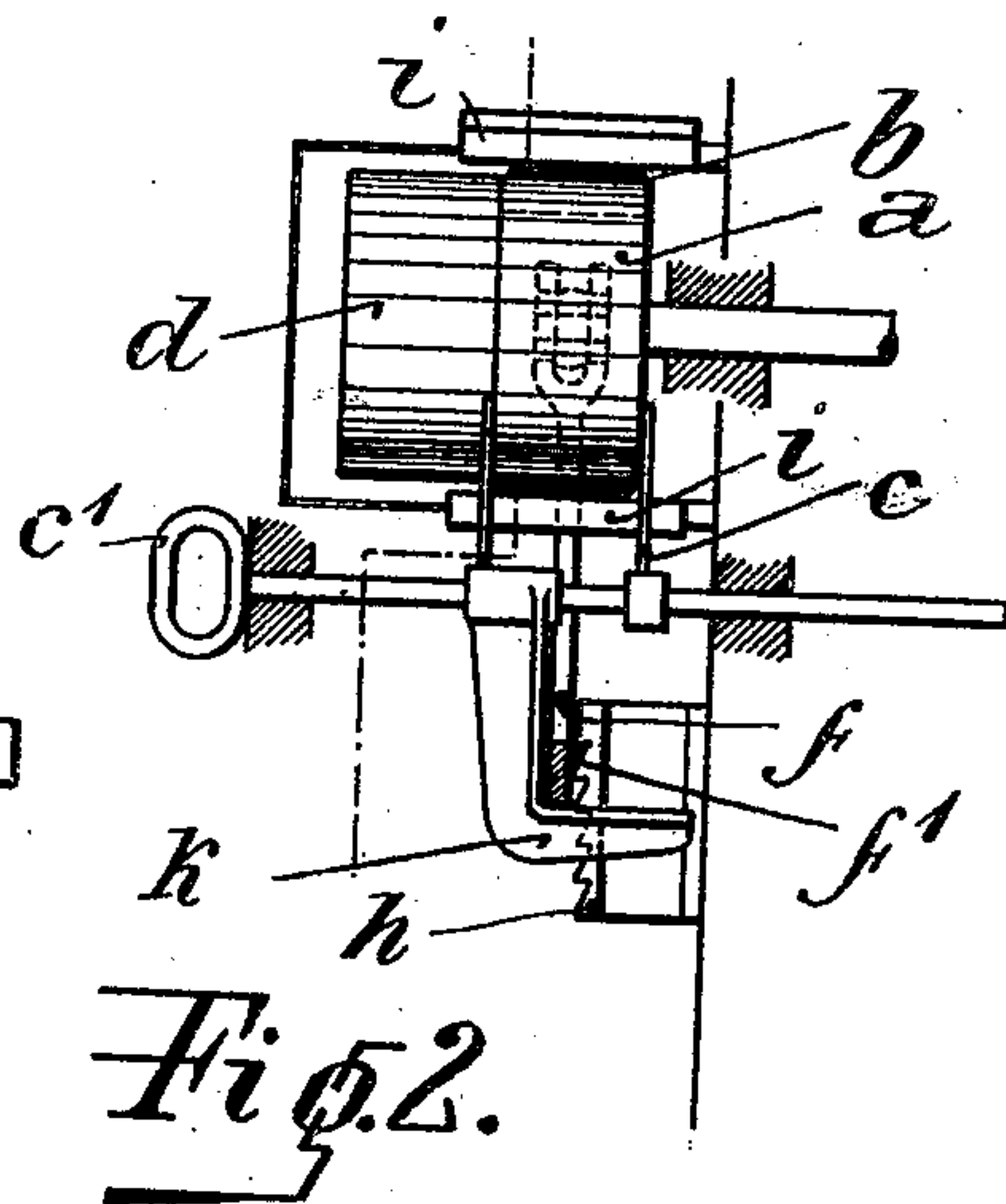


Fig. 2.

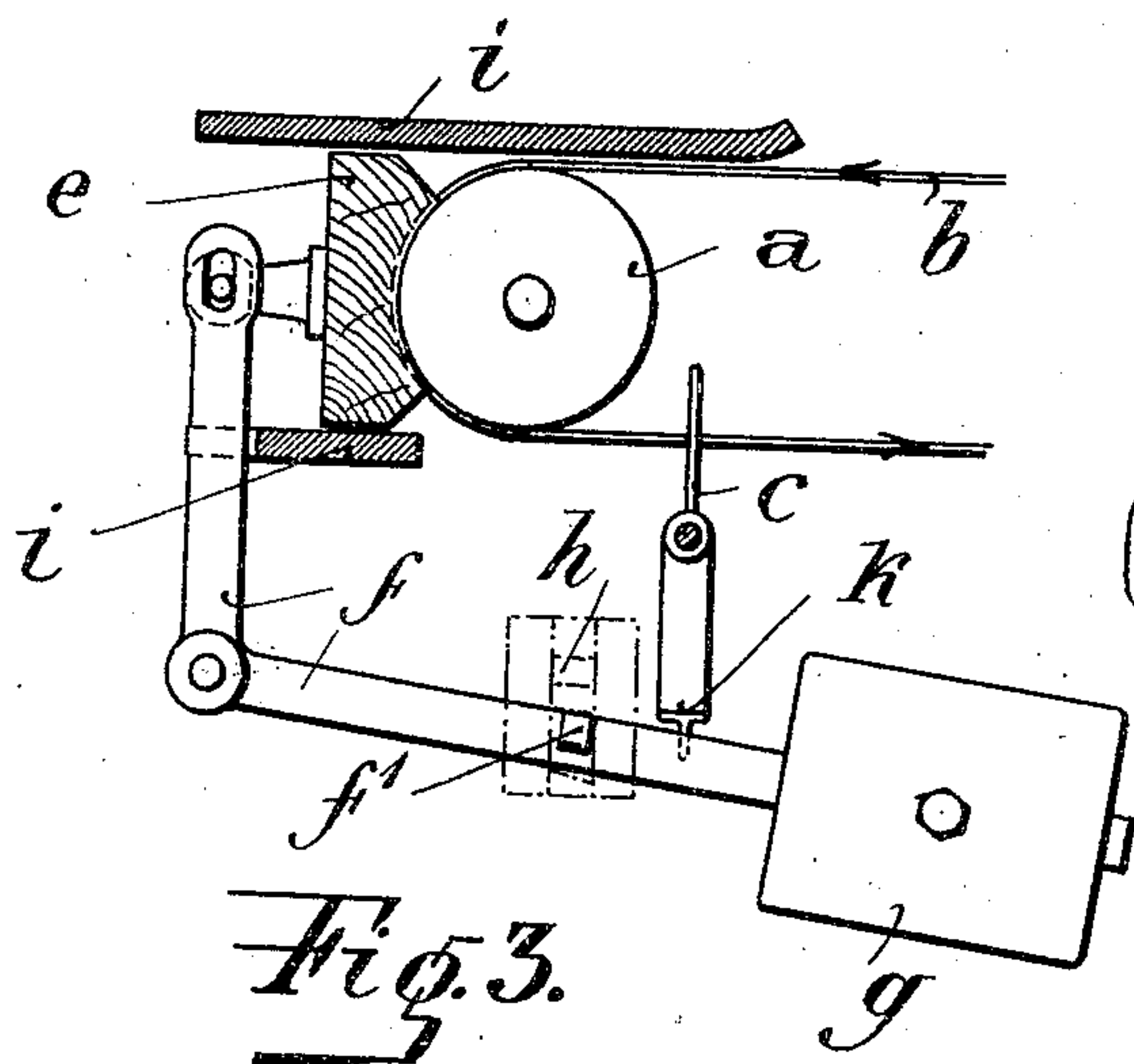


Fig. 3.

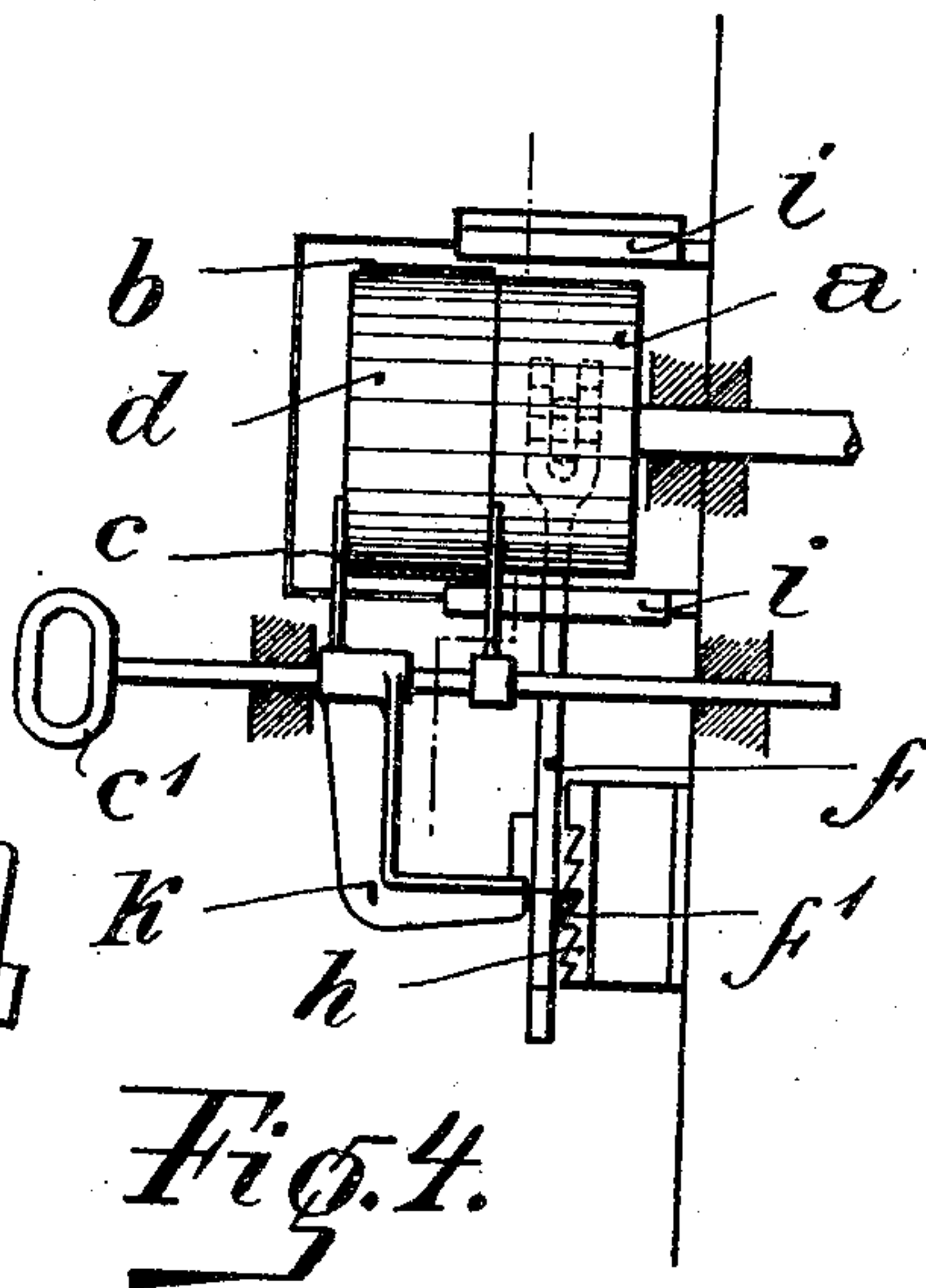


Fig. 4.

Witnesses:  
*Miller*  
*W. Rottmann*

Inventor:  
*Wilhelm Hanke*



# UNITED STATES PATENT OFFICE.

WILHELM HANKE, OF GOWARZEWO, NEAR SCHWERSSENS, GERMANY.

## SAFETY DEVICE.

No. 810,938.

Specification of Letters Patent.

Patented Jan. 30, 1906.

Application filed February 9, 1905. Serial No. 244,930.

*To all whom it may concern:*

Be it known that I, WILHELM HANKE, a subject of the German Emperor, and a resident of Gowarzewo, near Schwerssens, Province of Posen, Prussia, Germany, have invented a certain new and useful Improvement in Safety Devices for Machines with Belt Driving and Disengaging Gear, of which the following is a specification.

The present invention relates to improvements in safety devices for machines with belt driving and disengaging gear.

These improvements consist, essentially, of a locking device for the belt-pulley brakes, a special construction of the guiding devices for the brake-block, and in other special arrangements hereinafter described. The locking device has for its object to prevent an automatic release of the brake device for the belt-pulley when the brake-block, the brake-band, or the like is pressed against the brake-pulley by means of a weight, spring, or the like. In the case of the braking devices hitherto known, which were constructed without a locking device, the brake-block or the brake-band as soon as the same was to come into action was thrown back by fits and starts by the rotational force of the belt-pulley. The object of the present improvement is to prevent this action.

When using brake-blocks of the kind hitherto employed, the additional disadvantage has existed that the brake-block easily tilted during its motion and on pressure being applied lay non-uniformly against the belt-pulley. The braking action was therefore, on the one hand, uncertain and, on the other hand, it came only slowly into operation.

A further feature of the present invention consists in the guides for the brake-block being formed at the same time as a belt-protecting device, this being effected by suitably extending said guides.

One constructional form of the present improved device is represented in the accompanying drawings, in which as a braking device a brake-block influenced by a weighted lever is employed.

In said drawings, Figure 1 shows the device in side elevation in its position of rest. Fig. 2 is a front elevation of Fig. 1. Fig. 3 shows the device in side elevation in its working position. Fig. 4 is a front elevation of Fig. 3.

On the belt-pulley *a* the driving-belt *b* runs, said belt being brought onto the idle

pulley *d* by means of a disengaging device *c*, which may be of any desired construction. The disengaging device *c* is connected with a handle *c'*, on which a support *k* is mounted, which carries the horizontal arm of the angle-lever *f* during the time when the driving-belt *b* runs on the belt-pulley *a*. The other arm of the angle-lever *f* is connected to the middle part of the back of the brake-block *e*, so that the latter is uniformly pressed forward and a tilting of the same in the guides *i* is prevented, which guides *i* extend in such a way that they simultaneously serve as a belt-protector, Figs. 1 and 2, and prevent accidents. A rack *h* is provided on the frame of the machine and a tooth-shaped projection engages the same. Furthermore, the lever *f* is provided on its free end with a weight *g*.

The operation of the device is as follows: The handle *c'* is pulled with a view to move the belt *b* from the driving-pulley *a* to the idle pulley *d*. While doing so, the support *k*, firmly connected to the handle *c'*, moves in the same direction, and the horizontal arm *looses its support, and the adjustable weight *g* forces the arm from its horizontal position to a sloping position, and this causes the vertical arm of the lever *f* to forward the brake *e*, connected with said arm, to the pulley *a*, and to arrest the same. The toothed-shaped projection *f'* and the rack *h* prevent the brake from being thrown back by the rotary motion of the belt-pulley *a*.*

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

1. In a machine having a fast and a loose pulley, a driving-belt, and means for placing said belt in and out of gear, the combination of a brake adapted to bear against the fast pulley, a guide for guiding said brake, said guide having an extension situated in proximity to the belt and adapted to form a belt-protector, a lever, means connecting said lever with said brake, means exerting a force on said lever and tending to apply the brake to the fast pulley, means for normally holding said lever in its position corresponding to the off position of the brake, and means for locking said brake in its applied position, substantially as and for the purpose set forth.

2. In a machine having a fast and loose pulley, a driving-belt, a belt-fork for placing said belt in and out of gear, a slidable rod carrying said fork, a handle on said rod, the combination of a brake-block *e* adapted to bear against the fast pulley, a guide *i* for guiding



said brake-block, said guide having an extension situated in proximity to the belt and adapted to form a belt-protector, an angle-lever  $f$  having a projecting tooth  $f'$ , means  
5 connecting said lever with the central portion of the back of said brake-block, a weight  $g$  on said angle-lever and tending to apply the brake-block to the fast pulley, a stop  $k$   
10 mounted on the rod carrying the belt-fork and adapted to normally support the angle-lever and to hold it in its position corresponding to the off position of the block and to move out of engagement with said lever

when the belt is thrown out of gear, and a toothed rack  $h$  with which the tooth on the lever  $f$  is adapted to engage when the brake-block is in its applied position, substantially as and for the purpose set forth.

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

WILHELM HANKE.

Witnesses:

HANS HILDEBRANT,  
MARIE FRANK.