

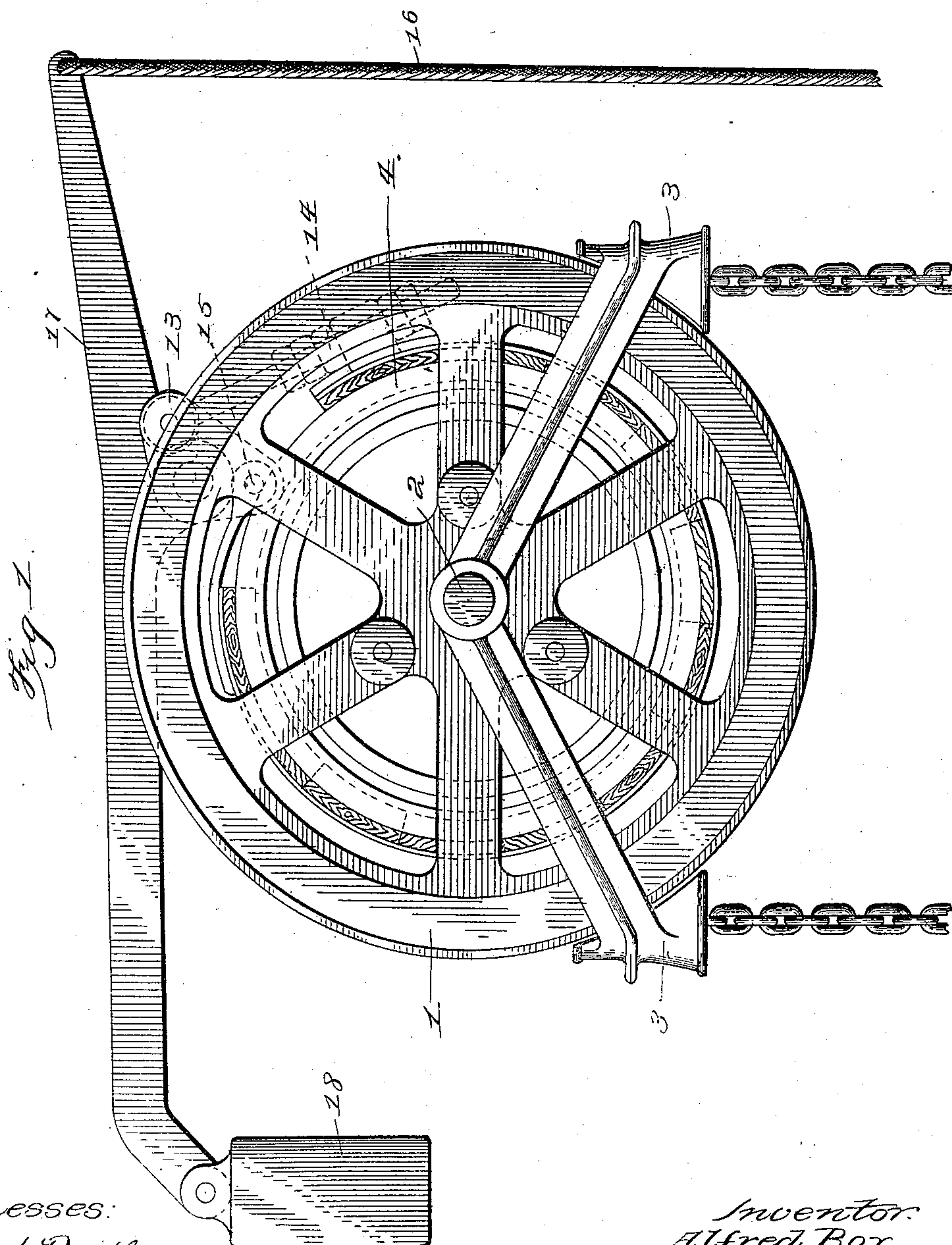
(No Model.)

2 Sheets—Sheet 1.

A. BOX.  
MACHINE BRAKE.

No. 568,233.

Patented Sept. 22, 1896.



Witnesses:

Herbert Bradley

Geo. C. Cruise

Inventor:  
Alfred Box.

By Knight Bros  
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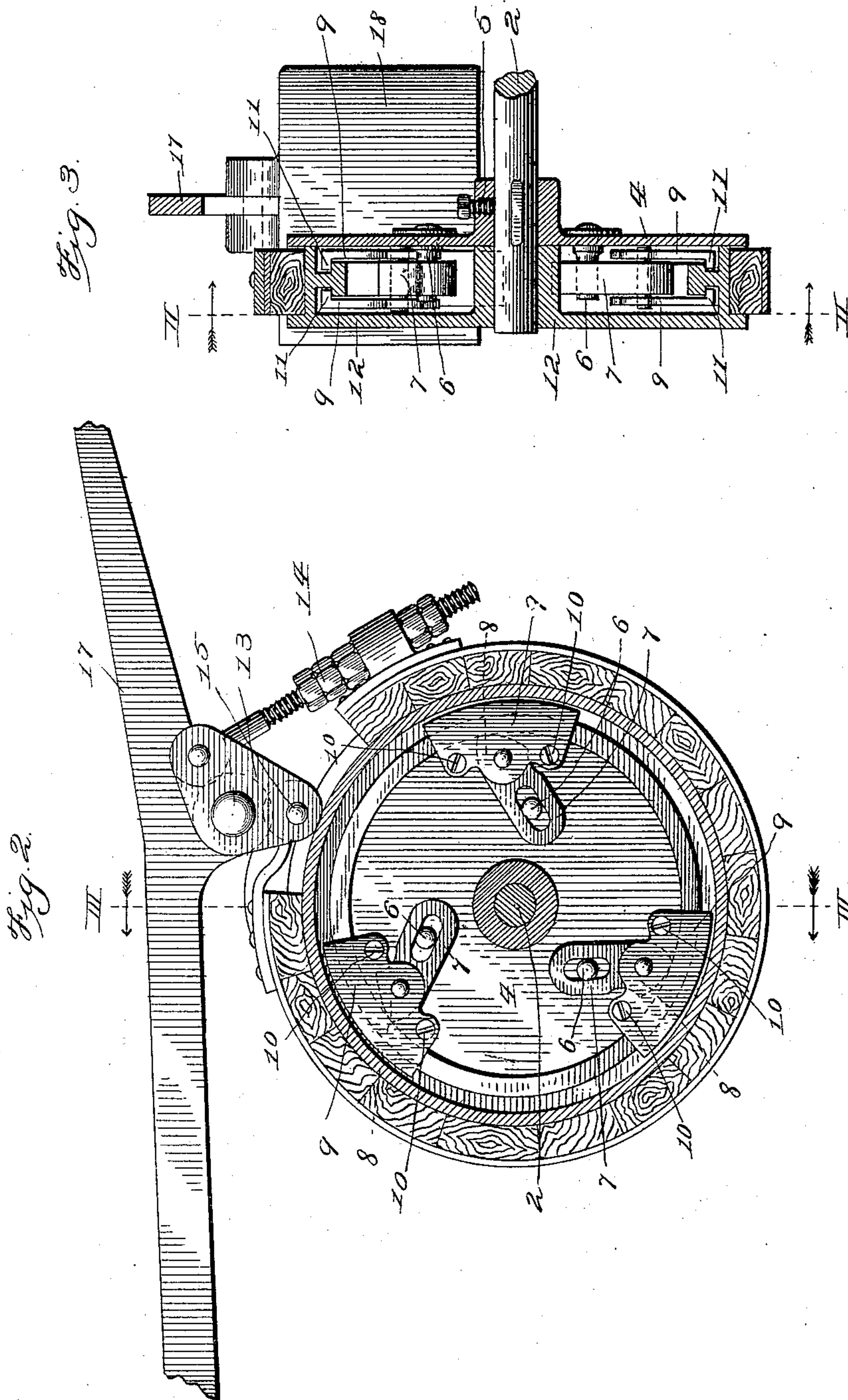
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# UNITED STATES PATENT OFFICE.

ALFRED BOX, OF PHILADELPHIA, PENNSYLVANIA.

## MACHINE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 568,233, dated September 22, 1896.

Application filed March 21, 1896. Serial No. 584,281. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED BOX, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machine-Brakes, of which the following is a specification.

My invention relates more particularly to that class of machine-brakes which are employed on hoisting-machines or cranes, though it may be used in any connection where it is desired to brake on a reverse movement of the device; and it consists, essentially, of a driven shaft, on which is loosely mounted a pulley which carries on its periphery a strap-brake, and a disk rigidly secured on the shaft, having automatic means carried thereby and in connection with the loose pulley which will tend to clamp against the loose pulley on a reverse movement of the shaft and thus brake it, but which will have no effect when moved in the forward direction.

In order that my invention may be fully understood, I will proceed to describe the same with reference to the accompanying drawings, in which—

Figure 1 is an elevation of a hoisting-pulley having my brake applied thereto. Fig. 2 is a sectional view taken on the line II II, Fig. 3, the hoisting-pulley being omitted, and looking in the direction of the arrow. Fig. 3 is a vertical section taken on the line III III, Fig. 2, looking in the direction of the arrow.

In the said drawings, 1 represents a hoisting-pulley rigidly mounted on a driven shaft 2. The pulley is provided with the usual grooved periphery and with the chain-guides 3.

4 represents a disk also rigidly mounted upon the shaft 2 by the set-screw 5, (see Fig. 3,) but in Fig. 1 I have shown it rigidly secured to the pulley 1. The disk 4 has pivoted to it on the pins 6 the slotted levers 7, provided with the cam-heads 8, and pivoted to the cam-heads 8 are the brake-shoes 9. These brake-shoes (see Fig. 3) are formed in two parts, which are adjustably held together by the screws 10. These shoes are also provided with the inturned edges 11, in order that they may surround the T-flange which

is formed on the pulley 12, loosely mounted on the shaft 2. The pulley is provided with a grooved periphery in which the strap-brake 13 fits, it being adjustable on the periphery by the means shown at 14. The strap-brake is normally in engagement with the pulley 12, and it is held from being released by the pivot-pin 15, which is secured to a suitable support.

16 represents an operating-cord secured to the lever 17, which carries the weight 18 and when operated loosens the strap-brake and leaves the pulley free to be turned.

The operation of my device is as follows: The shaft, hoisting-pulley, and disk 4 are turned in one direction while the loose pulley is held by the strap-brake. When the disk is turned in one direction, the brake-shoes are carried around on the flange by the disk, thus, without any friction being permitted by the slotted levers, owing to their arrangement, being moved to a position so as to bring the cam-heads out of engagement with the shoes. As soon, however, as there is a reverse movement of the disk and shaft the slotted levers will move on their pivot-pins and cause the cam-heads to bear upon the shoes and clamp them against the flange, and the pulley being braked will prevent further movement of the disk and shaft. As soon, however, as the strap-brake is loosened in the periphery of the pulley the shaft is permitted to turn in the reverse direction.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination of a shaft, a pulley formed with a T-flange and mounted loosely on the shaft, a disk fixedly mounted on the shaft, the levers provided with cam-heads adapted to bear on the T-flange and having pin-and-slot connection with the disk, and the shoes having inturned edges for engaging the T-flange and pivoted to the cam-heads of the levers; substantially as described.

2. In a machine-brake, the combination of a driven shaft, a pulley formed with an internal flange and loosely mounted on said shaft braking means in connection therewith, a disk rigidly secured on said shaft, slotted levers having cam-heads pivoted on said disk,

and brake-shoes pivoted on the cam-head engaging said flange, substantially as shown and described and for the purpose set forth.

3. In a machine-brake, the combination of  
5 a driven shaft, a loose pulley, a braking means, a disk rigidly secured to said shaft, and a connecting means between the disk and pulley consisting of pivoted slotted cam-levers, shoes pivoted to their cam-heads and  
10 in engagement with the loose pulley, and so arranged that when the disk is revolving in

one direction the shoes will move around the pulley, but when moved in the reverse direction the slotted levers will move so as to bring their cam-heads to bear on the shoes 15 and clamp them against the pulley and thus brake the disk and shaft, substantially as shown and described.

ALFRED BOX.

Witnesses:

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