2 Sheets—Sheet 1.

W. WARNER.

ELEVATOR.

No. 175,582. Patented April 4, 1876.

Fig. 1

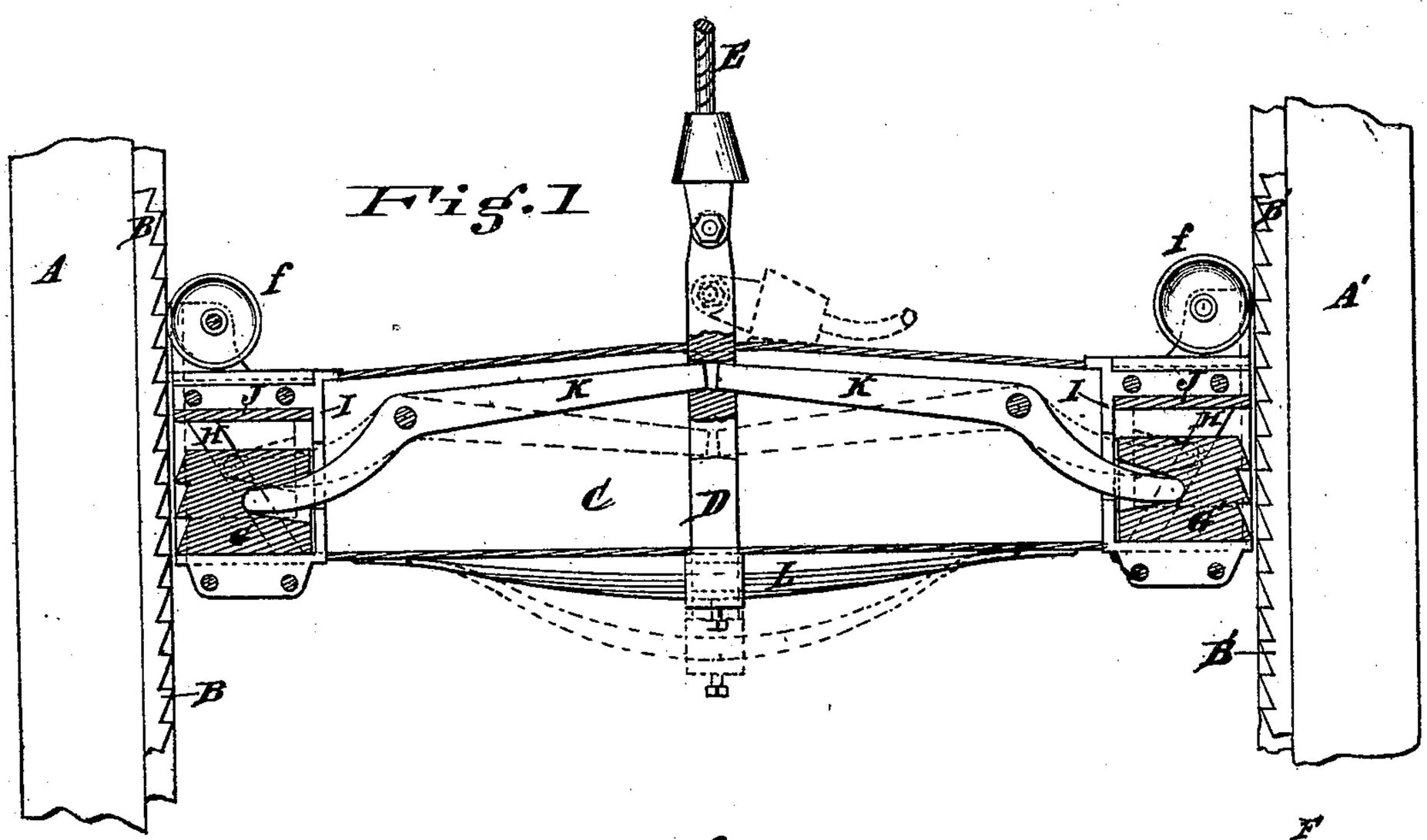
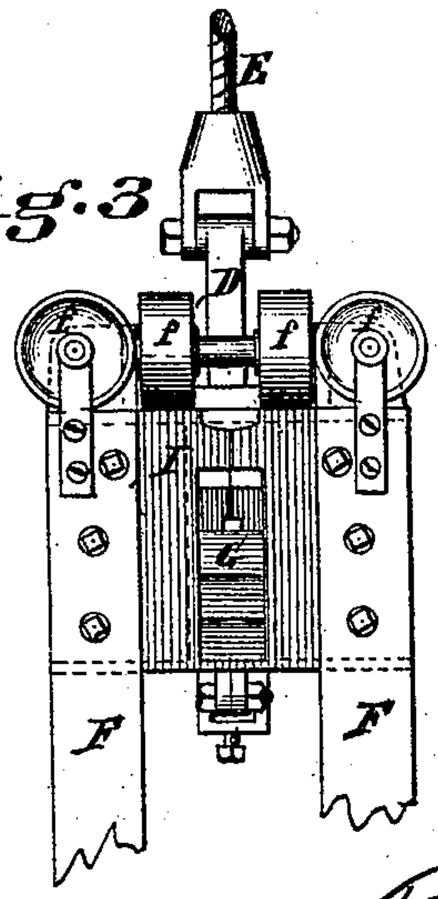


Fig. 2

Fig. 3



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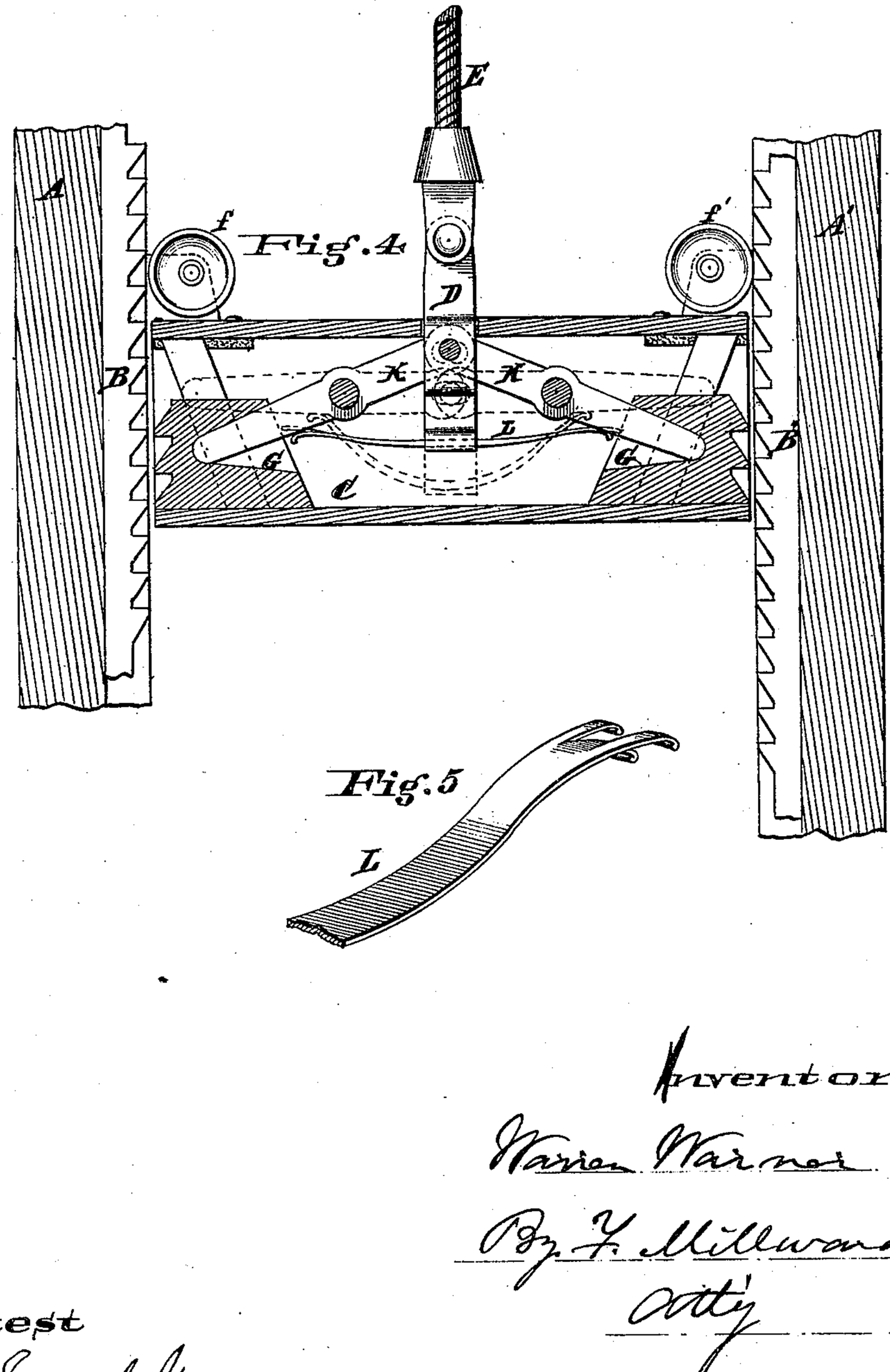

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UNITED STATES PATENT OFFICE.

WARREN WARNER, OF CARTHAGE, OHIO.

IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. **175,582**, dated April 4, 1876; application filed February 2, 1876.

To all whom it may concern:

Be it known that I, WARREN WARNER, of Carthage, Hamilton county, and State of Ohio, have invented an Improvement in Elevators, of which the following is a specification:

My invention relates to devices for arresting the downward motion of the platform after an accidental breakage of the hoisting-rope; and consists in the provision of toothed safety-catches operated by a spring, in such a way that, as they extend outward by the power of the spring after the rope is broken, they will, with relation to the platform, have an upward as well as outward motion, for the purpose of gaining time for the full engagement of the catches, and enable the upright toothed guides of the machine to force the catches positively into their places.

Figure 1 represents, between the ordinary posts of a hoisting-machine, a sectional view of a platform-head embodying my invention. Fig. 2 is a plan of the same. Fig. 3 represents a sectional view of a platform with my preferred construction for the mechanism which operates the angularly-sliding catches.

A A′ are the hoisting-ways or side guides, fitted with the customary toothed uprights B B′. The head C of the platform is fitted with the customary sliding yoke D, to which the rope E is secured, and, if necessary, with the anti-friction rollers *f*, the head also having the usual side posts F, to sustain the platform below. G G′ are two toothed blocks, fitted (by reason of the provision of angular side guides H, on which they move) to move out, upward, and outward. They are fitted in iron chambers I, and when up to the fullest extent abut against the rubber bumper J to avoid shocks. They are operated by levers K and spring L, the spring and ends of the levers being carried by the sliding rope-yoke D, which, when the rope breaks, is drawn down by the spring forcibly, so as to throw the ends of the levers down and the blocks G G′ into mesh with the racks B B′.

The spring is attached, preferably, as shown in Fig. 4, so that it will not only act to pull the yoke D down, but will at the same time force the outer ends of the levers upward; and the spring may be forked at the ends, as shown in Fig. 5, to preserve a proper connection with the ends of the levers.

The movement of the blocks G G′ angularly secures an important result, in this, that it gives time for the catching of the teeth when the platform has commenced to fall, and also enables the teeth to perfect their engagement while in the act of falling, and before the entire weight of the platform rests upon the teeth. This avoids the tendency to shear off the ends of the teeth, and prevent their full engagement, which exists in every other machine.

Another advantage in the operation of these angularly-moving blocks is, that they are definitely stopped against the bumpers, and do not press outward against the sides of the ways in sustaining the weight of the platform.

I do not propose to claim, broadly, the combination, with toothed racks, of angularly-sliding toothed catch-blocks, controlled by a spring-yoke through the intervention of levers, but confine myself to such combination when the outer ends of the levers engage recesses in the catch-blocks, which is a more simple mode of construction than, and fully as effective, as that heretofore known.

I claim—

1. The combination, substantially as specified, of the toothed side racks of a hoisting-machine, the angularly-sliding catch-blocks, and the bumpers.

2. The combination, substantially as specified, of the angularly-sliding catch-blocks, provided with recesses, the levers K, the outer ends of which engage said recesses, spring L, and yoke D.

In testimony of which invention I hereunto set my hand.

WARREN WARNER.

Witnesses:
JOHN E. JONES,
J. L. WARTMANN.