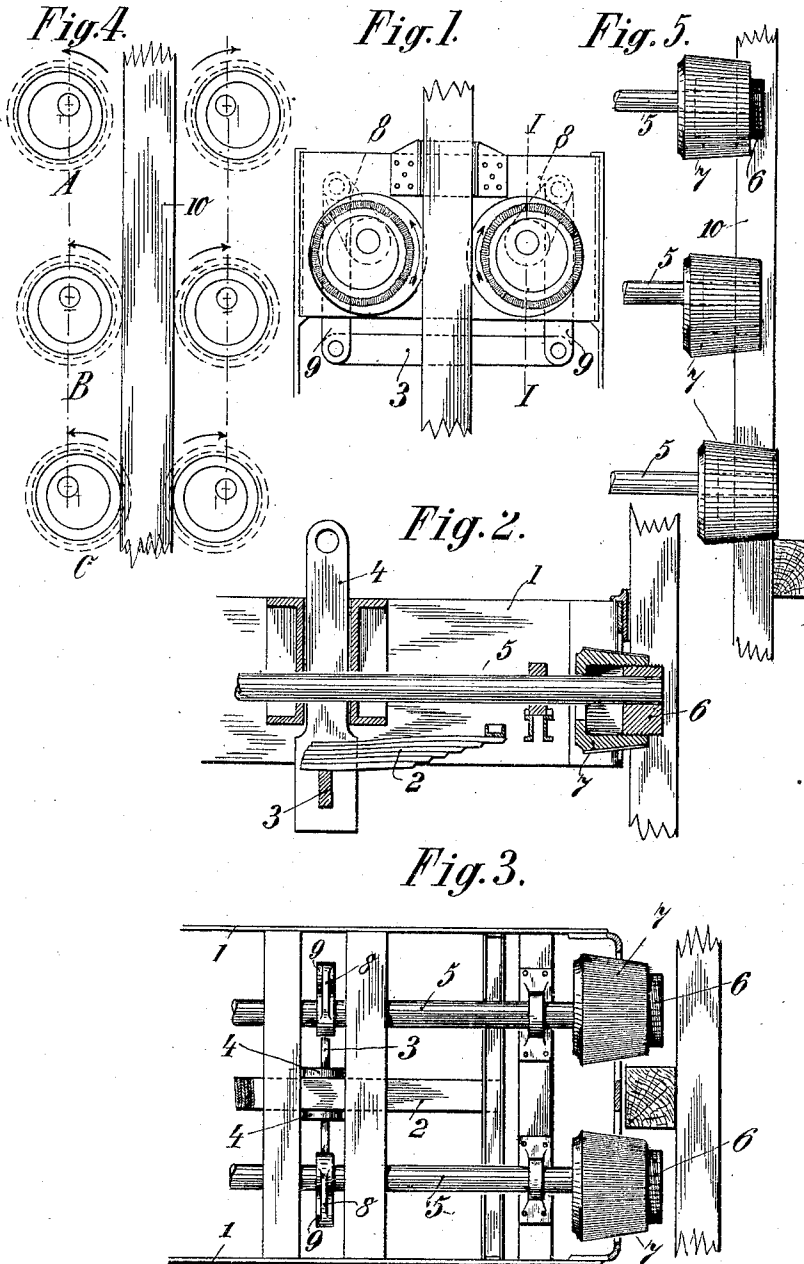


F. WEIDIG.
SAFETY CATCH FOR SUSPENDED LIFT CAGES.
APPLICATION FILED JUNE 16, 1909.

964,890.

Patented July 19, 1910.



Witnesses:
Berthold R. Pankke
Gerhard Pagel

Inventor:
Friedrich Weidig

UNITED STATES PATENT OFFICE.

FRIEDRICH WEIDIG, OF GEWERKSCHAFT DESDEMONA, NEAR ALFELD, GERMANY.

SAFETY-CATCH FOR SUSPENDED LIFT-CAGES.

964,890.

Specification of Letters Patent. Patented July 19, 1910.

Application filed June 16, 1909. Serial No. 502,633.

To all whom it may concern:

Be it known that I, FRIEDRICH WEIDIG, a subject of the German Emperor, and resident of Gewerkschaft Desdemona, near Alfeld-on-the-Leine, Germany, have invented certain new and useful Improvements in Safety-Catches for Suspended Lift-Cages, of which the following is a specification.

My invention relates to that class of safety catches for suspended lift-cages which has brake-members moved into the operative position by a spring at the breaking of the suspension rope or cable. In existing safety catches of this type the brake-members are being suddenly pressed against the guide-bars and thus retain the lift-cage with a sudden shock. Shocks of this kind are extremely unpleasant for the occupants of the cage and they often produce serious damage to the stagings of the shaft. These objections are obviated according to my invention by avoiding the sudden application of the brake-members in the event of the cable breaking, but only permitting gradual application of said members to the guide-bars so as to provide a real brake action such as does not occur in existing arrangements for this purpose. To this end I adopt tapered box brake members which at the breaking of the cable are applied against the guide-bars by a spring in the usual manner. The friction thereby engendered causes the box members to turn and to screw endwise so that by reason of their tapered surface they become gradually jammed against the guide-bars.

The accompanying drawing shows an embodiment of the invention by way of example, and Figure 1 is a side elevation of the same with a portion of a guide bar. Fig. 2 is a vertical section taken on the line I—I of Fig. 1. Fig. 3 is a plan. Fig. 4 is a diagram showing in end-view different positions of the box brake-members. Fig. 5 is a side elevation of Fig. 4.

In the upper part of the lift-cage 1 there is provided the usual spring 2 with the ordinary cross-bar 3 beneath it. To the latter is secured the cable through the intervention of the known suspension bars 4. Further, the two shafts 5 are rotatably mounted in the upper part of the cage 1 at a suitable distance from each other. At each end of each of the shafts 5 is fixed an

eccentric block 6 formed with external screw threads. Upon each eccentric 6 is mounted an internally screw-threaded tapering brake-member 7 capable of being screwed to and fro upon the eccentric and having longitudinal teeth or ribs. Each shaft 5 has a fixed lever-arm 8 connected by a link 9 with the cross-bar 3.

Under normal conditions the brake members 7 are in the position marked A that is to say free of the guide-bars 10, see Fig. 4. At the breaking of the cable, the spring 2 presses the cross-bar 3 downward and the latter pulls by means of its links 9 the levers 8 around, thus causing the shafts 5 to turn in such a direction as to bring the eccentrically supported brake-members 7 in contact with the guide-bars 10 as is indicated by B, Fig. 4. The friction hereby produced causes the brake-members 7 to revolve and to screw further upon the eccentric blocks, 6. By reason of the tapering form of the box brake-members 7 these are pressed with gradually increasing force against the guide-bars 10, as is indicated in the position C, Fig. 4, thereby slowly arresting and finally stopping the lift-cage. Should the lift-cage not stop securely owing to unusual load, the box brake-members 7 screw sufficiently outward until their outer ends catch on a cross-beam of the staging of the shaft and so stop the lift cage as is indicated at the lower portion of Fig. 5. The drop of the falling lift-cage can be readily pre-determined by the disposition, size and screw-threads of the eccentric blocks and their box brake-members.

With the improved arrangement very little damage can be done to the staging of the shaft and the latter can be immediately used after the breaking of the cable without necessitating repairs. Moreover, the brake-mechanism comprises but few movable parts and these are moved together at each starting and landing of the lift-cage so that they cannot rust and become stiff.

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

1. In a safety catch for suspended lift cages in combination shafts turnably mounted in the lift cage, means for turning said shafts at the breaking of the suspension rope, and tapering sleeves provided on said shafts and adapted to be pressed against the guide bars of the lift at the turning of said

shafts and to be screwed endwise on said shafts, substantially as and for the purpose set forth.

2. In a safety catch for suspended lift cages in combination shafts turnably mounted in the lift cage, means for turning said shafts at the breaking of the suspension rope, eccentric blocks having external screw threads and being firmly fixed to said shafts, and tapering sleeves adapted to be screwed endwise upon said eccentric blocks and adapted to be pressed against the guide bars of the lift, substantially as and for the purpose set forth.

3. In a safety catch for suspended lift cages in combination shafts turnably mounted in the lift cage, a lever arm fixed on each of said shafts, a cross bar vertically movable

in the lift cage, links connecting said lever arms with said cross bar, and a spring adapted to move downward the said cross bar, disks eccentrically fixed at the ends of said shafts and having external screw threads, and tapering sleeves adapted to be screwed endwise upon said eccentric disks and adapted to be pressed against the guide bars of the lift, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name this 4th day of June 1909, in the presence of two subscribing witnesses.

FRIEDRICH WEIDIG.

Witnesses:

E. T. HUTCHINGS,
LUISE KATHER.