F. KÖLLER.

SAFETY CATCH.

APPLICATION FILED MAY 10, 1910.

1,011,066.

Patented Dec. 5, 1911.

Fig. 1

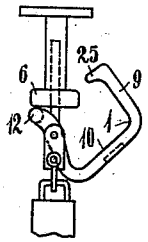


Fig. 2

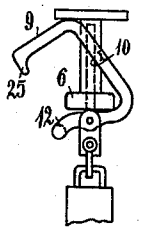


Fig. 3

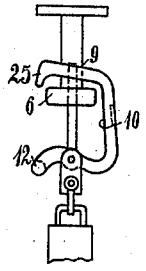


Fig. 4

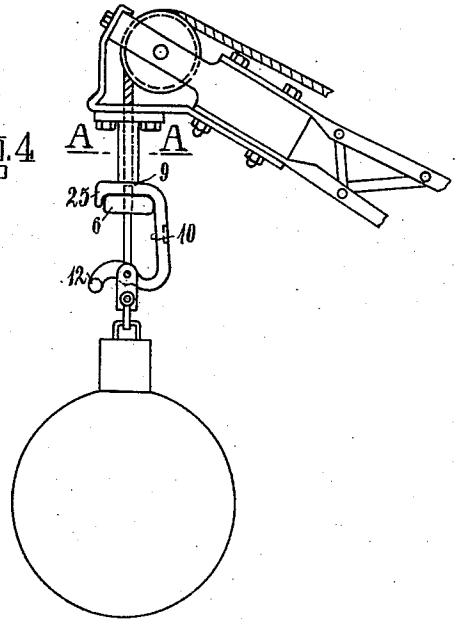
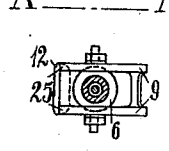


Fig. 5.



Witnesses.

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SAFETY-CATCH.

1,011,066. Specification of Letters Patent. Patented Dec. 5, 1911.

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To all whom it may concern:

Be it known that I, FERDINAND KÖLLER, a subject of the German Emperor, and residing at Nienstädt, Schaumburg-Lippe, Empire of Germany, have invented certain new and useful Improvements in Safety-Catches, of which the following is a specification.

The subject-matter of my invention is an improved automatic safety-catch, particularly for electric arc-lamps, to which those drawbacks of devices known heretofore for the same purpose are not attached.

Some known safety-catches have the disadvantage that their operation is dependent on numerous small parts, springs, lugs or the like, and therefore they readily break down, frequently require repairing and are very expensive to manufacture. This danger is particularly serious when the catch or other parts to be released moves with difficulty owing to rust, ice or the like or the springs or small parts are out of order, and the rope is then partially destroyed owing to its being frequently bent, in strong wind or in consequence of earthing. In addition, the danger is increased when, owing to a lamp or weight being raised carelessly, the shoulder or abutment strikes against the pole, and as the boss is not then within reach of the catch the lamp would fall to the ground if the rope broke. These disadvantages are completely avoided according to my invention, the catch being made of one single piece and so shaped that, when the boss is put into the locking position, it simultaneously moves the catch back so far, by means of the tilting device, that it is certainly automatically unlocked by its own weight when the rope is pulled a little for the purpose of lowering the lamp. The lamp is prevented from being pulled above the correct position owing to the slanting faces, which are opposite the boss when the lamp rises, being placed at right angles to the direction of motion and owing to the second slanting face simultaneously preventing the boss from moving backward, whereupon the boss is guided into its seat when the rope is released.

The catch preferably consists of two like adjacent parts each having the shape of an irregular ring held the proper distance apart by cross-pieces, the rings being opened suitably to allow the boss to pass through them. Further, at suitable points I provide pivots or eyes which do not project inward and which allow the rings to rotate in common.

One illustrative embodiment of my invention is represented by way of example in the accompanying drawing, wherein:—

Figures 1 to 3 show my safety-catch in various positions in elevation, and Fig. 4 is a like view showing a lamp suspended by the same, while Fig. 5 is a horizontal section in the plane A—A in Fig. 4 showing the safety-catch only.

Referring to the drawing, the specially-shaped, two-part catch 1 is free to rock about the pivot 2 passing through the links 3 carrying the shackle 4 from which the load 5 is suspended. On the mast or other support 8 is secured a tubular guide 7 having at its lower end a boss 6. The rope or the like passes through this guide and is attached to a pin 11 pivotally attached to the pivot 2.

My safety catch operates as follows: If the lamp is lowered, when the rope is pulled the catch 1 abuts with its extensions or lugs 12 against the boss 6 (Fig. 1). The fulcrum of the catch is so arranged that under ordinary circumstances the catch is tilted outward. Owing to the part 12 abutting against the boss 6 the catch is swung over, its extension 25 and part 9 extending over the boss 6, as shown in Fig. 2. In this position the boss and with it the lamp cannot be raised, so that all the defects are done away with which resulted heretofore owing to the lamp being raised too far. Now if the rope is released, the flat part 10 presses against the boss whereby the catch is rocked back so far that its center of gravity is brought into the vertical position and the face of part 9 rests on part 6 (Fig. 4) so that the lamp hangs on the latter. Now if the lamp is raised again, (Fig. 3) owing to the position of its center of gravity the catch 1 is returned into its original position (Fig. 1) so that the lamp can now be lowered.

It is not necessary to connect the two sides of the catch by two cross-pieces, as shown, as the mode of operation of the same is not changed when the catch is simply divided longitudinally in the center, and it is clear that then two catches are present which are arranged and operate exactly the same.

It is to be understood that the device may be provided with any known electrical conductor coupling.

In consequence of its construction my device is suitable for loads of all kinds, particularly for heavy loads such as are carried by cranes, travelers and the like. The construction may then be suitably varied, the two suspension pivots being replaced by one through bolt or the like.

I am aware that single catches of substantially the same shape as that above described and shown in the drawing have been known heretofore, and I do not claim the same broadly. Owing to the novel combination of parts in my safety catch and to the mode of operation thereof, certainty of operation of the safety catch is assured whether the load and the parts of the device connected therewith rotate or whether the load swings to and fro, which is not the case in similar known devices, which I do not claim; but

I claim:—

In an automatic safety catch, a supporting means, a tubular guide having its upper end attached to the supporting means, and having a boss upon its lower end a rope passing through the tubular guide, said rope being attached to a load bearing element, and a catch pivotally attached to the load bearing element said catch comprising on one side of the pivot an extension lug, and on the other side a hook shaped portion adapted to engage the boss of the tubular guide, and so proportioned that normally its center of gravity lies upon one side of the guide, whereby upon slightly elevating the rope the catch is released from the boss, and upon a greater elevation of the rope, the extension lug engages with the boss to throw the center of gravity of the catch upon the other side of the guide so that the catch engages upon the boss.

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

FERDINAND KÖLLER.

Witnesses:
R. PAUL THOMPSON,
RR. BÜLOW.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."