L. H. CARLSON.

BOX SKID.

APPLICATION FILED OCT. 7, 1909

990,105.

Patented Apr. 18, 1911.

2 SHEETS—SHEET 1.

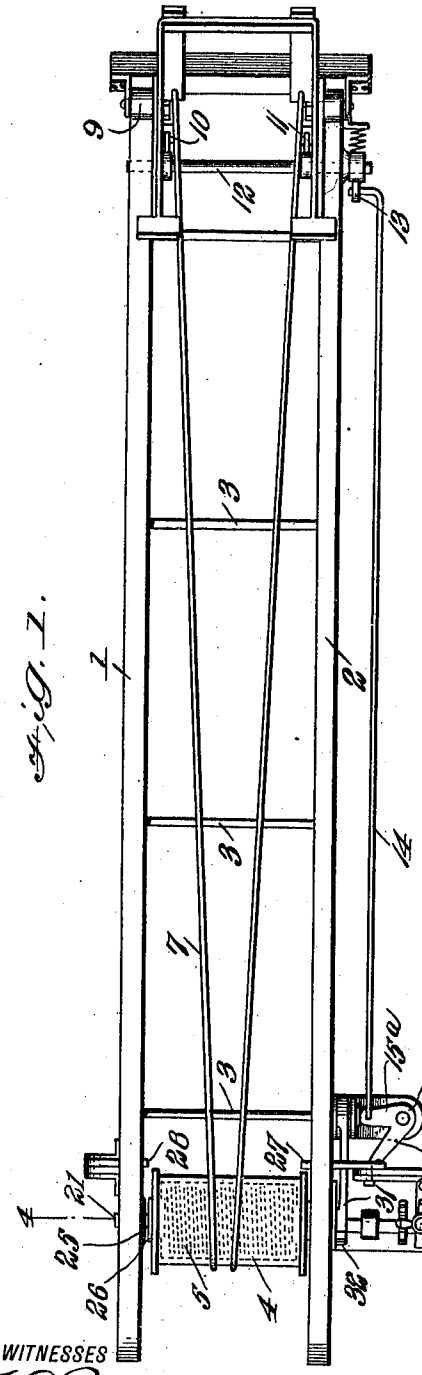


Fig. 1.

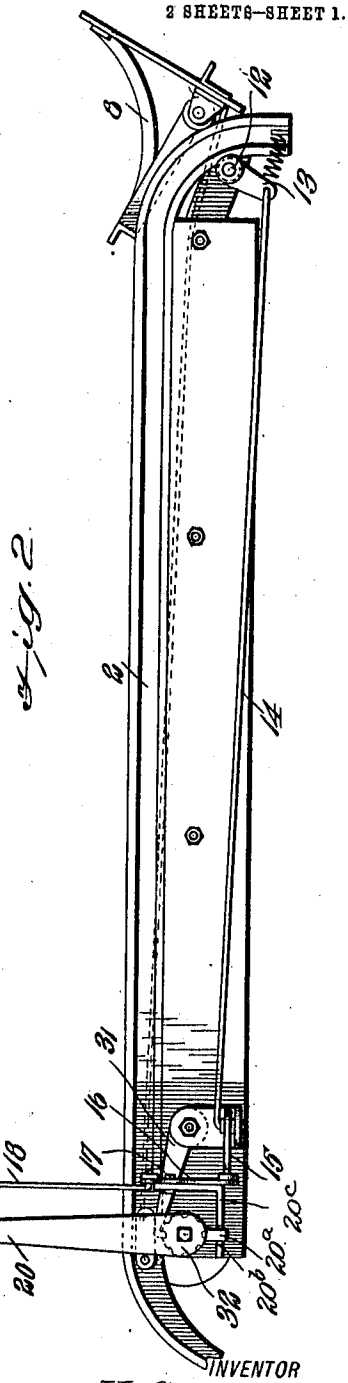


Fig. 2.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

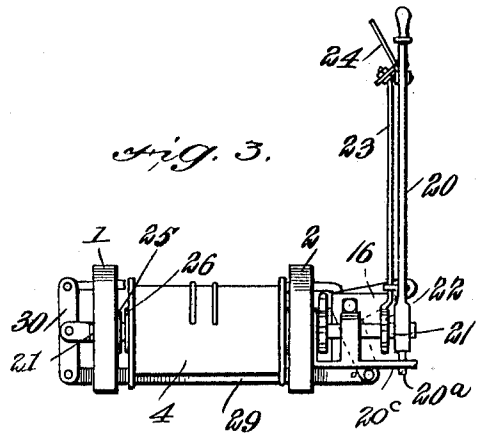


Fig. 4.

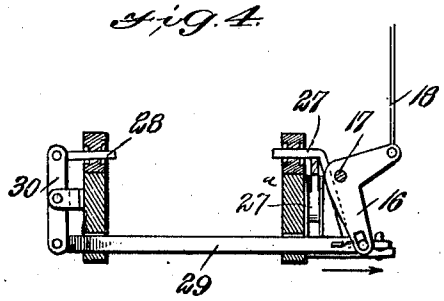


Fig. 5.

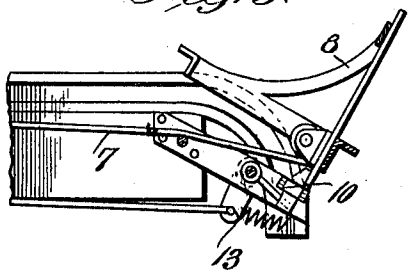
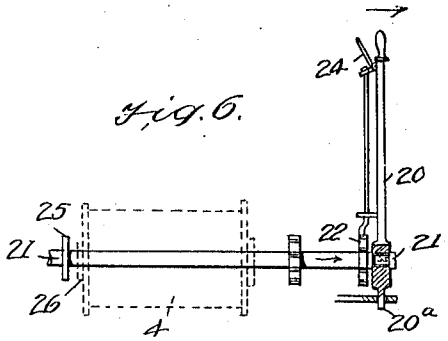


Fig. 6.



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BOX-SKID.

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Application filed October 7, 1909. Serial No. 521,439.

To all whom it may concern:

Be it known that I, LARS HENNING CARLSON, a citizen of the United States, and resident of Lorain, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Box-Skids, of which the following is a specification.

My invention relates to improvements in skids for lowering boxes or packages from a higher to a lower level, as from the level of the side walk, street, or store to the basement, and it consists in the combinations, constructions, and arrangements of parts herein described and claimed.

The main object of my invention is to provide a device by means of which the boxes or packages may be lowered readily without danger of breakage. I attain this object by using a gravity carrier whose action is controlled by means of a lever at the upper level.

A further object of my invention is to provide means by which the box carrier is returned to the upper level ready for a new load. This object is attained by the use of a spring-actuated drum, and cable.

A further object of my invention is to provide means for locking the carrier in its lower position and for unlocking it at will.

Further objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings in which—

Figure 1 is a plan view of the device, Fig. 2 is a side view thereof, Fig. 3 is an end view, Fig. 4 is a section along the line 4—4 of Fig. 1, Fig. 5 is a detail view of the locking mechanism, at the lower end of the device. Fig. 6 is a detail view showing the relation of the friction disk to the drum.

In carrying out my invention I provide a main frame comprising the tracks 1 and 2, secured together by means of the cross pieces 3. The upper and lower ends of the tracks are grooved as shown in the figures. Between the two rails 1 and 2 at the upper end of the device I place a drum 4 which is hollow and is provided with the spiral spring on its inside having one end attached to a shaft 21 and the other to the inside of the drum. Around the drum is wound a cable 7 which is attached to the carrier 8, provided with rollers 9, arranged to run on the tracks 1 and 2, and having a curved shape such as that shown in Fig. 2. The carrier 8 may be held in its lower position by means of a pair of stops 10 and 11 which are carried by the shaft 12, extending from side to side of the device. The shaft 12 is provided with a laterally extending arm 13 which is connected by means of a pull rod 14, to one arm of a bell crank lever 15 secured upon the extension 16′ of the frame 2. The other end 15^b of the bell crank lever 15 is engaged by another bell-crank lever 16 which is pivoted at 17, and whose upper end is engaged by the draw rod 18, it in turn being secured to the lever 19 on the control lever 20. The latter is loosely mounted on a reduced portion of the shaft 21 but may be locked to the latter by means of the ratchet 22, and locking lever 23, which is operated by the handle 24. The shaft 21 carries the drum 4 and has an endwise movement and bears a friction disk 25 arranged to engage a similar friction disk 26 on the end of the drum 4, so that when the lever 20 is pulled its extended end 20^a which projects through an opening 20^b in the bracket 20^c will act as a fulcrum to move the shaft 21, and thereby bring the two disks 25 and 26 into engagement for retarding the movement of the cylinder. It will be understood that this movement need be a very slight one and that the connection between the lever 20 and the shaft 21 is loose enough to prevent the shaft from being bent or the lever from binding on the shaft.

In order to retain the carriage at the top of the skid, I provide the stop members 27 and 28, which are arranged to be moved inwardly and outwardly on opposite sides of the skid by means of the lever connections 29 and 30 (as shown in Fig. 4). In this figure, it will be seen that the stop member 27 is carried upon an upright 27^a secured to the member 29. When the latter member moves in the direction indicated by the arrow the stop member 27 will be carried with it, while the stop member 28 will be moved in the opposite direction.

In order to increase the tension of the spring 5, the rod 18, which, as shown in Fig. 2, has a hook at its lower end, is unhooked from the end of the lever, and the operator swings the lever 20 in the direction indicated by the arrow in Fig. 2, until the dog 31 en- The operator then raises the ratchet rod 23 and the lever 20 is returned to its original position when the rod 23 is permitted to

again engage the ratchet 22. The operation is repeated until a sufficient tension is placed upon the drum.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. The apparatus is placed upon a flight of steps or other inclined plane. As the boxes or packages are received they are placed on the carrier 8, which is held by means of the stops 27 and 28 in the manner already explained. The lever 19 is then operated, pulling upwardly on the rod 18, and causing the lever 16 to swing in the direction of the arrow in Fig. 4. The link 29, which is connected to the lower end of the lever 16 and which moves in the same direction, carries with it the stop member 27 and the lever 30 causes the movement of the stop member 28 in the opposite direction, thereby permitting the carriage to descend. In case the speed should be too great, the lever 20 may be shifted laterally, as already explained, thereby retarding the movement of the spring drum through the frictional disks. When the box reaches the bottom of the skid, it is held in place by the arms 10 and 11, until released by the movement of the operating handle 19 as already described. The arms 10 and 11 and the stops 27 and 28, it will be observed are operated simultaneously by a movement of the rod 18, the latter being connected to the bell-crank lever 16, which in turn is connected with both the bell-crank 15 and the rod 29, as stated. Upon the release of the carriage, the spring drum causes the movement of the latter up the inclined skid, until the top is reached, this movement being also controlled by the braking mechanism already described.

I claim:

1. A box skid comprising a pair of tracks, a spring drum arranged at one end of said tracks, a carrier provided with rollers arranged to run on said tracks, a cable wound around said drum and having one end attached to said carriage, a pair of stops arranged to be projected into the path of the carriage for holding the same at the top, and a lever for withdrawing said stops and permitting the carriage and its load to descend to the bottom of the skid.

2. A box skid comprising a pair of tracks, a spring drum arranged at one end of said tracks, a carrier provided with rollers arranged to run on said tracks, a cable wound around said drum and having one end attached to said carriage, a pair of stops arranged to be projected into the path of the carriage at the other end of said tracks, a common lever for manipulating said stops, and a friction disk for retarding the movement of said drum and a lever for operating the same.

3. A box skid comprising a pair of tracks, a spring drum arranged at one end of said tracks, a carrier provided with rollers arranged to run on said tracks, a cable wound around said drum and having one end attached to said carriage, a pair of stops arranged to be projected into the path of the carriage for holding the same, at one end of the skid, a pair of stops arranged to project into the path of the carriage at the other end of the skid, a common lever for manipulating said stops, a friction disk for retarding the movement of said drum, a lever for operating the same, and means for increasing the tension of the spring in the spring drum, said means being also actuated by the movement of the lever for operating the friction disk.

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