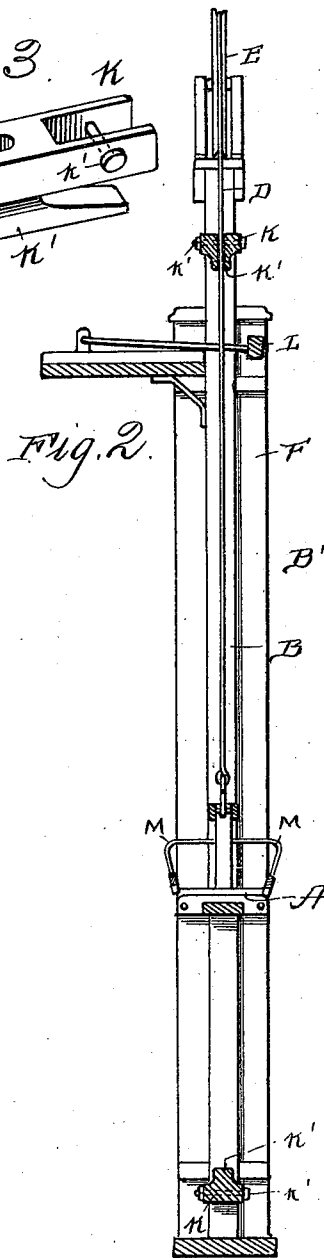
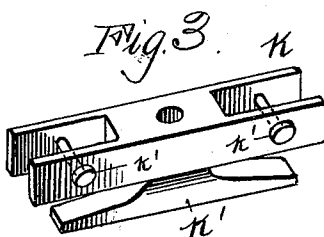
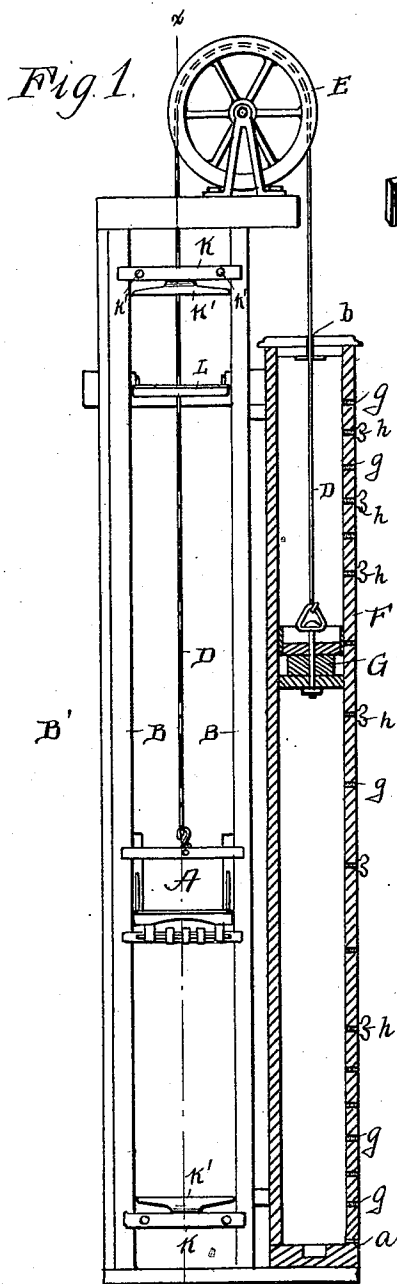


(No Model.)

C. I. FOSTER.
APPARATUS FOR LOWERING ICE, &c.

No. 548,978.

Patented Oct. 29, 1895.



WITNESSES

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CHARLES IVES FOSTER, OF MERIDEN, CONNECTICUT.

APPARATUS FOR LOWERING ICE, &c.

SPECIFICATION forming part of Letters Patent No. 548,978, dated October 29, 1895.

Application filed June 14, 1895. Serial No. 552,837. (No model.)

To all whom it may concern:

Be it known that I, CHARLES IVES FOSTER, a citizen of the United States, and a resident of Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Apparatus for Lowering Ice and for other Purposes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of apparatus embodying invention, the air-cylinder being in section. Fig. 2 is a section on line *x x*, Fig. 1. Fig. 3 is a perspective view of stop.

This invention is more especially designed as an improvement upon the similar apparatus described and claimed in my Patent No. 506,777, granted October 17, 1893, reissued July 3, 1894, No. 11,425.

The present improvement consists, principally, in providing the air-cylinder with means whereby the speed of the carriage may be regulated as desired.

It also consists in providing an adjustable stop and a guard for the carriage.

The invention also consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claim.

Referring to the accompanying drawings, the letter A designates a movable carriage, which is arranged to reciprocate on the vertical ways or guides B of a frame B'. Attached to said carriage is one end of a rope or cable D, which passes up and over a large grooved wheel or pulley E, journaled on the upper portion of the frame B'. From this pulley the rope or cable passes down into the air cylinder or box F, within which it is connected to a practically air-tight fitting piston G, which is weighted to overbalance the weight of the empty carriage. This piston is preferably similar to the one described in my said former patent, and need not be further described.

In addition to the small air vents or escapes

a and *b* at top and bottom, respectively, of the air box or cylinder which were formerly employed, I form through one side or wall of said box a vertical series of small openings or vents *g*, which may be closed by means of small removable plugs *h*, fitted thereto in an air-tight manner. By means of these vents and plugs the movement of the piston may be opposed by a greater or less compression of the air in the box or cylinder, according to the number of vents which are kept unclosed. In this manner the resistance may be balanced to the desired degree with relation to the particular load to be carried and the degree of ascent and descent regulated. The arrangement also provides means whereby the carriage may be caused to move more slowly as it approaches the limit of its ascending or descending movement, and this may be made to occur at any point in the movement, according to the extent which it is necessary for the carriage to move. This is done in the following manner: Suppose it is not required to raise the carriage to the full height shown in the drawings to receive its load. A corresponding number of the lower vent-holes will then be closed, those above being open, so that as the piston passes below the first plugged vent it is met by a gradually-increasing resistance as the air becomes more and more compressed. The escape of this compressed air through the small vent *b* gradually destroys this resistance, and the carriage is eased to its stop.

K designates an adjustable stop for the carriage. This stop consists of a transverse bar, whose ends are forked for engagement with the vertical bars of the frame B'. These forks are sufficiently flexible to enable them to be drawn together by means of the bolts and nuts *k'* to hold the bar at the desired point. A lower arm K' of the bar, extending transversely between the vertical ways, forms the stop proper. This bar is to be moved up and down to stop the carriage at any desired point. K is a similar stop at the bottom.

L designates a bar or gate which shuts off the approach to the carriage while the latter is down. This bar or gate is raised upon the ascent of the carriage by means of the arms M, carried thereby.

While the above-described apparatus is

more especially designed for the purpose of lowering ice, it is nevertheless equally adapted for various other purposes, and particularly for use as a fire-escape. A building being equipped with this apparatus in case of fire, a person or persons can step into the carriage and be lowered safely to the ground, when the carriage will return automatically for a second load.

10 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

15 The combination with the carriage mounted to move vertically in a suitable frame, a vertical air cylinder having in its wall a series of air vents at different vertical points, plugs

whereby more or less of said vents may be closed according to the speed desired for the carriage or the point at which it is desired said carriage shall cushion, a weighted piston fitting practically air-tight within said cylinder, a cord or cable connecting said piston and carriage and vertically adjustable stops for limiting the movements of said carriage, substantially as specified.

25 In testimony whereof I affix my signature in presence of two witnesses.

CHARLES IVES FOSTER.

Witnesses:

E. C. BIRDSEY,
L. R. VANCE.