

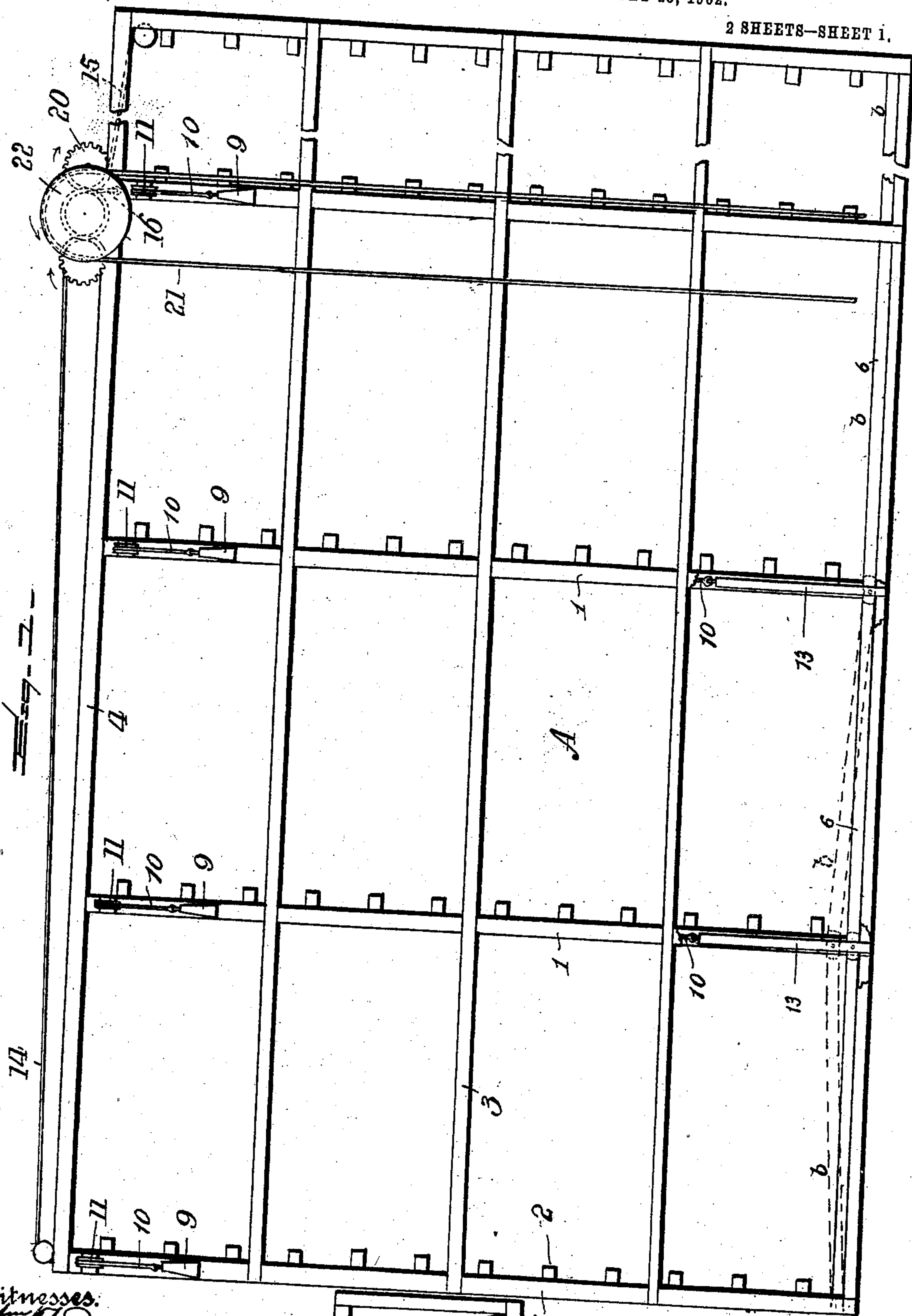
No. 840,189.

PATENTED JAN. 1, 1907.

B. H. ALVEY.
ELEVATOR.

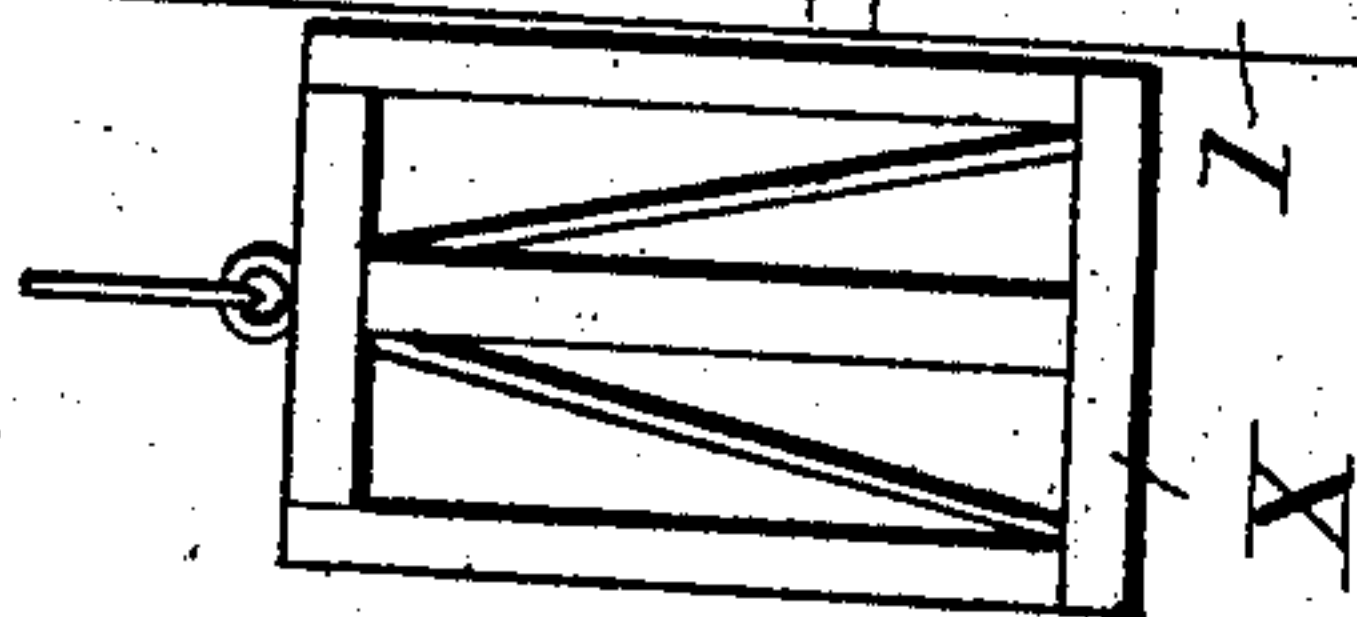
APPLICATION FILED JULY 15, 1901. RENEWED JULY 25, 1902.

2 SHEETS—SHEET 1.



Witnesses.

H. R. Rufford
E. R. Rufford



Inventor.
Benj. H. Alvey
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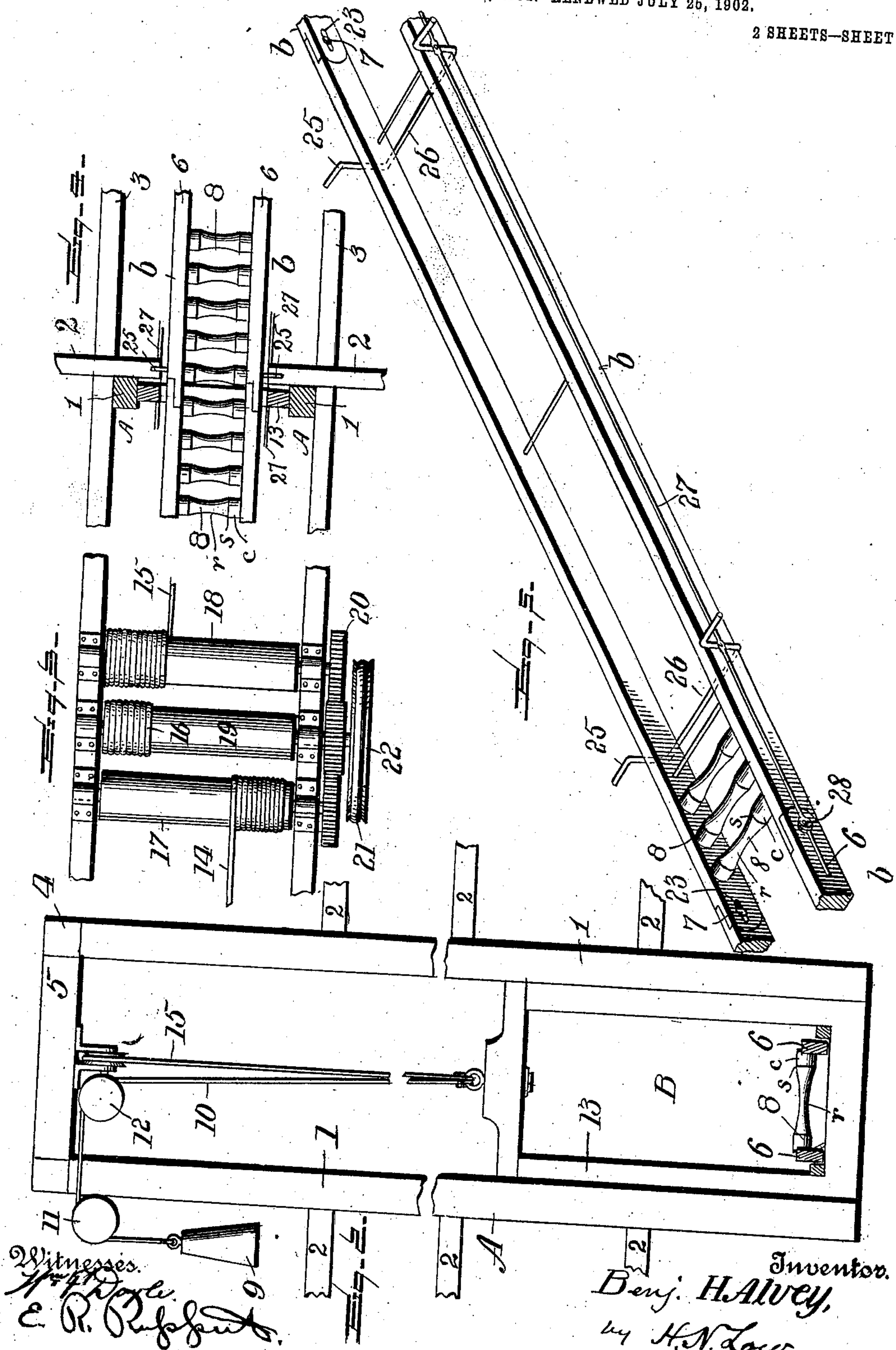
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2 SHEETS--SHEET 2.



Inventor.
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UNITED STATES PATENT OFFICE.

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ELEVATOR.

No. 840,189.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed July 15, 1901. Renewed July 25, 1902. Serial No. 116,977.

To all whom it may concern:

Be it known that I, BENJAMIN H. ALVEY, a citizen of the United States, residing at Louisville, in the county of Jefferson, State of Kentucky, have invented certain new and useful Improvements in Elevators; 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.

My invention relates to appliances for elevating, transferring, distributing, and storing goods.

While especially designed for the handling and warehousing of barrels of whisky, it will be understood that the invention may be employed for other purposes.

In order to make my invention more clearly understood, I have shown in the accompanying drawings means for carrying the same into practical effect, without limiting my improvements, in their useful applications, to the particular construction which, for the sake of illustration, I have delineated.

In said drawings, Figure 1 is an elevation in side view of a skid embodying my invention. Fig. 2 is an end view of a portion of the same on a larger scale. Fig. 3 is a plan view of a portion of the hoisting mechanism. Fig. 4 is a plan view of a portion of the skid-bed and contiguous parts. Fig. 5 is a perspective view of a portion of the skid-bed.

Referring to the drawings, 1 indicates posts arranged in a double row, as in the aisle of a warehouse, of which 2 represents the storing racks or floors constituting two series at different heights, one along each side of the skid. The invention is illustrated as applied to the storing of whisky-barrels. The posts 1 are connected by longitudinal frame members 3, longitudinal top beams 4, and cross-beams 5, the whole constituting a frame A, in which the skid B may be moved up and down. Considered as a means for transferring the barrels horizontally or along the storing-racks, the device B may be considered as and termed a "skid."

The said device has, however, a direct elevating function in hoisting the barrels from one height to another, as hereinafter explained. The ends of the rack-beams 2 are or may be secured to the frame A and are in proximity to the path of the skid, Fig. 4, whereby barrels or other goods having been

elevated to the desired height and moved along the skid longitudinally to the place where they are to be stored may be readily transferred from the skid to the storing-racks at each side of the aisle.

The skid and goods-transferring device is of the gravity type in which an actuating mechanism is not necessary to the transfer of goods along the same, this transfer being effected by gravity or by pushing the goods along rollers with which the device is provided. This independence of any actuating mechanism allows the transferring device to be elevated bodily, as hereinafter described. It comprises a series of sections *b*, separately jointed together, whereby one section or part of the skid may be raised to a greater height than another part to cause the goods to move by gravity along the skid to the desired point of delivery. To this end each section *b* is preferably constructed of longitudinal side bars 6, separably jointed together by removable pivot-pins 7. Between and in the bars 6 are journaled concave rollers 8, which serve as the immediate supports of the barrels or other goods which may be on the skid. These rollers enable the goods to move freely along the skid by gravity when the same or a section thereof is inclined. Said rollers have peripheral shoulders *s*, intermediate recessed portions *r*, and end cylindrical portions *c*, as shown in Figs. 4 and 5. This construction tends to bring back to a central position any package which may get to one side of the device B as it rides along the same on the shoulders *s* and parts *c*, because these parts of the rollers have greater speed than the parts *r* of smaller circumference. The skid, which extends substantially from end to end of the frame A, is balanced at suitable intervals by weights 9 on ropes 10, which latter pass over pulleys 11 12 on the upper part of the frame A and are attached to frames 13, which inclose and support the bars 6 and slide vertically in the frame A, Figs. 2 and 4.

The skid is operated by hoisting-ropes of suitable number and location. I have shown three such ropes at 14, 15, and 16 attached, respectively, to the ends and middle of the skid and running to drums 17 18 19, mounted on the frame A, Figs. 1 and 3. The drumshafts are geared together at 20 and may be simultaneously operated to raise the whole

skid equally by a hand (or power) rope 21 passing over a pulley 22 on the shaft of one of the drums. When it is desired to incline any part of the skid, it may readily be done 5 by hand, the weights 9 assisting such operation. It will be understood that the holes 23 in which the pins 7 fit may be somewhat larger than the pins to give a limited independence of movement to the different sections of the skid. For inclining any section 10 or sections of the skid-bed or for using only a part of the latter the pins 7 at suitable points may be entirely removed. To firmly hold the skid-bed level with any desired rack, 15 I provide the side bars 6 with a movable supporting means adapted for connection with the frame A, racks 2, or other fixed object. This consists, preferably, of a series of arms 25, adapted to rock on a shaft or pivot 26, 20 the latter mounted on the bars 6, so as to engage above fixed shoulders in the frame A. Such shoulders may be furnished by the ends of the racks 2. The arms 25 may be simultaneously actuated by a rod 27, connecting 25 with another. At the joints 7 the rod 27 is similarly jointed at 28 to allow the above-described independence of movement of the different sets of bars 6. The frames 13 and attached counterbalancing means are arranged one at each of the joints 7. 30

It will be understood that under ordinary conditions and for most of the uses of my invention the actual hoisting or the greater or heavier part thereof is or may be performed by a hoisting or supplemental elevator or elevating-cage X, Fig. 1, from which 35 the barrels or other goods after being elevated are delivered to the distributing-skid B. The heavy work of hoisting is thus taken from the distributing-skid, although it will be seen that goods may be shifted from a rack at one level to another rack at another level by means of the skid B without the necessity of using the hoisting elevator or cage X. 40

I am aware of the use of rollers in conveyers for logs and the like and also that it has been proposed to employ rollers upon the

surface of a skid to facilitate the delivery of goods therefrom; but I believe myself the first to devise an elevatable skid device of 50 considerable longitudinal extension and provided with rollers on which goods may be shifted along the skid from one point of delivery to another and by the use of which goods may be received at one point (as from 55 a certain rack) and shifted horizontally to another point at the same level, (as to another rack.)

What I claim is—

1. In an elevator, the combination of racks 60 or supports at different heights, the side bars jointed together, rollers carried by the said bars, and a hoisting mechanism connected with different parts of the skid, substantially as and for the purposes described. 65

2. The combination of racks or supports at different heights, the guiding-frame, frames vertically movable in the guiding-frame, bars jointed together to form a continuous skid-bed and carried in the movable frames, rollers 70 mounted in the said bars and a hoisting mechanism connected with the vertically-movable frames.

3. The combination of racks or supports at different heights, the guiding-frame, a skid-bed vertically movable therein and composed 75 of movably-connected sections provided with rollers, a hoisting mechanism connected with the said bed and means for connecting the said bed with the frame at different heights, 80 substantially as set forth.

4. The combination of racks or supports at different heights, a skid arranged along the said supports and provided with rollers 8, and a hoisting mechanism connected with 85 the skid at different points, substantially as and for the purposes set forth.

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

BENJAMIN H. ALVEY.

Witnesses:

JAS. G. DUGAN,
THOS. S. DUGAN.