

No. 711,993.

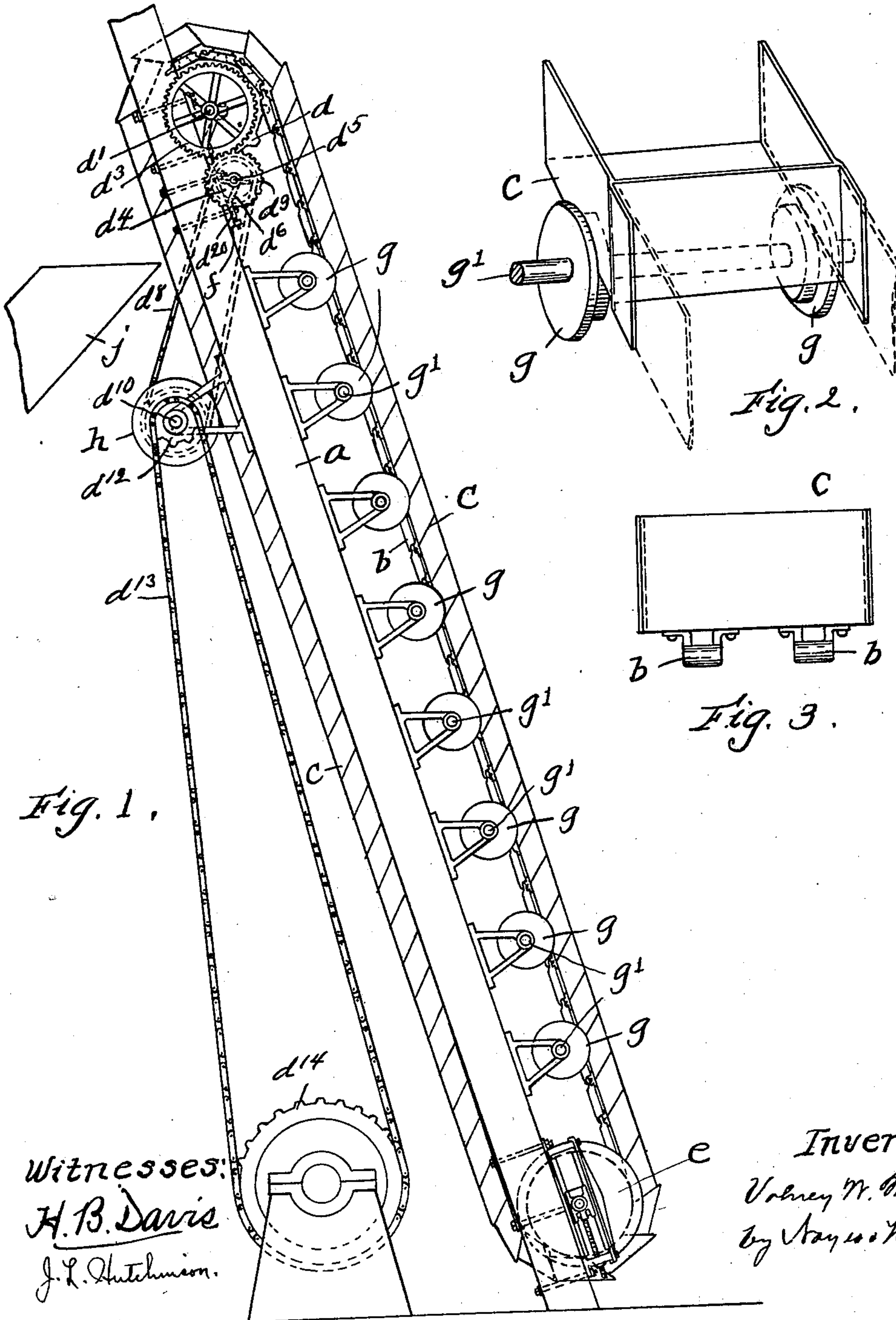
Patented Oct. 28, 1902.

V. W. MASON, JR.
ELEVATOR.

(Application filed Apr. 9, 1902.)

3 Sheets—Sheet 1.

(No Model.)



Witnesses:
H. B. Davis
J. L. Hutchinson.

Inventor:
Volney W. Mason Jr
by *Hayes & Harmon*
Attys.

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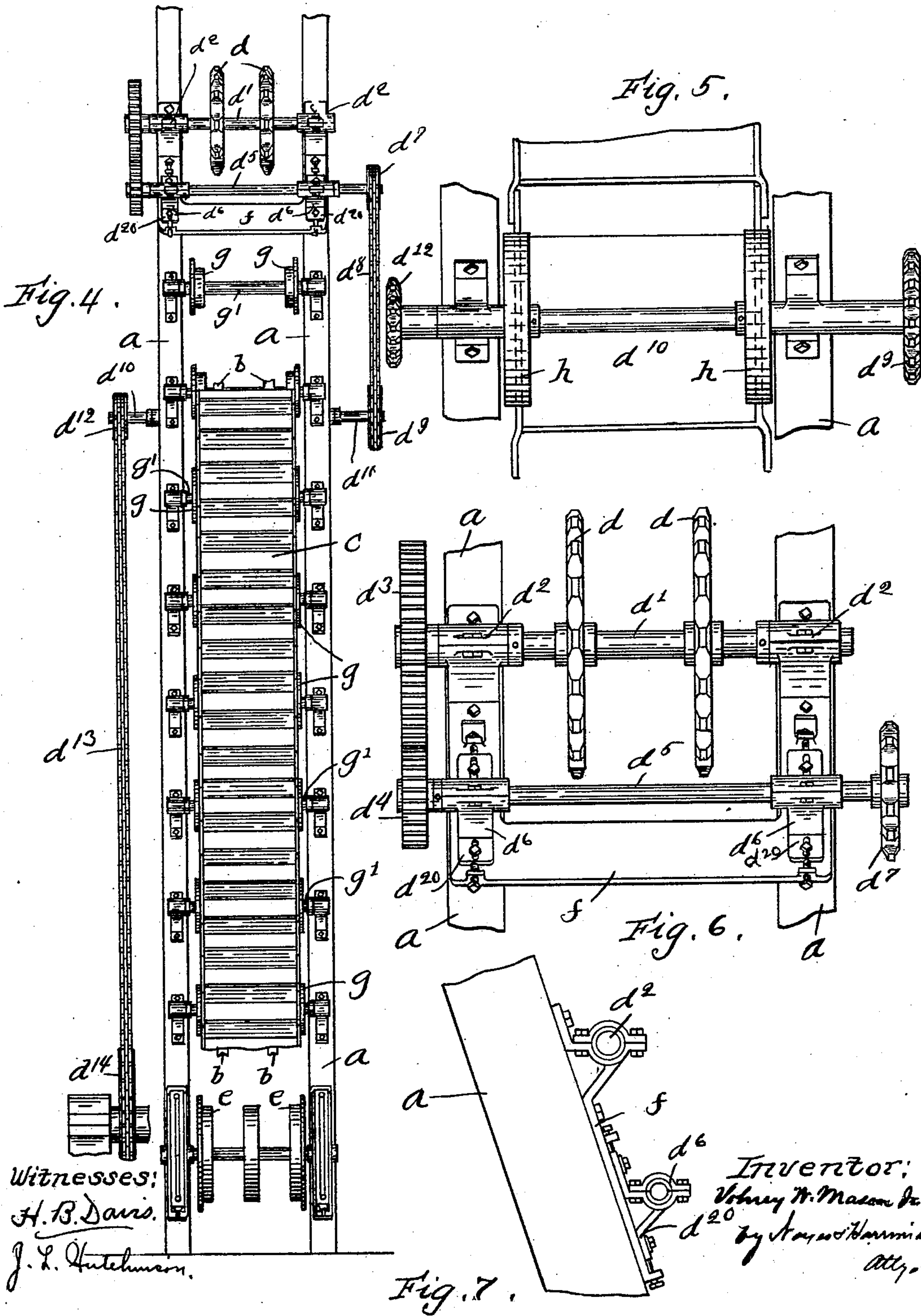
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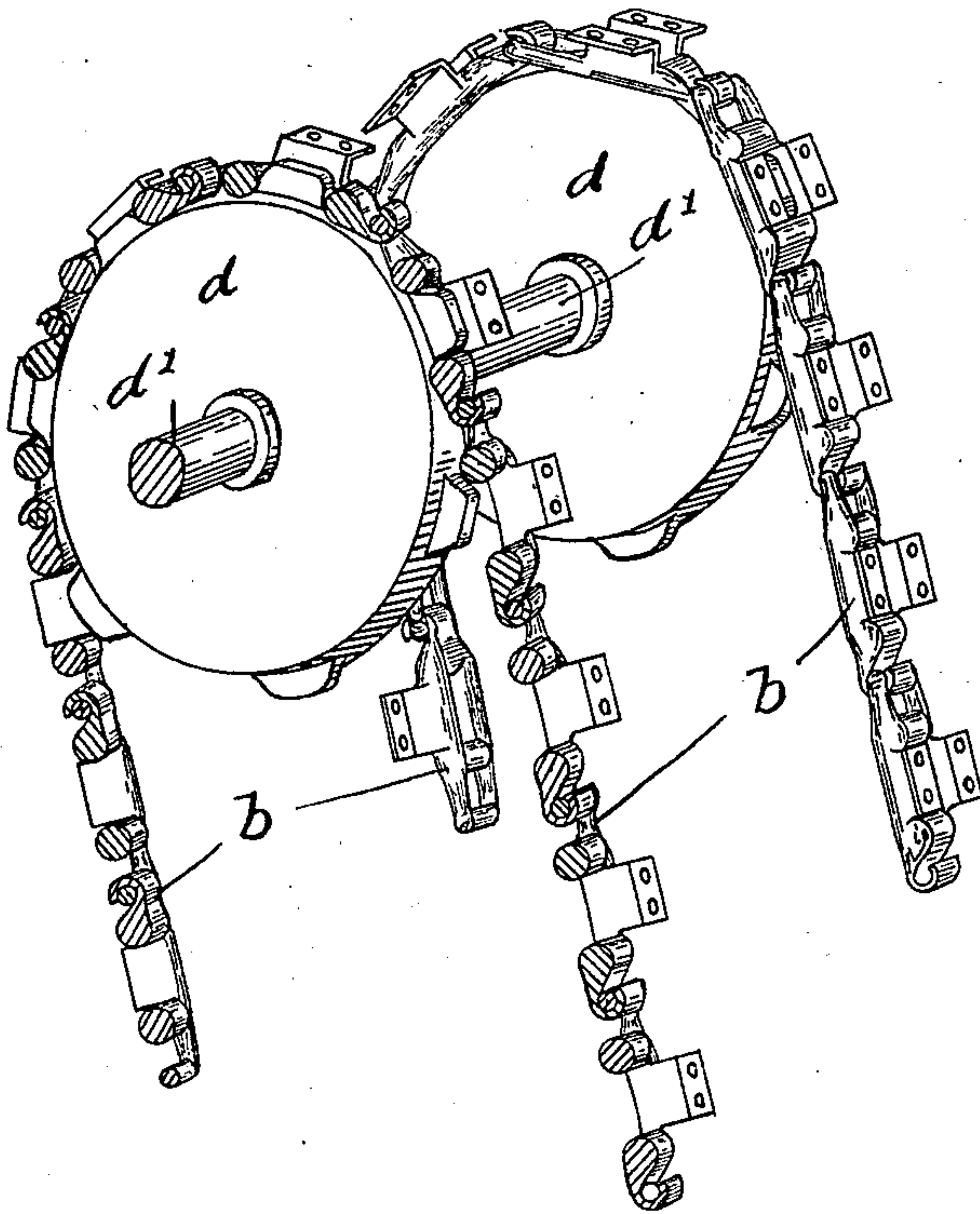


Fig. 8.

Witnesses:

H. B. Davis.

J. L. Hutchinson

Inventor:

Vahney W. Mason Jr.

by Ayres & Harrison
Attys

UNITED STATES PATENT OFFICE.

VOLNEY W. MASON, JR., OF NEW YORK, N. Y.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 711,993, dated October 28, 1902.

Application filed April 9, 1902. Serial No. 102,010. (No model.)

To all whom it may concern:

Be it known that I, VOLNEY W. MASON, Jr., of New York, in the borough of Manhattan and State of New York, have invented an Improvement in Elevators, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

10 This invention relates to elevators of the class comprising, essentially, a pair of endless chains and a series of buckets carried by them, and has for its object to provide means—
15 as rolls, for instance—for preventing the heavily-loaded chains from sagging as the buckets rise, which also act as guides to assist in maintaining true alinement of the buckets in case they are unevenly loaded; also, to provide means—as rolls, for instance—which prevent the chains from sagging as the buckets fall; also, to provide means—as rolls, for instance—to prevent the
20 chains from sagging as the buckets pass by the delivery-chute, to thereby prevent the buckets from striking the end of the chute; also, to provide a frame for supporting the shafts bearing the essential elements of the driving mechanism, whereby said shafts are always held in parallelism, notwithstanding
25 the severe duty to which they are subjected.

30 Figure 1 shows in side elevation an elevator embodying this invention. Figs. 2 and 3 are details of one of the buckets. Fig. 4 is a front elevation of the elevator; Fig. 5, a detail of the support for the bucket which is located beneath the chute. Fig. 6 is a detail of the supporting-frame for the shafts of the driving mechanism. Fig. 7 is a side or edge
35 view of said supporting-frame, and Fig. 8 is a detail showing a portion of each endless chain and its relative position to the sprocket-wheel.

40 *a* represents the side bars of the main frame; *b b*, a pair of endless chains; *c*, the buckets attached to said chains; *d d*, the sprocket-wheels over which the chains pass which are located at the top of the main frame; *e*, the wheels over which the chains pass which are located at the bottom of the main
45 frame. The sprocket-wheels *d d* (see Fig. 6) are secured to a shaft *d'*, having its bearings in boxes *d² d²* on the frame *f*, which is secured

to the upper ends of the side bars of the main frame, and at one end of said shaft *d'* a toothed gear *d³* is secured, which is engaged
55 by a pinion *d⁴*, secured to a shaft *d⁵*, having its bearings in boxes *d⁶ d⁶*, adjustably mounted on said frame *f*, and to said shaft *d⁵* a sprocket-wheel *d⁷* is secured, over which a chain *d⁸* passes, which passes around the sprocket-wheel *d⁹*, secured to a shaft *d¹⁰*, to which a sprocket-wheel *d¹²* is secured, over which
60 passes a sprocket-chain *d¹³*, which passes over a sprocket-wheel *d¹⁴*, secured to any suitable driving-shaft.

65 The metallic frame *f*, (see Fig. 6,) which constitutes one of the novel features of this invention, comprises a horizontal portion, of a length to extend from one to the other side bar of the main frame, and a pair of parallel
70 arms which project at right angles therefrom and which are secured to the side bars of the main frame.

The boxes *d² d²* comprise a bottom half or portion and a removable top half or portion, 75 and the bottom half or portion is formed integral with the frame *f*, and as said frame in practice is disposed at an angle to a perpendicular the division-line between the bottom and top halves or portions is made at an angle to the plane of the frame so as to occupy
80 a horizontal plane. The boxes *d⁶ d⁶*, which are adjustably secured to the frame *f*, also comprise bottom halves or portions and top halves or portions, separated on a line at an
85 angle to the plane of the frame so as to occupy a horizontal plane, and the bottom halves or portions are formed integral with base-plates *d²⁰*, which are bolted to the frame *f* by bolts passing through slots in said plate. 90
The slots run lengthwise the plate to provide for longitudinal adjustment thereof on the frame *f*, and on each arm of said frame *f* two lugs are cast, one above and the other below the base-plate *d²⁰*, through which set-screws 95 pass, the ends of which bear upon or against said plate to assist in holding it in correct position. The metallic frame *f* thus described supports the boxes *d² d²* and also the boxes *d⁶ d⁶*, and it will be seen that the two shafts 100
d' d⁵ are thus held in parallelism at all times and under all conditions, which is important in order that the driving mechanism of the sprocket-chains, the essential elements of

which are borne by said shafts, may run freely. By making the boxes d^6 d^6 adjustable toward and from the boxes d^2 d^2 the gears may be kept in mesh.

5 Upon the outer or upper side of the main frame a plurality of pairs of rolls g are placed, which are free to revolve on shafts g' , held in suitable bearings in the side bars of the main frame. As many pairs of rolls g will be
10 provided as desired. The rolls g are formed with plain faces having flanges at their outer sides, and when thus formed they present right-angular bucket-receiving portions. The buckets c are formed with flat bottoms and
15 vertical sides and also have an end wall substantially as usual, and the bottoms and sides of said buckets being disposed at right angles to each other form right-angular engaging faces which engage the rolls g . The distance between the flanges of each pair of
20 rolls is substantially equal to the width of the buckets, so that the buckets may pass freely between said flanges and at the same time bear upon and be supported by said
25 rolls, and said buckets are held by the flanges of the rolls against lateral movement. It is important that the rolls shall be provided with flanges to guide the buckets while supporting them, as it frequently happens that
30 they are unevenly loaded and have a tendency to swing laterally, and such movement of the buckets tends to move the links of the chains out of true alinement, which results in undue friction of the parts. On the opposite side of the main frame a pair of flat-
35 faced rolls h h are provided, which are herein shown as mounted to revolve freely upon or they may be secured to the shaft d^7 , and said rolls are held by said shaft d^{10} in such relative position to the buckets as to be engaged
40 by the outer edges of the side walls of said buckets. The rolls h h are located a short distance below the delivery-chute j and occupying a fixed plane will act to keep the buckets from striking the end of the chute in case
45 the chains sag unduly.

It will be seen that the outer edges of the buckets c serve as roll-engaging portions which engage the bucket-engaging faces of
50 the rolls h h .

There may be as many like pairs of rolls h h provided as desired, yet in practice a single pair located quite close to and beneath the chute accomplishes the desired results.

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

1. In an elevator of the character described, a pair of endless chains, means for supporting and moving them, buckets carried by said
60

chains which project at each side beyond the chains, roll-engaging portions formed on the projecting portions of said buckets, combined with one or more pairs of flanged bucket-engaging rolls, the rolls of each pair being
65 mounted on a shaft a sufficient distance apart to provide for the passage of the chains between them, substantially as described.

2. In an elevator of the character described, a pair of endless chains, buckets carried by
70 them having roll-engaging portions along their upper or outer edges, combined with a pair of rolls and a support for holding them in position to engage said roll-engaging portions as the buckets are moved along by the
75 chains, substantially as described.

3. In an elevator of the character described, a pair of endless chains, buckets carried by them having roll-engaging portions along their upper or outer edges and a chute located near the upper end of the elevator, combined with a pair of rolls supported beneath
80 said chute and adjacent thereto which engage the roll-engaging portions of the buckets at points just beneath the chute, substantially
85 as described.

4. In an elevator of the character described, the combination of a pair of endless chains, buckets carried by them, a pair of sprocket-wheels at the upper end of the main frame
90 over which said chains pass, a shaft bearing said sprocket-wheels, a toothed gear secured to said shaft, a driving-pinion engaging said toothed gear, a shaft bearing said pinion, a driving-wheel secured to said shaft and a
95 frame secured to the main frame having bearings for supporting said shafts in parallelism, substantially as described.

5. In an elevator of the character described, the combination of a pair of endless chains,
100 buckets carried by them, a pair of sprocket-wheels at the upper end of the main frame over which said chains pass, a shaft bearing said sprocket-wheels, a toothed gear secured to said shaft, a driving-pinion engaging said
105 toothed gear, a shaft bearing said pinion, a driving-wheel secured to said shaft and a frame secured to the main frame having bearings for supporting said shafts in parallelism, the bearings for one of said shafts being adjustable
110 relatively to the bearings for the other, substantially as described.

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

VOLNEY W. MASON, JR.

Witnesses:

B. J. NOYES,

J. L. HUTCHINSON.