

(No Model.)

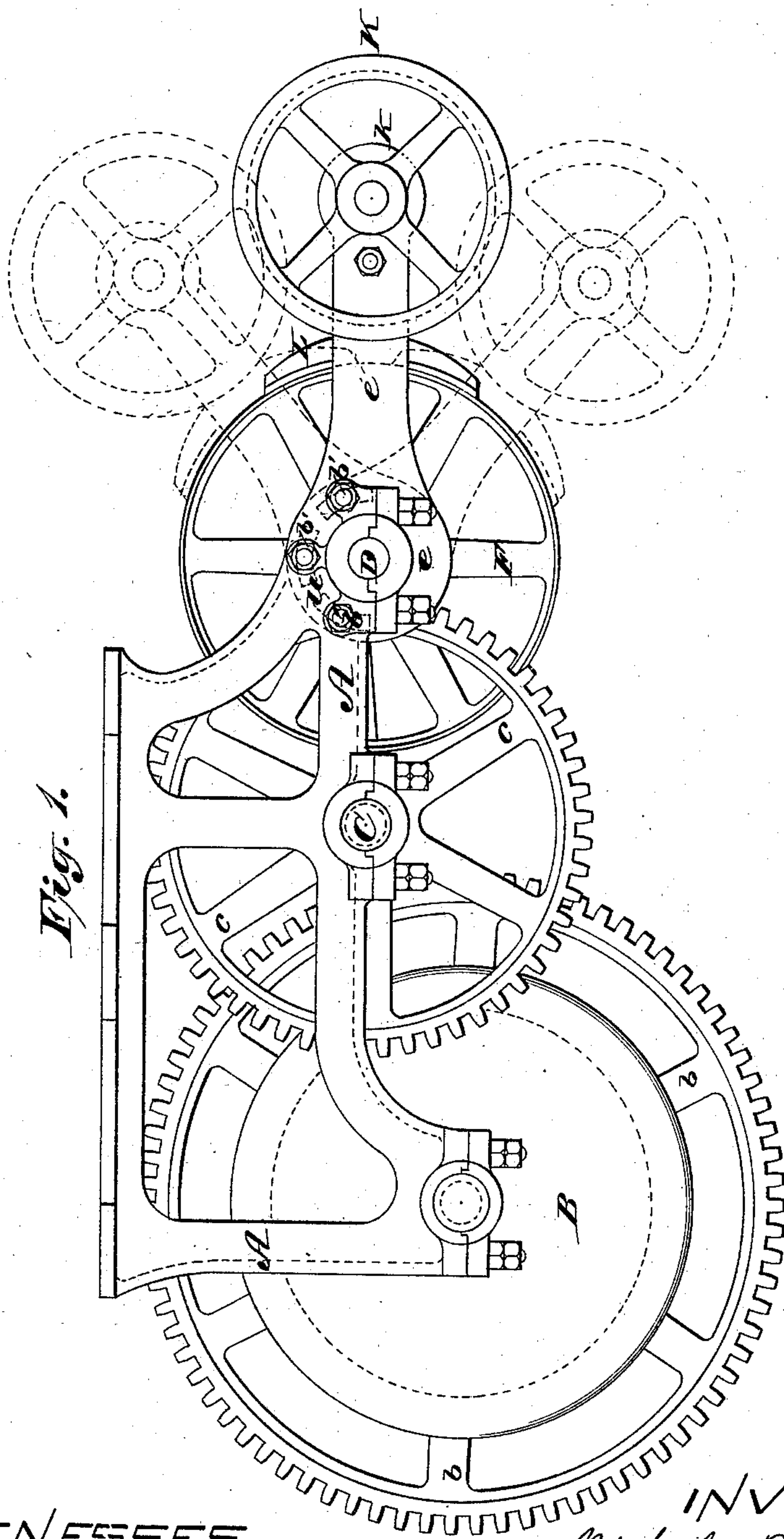
3 Sheets--Sheet 1.

N. B. CUSHING.

Hoisting Apparatus for Elevators, &c.

No. 232,338.

Patented Sept. 21, 1880.



WITNESSES.
A. H. Parker
Chas H. Doyal

INVENTOR.
Nichols B Crooking
per James A Whitney.
Atty.

(No Model.)

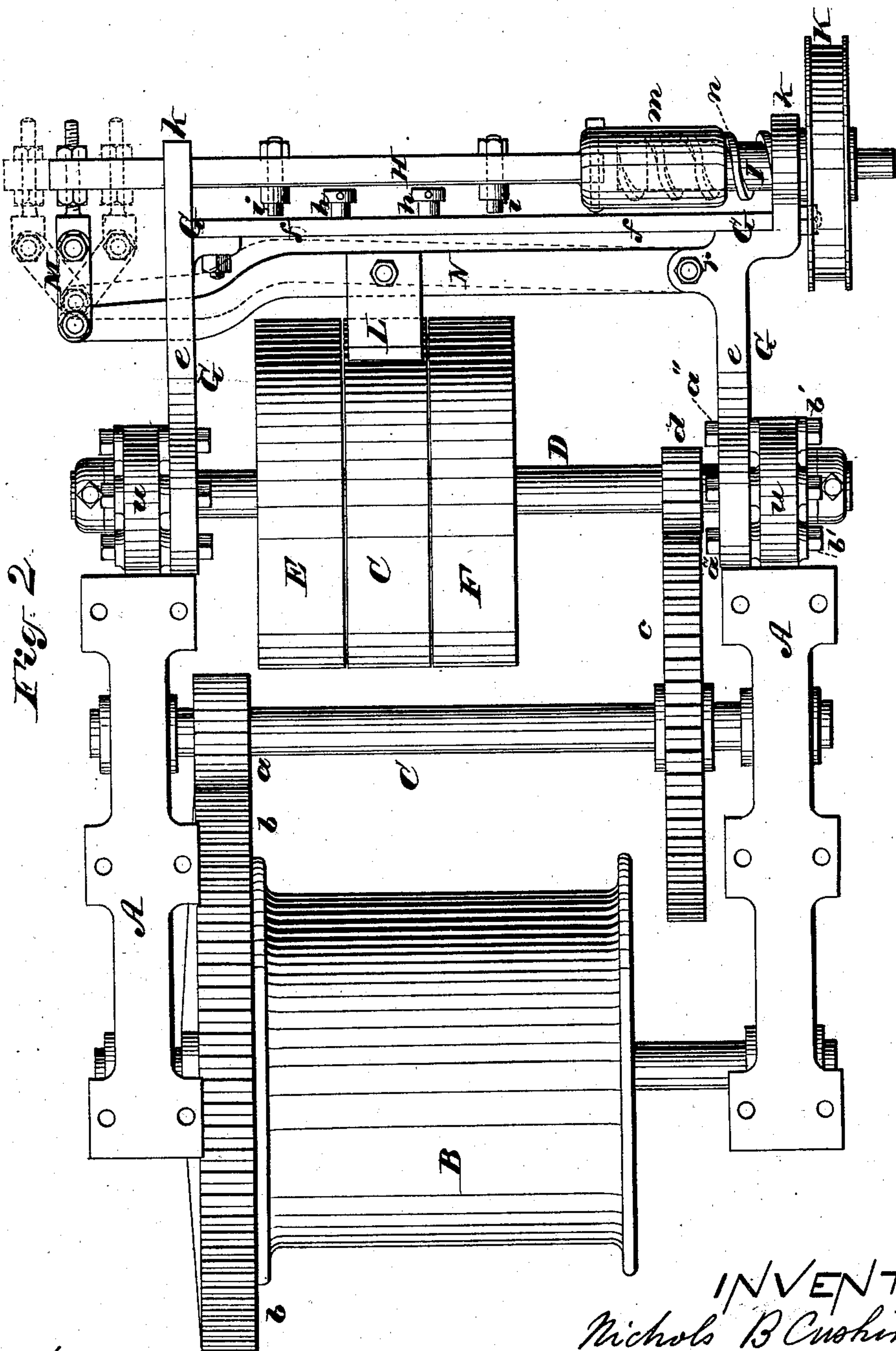
3 Sheets--Sheet 2.

N. B. CUSHING.

Hoisting Apparatus for Elevators, &c.

No. 232,338.

Patented Sept. 21, 1880.



WITNESSES.

H. F. Parker
Chas. H. Doyat

INVENTOR.
Nichols B. Cushing
per James A. Whitney,
Att'y.

(No Model.)

3 Sheets--Sheet 3.

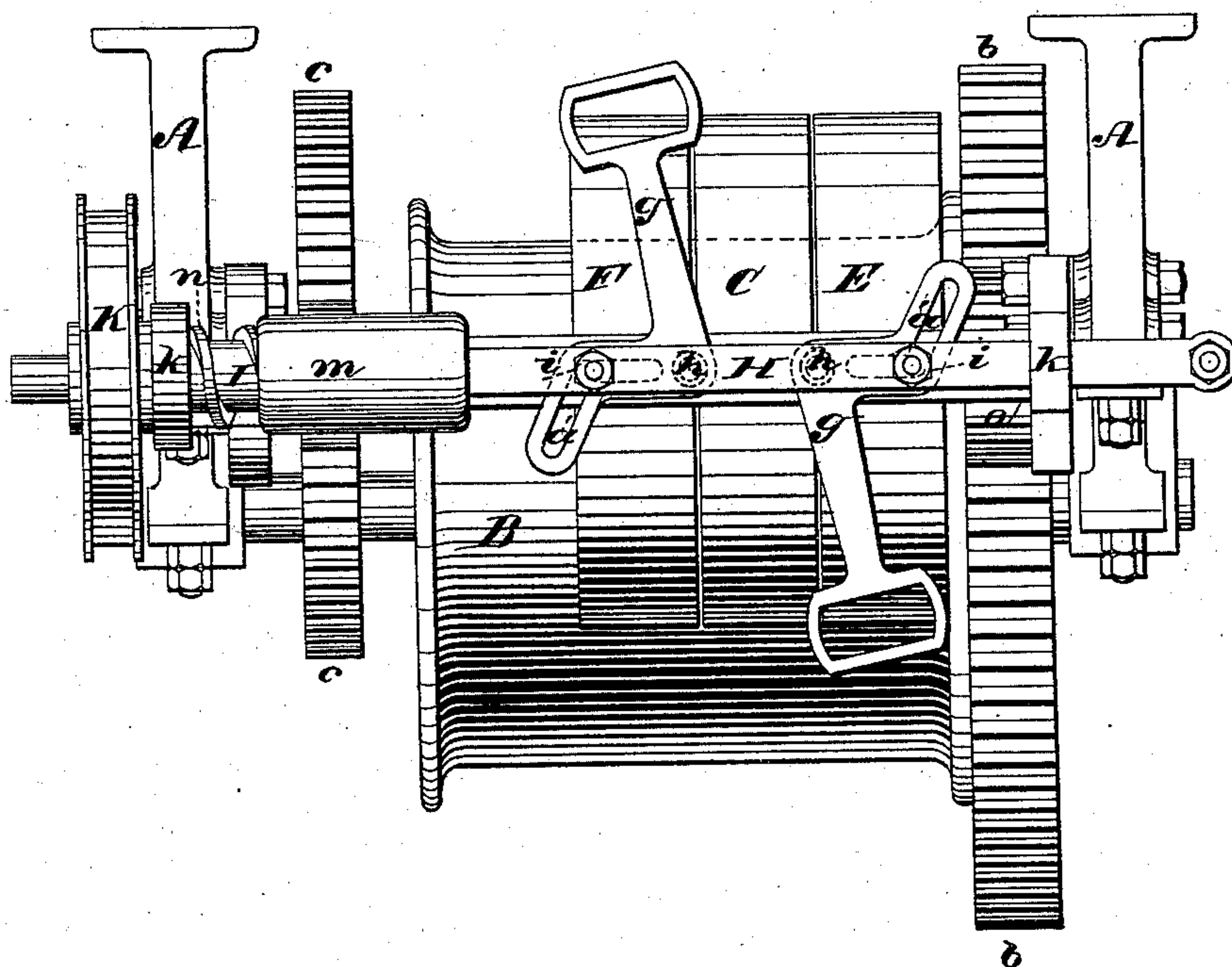
N. B. CUSHING.

Hoisting Apparatus for Elevators, &c.

No. 232,338.

Patented Sept. 21, 1880.

Fig. 3.



WITNESSES.

A. H. Parker
Chas. H. Boyat.

INVENTOR.

Nichols B Cushing
per James A Whitney.
Atty.

UNITED STATES PATENT OFFICE.

NICHOLS B. CUSHING, OF JERSEY CITY, NEW JERSEY.

HOISTING APPARATUS FOR ELEVATORS, &c.

SPECIFICATION forming part of Letters Patent No. 232,338, dated September 21, 1880.

Application filed August 6, 1880. (No model.)

To all whom it may concern:

Be it known that I, NICHOLS B. CUSHING, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain
5 Improvements in Hoisting Apparatus for Elevators, &c., of which the following is a specification.

This invention relates to that class of apparatus commonly termed "hoisters," and more
10 particularly designed for working the elevators on docks, in warehouses, and other places; and its object is to enable the apparatus to be adjusted to the particular location in which it is to be placed and used, so that it may be set
15 up complete at the manufactory, instead of requiring to be taken more or less in piecemeal to the place where it is to be permanently located, and there specially and fixedly arranged for use. This special adjustment and arrange-
20 ment ordinarily occurs, for the reason that the direction of the driving-belts of the apparatus is commonly arbitrarily determined by the shape and size of the space or room in which the apparatus is to be placed—in other words,
25 by the exigencies of each particular case.

My invention comprises a novel construction or combination of parts, whereby the apparatus as a whole may be completed and set up
30 ready for use, but capable of adjustment to bring its parts in such relation with each other that the belt may be run in any direction radially from the axis of the driving-pulley without taking apart the machine, and without any other manipulation than the turning of certain
35 portions of the apparatus around a joint provided to permit of the adjustment aforesaid.

Figure 1 is a side elevation, Fig. 2 a plan view, and Fig. 3 an end view, of an apparatus embracing my said invention.

40 A is the supporting-frame of the apparatus, which may be of any suitable or appropriate character, but which, as represented in the drawings, is designed to be bolted to the ceiling of the room in which the apparatus is placed for operation. This frame carries or supports the winding-drum B and the intermediate or counter shaft, C, which has at one end
45 a pinion, *a*, which gears into the spur-wheel *b* of the winding-drum, and at the other end a spur-wheel, *c*, which gears into a pinion, *d*, on the pulley-shaft D, the said pulley-shaft D

having what, for our present purpose, may be termed the "operating-pulley," C, which is fast on the said shaft D, which latter has also two
55 loose pulleys, E and F, to permit the shifting of the driving-belts to and from the operating-pulley C, according as it is desired to rotate the drum B in one direction or the other.

G is a frame composed of two side pieces, *e*, and a cross-piece, *f*, the inner ends of the side
60 pieces, *e*, being pivoted or journaled upon the shaft D of the operating-pulley C, so that in whichever direction the frame G may be turned it will still be radial to the shaft D—in other words, to the axis of motion of the operating-
65 pulley C. Upon the outer end of this frame G is placed the belt-shipping mechanism, which may be of any ordinary or suitable kind, but which, as represented in the drawings, comprises the shipping-levers *g*, (said levers being
70 represented in Fig. 3,) which are pivoted upon suitable bearings *h*, provided on the cross-piece *f*, as represented in Fig. 2, the requisite lateral movement of the said shipping-levers *g* being given by studs *i*, provided on a transversely-
75 movable rod, H, one end of which slides in a bearing formed in one of the outwardly-projecting lugs or portions *k* of the frame G, and the aforesaid studs *i* fitting into the slotted short arms *a'* of the shipping-levers *g*.
80

The requisite longitudinal movement is given to the rod H by means of a nut, *m*, on the inner end thereof, into which works the spiral thread *n* of the screw I, which latter is supported in a bearing in one of the lugs or
85 portions *k* of the frame G, as more fully represented in Fig. 2, the said screw I being attached to a pulley, K, which is intended to be actuated by the usual vertical belt used in passenger and other elevators for controlling
90 the movement of the elevator-car. The same longitudinal movement which thus actuates the belts to throw one or the other from or to the operating-pulley C serves also to give movement to the brake L with reference to
95 said pulley C. The brake L is secured to brake-bar N, which at one end is pivoted to the frame G, as shown at *r*, the opposite end being connected by a link, M, at one end of the rod H, but opposite that at which the pulley K is placed, so that when the rod H ap-
100 proaches the extreme limit of its movement in

either direction the brake L will be withdrawn away from the operating-pulley C, at which time the said pulley C is under operation by a belt running thereon, whereas when the rod H is brought to the position in which the belts are brought upon the loose pulleys E F the brake L is applied to the face of the pulley C.

It will be observed that in practice it is especially desirable, or even necessary, that the belt-shipping and brake-actuating mechanism should be constituted between the two opposite portions of the belts which run upon the pulleys E C F, and it is this requirement which necessitates a difference of position as concerns said parts, according to the exigencies of any particular case. Now, therefore, inasmuch as the said belt-shipping and brake-actuating mechanism—one or both, but especially the latter—is carried upon the outer portion of the frame G, which, at its inner portion, is pivoted upon the shaft D of the operating-pulley C, the adjustment of the frame G, as hereinbefore explained, will bring the aforesaid belt-shipping and brake-actuating mechanism into a position radial to the axis of the pulley C, so that the said mechanism may be adjusted to act in proper relation with the belts, no matter in what direction the said belts may run from the pulley C and its adjoining loose pulleys E F, so that the machine made complete and set up for operation at the manufactory may be put in any place, regardless of the necessary direction of the driving-belts, and adjusted to said direction of the driving-belts by simply turning the frame G around its axis of movement or adjustment—namely, the shaft D—and fixing it in such position to hold the belt-shipping and brake-actuating mechanism stationary. In order to thus retain the frame G in the position in which it is adjusted the portions U of the main frame A, in which are formed the bearings of the shaft D, have curved slots concentric with the axis of said shaft, through which are passed bolts

a'', the said bolts extending through the said slots from the side pieces, e, of the frame G, and having at their outer end nuts b', which tighten against the outer surfaces of the parts U of the main frame A, so that the side pieces, e, are gripped in frictional contact to the parts U of the frame A with such tenacity as to retain the said frame in position, as hereinbefore explained.

It is to be understood that the relative arrangement of the drum B and the operating-pulley C, with their intermediate gearing, may be changed or modified to any extent, and that in like manner the construction and arrangement of the belt-shipping and brake-actuating mechanism may also be changed and modified without affecting the principle of my invention so long as the said belt-shipping or brake-actuating mechanism—one or both—is provided upon the outer end of the frame G, and the latter frame G has its axis of movement or adjustment substantially coincident with the axis of motion of the pulley C.

It is also to be observed that the said frame G, instead of being pivoted direct upon the shaft D, may be pivoted upon bearings formed upon the main frame A, the arrangement of the pivots themselves being immaterial so long as the axis of movement or adjustment of the frame is substantially coincident to the axis of motion of the pulley C.

What I claim as my invention is—

In a hoisting apparatus for elevators, &c., the combination of the adjustable frame G, provided with mechanism for controlling the operating-pulley C, with the said operating-pulley and the winding-drum actuated thereby, the aforesaid frame G being adjustable around an axis substantially coincident with that of the operating-pulley aforesaid, all substantially as and for the purpose herein set forth.

NICHOLS B. CUSHING.

Witnesses:

CHAS. H. DOXAT,
H. F. PARKER.