

E. W. Cady,
Lifting Jack,

No 29,951,

Patented Sept. 11, 1860.

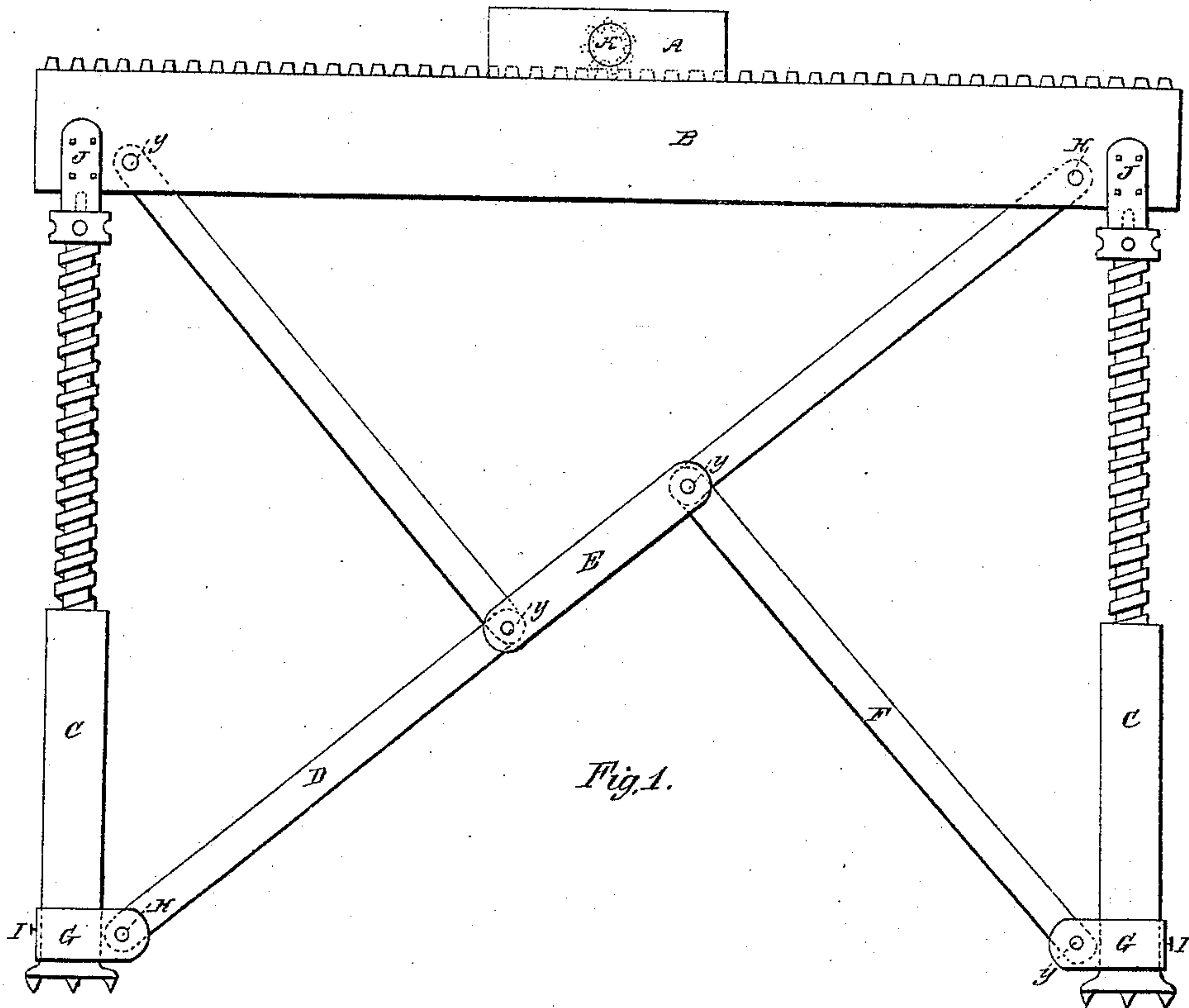


Fig. 1.

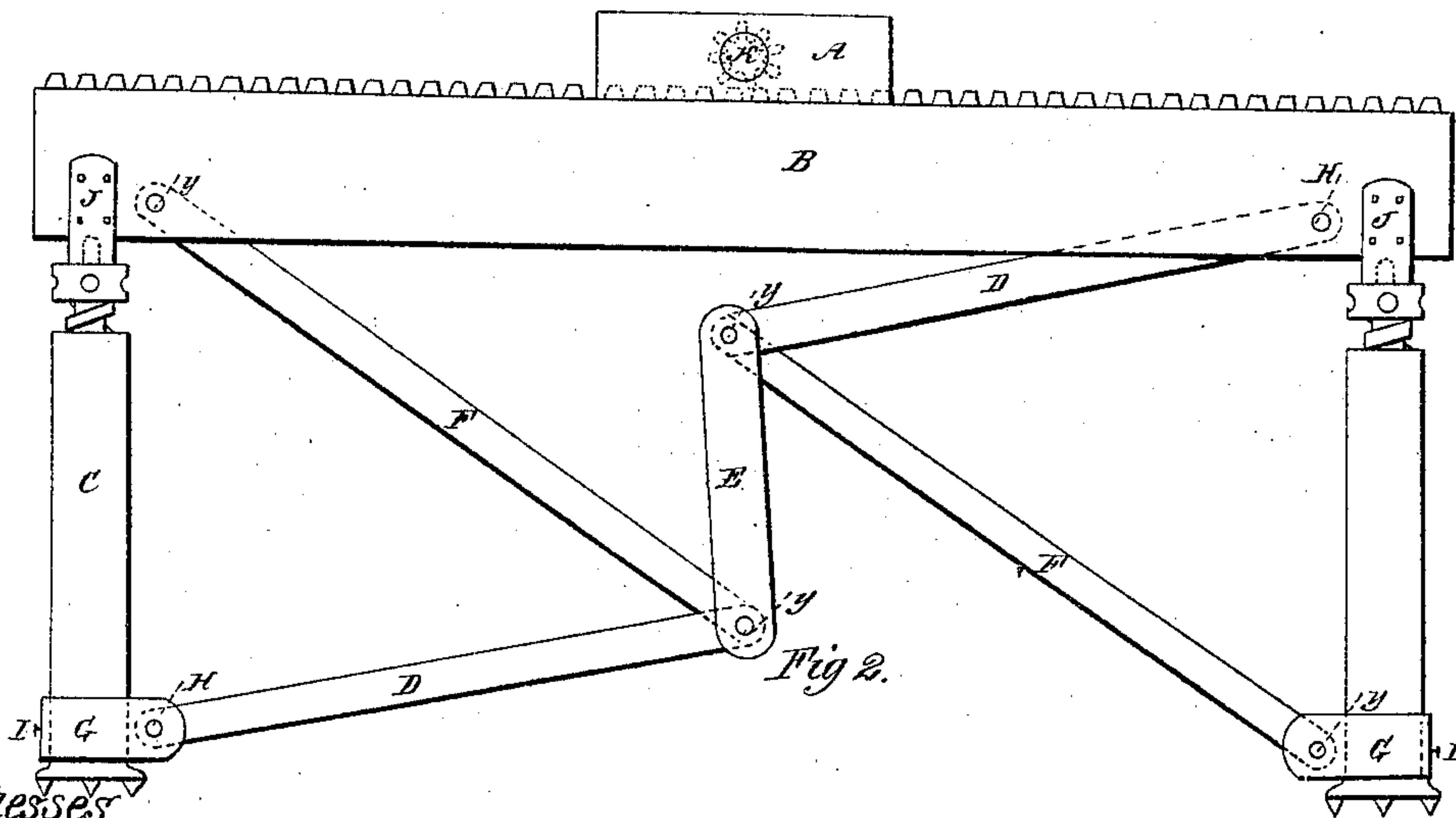


Fig. 2.

Witnesses:
O. C. Porter
Almon D. Holman

Inventor:
Elisha W. Cady

UNITED STATES PATENT OFFICE.

ELISHA W. CADY, OF TOMAH, WISCONSIN.

SELF-ADJUSTING BRACE FOR JACK-SCREWS OR OTHER HOISTING APPARATUS.

Specification of Letters Patent No. 29,951, dated September 11, 1860.

To all whom it may concern:

Be it known that I, ELISHA W. CADY, of the town of Tomah, in the county of Monroe and State of Wisconsin, have invented
5 a new and useful machine, which I call "Cady's Combination Self - Adjusting Brace," for the purpose of bracing screws or standards where the part needing bracing requires to be raised or lowered and is
10 subject to lateral pressure, such as jacks for raising and moving buildings, railroad-cars, adjustable scaffolds for builders' purposes, elliptic springs for coaches, ship-jacks for raising vessels and working them over bars
15 or off of reefs, and for bracing any uprights which support a weight which needs to be raised or lowered and which may or may not be required to be moved in a lateral direction; and I do hereby declare that the following is a full, clear, and exact description
20 of the construction of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents the brace when raised
25 to its highest extent and Fig. 2 the same when let down nearly to its lowest.

A is a cast iron box containing a pinion wheel (shown by the dotted lines) which has a projecting head K with holes in its
30 circumference into which a lever is to be inserted for the purpose of turning the pinion to give the box A a lateral motion.

B is a wooden beam with segments on its upper side the cogs of which fit those of the
35 pinion.

C C are two ordinary jack screws such as are commonly used on rail roads and for moving buildings.

40 G G are iron collars to slip over the jack screws and are held in their places by the set screws I I.

J J are collars fastened to the beam B and constructed at the bottom so as to receive the heads of the jack screws.

45 D D are the two short arms of the brace F F its two long arms and E an evener connecting the arms together so that the brace shall be effective whatever may be the position of the outer extremities of the arms.

50 H H Y Y Y Y are bolts fastening the ends of the arms in their proper places.

In the drawings referred to above the brace composed of the arms D D and F F and the evener E is shown as attached to a
55 mechanism for raising and moving cars and

buildings and other heavy bodies, such application of it being the most convenient for the present purpose of an exhibition of its operation. By turning up the screws (their feet being kept from slipping) either both
60 alike or unequally it will be at once seen that the brace is at all times equally effective whether one side is up and the other down or whether both sides are raised to equal heights.

65 The superiority of this invention consists in the simplicity of its construction and the ease with which it can be attached to anything needing a brace of this description, and the facility with which a machine to
70 which it is attached can be adapted to even or uneven ground, and the relief from strain which it gives those parts of the uprights which are most likely to yield. As in the case of the machine shown in the drawings
75 the strain comes on the beam B pulling horizontally with the grain of the wood, and on the feet of the screws which are rendered the more firm in their places the greater the weight placed upon them, so that in moving
80 heavy bodies as by means of the box A and pinion K there is scarcely any additional strain comes on the screws beyond that caused by the pressure of the weight to be sustained, so that the screws are not liable
85 to be broken off by any sudden surge of the weight to one side or the other which sometimes happens when they are braced in the ordinary manner.

Another advantage of this brace, when at-
90 tached to a machine as shown in the drawings, is that, by raising one end of the beam B higher than the other, the screws or standards will only vary from a plumb line half
95 what an ordinary brace would cause them to do, thus imparting greater strength to the machine when operating it on uneven ground.

In order to render the construction of this brace easily understood by any ordinary mechanic I would state that, reference being
100 had to Fig. 1, the length of the evener E equals three tenths ($3/10$) of the perpendicular distance Y H the screw being raised to its full height. The length of each short arm
105 D D equals one half ($1/2$) the distance H H minus the length of the evener. The length of the long arms F F can be most accurately determined by measuring the distance between the connecting points Y Y and Y Y
110

as their length will vary with the length of the beam.

The bolts H H Y Y Y Y want to be just loose enough to allow the ends of the arms
5 to work freely but not to have much play in any direction.

I claim no originality in the jack screws, or in the gearing above described, or in the manner of connecting the ends of the arms
10 with each other and with the uprights and beam, but

What I do claim and desire to secure by Letters Patent is—

The combination self adjusting brace composed of the arms D D F F and the evener 15 E and constructed substantially as herein set forth.

ELISHA W. CADY.

In presence of—

O. E. FOOTE,
S. D. HOLLISTER.