

(Model.)

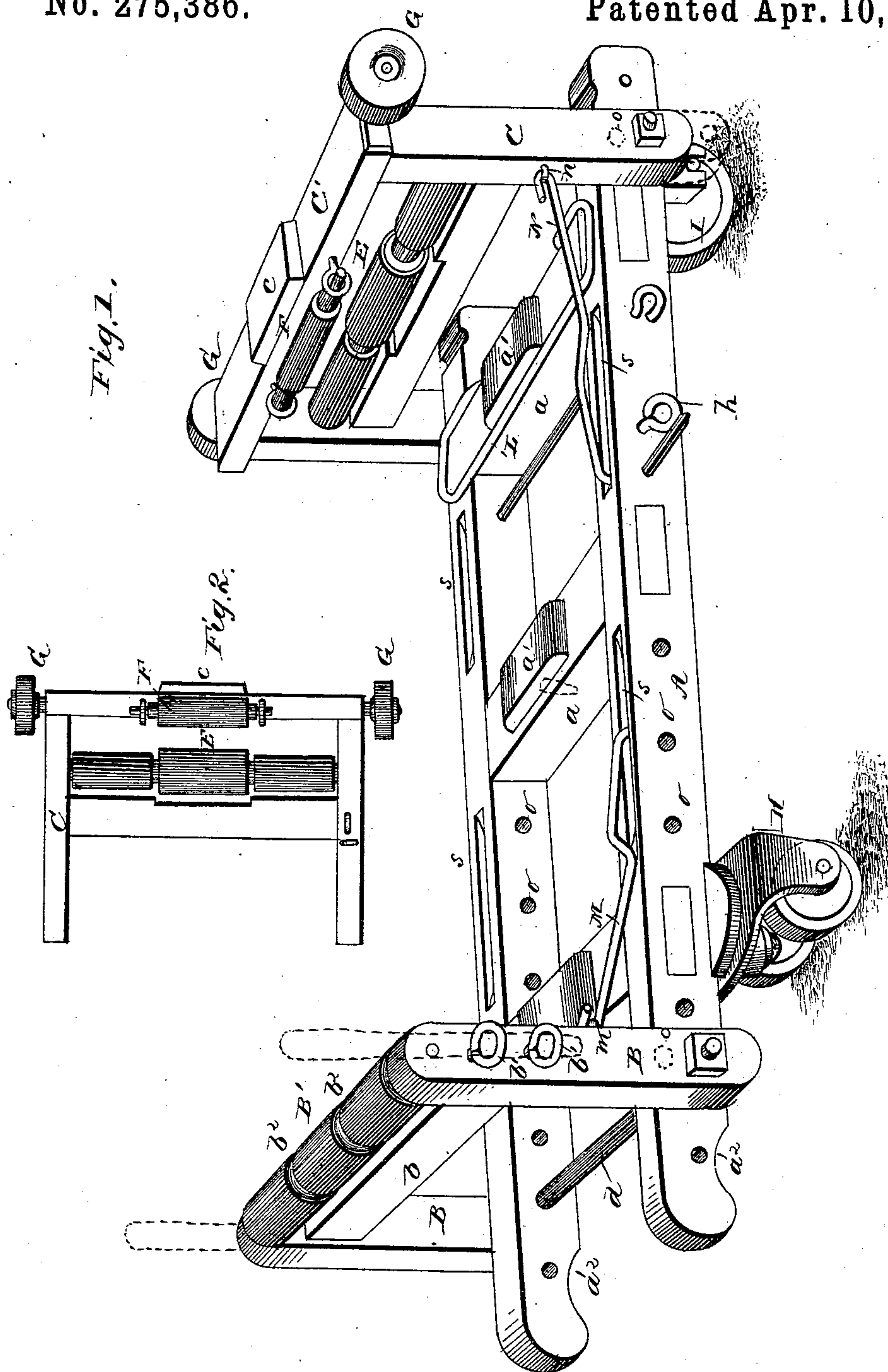
3 Sheets—Sheet 1.

W. W. HUGHES.

HAND TRUCK.

No. 275,386.

Patented Apr. 10, 1883.



WITNESSES:

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ATTORNEYS.

(Model.)

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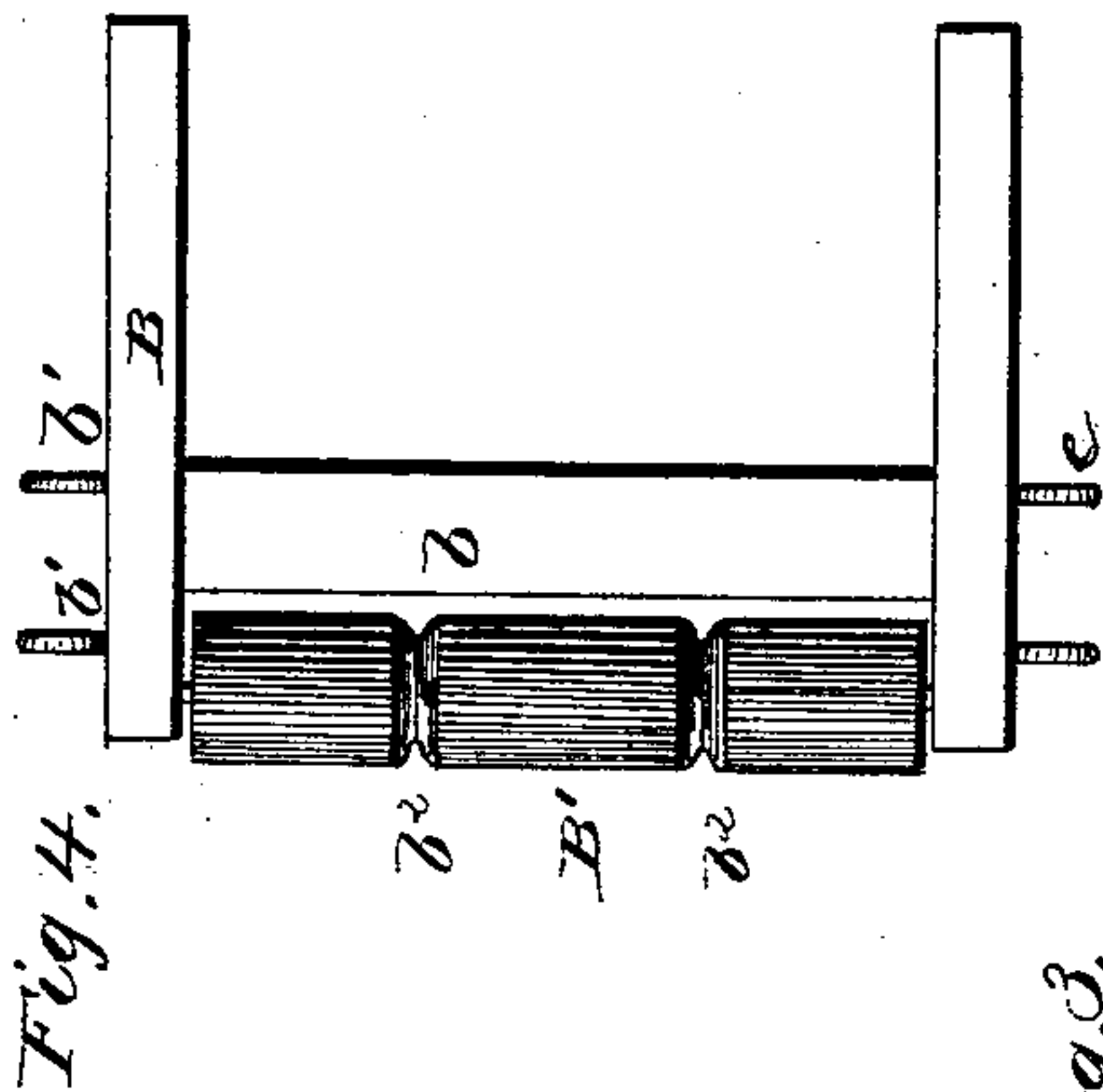


Fig. 5

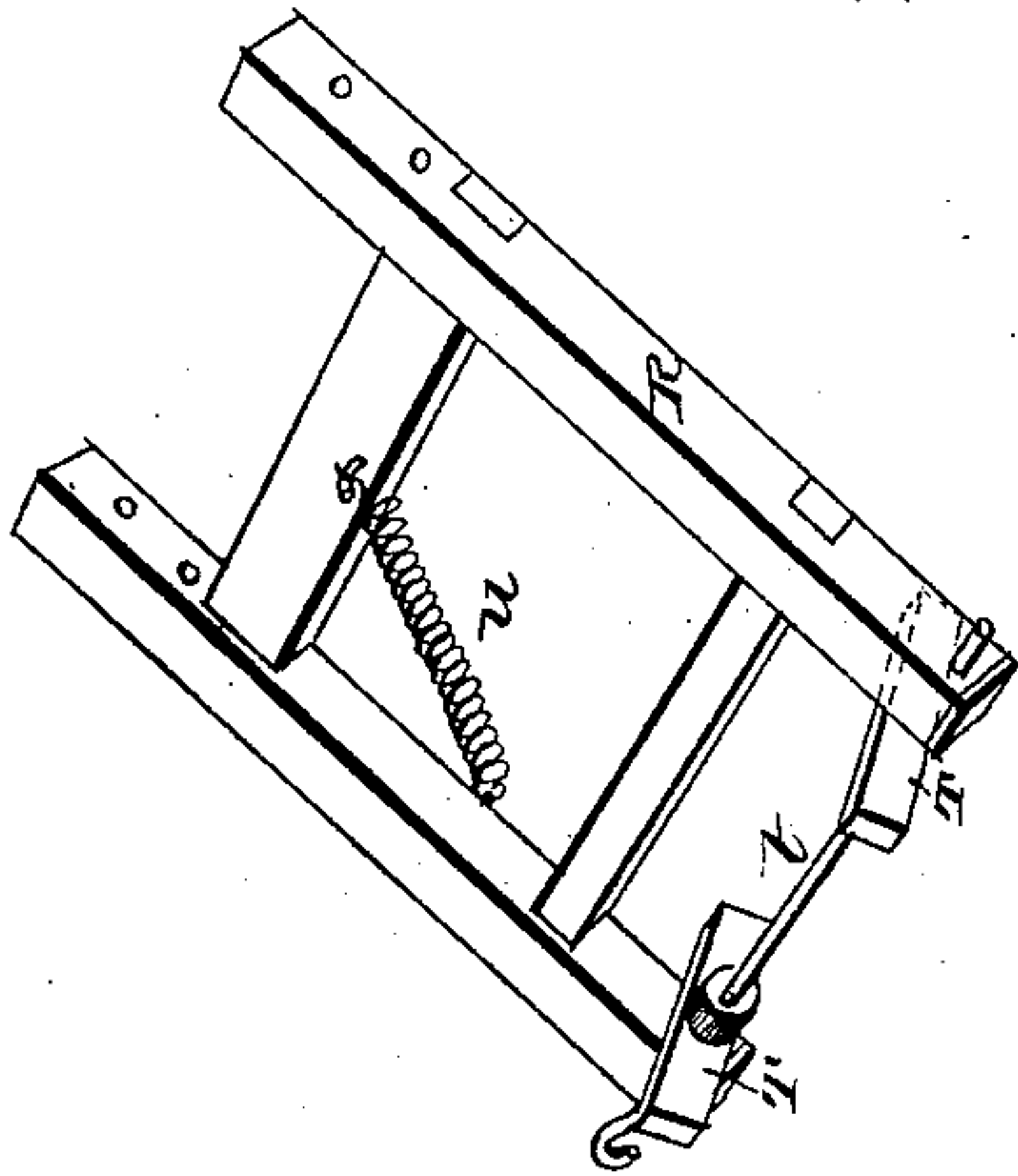
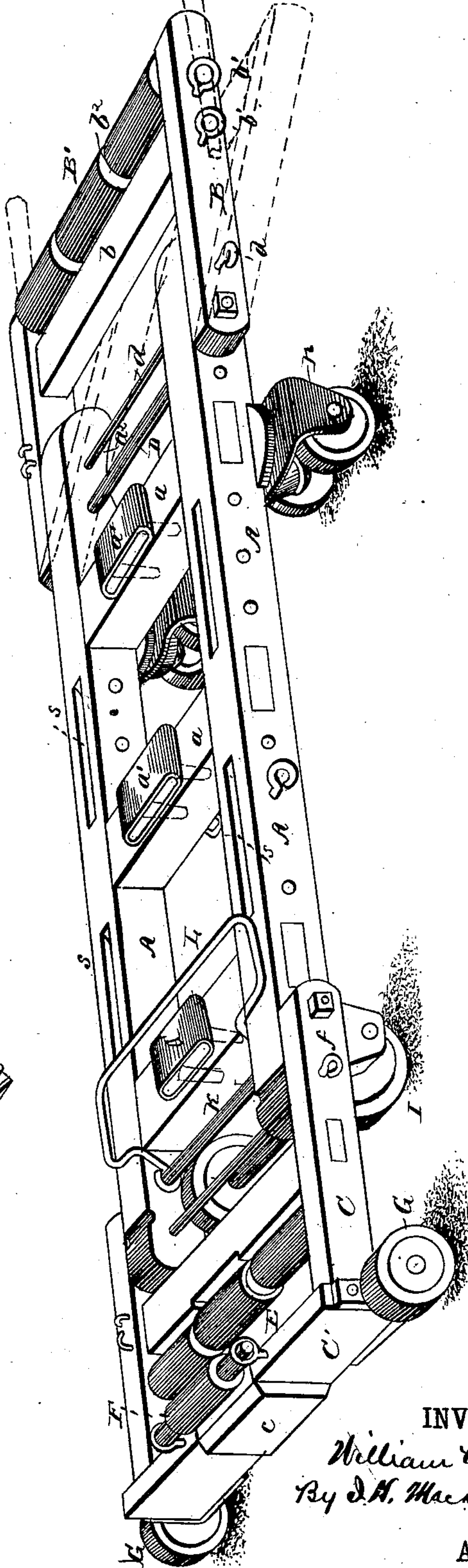


Fig. 3.



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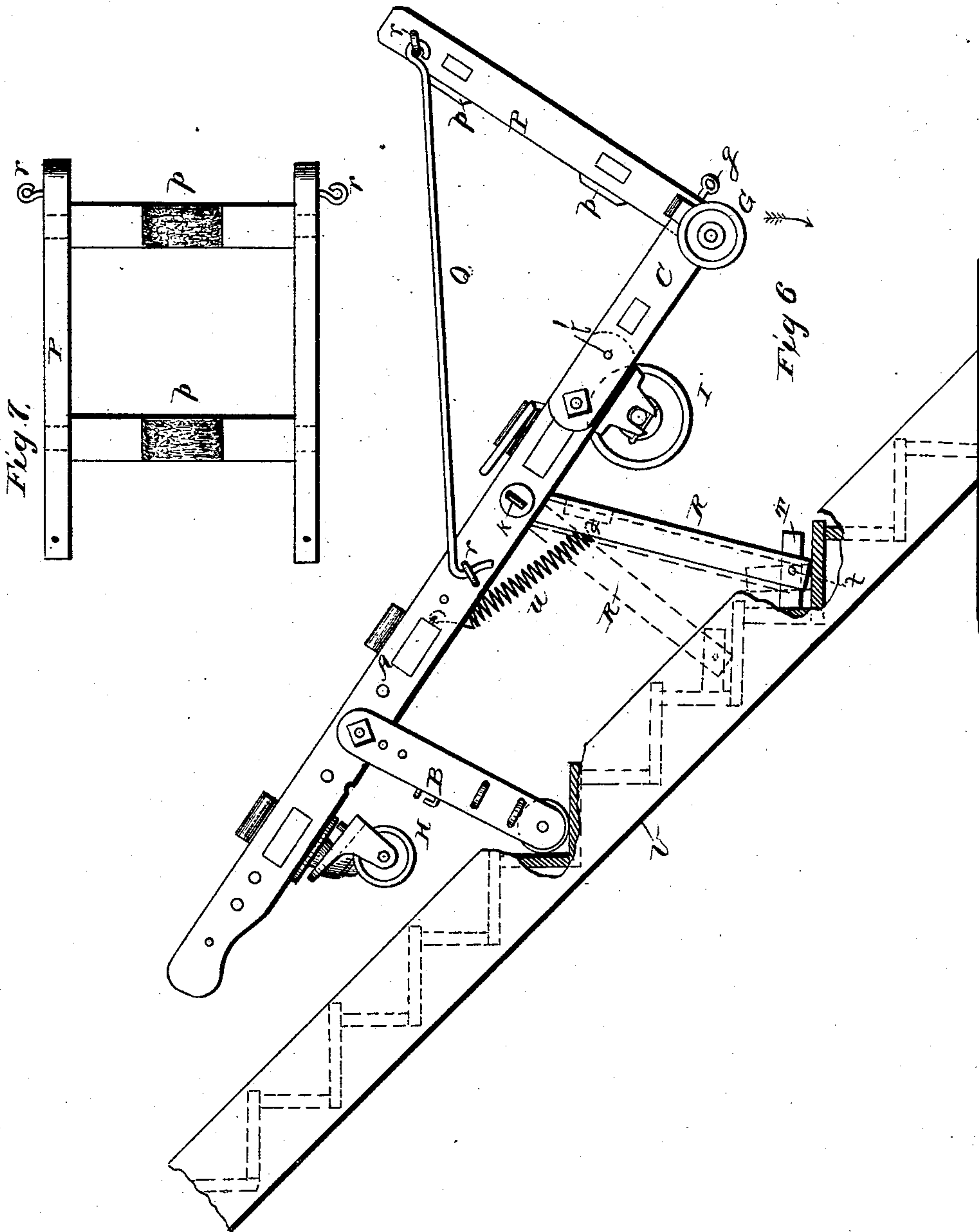
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# UNITED STATES PATENT OFFICE.

WILLIAM W. HUGHES, OF URBANA, OHIO, ASSIGNOR TO CORNELIA B. HUGHES, OF SAME PLACE.

## HAND-TRUCK.

SPECIFICATION forming part of Letters Patent No. 275,386, dated April 10, 1883.

Application filed October 11, 1882. (Model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. HUGHES, a citizen of the United States, residing at Urbana, in the county of Champaign and State of Ohio, have invented certain new and useful Improvements in a Combined Platform Hand and Stair Truck; and I do hereby 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 trucks for moving pianos, organs, furniture, trunks, and other heavy articles; and it consists, essentially, in a truck-frame provided with interchangeable and extension supports adjustable on the truck-frame, both longitudinally and vertically; and further provided with a step-balance frame secured to the under side of the truck-frame, and automatically actuated as the truck-frame is moved up and down the stairs.

It lastly consists in certain details of construction and arrangement of the several parts, as will be hereinafter more fully set forth in the specification, and pointed out in the accompanying drawings, in which—

Figure 1 is a perspective view of my device with the adjustable extension-supports raised; Fig. 2, a plan view of one of the supports; Fig. 3, a perspective view of the truck with the extension-supports extended horizontally; Fig. 4, a plan view of one of the end supports; Fig. 5, a detail view of the step-balance frame; Fig. 6, a side elevation of the device when used as a stair-truck, and Fig. 7 a plan view of the end support.

Referring more particularly to the drawings, the main truck-frame A is provided with the front wheels, I, and the rear casters, H. I may, however, use casters at the front and rear. To the rear of the truck-frame I secure an extension pivotal support, B, by means of a suitable rod, *d*, and at the front of the frame another extension-support, C, is similarly secured. A roller, B', provided with a cushion of rubber or other suitable material, is journaled in the support B. Cushioned anti-friction rollers E F are journaled in the end support C. The supports are held in a vertical position, when raised, by means of the removable hook-rods M N, the free ends of which pass along

grooves and automatically drop into slots *s* in frame A. There may be four of these rods, if deemed necessary. Rings, staples, or bands *b'* are fastened to the sides of support B for the purpose of receiving levers, such as dray-pins, (*vide* Fig. 3,) by means of which an additional leverage is obtained to raise or lower the piano. The cross-pieces *a* in the main frame are provided with removable and interchangeable cushions *a'*, of suitable material, to prevent injury to the polished surface of a piano or other article. The end supports, B C, can be removed and the main truck then used as an ordinary hand-truck, the end of the frame A being cut away at *a*<sup>2</sup> to afford a ready means for lifting. The truck can be easily moved and turned by means of the wheels and casters. When used as an ordinary hand-truck the cushions *a'* are removed, the cushions being provided with dowel-pins which enter openings in the cross-pieces *a*. An end rest, L, having an eye on each side, is pivotally secured by the rod K, which passes through the frame and eyes. These end rests can be made flat, concave, &c., to suit barrels, boxes, &c. I can also use the extension-support C in its upright position as an end rest. This support is especially adapted for high or bulky articles having a polished surface, the cushioned rollers E F giving the desired protection; or I may use both extensions as end supports, as shown in Fig. 1. When the truck is used for conveying articles up or down stairs I use the balance-step frame shown in Figs. 5 and 6. In this connection I also use a supplemental end supporting-frame, P, rigidly secured to the end extension C by the set-screws *g* and the side rods, Q, attached to this and the main frame by the links or eyes *r*.

In operation the device is used as follows: Suppose, for example, it is desired to move a square or grand piano from a store-room to a distant position. I first place the truck, with the extensions B C raised vertically, Fig. 1, underneath the piano, the height of the extensions being adjusted by means of the rods *d*, which pass through openings *o* in the main frame and extensions. (The height of the different pianos varies but little.) I then turn the piano over on its back edge, so as to rest on roller-cushion B' and cushion *c*, the edge of



the projecting lid or cover resting in the groove  
 5 of the piano let down on end against the cushioned anti-friction rollers E F. The central part between the grooves of rollers B E F and cushions  $a'$  and  $c$  are all in line along the center of truck and about the width of the depth  
 10 of a piano, which allows a piano to be turned over on the truck-frame from either side and rest squarely on the cushions. The lid enters the grooves, as just described, and this prevents injury to the lid and avoids a leaning  
 15 position of the piano, as would be the case if the lid rested on the cushion. Next the extension B is lowered on its pivot until the piano rests on the central cushions,  $a'$ , of the track proper, and after inserting the fasten-  
 20 ing-rods  $f$  the several parts are in the position shown in Fig. 3. In this position the truck and weight can readily be removed to an adjoining room, or onto a dray or other conveyance. When the piano is to be set up again  
 25 the end resting on roller B is first raised by inserting levers in the staples or rings  $b'$ , the extension B acting as a pivotal lever in conjunction with the inserted levers. Then raise the other end of the piano by raising the support C, the piano now resting on the supports  
 30 in a vertical position, as before. The legs and pedal are now adjusted and the piano turned over on the floor. It will be noticed that when the end of the piano at extension B is being  
 35 raised the extension C rests on the floor at a lower point than the truck proper, so that the pivotal point is at cushion  $a'$ , near extension C, until the weight is raised about thirty degrees before the lower end of the piano rests  
 40 on and against rollers E F, which is then the pivotal point. When extension C is raised the other end of the piano rests on and projects considerably forward of roller B, therefore making it an easy matter to raise either end.

45 If I wish to move an upright piano, organ, or article of furniture analogous thereto to a distant position—such as on a dray—without boxing, I raise the extension C to a plane with the main truck-frame A and secure it in this  
 50 position rigidly by the rod  $f$ , Fig. 3, and then place on this extension C the auxiliary frame P, which prevents the article from slipping off. As a further protection, the extension B is turned inward and downward until the cushioned roller B rests against the piano and is  
 55 held in this position by a buckle strap or straps or other suitable means.

60 If I wish to move a piano, article of furniture, or several trunks, &c., up a flight of stairs, I place the end B a few steps up the stairs, and raise end C so as to place underneath frame A the balance-step frame R, which is pivoted to said frame A by a rod, K. One  
 65 end of a spring,  $u$ , is attached to the cross-brace of frame A, forward of frame R, the opposite end of the spring being secured to the frame. Then raise the upper end of the truck

farther by balancing on frame R, and reverse the usual upright position of extension B, (unless I use a separate frame as its equivalent,) 70 placing it underneath A and back of the casters, rigidly securing it to frame A by suitable rods, the cushioned roller of B resting on one of the steps. (*Vide* Fig. 6.) Now by pushing down at end of extension C extension B is  
 75 raised, and then by pushing forward and balancing on frame R the truck is advanced one or two steps at a time. Then raise the lower part of the truck, the weight resting on B. This causes a forward movement of frame R 80 actuated by spring  $u$ . The step-piece T (turning on the pivot-rod  $t$ ) turns over the edge of the step, thus preventing the lower ends of frame R from becoming engaged with the step-rise.

85 It will be observed that the extension B and balance-frame R are now pivoted so near the center of gravity that there is but little power required to carry up the load, as the balance-frame balances and supports the weight of the 90 article during the interim of raising and lowering the extensions. If the stairs have a turn or curve in them—such as at landings—the wall preventing the horizontal turning of the truck to the next step, I disengage B and place 95 it in its horizontal extended position, so that the roller B' answers to roll up the wall until the truck reaches a point where it can be turned on its lower end, and if but five or six steps remain to reach the top it will not be neces- 100 sary to readjust the extension B underneath. I may, however, use an additional frame, equivalent to B, acting as an under vertical support, in which case I keep B in its extended po- 105 sition. The several holes which pass through the extensions and truck-frame permit the roller B' to pass beyond the end of the piano, when desired. To prevent an excess of forward movement of frame R, I use an ordinary buckle-strap, fastening one end to frame R, and 110 pass the other end to a point back of it—such as rod  $f$ —buckling it up to a suitable length, the frame R being pivotally attached to A at a point that will give the best balance when loaded. 115

To move the piano, &c., down stairs it is only necessary to detach the spring  $u$  from frame A, and the frame R will then automatically drop into a vertical position on each suc- 120 ceeding step as it is released from the step by raising that end of the frame, the operation being the reverse of going up stairs.

When a bureau or other article of less length than a piano is to be moved up or down stairs, I dispense with the frame P and use extension 125 C, in its secured vertical position, as a lower end rest, and proceed as before.

130 If it is required to slide an article up or down an incline—such as to or from a window—on a plane or ladder, I remove the supports B C and cushions  $a'$  and turn the main frame A upside down. I then place in position the end support, P, and the frame can be easily moved up or down the incline.



It will be seen that the several parts of the truck outside of the main frame can be readily turned down or folded onto the main frame without detaching them, and the whole can be  
5 conveniently moved as a hand-truck.

By my device a piano can be easily and safely handled by one or two men.

The device is applicable to hotels, merchants, &c., as the end extensions can be re-  
10 moved and the truck used as an ordinary hand and platform truck.

Having thus described my invention, what I claim is—

1. A truck provided with end supporting-  
15 frames adjustably secured to the main frame, so as to be extended horizontally, or raised vertically on said main frame and suitably secured thereto in their extended or raised position, substantially as and for the purpose set  
20 forth.

2. A truck provided with suitable wheels and casters and two end supporting-frames detachable from the truck, one of said frames having a top cushioned roller, the other hav-  
25 ing end cushioned rollers, and wheels G, secured to said frame, substantially as and for the purpose set forth.

3. In a truck, the combination, with the main truck-frame provided with suitable  
30 wheels or casters, of the vertically and horizontally adjustable end frames having cushioned rollers and hooked holding-rods for rigidly securing the extension-frames to the main frame.

4. In a truck, the combination, with the main truck-frame having removable and in-  
35 terchangeable central cushions,  $a'$ , and a pivoted end supporting bar or rod, L, of the pivoted end extensions vertically and horizontally adjustable on the main frame, substantially as  
40 and for the purpose set forth.

5. A truck provided with a removable balance-step frame pivotally secured to the main frame in such manner that as the main frame  
45 is raised and lowered in ascending a flight of stairs the balance-frame is automatically raised and moved from step to step, substantially as and for the purpose set forth.

6. In a truck, the combination, with a main

frame and an automatically-moving balance-  
50 frame, of the end frames adjustably secured to the main frame, one of said end frames, or its equivalent, and the balance-frame being se-  
cured to the under side of the main frame in  
such manner that each alternately supports  
55 the truck as it is moved up or down a flight of stairs, substantially as and for the purpose set forth.

7. In a truck, the combination of the main frame A, adjustable extension-frame C, and  
60 the auxiliary supporting frame P, secured to the main and extension frames, substantially as and for the purpose set forth.

8. In a truck, the combination, with the main frame A, adjustable extension-frame B,  
65 provided with the cushioned roller  $B'$ , having the grooves  $b^2$ , and frame C, having end rollers, E F, and wheels G, of the auxiliary frame P, substantially as and for the purpose set forth.

9. A truck having an adjustable end exten-  
70 sion-frame B, secured thereto, and provided with a grooved cushioned roller  $B'$ , and lever rings or eyes  $b'$ , substantially as and for the purpose set forth.

10. A truck provided with an adjustable end  
75 extension-frame C, secured thereto, and having the cushioned anti-friction rollers E F, and wheels or rollers G, substantially as and for the purpose set forth.

11. In a truck, the combination, with the  
80 main frame A, provided with adjustable and reversible extension-supports B C, auxiliary end supports, P, interchangeable cushions  $a'$ , and removable wheels I, as and for the pur-  
85 pose set forth.

12. In a platform and stair truck, the com-  
bination of a main frame, pivotal extension-  
supports B C, auxiliary end supports, P, and  
step-balance frame R, the extension-frames  
90 adapted to fold and rest on the main truck-  
frame, substantially as and for the purpose set forth.

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

WILLIAM W. HUGHES.

Witnesses:

I. H. McDONALD,  
D. McDONALD, Jr.