

(No Model.)

H. F. DONALDSON.
LIFT OR HOIST FOR WAREHOUSES.

No. 570,913.

Patented Nov. 10, 1896.

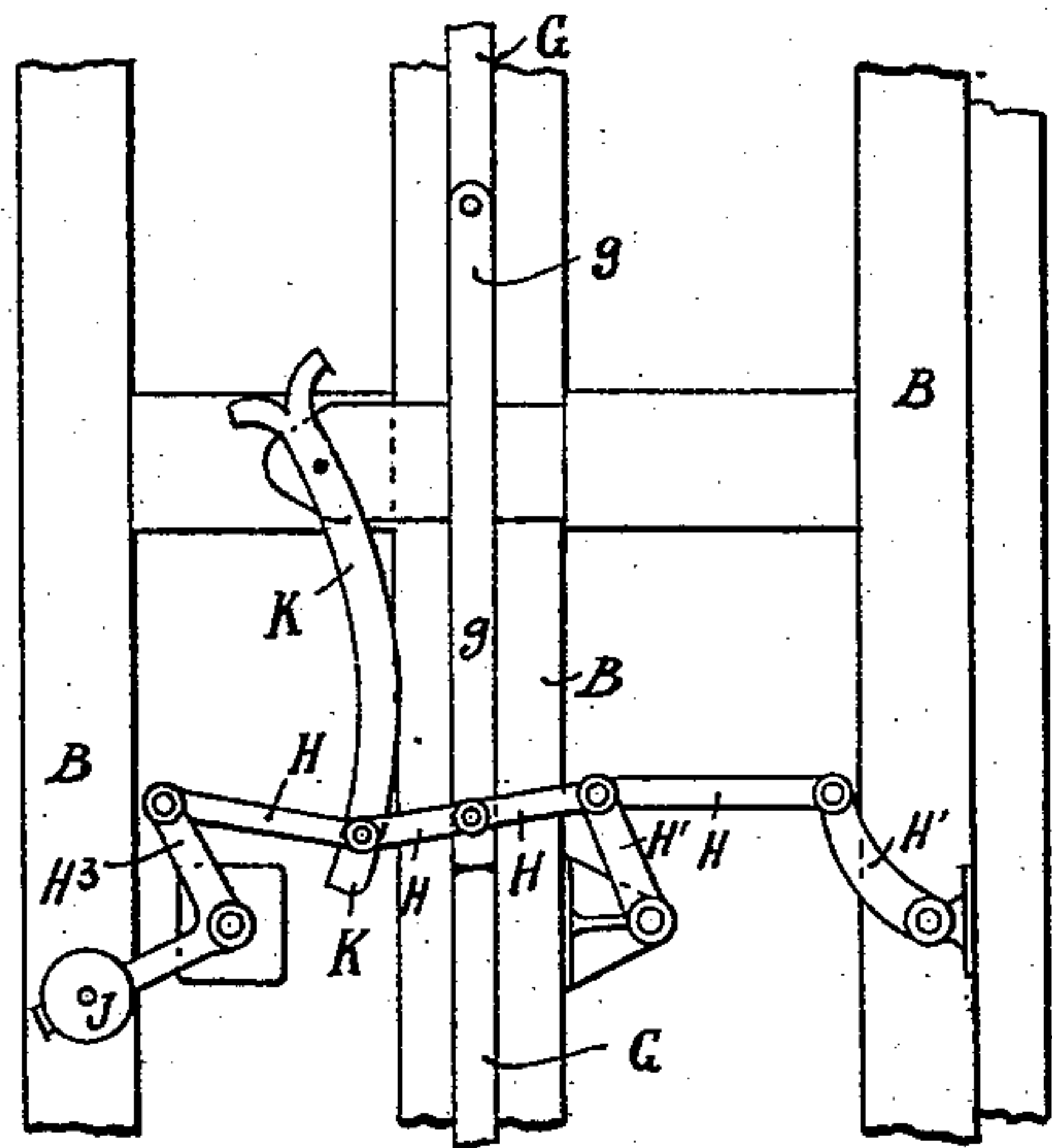


Fig. 3.

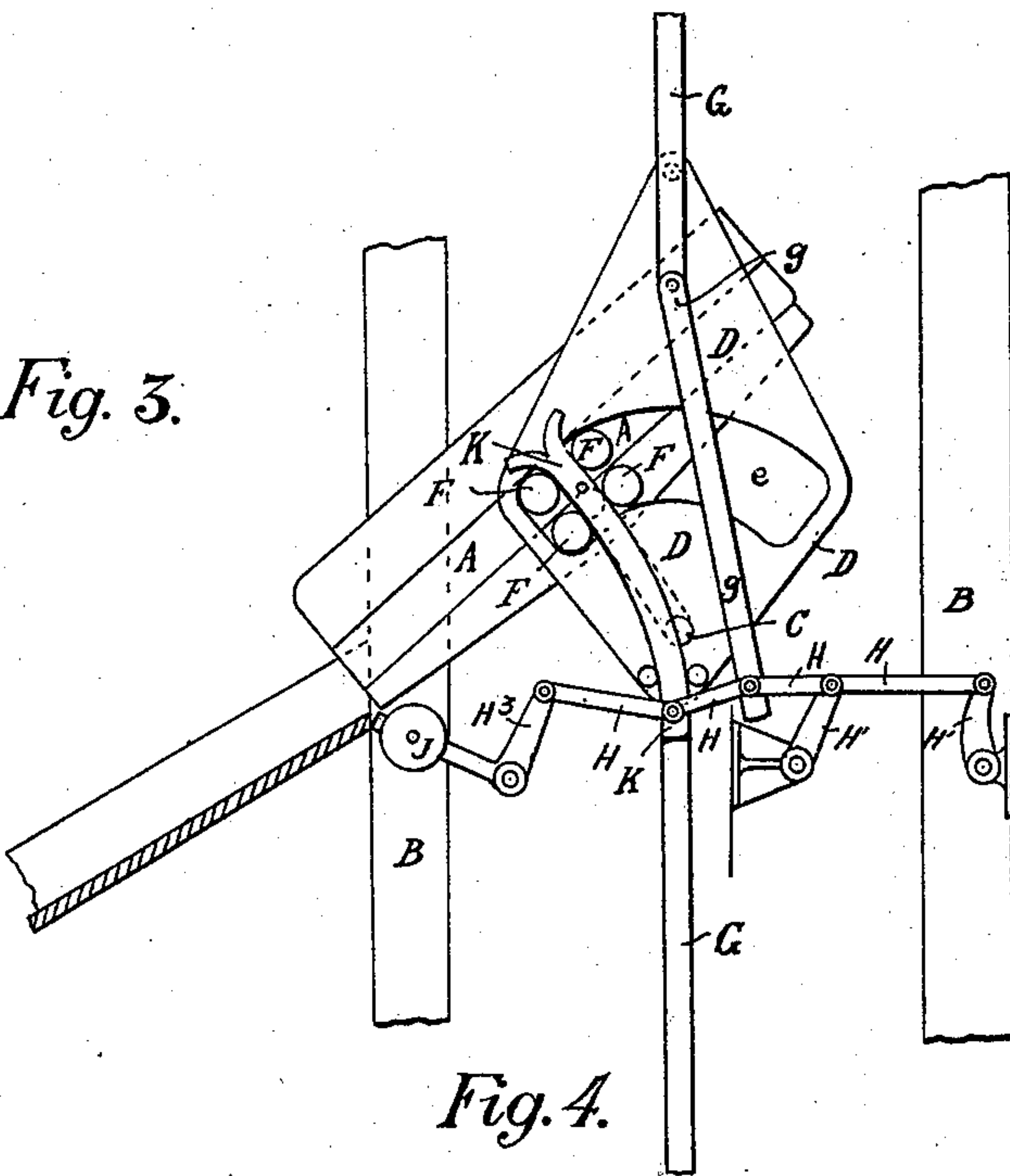


Fig. 4.

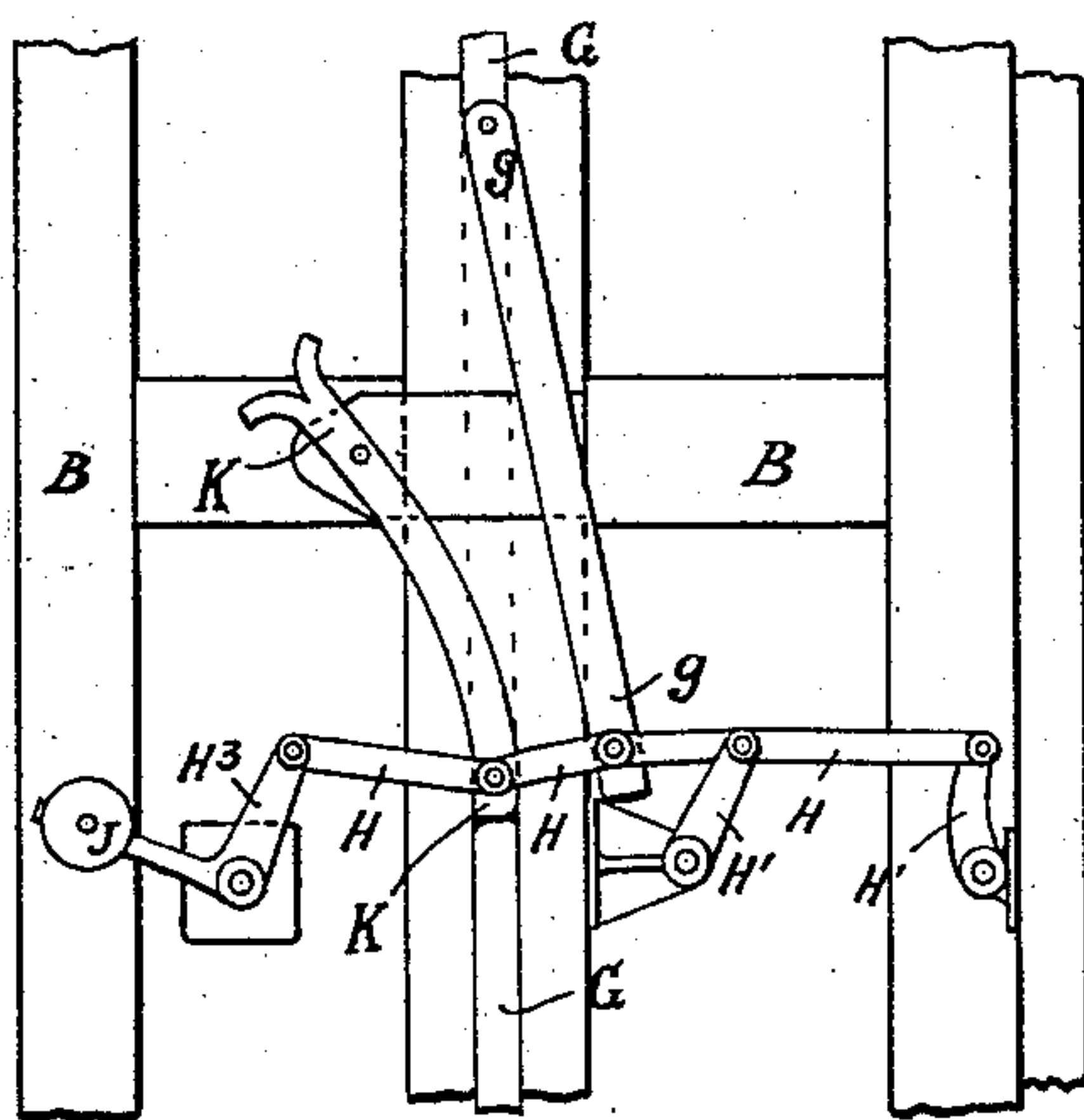


Fig. 2.

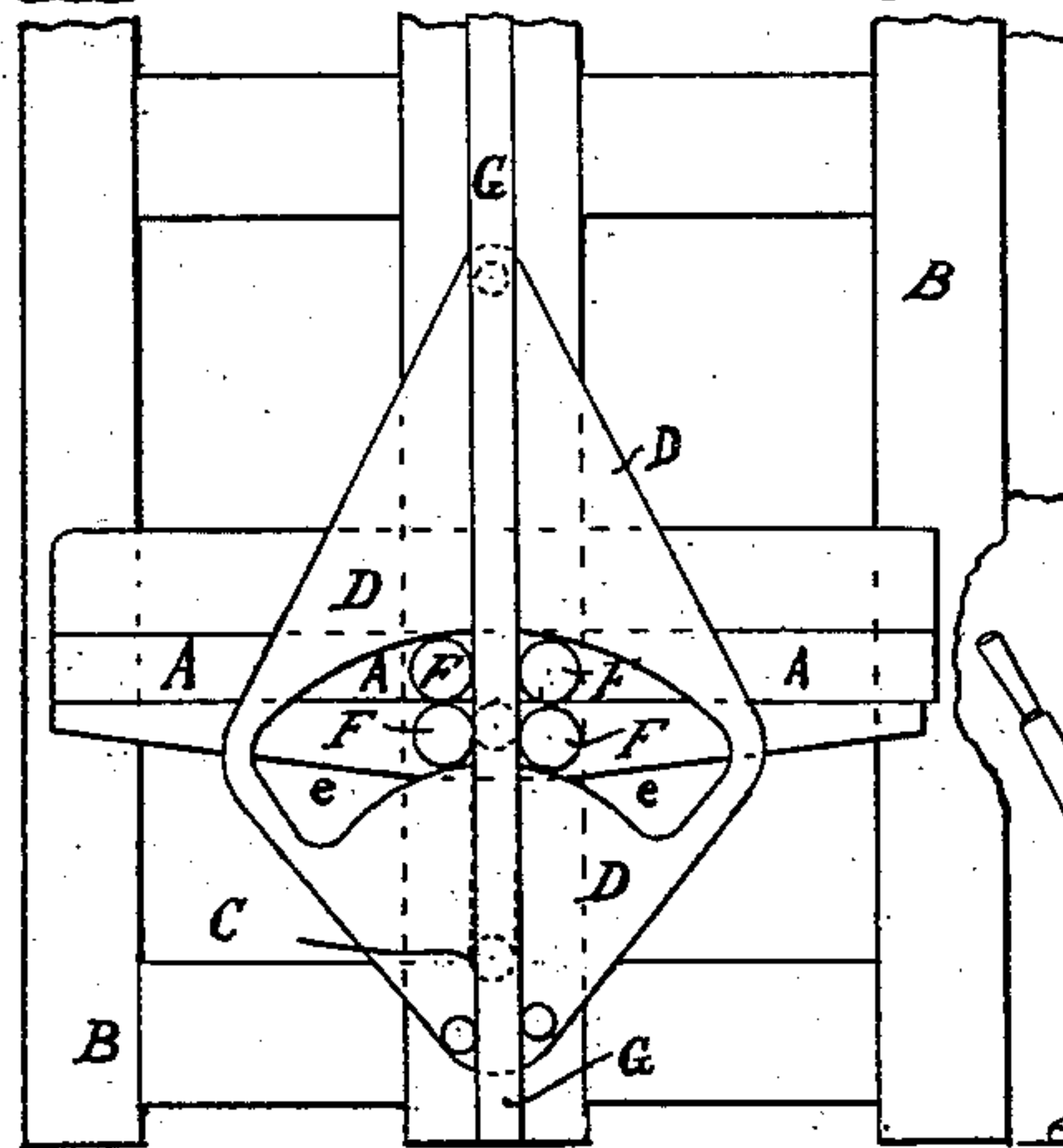
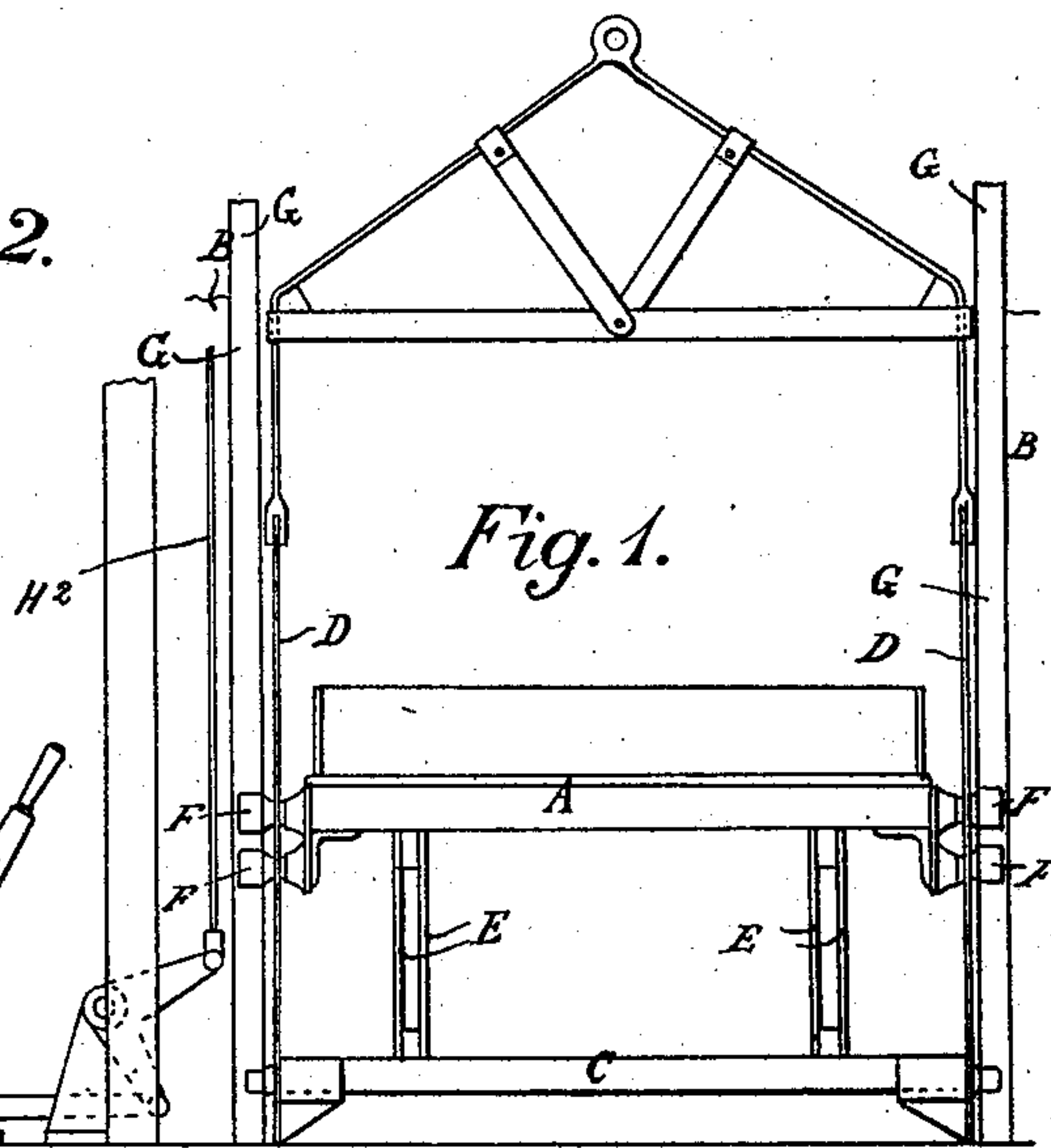


Fig. 1.



Witnesses.

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UNITED STATES PATENT OFFICE.

HAY F. DONALDSON, OF LONDON, ENGLAND.

LIFT OR HOIST FOR WAREHOUSES.

SPECIFICATION forming part of Letters Patent No. 570,913, dated November 10, 1896.

Application filed July 15, 1895. Serial No. 556,066. (No model.)

To all whom it may concern:

Be it known that I, HAY FREDERICK DONALDSON, a subject of the Queen of Great Britain and Ireland, and a resident of 109 Leadenhall Street, London, in the county of Middlesex, England, have invented certain new and useful Improvements in and Relating to Lifts or Hoists for Warehouses, of which the following is a specification.

10 This invention relates to improvements in and relating to lifts or hoists for warehouses; and my invention is especially applicable to lifts or hoists used for raising carcasses of frozen or other meat in warehouses, although
15 I do not confine the application of my invention to such use, and the object of my invention is to enable goods which are being raised to be automatically discharged on any floor of a warehouse provided with a lift constructed
20 according to my invention by merely pulling one of a series of levers, which levers are preferably situated on the lowermost part or floor of the warehouse.

25 In order that my invention may be readily understood, reference is made to the accompanying drawings, wherein like letters indicate corresponding parts throughout the several figures, and in which—

30 Figure 1 represents a front elevation of a lift provided with my improvements. Fig. 2 represents a side elevation of the platform and one side of the lift-frame provided with my improvements. Fig. 3 represents in side
35 elevation one of the details hereinafter referred to, and Fig. 4 represents a side elevation of the platform when swung and tilted.

40 In carrying out my invention I construct a lift in about the usual manner. The platform A, which is adapted to slide within the lift-frame B, and upon which the goods rest while being raised, is supported by a suitable cross-bar C, which in turn is attached at each
45 end to a guide-plate or equivalent D. The platform A is pivotally attached to the cross-bar C by means of, preferably two, connecting-arms E, so that said platform A is capable of being swung and also tilted to a sufficient extent.

50 Each of the guide-plates D is formed with a suitable aperture *e*, through which a set of, preferably four, guide-rollers F, with which each side of the platform is provided, pass,

and to each side of the frame B of the lift I fix a vertical guide-rail G, the arrangement being such that the platform is normally held
55 in a horizontal position by reason of each set of guide-rollers F being in engagement with the relative guide-rail G, as shown. Said guide-rails G extend the whole length of the travel of the lift, and at each floor of the warehouse a portion *g* of each guide-rail G is pivotally attached to the frame B of the lift, so
60 that each of said pivotally-attached portions *g* of the guide-rail G is capable of being swung out of alinement with the remaining or fixedly-attached portions of the guide-rail G, as shown, the portions *g* on each floor being connected together, so as to act in unison. Said pivotally-attached portions *g* of the
65 guide-rail G are connected by means of suitable rods H H² and levers H' to a series of hand-levers *h*, which hand-levers are preferably situated at the lowermost part or floor of the warehouse where the lift starts, the arrangement of the rods H H², levers H' H³, and
70 hand-levers *h* being such that normally the portions *g* of the guide-rails G are in alinement with the fixedly-attached portions of said guide-rails G by reason of the action of a counterpoise J, with which the levers H³ are
75 provided, and on the operation of any of the hand-levers *h* the relative portions *g* are moved out of alinement, as shown.

For the purpose of causing the platform A to be swung and tilted at any one of the floors
80 of the warehouse I pivotally attach the upper end of a series of comparatively short and suitably-bent rails K to the lift-frame B, one such bent rail K being provided in close proximity to each pivotally-supported portion *g*
85 of the guide-rail G, and the lower end of each of said bent rails K is attached to one of the rods H, the arrangement being such that when the portions *g* of the guide-rails G are swung
90 out of alinement by the operation of a hand-lever *h*, as above described, the lower end of the bent rail K is brought into alinement with the fixedly-attached portion of the guide-rail G, as shown.
95

By my improvements it is only necessary
100 to operate one of the hand-levers *h* and to set the lift in motion in any usual way, when the platform A will rise horizontally until its guide-rollers are engaged with the bent rail

K which has been brought into alinement by the operation of the hand-lever *h*, when said guide-rollers *F* will follow said bent rail, and thereby swing and at the same time tilt the platform *A*, as shown in Fig. 4, thus causing the goods on the platform *A* to be discharged.

In addition to the simplicity of construction and arrangement of the parts described one important advantage appertaining to my invention is that when the platform has been tilted, as above described, said platform has at the same time been swung over the edge of the floor, thus effectually insuring that no goods or articles will fall between the platform and the edge of the floor, which frequently happens with lifts or hoists in which the platform is merely tilted and not swung.

I wish it to be understood that I do not confine myself to any particular construction of the different parts constituting my improvements, and also that the platform may be raised or operated by any suitable means or any desired power. Further, if my improvements are applied to a lift driven by a ram

I prefer to dispense with the guide-plates *D*.
Having now described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a lift or hoist a platform supported on arms such as *E* and having guide-rollers such as *F* engaging with guide-rails *G*, *g* and *K* whereby said platform when operated may be caused to be swung and tilted substantially as set forth.

2. In a lift or hoist the combination of a platform *A*, rollers *F*, arms *E*, cross-bar *C*, guide-rails *G*, *g* and *K*, rods *H*, bell-crank lever *H*³ and counterpoise *J*, all for the purposes and substantially as set forth.

3. In a lift or hoist the combination with a platform *A* supported on arms *E* and having guide-rollers *F* adapted to engage with guide-rails, of guide-plates *D* provided with apertures *e* and carrying the cross-bar *C* all for the purposes and substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HAY F. DONALDSON.

Witnesses:

W. WILSON HORN,
R. C. KEABLE.