

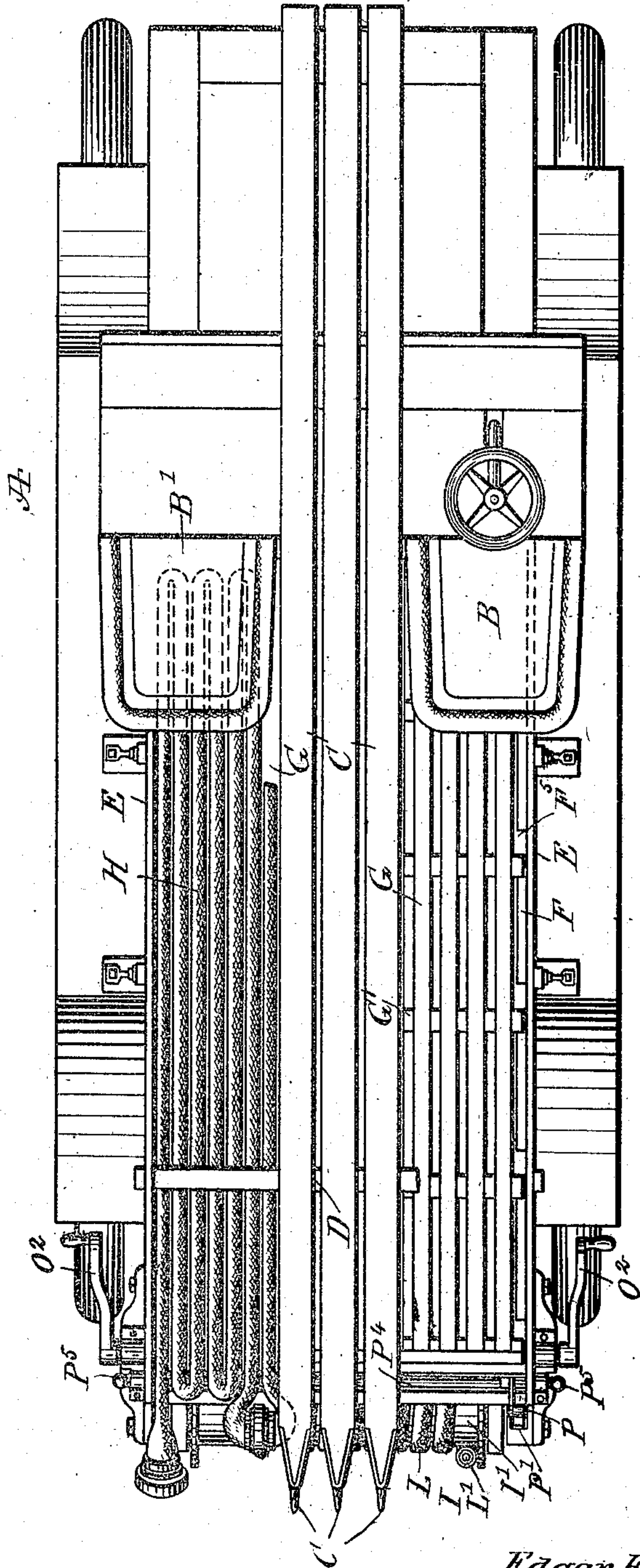
No. 881,872.

E. F. SANFORD.
FIRE FIGHTING APPARATUS.
APPLICATION FILED APR. 16, 1907.

PATENTED MAR. 10, 1908.

4 SHEETS—SHEET 1.

Fig. 1



WITNESSES

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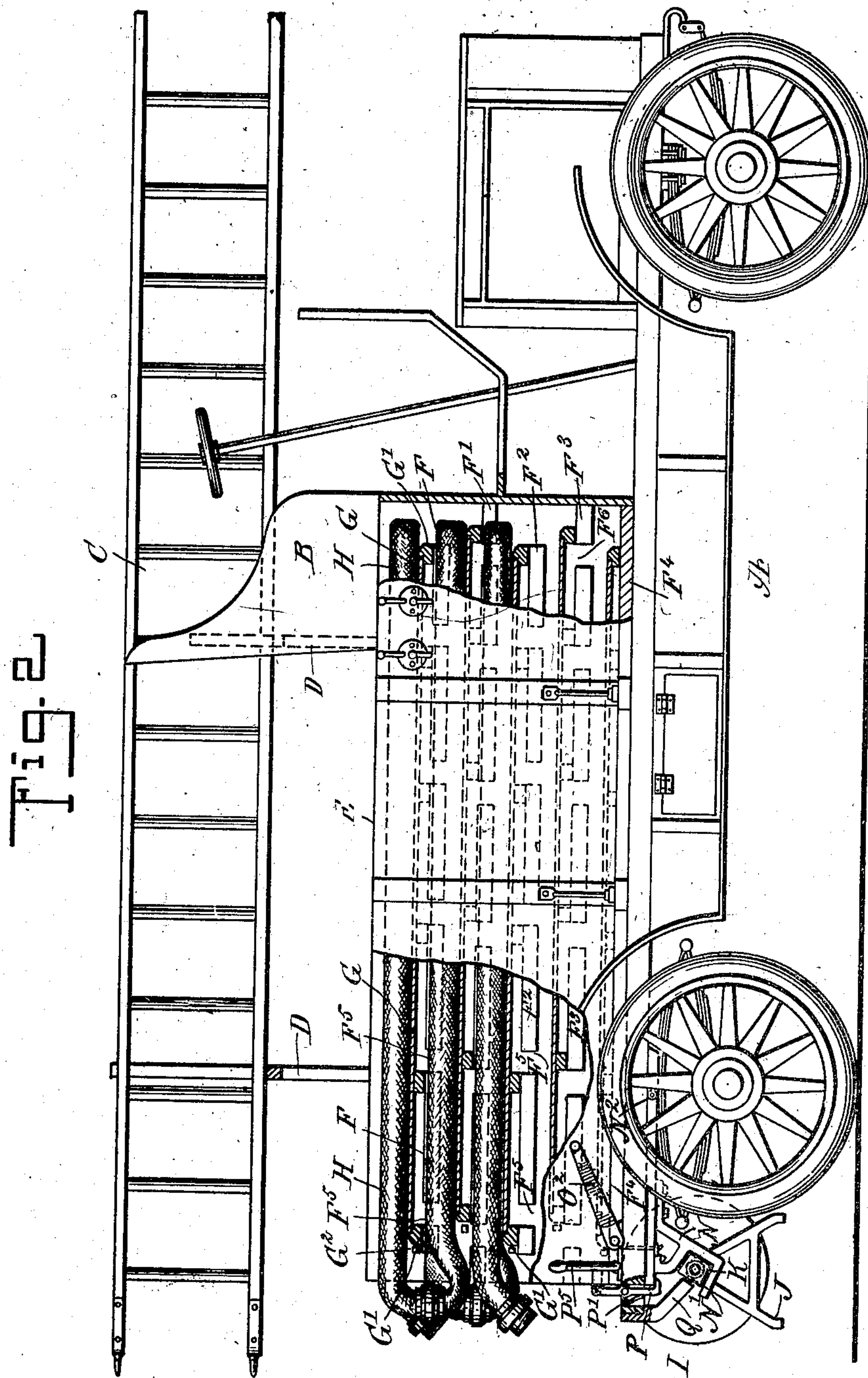
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4 SHEETS—SHEET 2



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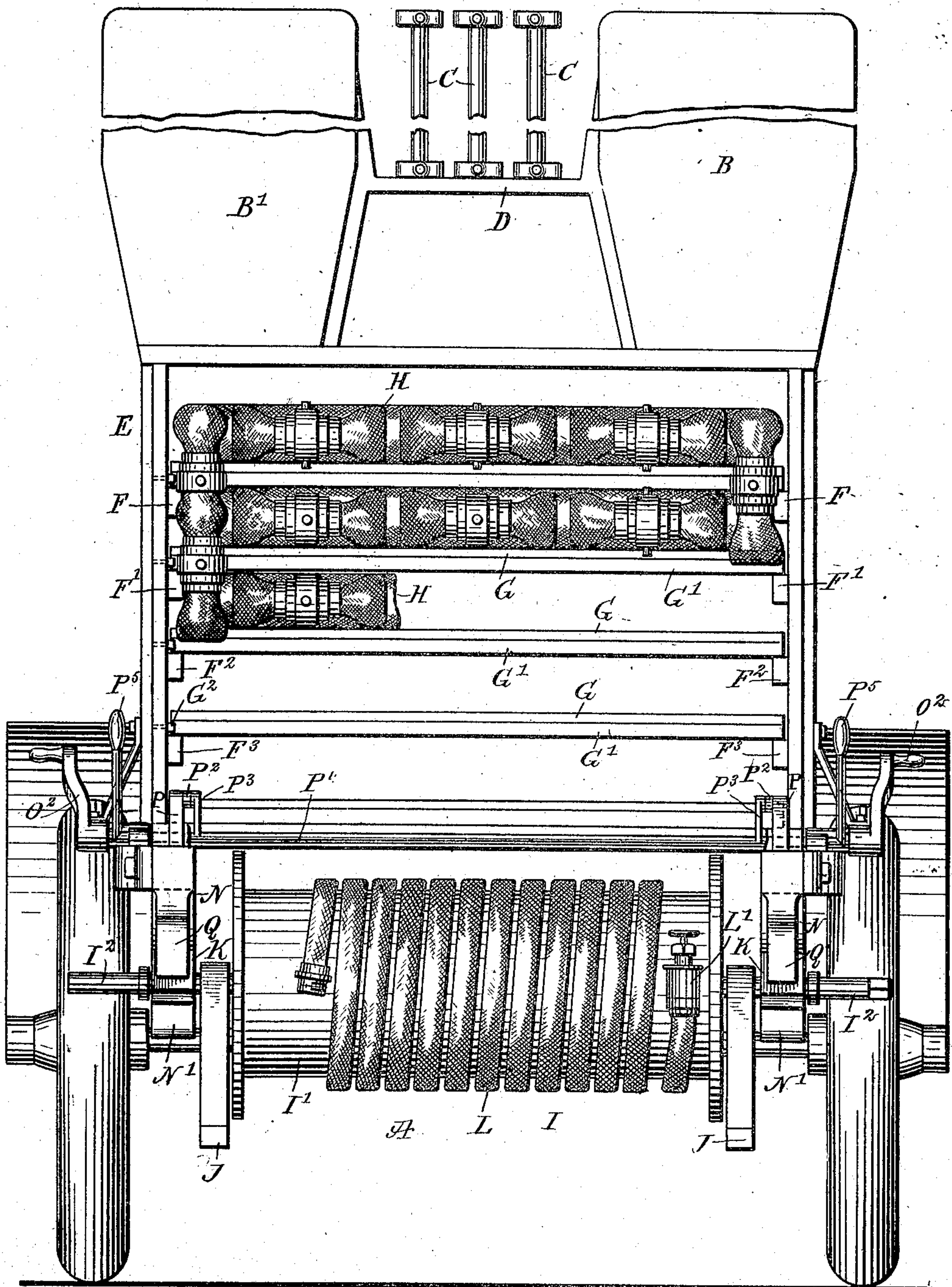
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4 SHEETS—SHEET 3.



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Fig. 3

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4 SHEETS—SHEET 4.

Fig. 4

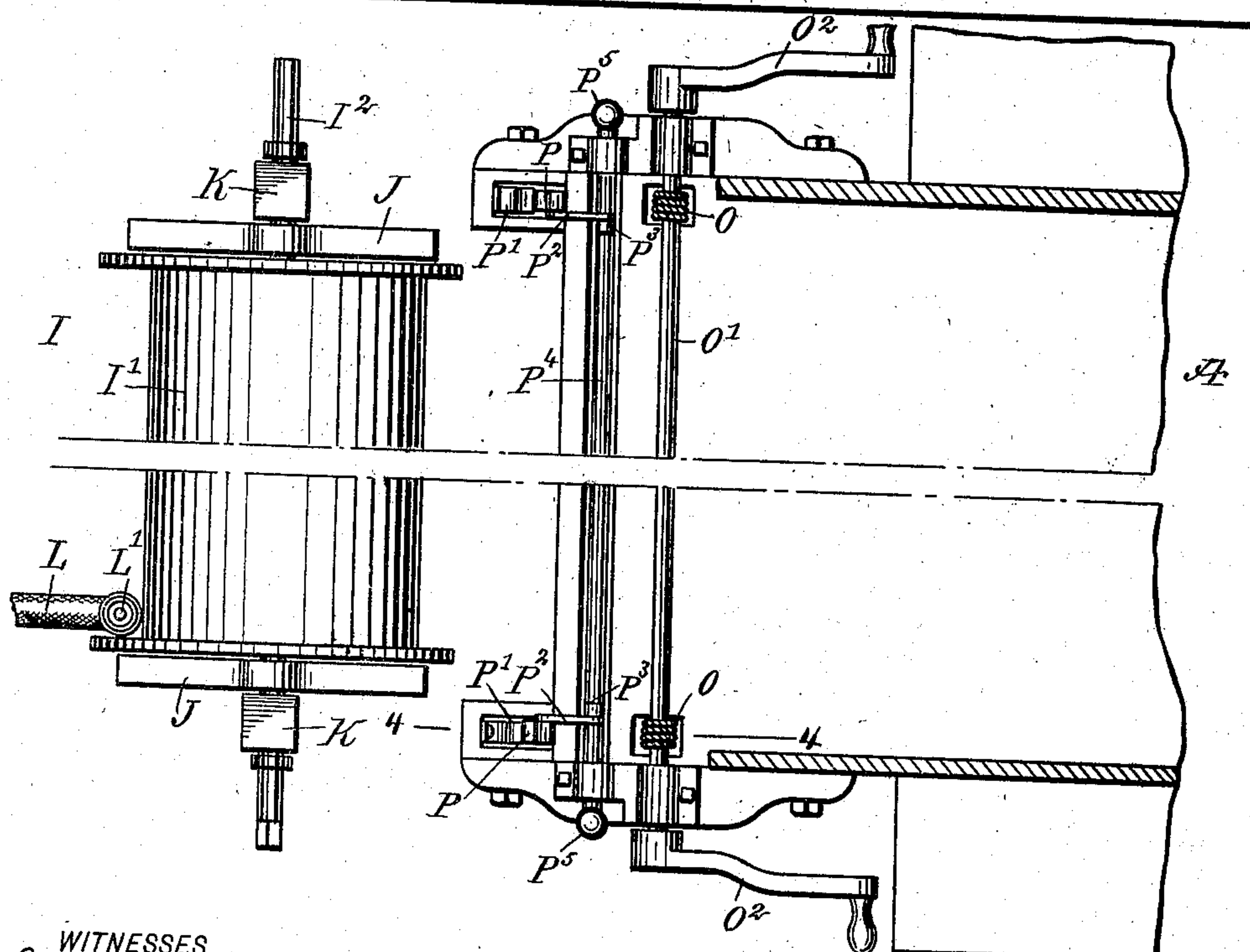
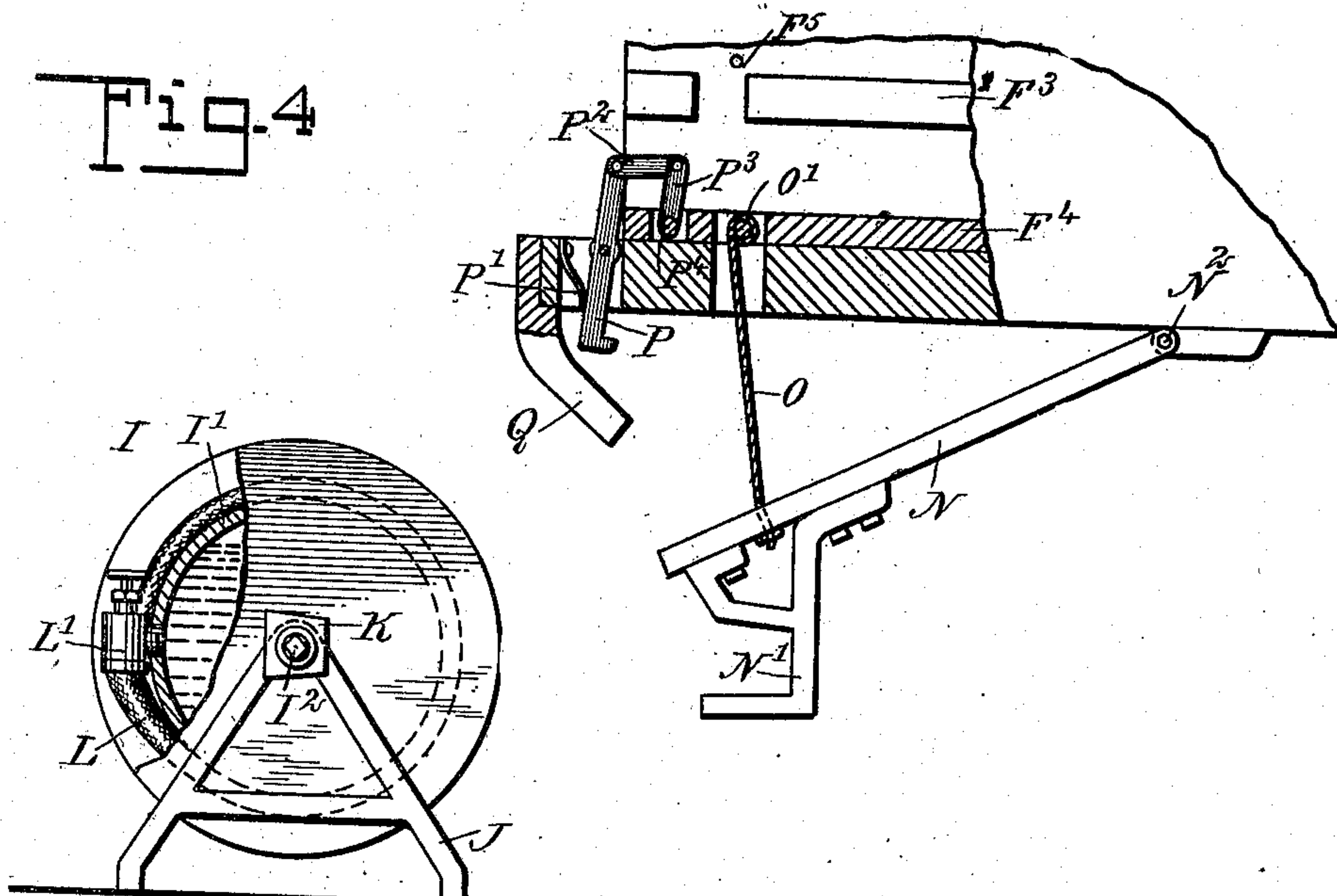


Fig. 5

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UNITED STATES PATENT OFFICE.

EDGAR F. SANFORD, OF MERCED, CALIFORNIA.

FIRE-FIGHTING APPARATUS.

No. 881,872.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed April 16, 1907. Serial No. 368,568.

To all whom it may concern:

Be it known that I, EDGAR FRANCIS SANFORD, a citizen of the United States, and a resident of Merced, in the county of Merced and State of California, have invented a new and Improved Fire-Fighting Apparatus, of which the following is a full, clear, and exact description.

The invention relates to ladder and hose trucks, and its object is to provide a new and improved fire fighting apparatus, preferably in the form of a motor vehicle, and arranged to permit of conveniently carrying fire ladders, hose and a chemical tank, and allowing removal of the same for immediate use in a comparatively short time.

The invention consists of novel features and parts and combinations of the same, which will be more fully described herein-after and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement; Fig. 2 is a side elevation of the same, parts being broken out and parts being in section; Fig. 3 is an enlarged rear end elevation of the improvement; Fig. 4 is a side elevation, partly in section, of the chemical tank and means for supporting the same, the section being on the line 4-4 of Fig. 5, and Fig. 5 is a plan view of the same, parts being in section.

The vehicle A on which the apparatus is mounted is preferably of the motor driven type, as indicated in the drawings, and the said vehicle is provided with seats B, B' spaced apart in a transverse direction, to form a space or a passage for the reception of fire ladders C resting on supports D attached to the vehicle and arranged in longitudinal alinement with the space between the said seats B and B'. By the arrangement described ladders C of approximately the length of the motor vehicle can be conveniently supported without obstructing the ingress or egress of the driver, firemen or other persons to the seats B, B', at the same time allowing the driver or other persons to conveniently manipulate the motor machinery.

On the vehicle A in the rear of the seats B, B' and below the ladders C is arranged a hose rack E, preferably in the form of a box-

like structure open at the top and rear, and provided at the sides with guideways F, F', F², F³ and F⁴ located one above the other and adapted to support movable shelves G each carrying fire hose sections H. The shelves G are preferably in the form of slatted shelves having cross bars G' projecting beyond the side slats and resting on the corresponding guideways F, F', F², F³ and F⁴, as will be readily understood by reference to Figs. 1 and 2. The hose sections H are coiled on the several shelves in such a manner that the convolutions are arranged one alongside the other, thus accommodating a large amount of hose in a comparatively short space, at the same time allowing convenient coupling of the hose section on one shelf with the hose section on the next following shelf above or below, as the case may be.

In practice, the hose sections are of a predetermined length corresponding to the length of the shelves, so as to bring the couplings to the rear ends of the shelves, to allow convenient coupling of one hose section with the other. In a like manner the arrangement permits of coiling the hose section on one shelf from one side to the other, and the next following hose section in the reverse direction on the shelf next below or above, so as to form one continuous hose which can be readily removed from the hose rack, either by running the vehicle from a hydrant towards the burning structure or from the burning structure towards a hydrant at a distant place. In either case the continuous hose can readily pay out of the hose rack E when holding one end of the hose and moving the vehicle along.

Normally the shelves G are locked against longitudinal movement by suitable locking devices G² at the rear ends of the shelves and engaging corresponding keepers on the sides of the hose rack E.

In case the two lowermost shelves G and their hose sections have been removed, and it is desired to drop the shelves G of the next following guideways F², F' and F so as to engage the same with the guideways F⁴, F³ and F², respectively, the following arrangement is made.

Each of the guideways F, F', F² and F³ is provided with vertically disposed slots or openings F⁵ for the passage of the projecting ends of the cross bars G' of the shelves G, when moving the latter after unlocking the

same, either in a forward or a rearward direction; thus, when it is desired to drop the shelf on the guideway F^2 onto the guideway F^3 , it is only necessary to move the shelf G on the guideway F^2 forwardly until the cross bars G' register with the slots F^5 , so that this shelf G with the hose thereon drops down onto the next following guideway F^3 , as indicated in Fig. 2, and when this shelf is now drawn forward its cross bars G' finally register with the slots F^5 on the guideway F^3 , so that the shelf drops down onto the lowermost guideway F^4 . In a like manner the next following shelf G on the guideway F' can be successively dropped onto the guideways F^2 and F^3 , and finally the shelf on the uppermost guideway F can be successively dropped until it reaches the guideway F^2 . Now in order to permit the successive dropping of the shelves from one guideway to another the slots F^5 in the successive guideways F, F' , F^2 and F^3 are staggered, as plainly indicated in Fig. 2, and the cross bars G' are correspondingly spaced apart to register with the slots F^5 on moving the shelves G either rearward or forward, as above explained.

A chemical tank I containing a fire extinguishing fluid is removably carried on the rear end of the vehicle A, and this chemical tank I is provided with a drum I' for containing the chemical (see Fig. 4), the shaft I^2 of the drum being journaled in a stand J, and on the said shaft I^2 are held supporting bearing blocks K, as indicated in Figs. 4 and 5. On the drum I' is adapted to wind a hose L connected at one end by a valve L' with the interior of the drum I' , to allow the fire extinguishing fluid to pass out of the drum I' through the valve L' when opened and into the hose L to the nozzle thereof to extinguish a fire.

Normally the valve L' is closed and the hose L is wound on the drum I' , and the entire chemical tank I is supported on the rear end of the vehicle, and for this purpose the following arrangement is made: The blocks K previously mentioned fit into open bearings N' held on swing arms N extending longitudinally and fulcrumed at N^2 to the vehicle body, and the said swing arms N are connected with ropes or cables O extending upwardly and winding on a drum O' journaled in suitable bearings on the vehicle A. The ends of the drum O' are provided with handles or crank arms O^2 under the control of the firemen, to allow the arms N to swing downward until the stand J rests on the ground, the bearings N' then being open at the rear, so that when the vehicle A is drawn forward the blocks K move out of the bearings N' and the chemical tank I remains standing on the ground while the vehicle A moves forward. In a like manner when the vehicle is backed up the bearings N' engage

the blocks K, and then by the operator turning the crank arms O^2 the ropes or cables O are wound up on the drum O' , to impart an upward swinging motion to the swing arms N, with a view to lift the vehicle tank I off the ground and to hold it supported from the rear end of the vehicle, as plainly indicated in Figs. 2 and 3. When the swing arms N reach a horizontal position against the under side of the vehicle body, then the free ends of the said swing arms are engaged by catches P, to lock the swing arms in a raised position. The catches P are fulcrumed on the vehicle body and are pressed on by springs P' so as to hold the catches in engagement with the swing arms N. The upper ends of the catches P are pivotally connected by links P^2 with arms P^3 held on a transversely extending shaft P^4 journaled in suitable bearings arranged on the vehicle body, and on the said shaft P^4 are arranged handles P^5 adapted to be taken hold of by a fireman, to move the same forward, with a view to disengage the catches P from the swing arms N immediately previous to lowering the chemical tank I, as before explained. Stops Q held on the rear end of the vehicle project close to the rear faces of the blocks K, so as to hold the same in the bearings N' and thus prevent accidental disengagement of the chemical tank I from its support on the rear end of the motor vehicle.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A fire fighting apparatus comprising a vehicle having seats spaced apart in a transverse direction, and ladder supports arranged in longitudinal alinement with the space between the said seats, to allow of supporting ladders the entire length of the vehicle without obstructing the said seats.

2. A fire fighting apparatus comprising a vehicle, hose shelves arranged on the vehicle one above the other and on which the hose is coiled with the convolutions located side by side, and means in connection with the shelves and the vehicle for permitting the said shelves to be placed at different heights in the vehicle without removal therefrom, said means being operated by the longitudinal shifting of the shelves.

3. A fire fighting apparatus comprising a vehicle, and a plurality of horizontally arranged parallel hose shelves in connection with the vehicle and on which the hose is coiled, and means in connection with the vehicle and the shelves for permitting the said shelves to be moved vertically without removal from the vehicle, said means being operated by the longitudinal shifting of the shelves.

4. A fire fighting apparatus provided with a hose rack comprising longitudinally extending guideways arranged one above the

other, and shelves slidably held on the said guideways and adapted to support sections of hose, the said guideways having means to allow dropping of a shelf from one guideway to the next lower one.

5 5. A fire fighting apparatus provided with a hose rack comprising longitudinally extending guideways having spaced vertical slots, and shelves for supporting the hose
10 and having cross bars adapted to rest on the said guideways and adapted to register with the said slots, to allow of dropping a shelf from one guideway to the next lower one.

15 6. A fire fighting apparatus provided with a hose rack comprising longitudinally ex-

tending guideways having spaced vertical slots, and shelves for supporting the hose and having cross bars adapted to rest on the said guideways and adapted to register with the said slots to allow of dropping a shelf
20 from one guideway to the next lower one, the said slots of successive guideways being staggered.

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

EDGAR F. SANFORD.

Witnesses:

JOY CARLSTON,
S. C. CORNELL.