

No. 706,254.

Patented Aug. 5, 1902.

F. PETELER.
DUMPING CAR.

(Application filed Jan. 27, 1902.)

(No Model.)

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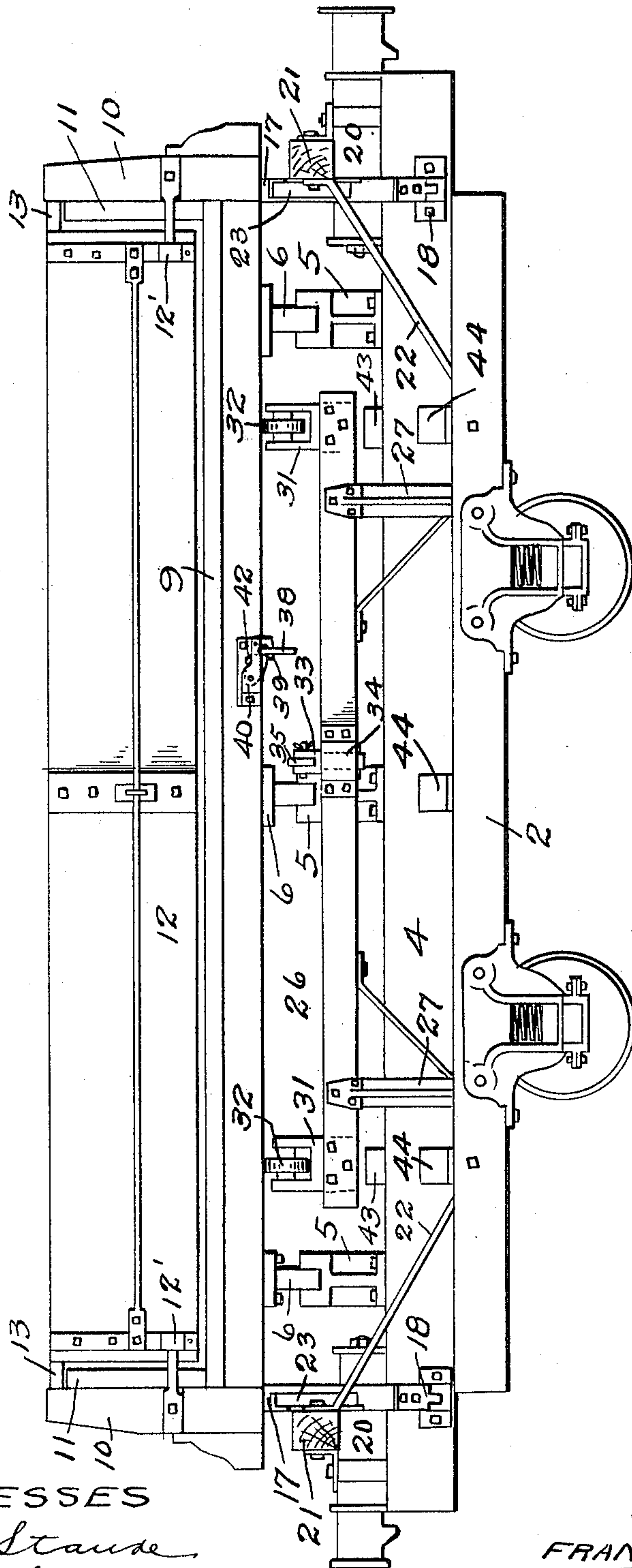


FIG. 1.

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4 Sheets—Sheet 2.

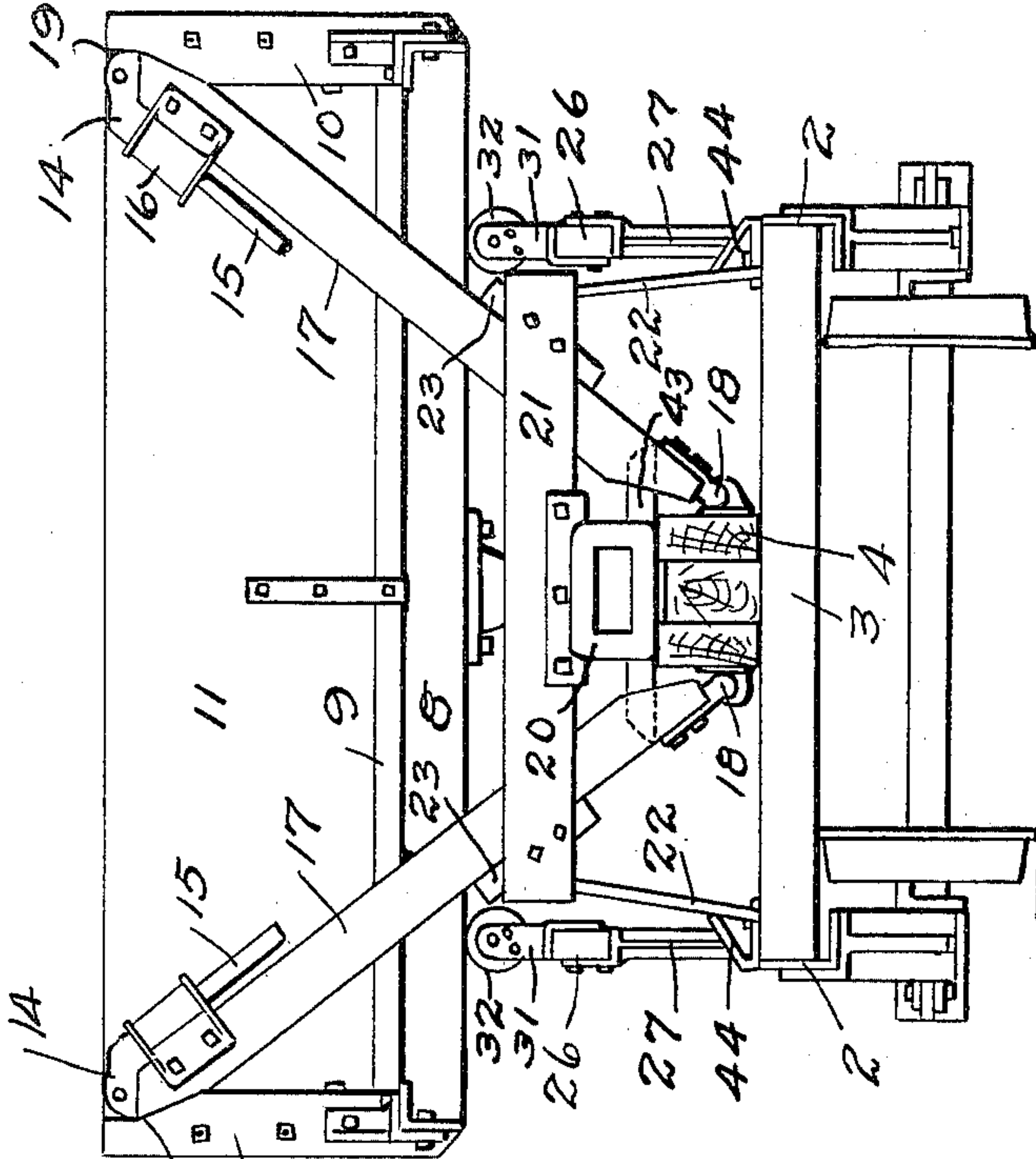


FIG. 2

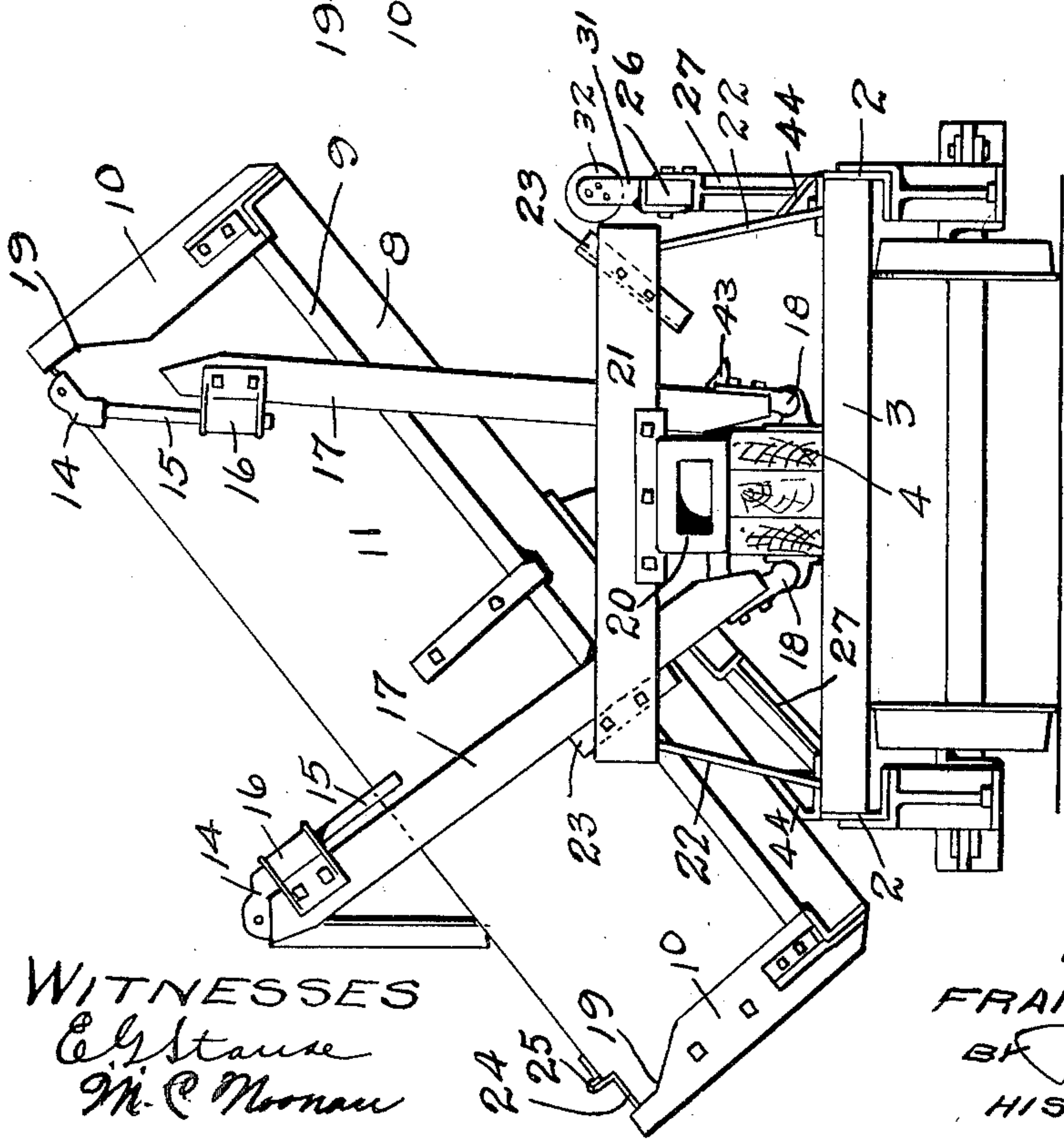


FIG. 3.

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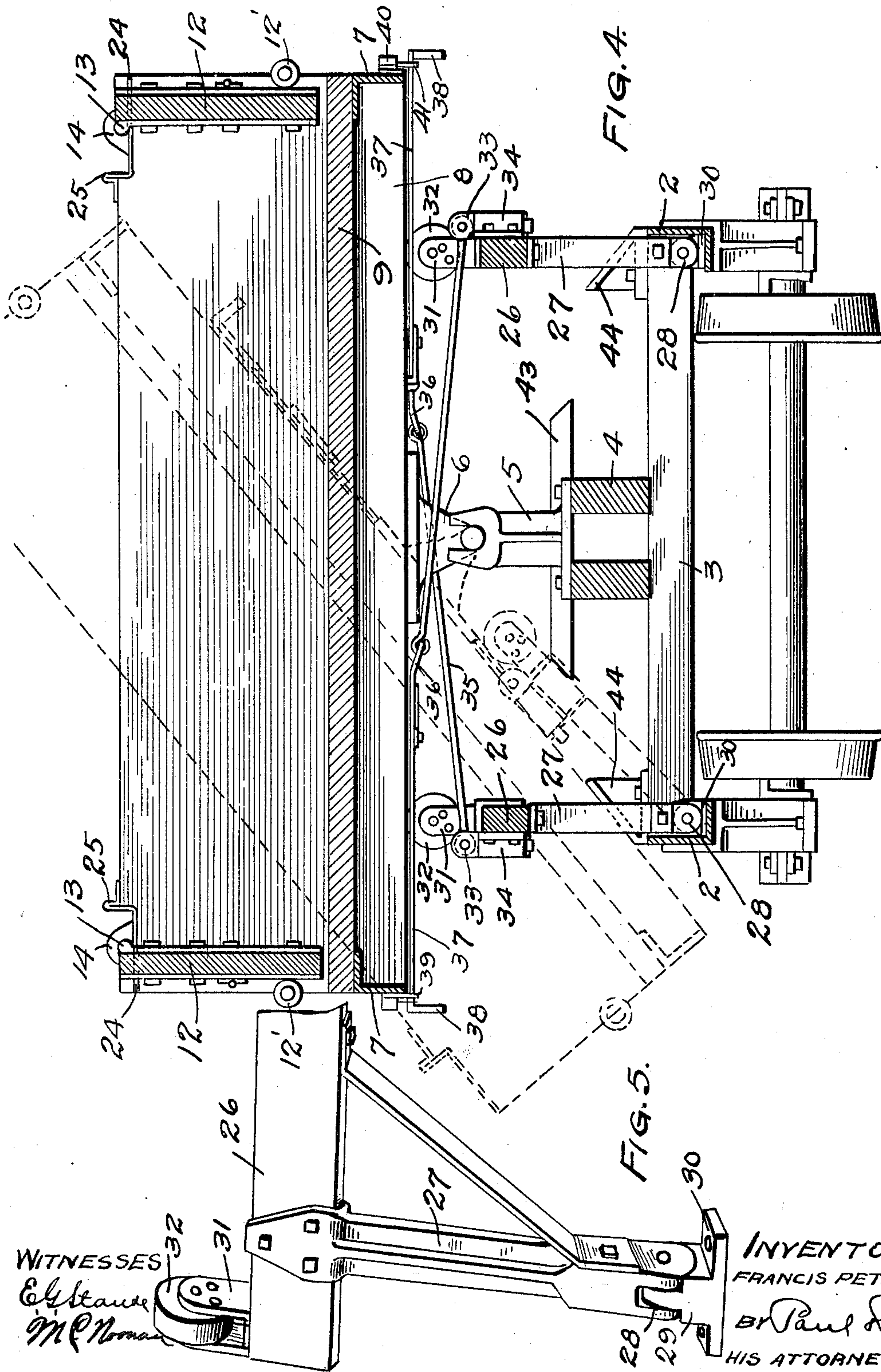
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4 Sheets—Sheet 3.



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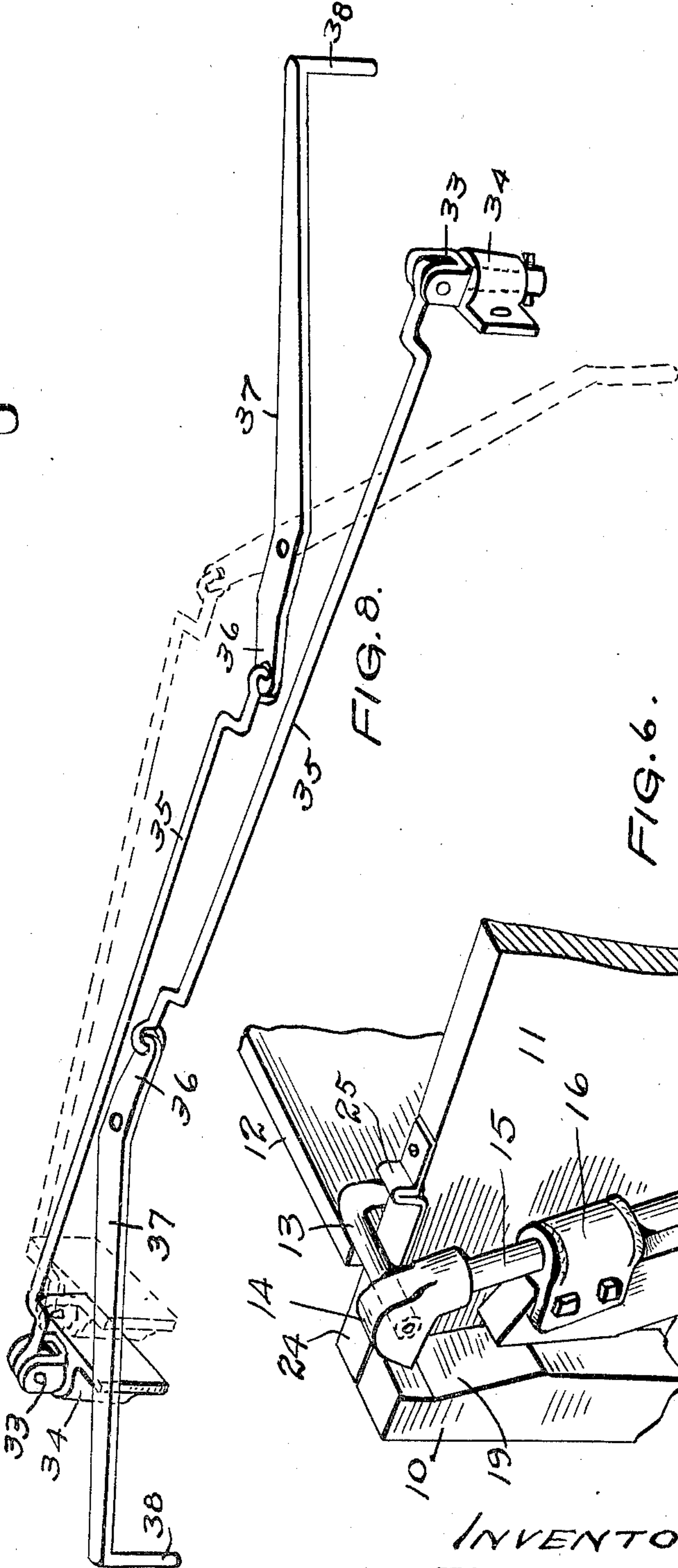
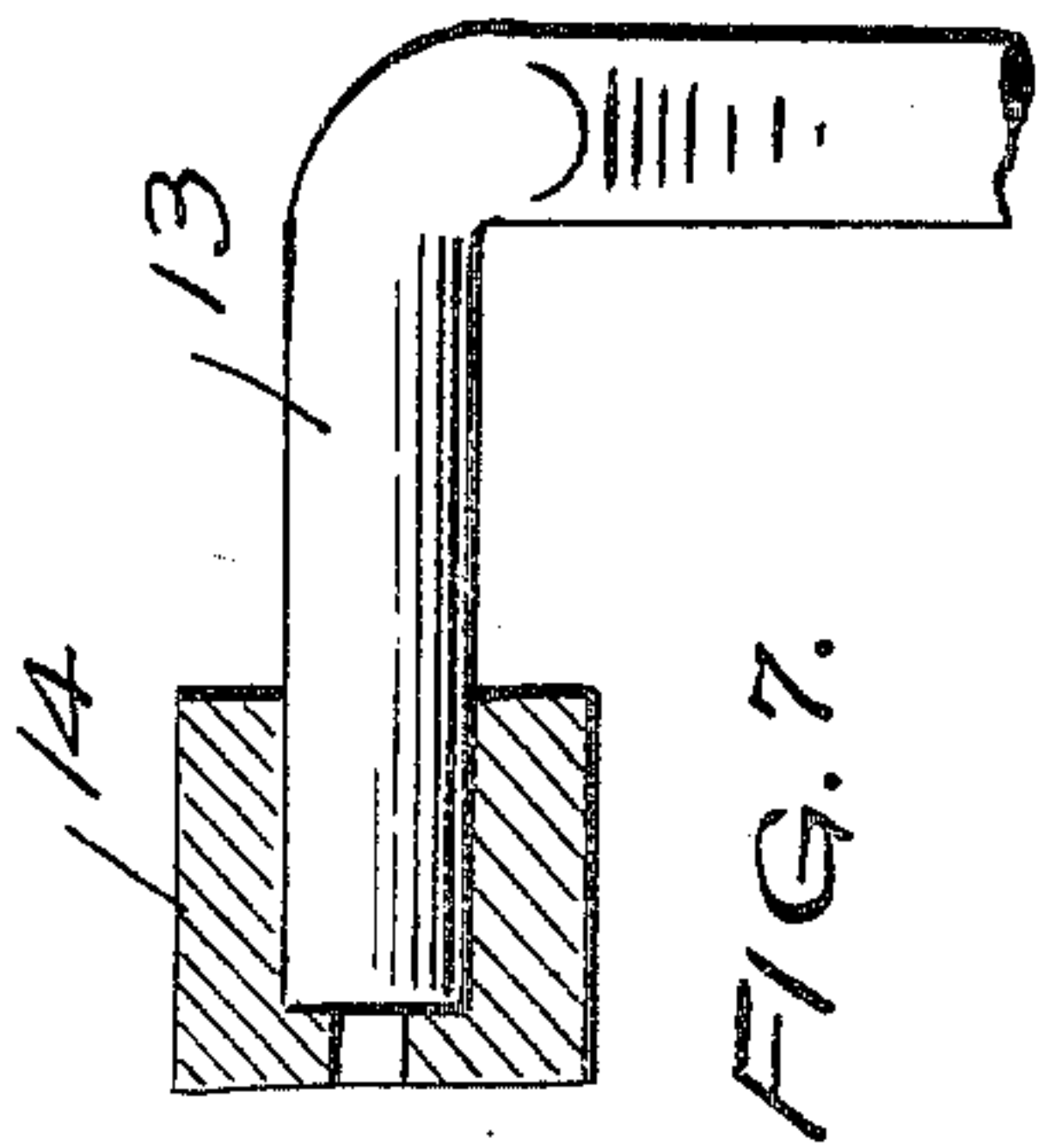
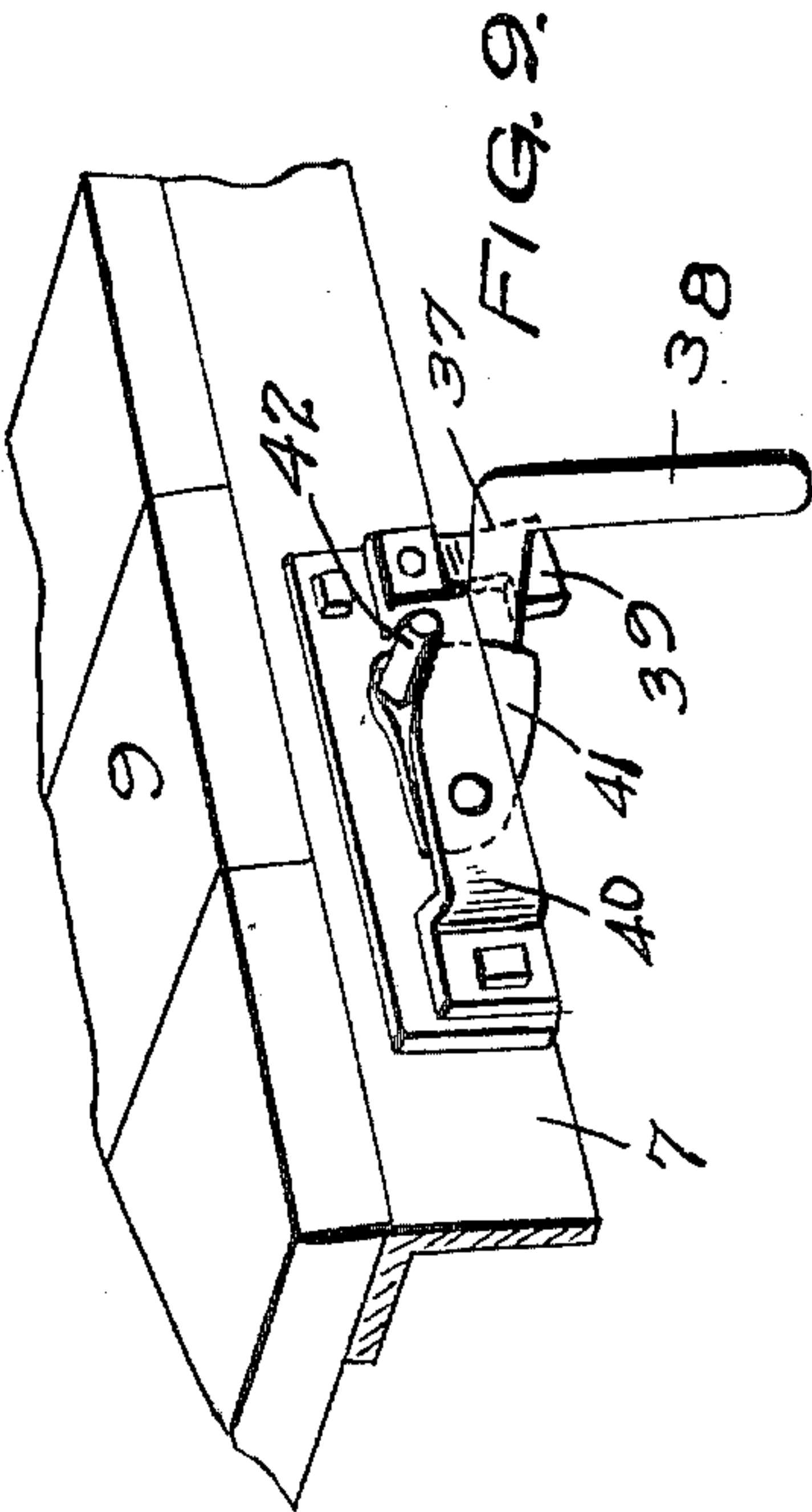
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4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

FRANCIS PETELER, OF MINNEAPOLIS, MINNESOTA.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 706,254, dated August 5, 1902.

Application filed January 27, 1902. Serial No. 91,362. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS PETELER, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Dumping-Cars, of which the following is a specification.

The invention relates to portable dumping-cars, and is designed as an improvement over the car shown and described in Letters Patent of the United States issued to me January 1, 1895, No. 531,746.

The primary object of the present invention is to provide a car that is adapted to dump on each side and is capable of receiving and discharging with ease and rapidity the largest masses of earth and rock that a steam-shovel can handle.

A further object is to provide a gravel and rock dump-car that can be easily and quickly converted into a flat-car.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in a dump-car having its doors mounted upon movable standards or posts to permit the car to be dumped on both sides.

Further, the invention consists in providing doors that are readily removable from the car-body and as easily replaced thereon, whereby the car is adapted for use either as a dump or a flat car.

Further, the invention consists in providing pivoted bolsters whereon the car-body rests when in a horizontal position and which can be readily swung down to permit the car to dump on either side.

Further, the invention consists in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a dumping-car embodying my invention. Fig. 2 is an end view showing the car-body in its horizontal position. Fig. 3 is a similar view with the car-body tilted, showing the relative position of the doors and the body. Fig. 4 is a transverse vertical section showing the mechanism for preventing the car-body from tilting prematurely, the tilted position of the body being indicated by dotted lines.

Fig. 5 is a detail of a portion of a bolster provided upon each side of the car. Fig. 6 is a detail perspective of the device for supporting the car-door on the swinging standards. Fig. 7 is a detail of the pivots or gudgeons of the door. Fig. 8 is a perspective of the lever mechanism, whereby the swinging bolsters are controlled. Fig. 9 is a detail of the mechanism for locking the bolster-operating mechanism to prevent its premature movement.

In the drawings, 2 represents the angle side bars of the truck-frame; 3, the cross-bars supporting the longitudinal bed-timbers 4, upon which the lower members 5 of the rockercastings are secured, the upper members 6 thereof being arranged upon the under side of the car-body. These parts have been in use in cars of my manufacture for a number of years, and I make no claim to the invention therein in this application.

7 represents the angle-bar sills, and 8 the channel cross-bars of the car-body, bolted securely together and carrying the planking or floor 9.

At the corners of the car I provide posts 10, connected by the planking 11, which forms the ends of the car-body.

12 represents the doors of the car, provided with the gudgeons 13, that are mounted in castings 14 on the upper ends of pins 15. These pins fit loosely within sockets in the castings 16, that are secured to standards 17, whose lower ends are connected by hinges 18 with the bed-timbers 4, near the lower edges thereof. When the doors are in their normal position, the castings 14 will rest upon the upper ends of the standard 17, and I prefer to provide recesses 19 in the posts 10 to receive said castings and the ends of said standards, which are preferably cut away to present broad bearing-surfaces to said posts, so that the doors will be securely supported and rigidly held at the top against outward pressure of the contents of the car. Outward swinging of the doors when the car-body is horizontal is prevented by the stops 12'. When the car-body is returned to its horizontal position after dumping, the standards supporting one of the doors and the corner-posts on that side will come together with

considerable force, and, if preferred, the engaging surfaces may be faced with plates of metal to prevent undue wear thereof.

Upon the draw-bars 20, at each end of the car, I provide cross-timbers 21, secured by any suitable means and braced near their ends by rods 22, and provided with angle-bar stops 23, which engage the standards 17 and limit the outward swinging movement of the same. The timbers 21 are arranged a sufficient distance from the ends of the car to allow the standards to be inserted and swing freely between them, and these timbers and the planking of the car form guides for said standards and prevent lateral twisting or swaying of the same. When the car is in its normal horizontal position, as shown in Fig. 2, the standards will be at the limit of their outward swinging movement, and upon tilting the car in either direction the standards on that side of the car toward which the body is tilted will remain stationary, supporting the swinging door, which will be suspended above the tilted floor of the body a sufficient distance to allow masses of earth or rock to slide out beneath, the door swinging freely to permit any unusually large mass to pass out which could not pass out if the door was rigid. If it is desired to dump the car on the opposite side, the standards on that side of the car opposite the direction of dumping will be swung up to an upright position, as shown in Fig. 3, and as the standards are swung up the door will be raised vertically, the pins 15 sliding easily in their sockets until the car-body has been tilted to the desired angle. The standard and door will remain in their raised position until the contents of the car has been dumped and will return automatically to their normal position when the car is again horizontal.

In my former patent above referred to only one door was shown pivoted upon fixed standards on one side of the car, and with this manner of supporting the door it was not possible to tilt the car in the opposite direction, even if a door had been provided on that side. This construction limited the use of the car and rendered it objectionable in places where dumping on both sides was necessary or desirable. My present construction, however, obviates all this difficulty, as the car can be tilted and dumped on both sides with equal facility. The swinging-doors supported standards will automatically adjust themselves to the tilted or horizontal positions of the car-body, and the door will remain stationary or will be raised vertically on its supports, according to the direction that the car is tilted. In tilting the car in one direction and raising the door on the opposite side, as shown in Fig. 3, it is necessary to provide means for preventing the door-gudgeons from slipping down the inclined edges of the car ends, and I therefore provide straps 24, secured within recesses in said ends near the posts 10 and provided with stops 25, which engage said gudgeons

and prevent the door from slipping out of its proper position when the castings 14 are lifted away from the ends of the standards.

As heretofore stated, the pins 15 are freely slidable within the castings 16 and may be readily slipped out of the same to permit the disengagement of the doors from the car. The car can thus be converted from a dumping to a flat car without the removal of bolts or the use of tools of any kind, it being merely necessary to raise the ends of each door sufficiently to lift the pins out of their sockets. This construction is also of great convenience in shipping the cars, as the doors can be loaded and handled separately from the car-body and put in place when it is desired to use the car for handling and dumping gravel.

In my former patent I provide a fixed bolster on the side of the car opposite from the direction in which it dumps to support the body when in a horizontal position, and I also provide chains to prevent premature tilting of the car. In the present construction I dispense entirely with the chains and employ a similar bolster which is pivoted to permit the car to be tilted on both sides.

26 represents bolster-bars upon each side of the car, mounted upon standards 27, that are pivoted at their lower ends upon lugs 28, provided on bosses 29 on the plates 30, secured to the side angle-bars 2. The ends of the standards 27 rest upon the bosses 29, as shown clearly in Fig. 5, so that if the car is overbalanced on one side the weight will be borne by the bosses and the side bars and not upon the pivot-pins, which might be cut or sheared off by the strain. I have shown two of the standards 27; but a greater number may be employed in a car having a larger capacity.

Upon the bolster-bars 26 I provide castings 31, wherein idle wheels or rolls 32 are mounted a sufficient distance from the car-bottom to roll freely thereon and permit the bolsters to be swung in toward the center of the car in dumping or returned to their normal position to support the body against tilting.

Various means may be provided for operating the swinging bolster-bars; but I prefer to provide a mechanism substantially as shown and described herein. This mechanism consists in a pin 33, mounted in a casting 34 on each bolster-bar and adapted to turn freely therein and pivotally connected with a rod 35, that extends under the car-body and is pivoted to the short arm 36 of a lever that is pivoted to the under side of the car-body, and has a long arm 37 extending at an angle to the short arm to the opposite side of the car-body and provided with a handle 38, that is in position to be grasped by the operator to swing the bolster on the opposite side of the car in toward the center and allow the car to be tilted toward that side. The car is provided on each side with corresponding operating-levers for swinging the bolster-bar on the opposite side. To limit the movement of the levers 37, I provide stops 39 on

the side bars 7 and also arrange straps 40 thereon, between which and said bars I pivot eccentrics 41, between which and the stops 39 the levers are securely locked. The eccentrics are provided with lugs 42, to be grasped by the finger for swinging the eccentrics and releasing said levers. Upon the bed-timbers 4 I provide cross-bars 43, which limit the inward swinging movement of the bolsters, and upon the side bars 2 I arrange the bumper-castings 44, with which the car-body engages when tilted. In a car of the capacity shown I provide three sets of the rocker-castings—one in the middle and one at each end of the car-body—and when a casting is provided in the middle I prefer to provide offsets in the pivoted rods 35 to clear the upper member of the casting. In cars of a larger size, however, where four sets of castings are provided—two at each end—the offsets in these rods will not be necessary. The pins to which the rod 35 are connected turn freely in their sockets, as described, and being pivotally connected with the rods will allow the bolster-bars to swing freely without any binding or cramping of the operating mechanism, and as these pins are readily detachable from the castings 34 the car-body can be quickly and easily removed from the trucks whenever desired.

This car is adapted for use wherever it is desired to dump on both sides, as in railroad-work, and the doors being suspended several feet above the bottom of the car when tilted will allow the contents to be rapidly discharged without being in any way obstructed by the lower portion of the door. Should any very large masses of earth or rock be loaded on the car, the lower edges of either one of the doors when the car is tilted to unload will upon being engaged by the earth or rock swing outward and allow the load to slide out. The doors and their supporting-standards will adjust themselves automatically to the horizontal and tilted positions of the car-body and need not be handled by the operator in any way in tilting the car or swinging it back to its normal horizontal position. The standards are protected by the ends of the car and by the horizontal cross-timbers and serve as firm substantial supports for the doors when the car is used for dumping and whenever desired, as in shipping, or when the car is used as a flat-car may be easily and quickly detached from the truck-frame.

To convert the dumping-car into a flat-car, I may simply remove the doors from the standards, leaving the latter secured to the frame. When used as a flat-car, the swinging bolsters may be locked in position and the car prevented from tilting in either direction, or it may be tilted any time by the operation of the lever mechanism.

In various ways the details of the mechanism herein described may be modified, and I therefore do not wish to be confined to the particular construction set forth.

I claim as my invention—

1. In a dumping-car, doors slidably supported upon swinging posts or standards. 70

2. In a dumping-car, swinging side doors, and reciprocating standards whereon said doors are removably and slidably supported.

3. In a dumping-car, standards pivoted near the center line of the car, and normally inclined toward the sides of the same, means for limiting the outward swinging movement of said standards and doors slidably supported at or near the upper ends of said standards. 75 80

4. In a car adapted to dump on both sides, doors closing only the sides of the car and slidably supported upon posts or standards, the connections of said doors with their supports permitting the doors to automatically adjust themselves to the tilted positions of the car-body. 85

5. In a dumping-car, swinging standards pivoted near the center line of the car, doors movably mounted upon said standards, each door being adapted to remain stationary when the car-body is tilted toward its side and to be raised above said standards when the car is tilted toward the opposite side, and suitable stops for limiting the inward movement of each door when so raised. 90 95

6. In a dumping-car, pivoted standards provided on each side of the center line, doors movably supported upon said standards, each door being adapted to remain stationary when the car is tilted toward its side and to be raised above said standards when the car is tilted toward the opposite side. 100

7. In a dumping-car, a door having pivots that are slidably supported upon posts or standards. 105

8. In a dumping-car, swinging standards pivoted near the center line of the car and provided near their upper ends with suitable sockets, and doors provided with pins that are adapted to enter said sockets and slide freely therein. 110

9. In a dumping-car, standards provided upon each side of the center line, timbers between which and the car-body said standards reciprocate, stops provided on said timbers for limiting the outward swinging movement of said standards, and doors pivotally supported upon the upper ends of said standards, and movable lengthwise thereof. 115 120

10. In a dumping-car, standards provided upon each side of the center line, doors slidably mounted on the upper ends of said standards and adapted to be raised one at a time above the same by the tilting of the car, and means provided on the ends of the car-body for limiting the inward movement of the door when so raised. 125

11. In a car adapted to dump on both sides, swinging standards or posts, doors slidably mounted at or near the upper ends of said standards, swinging bolsters provided beneath the car-body on each side thereof, and lever mechanisms for operating said bolsters. 130

12. In a car adapted to dump on both sides, swinging bolsters provided beneath the car-body, a lever mechanism connected with each bolster and operable on the opposite side of the car therefrom and means for locking said lever mechanism against premature movement.

13. In a car adapted to dump on both sides, swinging bolsters provided beneath the car-body, levers pivoted on the car-body and adapted to oscillate lengthwise thereof, each lever being operable on the opposite side of the car from the bolster with which it is connected, and rods connecting said levers and bolsters.

14. In a car adapted to dump on both sides, inwardly-swinging bolsters provided under each side of the car and having idle rolls or wheels to engage the bottom of the same, a lever mechanism connected with each bolster and operable on that side of the car opposite

from the bolster to which it is attached, and means for locking said lever mechanisms against premature movement.

15. In a car adapted to dump on both sides, standards pivoted near the center line of the car, castings provided at or near the upper ends of said standards and having pins slidably mounted in sockets on said standards, and doors having bearings in said castings.

16. In a dumping-car, doors supported independently of the car-body, each door being adapted to remain stationary when the car is tilted toward its side and to be raised above its supports when the car is tilted toward the opposite side.

In witness whereof I have hereunto set my hand this 22d day of January, 1902.

FRANCIS PETELER.

In presence of—

RICHARD PAUL,
M. C. NOONAN.