

No. 627,265.

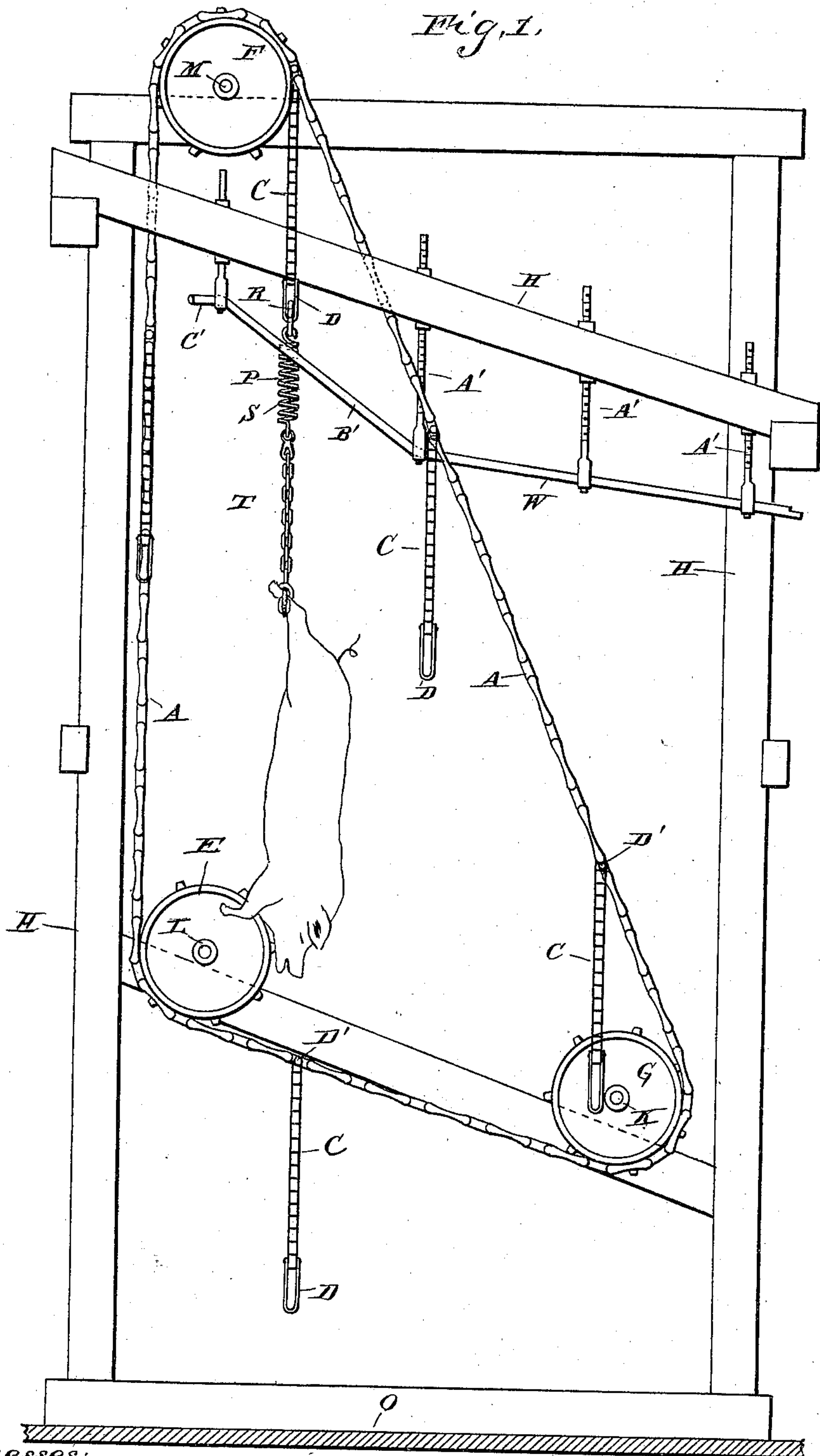
Patented June 20, 1899.

G. A. LOWRY.
HOG HOISTING MACHINE.

(Application filed Apr. 1, 1895.)

(No Model.)

2 Sheets—Sheet 1.



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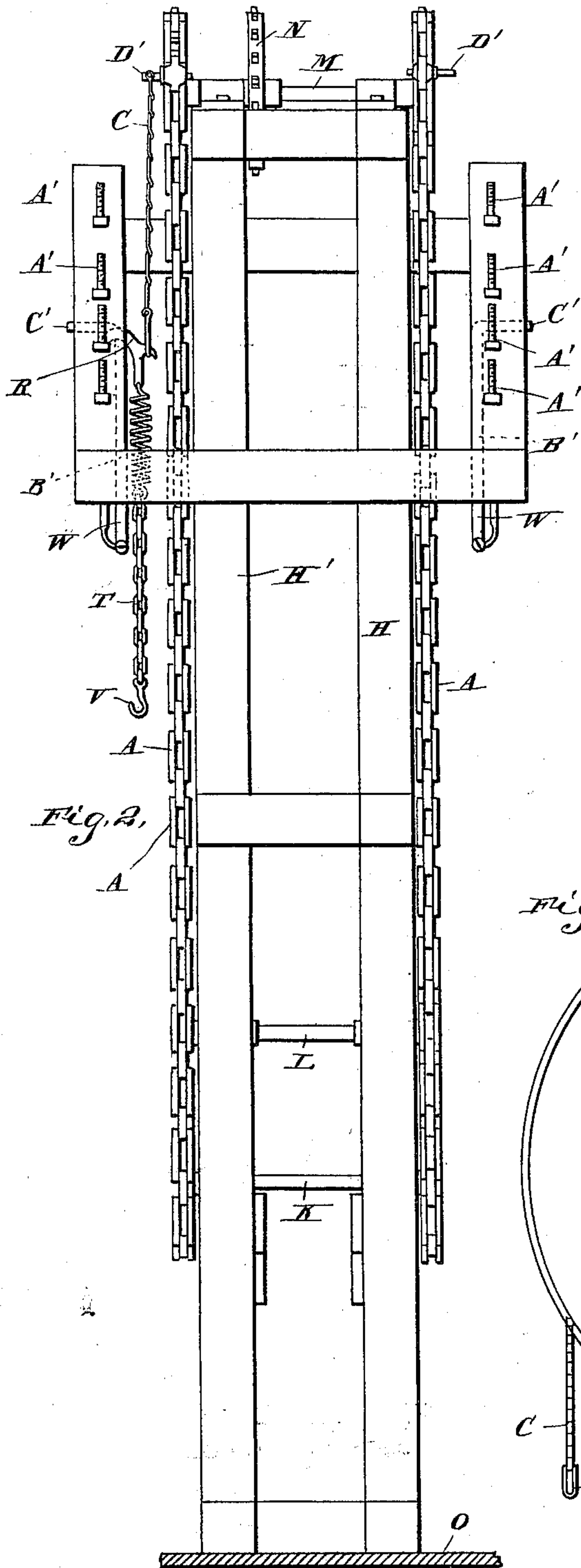


Fig. 2.

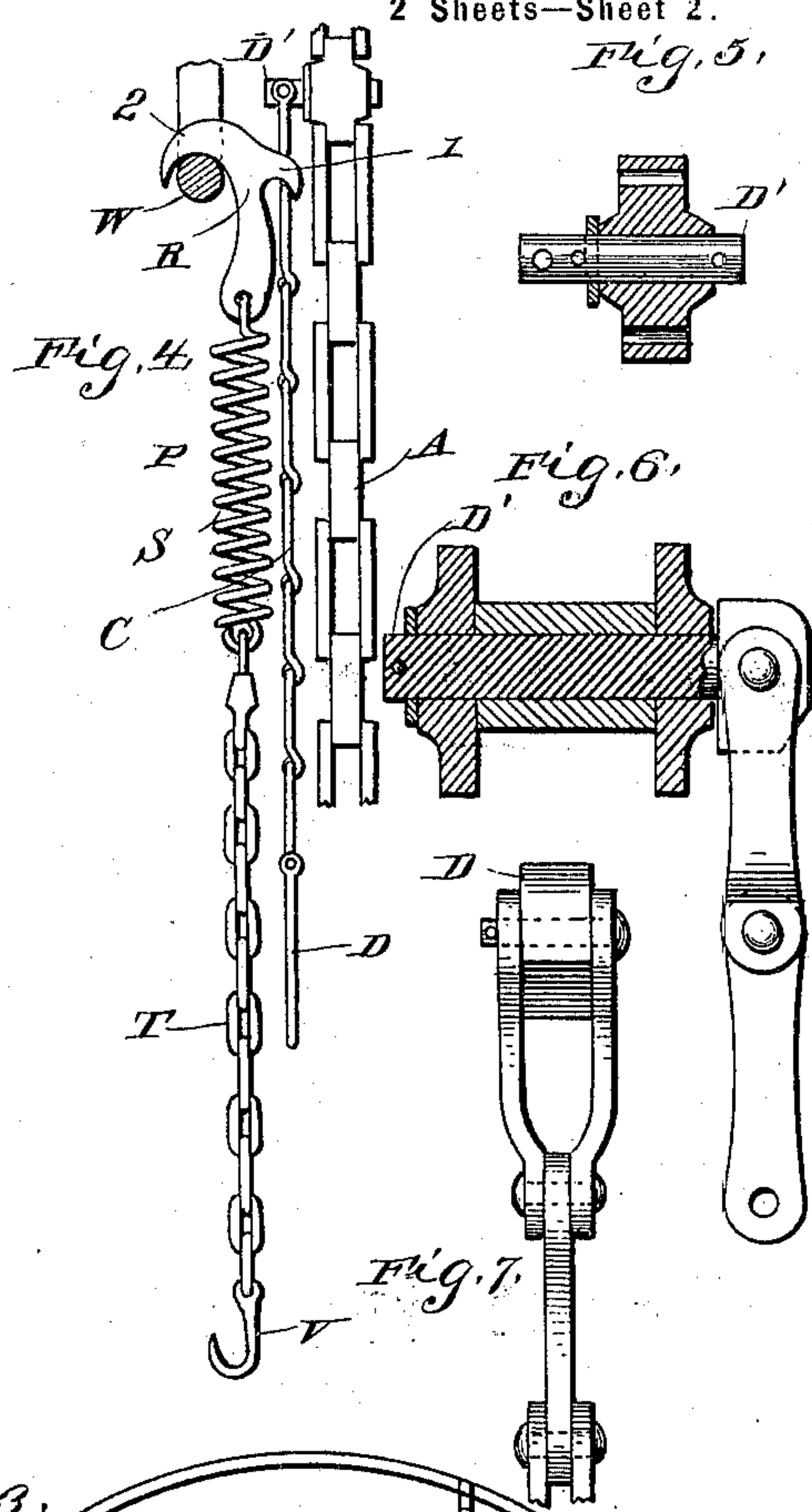
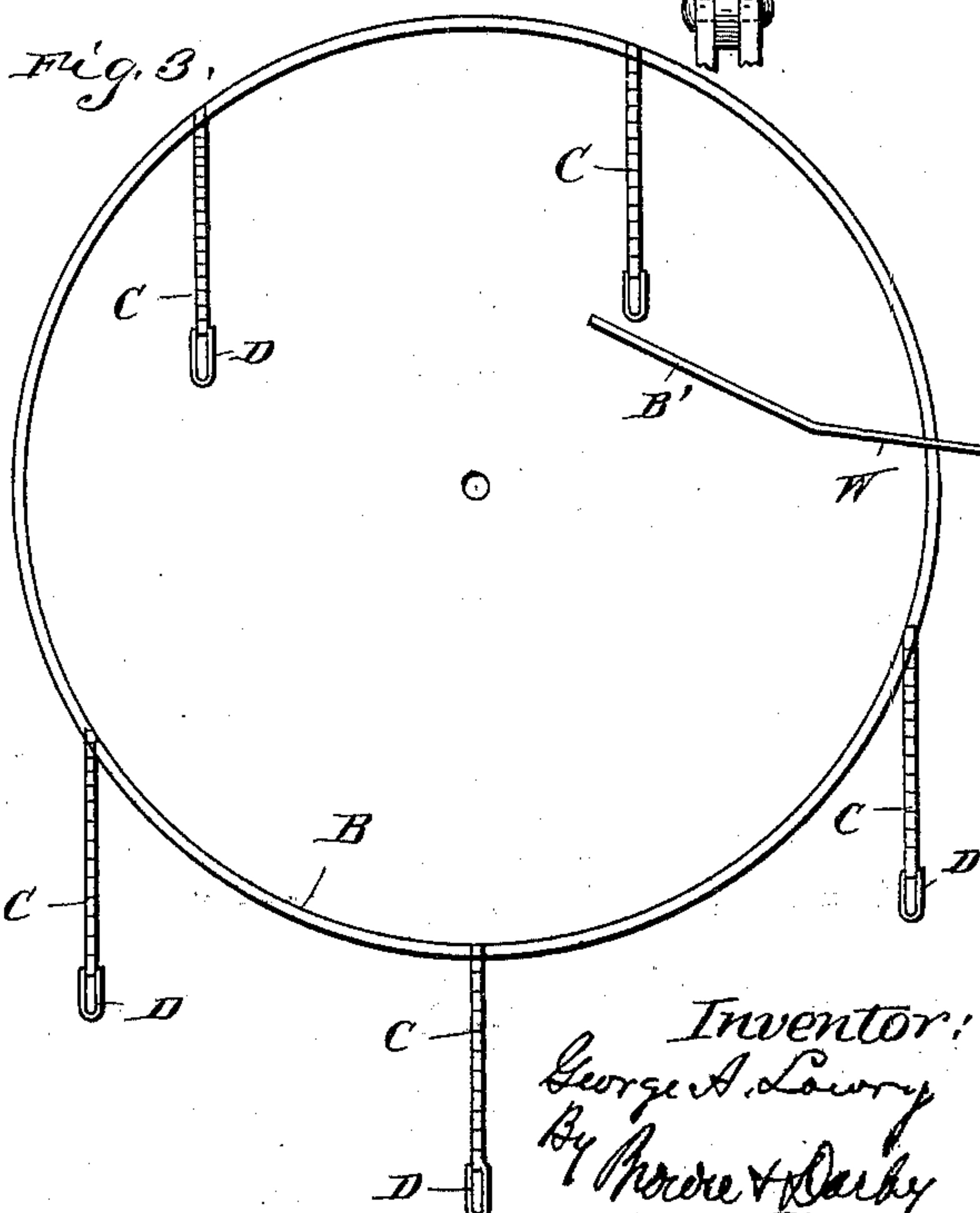


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE A. LOWRY, OF CHICAGO, ILLINOIS.

HOG-HOISTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 627,265, dated June 20, 1899.

Application filed April 1, 1895. Serial No. 543,935. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. LOWRY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Hog-Hoisting Machines, of which the following is a specification.

This invention relates to hog-hoisting machines; and its object is to provide a machine for automatically, expeditiously, and economically drawing shackled hogs in the pen, hoisting them, and delivering them to the sticking-rail with facility and with the least possible jar or jerk.

The invention consists, substantially, in the construction, combination, location, and relative arrangement of parts, all as will be more fully hereinafter set forth, shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in side elevation of a construction embodying the principles of my invention. Fig. 2 is an end view of the same, showing a duplicated hoisting mechanism. Fig. 3 is a view in side elevation, showing a modified form of hoisting-machine embodying the principles of my invention. Fig. 4 is a detail view, on an enlarged scale, of a form of shackle especially adapted for use in connection with my hoisting-machine. Fig. 5 is a detail view of the pivotal connection of the pendants or supporting devices to the carrier. Fig. 6 is a central longitudinal section of the pivotal support or rocking pin for one of the pendants, which is permanently attached to the carrier, the plane of section thereof being at right angles to the plane of section of Fig. 5. Fig. 7 is an end view of the pivot shown in Fig. 6 and of the link connected to such pivot by another pivot intersecting the same at right angles.

In carrying out my invention I provide a carrier adapted to move in or adjacent to the shackling-pen. In the form shown in Figs. 1 and 2 this carrier may consist of an endless chain A; but it is obvious that other forms of carrier may be equally well adapted for carrying out the principles of my invention—as, for instance, a disk or wheel B.

(Shown in Fig. 3.) I do not desire to be limited, therefore, to any particular form in the generic conception of my invention. Suitably supported by and dependent from the carrier is a series of short sections of chains or other suitable pendants C, preferably terminating in a large link D, forming a clevis, as shown, for a purpose that will more fully hereinafter appear.

In the form shown in Figs. 1 and 2 the carrier A consists of an endless sprocket-chain, preferably of flat links in the form of a link belt. The guide-pulleys or sprocket-wheels, upon which the carrier A is mounted, may be arranged in any suitable way to give any suitable direction of lead or travel. I have shown three such sprocket-wheels for each carrier A (designated, respectively, by reference-signs E, F, and G) so relatively arranged as to cause the carrier to travel in a triangular path, but of course the carrier may be given any desired direction of lead, and to that end any desirable number and relative arrangement of sprocket-wheels may be employed, and I desire it to be distinctly understood that I do not limit myself to the exact number and relative arrangement of sprocket-wheels shown and described. In practice the sprocket-wheels E, F, and G may be mounted in any suitably-arranged or convenient form and construction of framework H. In case a duplicate arrangement is employed, as shown, for instance, in Fig. 2, a double framework H H' is employed, and the shafts K L M of the sprocket-wheels are suitably journaled to rotate therein, as shown. The carrier may be driven in any suitable or desirable manner—as, for instance, by mounting a drive-wheel upon the shaft of one of the sprocket-wheels, as shown at N, Fig. 2, adapted to be driven from any suitable source of power. It is preferable that the framework H H' of the hoisting mechanism be an upright framework and that it be erected in a convenient location with reference to the shackling-pen, so that a part or leg of the carrier will travel through the pen at a convenient and suitable height from the floor O of the pen to enable the pendants to be brought into convenient reach of the shackler. It is also desirable that the line of travel of that portion of the carrier which passes through the pen be upwardly inclined with reference to

the floor of the pen from the point of entry thereof into the pen for a purpose to be hereinafter explained. For instance, in the particular embodiment of my invention shown
 5 in Fig. 1 the sprocket-wheel E is preferably mounted in a higher horizontal plane than sprocket G, the chain being actuated or caused to travel in a direction to enter the pen at the sprocket G.

10 Reference-sign P designates a shackle of special construction peculiarly adapted for use in connection with the apparatus above described and comprising a double-sided hook R, suitably connected to a short shackling-
 15 chain T, terminating in a hook V, as is usual. In order to provide a shackle wherein the weight of the hog is yieldingly supported, whereby injury to the meat is avoided by the sudden jerks of the hog, I interpose a yield-
 20 ing device or cushion between the hook R and the chain T. In the form shown this may consist of a suitable extension-spring S, as shown. Of course this yielding device or cushion may be arranged in any other suitable location.
 25 The hook R has a small hook 1 projecting from one edge or side thereof.

The purpose, special function, and mode of operation of the shackle will be more fully described hereinafter.

30 Suitably supported by the framework H H of the machine in convenient position relative to the traveling carrier is the sticking or receiving bar W. As shown and preferably, this bar is adjustably supported by means of
 35 adjusting-bolts A' and is provided with a sharply-inclined portion B' immediately adjacent to the path of travel of the carrier and with an end portion C', outwardly bent or turned from the plane in which the carrier
 40 travels. The pendants or depending short sections of chains C are preferably composed of flat links, as shown, and the supporting-link thereof is pivotally mounted upon a stud or bolt D' and at right angles with respect
 45 thereto, said stud or bolt being suitably journaled to rock in bearings formed in the carrier. By this construction it will be seen that each pendant is free to swing in intersecting planes, but cannot swing in a direction to
 50 twist itself.

The operation of my machine is as follows: A hog is shackled in the usual manner around one of its hind legs by means of the chain part T of a shackle. When a pendant C of the
 55 traveling carrier enters the shackling-pen, the shackler engages the hook 1 of the shackling-hook in the clevis or hooking-link D of the pendant, holding the same in place until the travel of the carrier causes the shackle to pull
 60 taut, when further care with reference thereto is unnecessary, and the shackler turns his attention to shackling another hog and hooking the shackle in similar manner in the next succeeding pendant C. From the foregoing
 65 description it will be seen that the lowermost guide sprocket-wheel G is so arranged relative to the floor O of the shackling-pen as to

permit the pendant C to command a sufficient sweep or reach of the pen as to enable the shackler to effect a hooking of the shackle
 70 thereto with a hog from any part of the pen. It will also be observed that as that portion of the carrier between the sprocket-wheels G and E is arranged to travel in an upwardly-
 75 inclined path during this time the pendant C is gradually becoming taut with reference to the hog and gradually pulls the hog to the point from which the hoisting proper com-
 80 mences. The same action takes place in case the wheel form of the carrier, as shown in Fig. 3, is employed, due to the curvature of the wheel, and this is an important feature,
 85 because the hoisting pull is not exerted until the hog is drawn to the desired point from which he is hoisted, and hence as the hoisting pull is preferably directly a vertical one
 90 the hog is first drawn to the point in the pen directly in vertical line with the line of pull. Moreover, the hog is brought to this point gradually, thereby avoiding injurious and
 95 objectionable jars and bumps due to the hog swinging violently against the side of the pen, as when the hoisting pull is exerted in the constructions at present in use, whatever the
 100 position of the hog in the pen with reference to the point of application of the pull. Again, it will be seen that from the construction above described the hog is prevented and held
 105 from swinging while being hoisted. These are exceedingly valuable and important features, for it avoids any injury to the meats by bruises and contusions. In slaughter-
 110 houses of any considerable capacity where the former method of hoisting hogs is employed the injury to meats arising from these causes alone amounts to fully two per cent.,
 115 and it becomes a matter of material importance to effect a saving of this loss.

The relative arrangement of the sticking-bar W and the path of travel of the hog while
 110 being conveyed by the carrier is such that the hog is elevated above the sticking-bar and is then gradually lowered upon it.

The pendant C is suitably guided into proper position by the outturned end C' of
 115 the sticking-rail for the hook 2 of the shackle to properly descend upon and engage the sticking-bar.

The hook R is lowered by the carrier upon the inclined part B' of the sticking-bar. By
 120 reason of the sharp incline given to this part of the receiving-bar and the relative arrangement of the said bar and the path of travel of the carrier it will be seen that the weight of the hog is imposed upon the bar, and con-
 125 sequently is relieved from the carrier very gradually as the hook R slides down the incline. This is an exceedingly important feature, for thereby is avoided injury to the meat by reason of the entire weight of the hog be-
 130 ing suddenly transferred to the sticking-bar by the sudden and violent lowering of the hog, which is the usual practice in the prior method and which results in serious injury

and loss in the finished meats. It will be seen that as the weight of the hog is gradually relieved from the pendant by the engagement of the long hook 2 with the sticking-bar the pendant will become slack and the short hook 1 will automatically disengage itself from the clevis D, thereby permitting the hog to slide by gravity along the inclined sticking-rail to the point where the work of the sticker is performed and thence on through the slaughter-house for the other necessary operations.

By the provision of a yielding member in the shackle—as, for instance, the spring S—sudden strains upon the hog during the hoisting operation or by reason of the movements of the live hog itself in its efforts to free itself from the shackle are taken up, and injury to the hog by reason thereof is consequently avoided.

In the use of a hog-hoisting machine embodying my invention not only is avoided the loss due to injury of the hog, as in the former method of hoisting hogs, but the hogs are more expeditiously and satisfactorily handled, and the services of at least two employees are dispensed with, and special care and attention to the hoisting mechanism are unnecessary after it is once put in motion.

It will be understood that many variations and changes in the specific details of construction and arrangement of parts would readily suggest themselves to persons skilled in the art and still fall within the spirit and scope of my invention. I desire it to be distinctly understood, therefore, that I do not limit myself to the exact details shown and described; but,

Having now fully explained the object and nature of my invention and a form of apparatus embodying the same and having explained the principle thereof, its function, and mode of operation, what I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a hog-hoisting machine, a carrier, means for actuating the same, means for attaching a hog thereto, and a receiving-rail arranged adjacent to the path of travel of the carrier and adapted to receive the hog from said carrier, said rail provided with an outwardly bent portion adapted to guide said carrier into position to properly deposit the hog upon said rail; as and for the purpose set forth.

2. In a hog-hoisting machine, a carrier, means for actuating the same, means for attaching a hog to said carrier and a receiving-rail arranged adjacent to the path of travel of the carrier and adapted to receive the hog from said carrier, said rail provided with a sharply-inclined portion, whereby the weight of the hog is gradually imposed upon said rail; as and for the purpose set forth.

3. In a hog-hoisting machine, a carrier, means for moving the same, means for attaching a hog to said carrier, in combination with

a receiving-rail provided with an outwardly-bent end and a sharply-inclined portion, said rail arranged to receive the hog from said carrier; as and for the purpose set forth.

4. In a hog-hoisting machine, an endless-chain carrier, having the hoisting run or leg thereof vertically arranged and having a run or leg arranged to travel through the shackling-pen in a vertically-inclined path, and means for attaching a hog to said carrier, whereby said hog is gradually drawn to a point in vertical line with the line of pull on the hoisting run or leg of said carrier; as and for the purpose set forth.

5. In a hog-hoisting machine, an endless carrier, arranged to travel in a single plane, means for actuating said carrier, means for yieldingly supporting a hog from to move with said carrier, and a receiving-rail arranged in proximity to and parallel with the plane in which said carrier moves, and adapted to receive the hog therefrom; as and for the purpose set forth.

6. In a hog-hoisting machine, an endless carrier, arranged to travel in a single plane, means for moving a hog therewith, means for actuating said carrier, a receiving-rail arranged parallel with the plane in which said carrier travels and in proximity to the path of travel thereof, adapted to receive the hog therefrom, and means for adjusting the position of said rail with reference to said hog-moving means; as and for the purpose set forth.

7. In a hog-hoisting machine, a carrier, means for actuating the same, a pendant pivotally attached to and arranged to travel with said carrier, adapted to receive a hog, a receiving-rail arranged alongside the path of movement of said carrier and adapted to receive the hog from said pendant as and for the purpose set forth.

8. In a hog-hoisting machine, a carrier, means for actuating the same, a flexible connection attached to and arranged to travel with said carrier and adapted to receive a hog, and a rail arranged adjacent to and alongside of the path of travel of said connection and adapted to receive the hog therefrom; as and for the purpose set forth.

9. In a hog-hoisting machine, a carrier, means for actuating the same, a flexible pendant pivotally attached to said carrier and adapted to receive a hog, and a rail arranged alongside the path of movement of said carrier and adapted to receive the hog from said pendant; as and for the purpose set forth.

10. In a hog-hoisting machine, a carrier, means for actuating the same, a flexible pendant attached to said carrier, a shackle adapted to be secured to a hog and to be attached to said flexible pendant, and a rail arranged alongside the path of movement of said carrier and adapted to receive said shackle from said pendant; as and for the purpose set forth.

11. In a hog-hoisting machine, an endless carrier, means for actuating said carrier, flexi-

ble suspending devices, pivotally supported upon to travel with said carrier, and adapted to receive the hogs, and a rail arranged alongside the path of movement of said carrier and adapted to receive the hogs from said suspending devices; as and for the purpose set forth.

12. In a hog-hoisting machine, and in combination with a shackling-pen, a traveling carrier, having a portion thereof arranged to move in an inclined path through said pen, and means for suspending a hog *d* from said carrier whereby the hog is gradually hoisted to the point where the vertical pull is exerted; as and for the purpose set forth.

13. In a hog-hoisting machine, and in combination with a shackling-pen, a traveling carrier, having a portion thereof arranged to move in an inclined path through said pen, suspending devices mounted on to travel with said carrier, and means for attaching the hogs to said suspending devices whereby the hog is gradually hoisted to the point where the vertical pull is exerted; as and for the purpose set forth.

14. In a hog-hoisting machine, and in combination with a shackling-pen, a traveling carrier having a portion thereof arranged to travel through said pen in an upwardly-inclined path, relative to the floor of said pen, suspending devices mounted on said carrier commanding the area of said floor and adapted to receive a hog whereby the hog is gradually hoisted to the point where the vertical pull is exerted; as and for the purpose set forth.

15. In a hog-hoisting machine, a traveling carrier, pins mounted to rock thereon, suspending devices pivotally supported by said pins to swing in a plane at right angles to the axis of said pins; as and for the purpose set forth.

16. In a hog-hoisting machine, a traveling carrier, a series of chains pivotally mounted on said carrier to swing in intersecting planes and adapted to receive the hogs, and a receiving-bar arranged adjacent to and parallel with the path of travel of said chains, and adapted to receive the hogs therefrom; as and for the purpose set forth.

17. A hog-hoisting machine, comprising in combination a carrier, a series of hoisting-chains connected to said carrier, an elevated track extending alongside of said carrier,

gearing for actuating said carrier, whereby an animal made fast to the hoisting-chains may be raised and transferred therefrom to the track; substantially as described.

18. In a hog-hoisting machine, a shackling-pen, an endless carrier arranged to travel adjacent to one wall of said pen, means for actuating said carrier, and flexible suspending devices pivotally connected to travel with said carrier and adapted to receive a hog and a receiving-rail arranged parallel with the path of travel of said carrier, and adapted to receive the hog from said suspending device; as and for the purpose set forth.

19. In a hog-hoisting machine, the combination with a frame of a carrier supported thereby and arranged to travel in a path outside of said frame, suspending devices connected to move with said carrier, and adapted to receive the hog to be hoisted, a receiving-rail arranged adjacent to and parallel with the path of movement of said carrier, and adapted to receive the hog from said suspending devices, and means for actuating said carrier; as and for the purpose set forth.

20. In a hog-hoisting machine, a shackling-pen, a carrier arranged adjacent to one side of such pen and carrying suspending devices adapted to command the area of the pen, in combination with a receiving-rail arranged parallel with the path of travel of said carrier; as and for the purpose set forth.

21. In a hog-hoisting machine, a shackling-pen, a carrier arranged adjacent to one side of such pen, a series of chains pivotally connected to said carrier and adapted to command the area of said pen, and means for actuating said carrier; as and for the purpose set forth.

22. In a hog-hoisting machine, a carrier, means for actuating the same, flexible suspending devices connected to said carrier, in combination with a receiving-rail, said rail provided with a sharply-inclined portion, and suspending devices adapted to receive the hogs and deliver the same upon said rail; as and for the purpose set forth.

In witness whereof I have hereunto set my hand this 30th day of March, 1895.

GEORGE A. LOWRY.

Witnesses:

S. E. DARBY,

FRANK T. BROWN.