G. COLLIS.

TRUCK.

APPLICATION FILED DEC. 1, 1913.

1,239,771.

Patented Sept. 11, 1917.

3 SHEETS—SHEET 1.

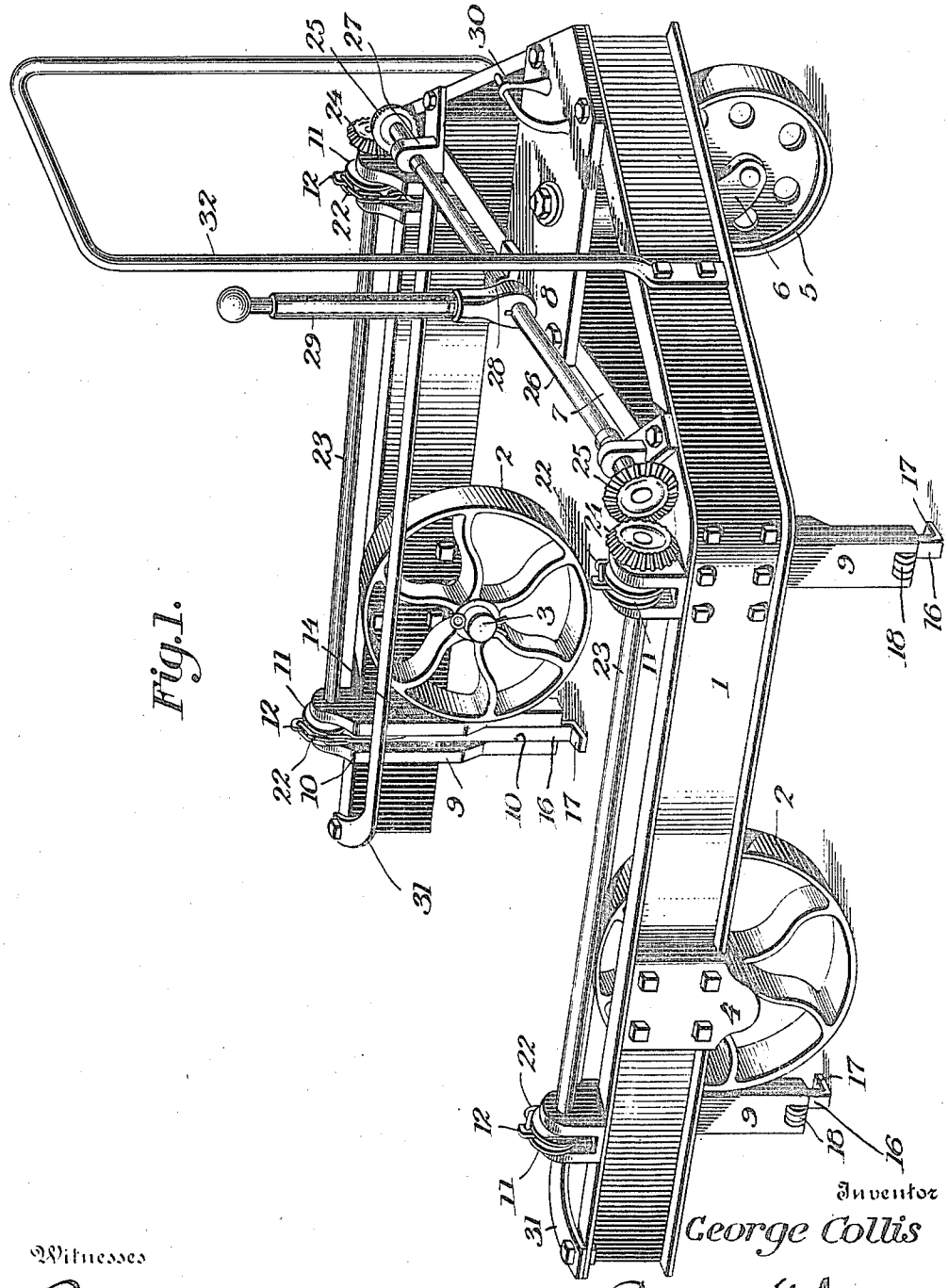


Fig. 1.

Witnesses

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3 SHEETS—SHEET 2.

Fig. 2.

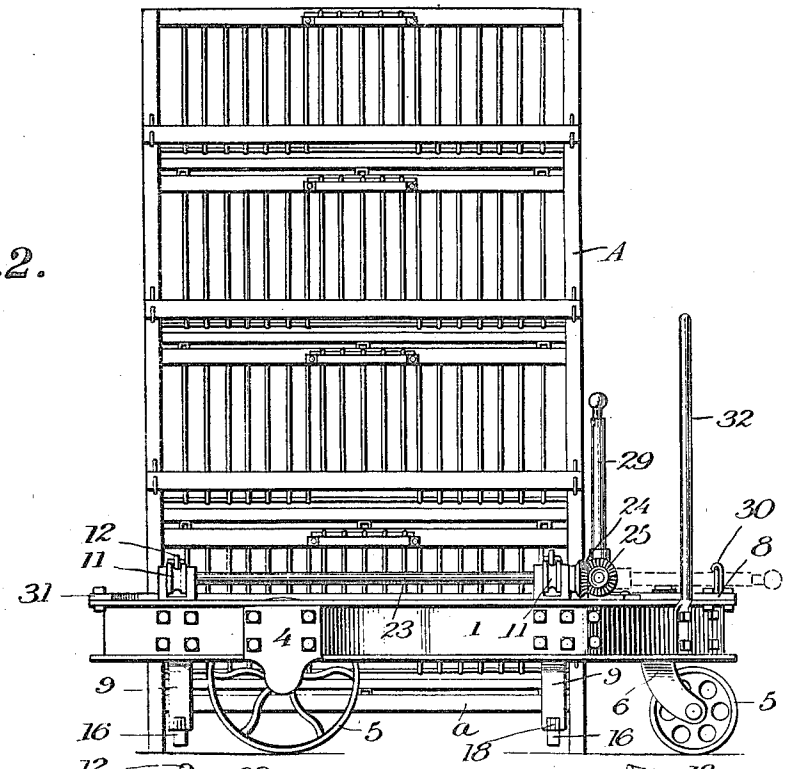


Fig. 3.

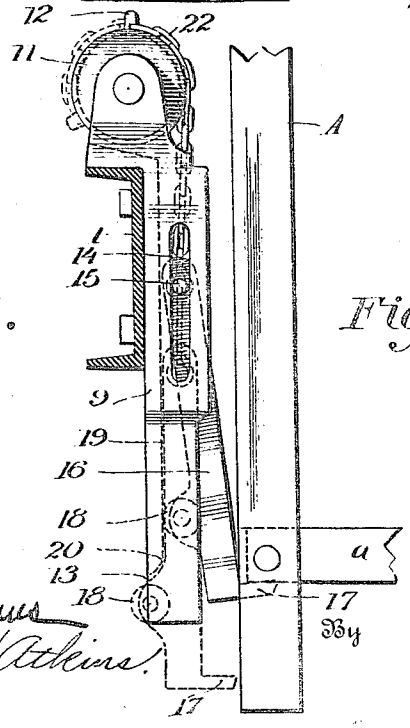
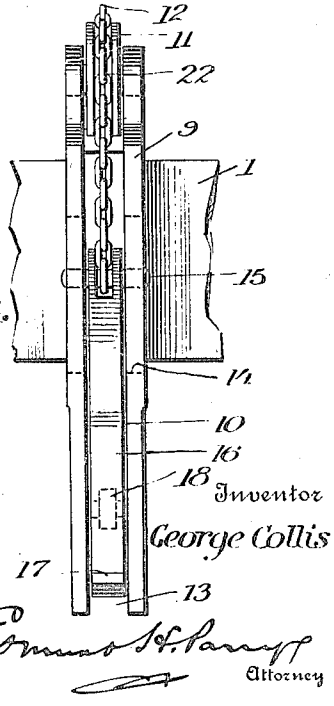


Fig. 4.



Witnesses

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3 SHEETS—SHEET 3.

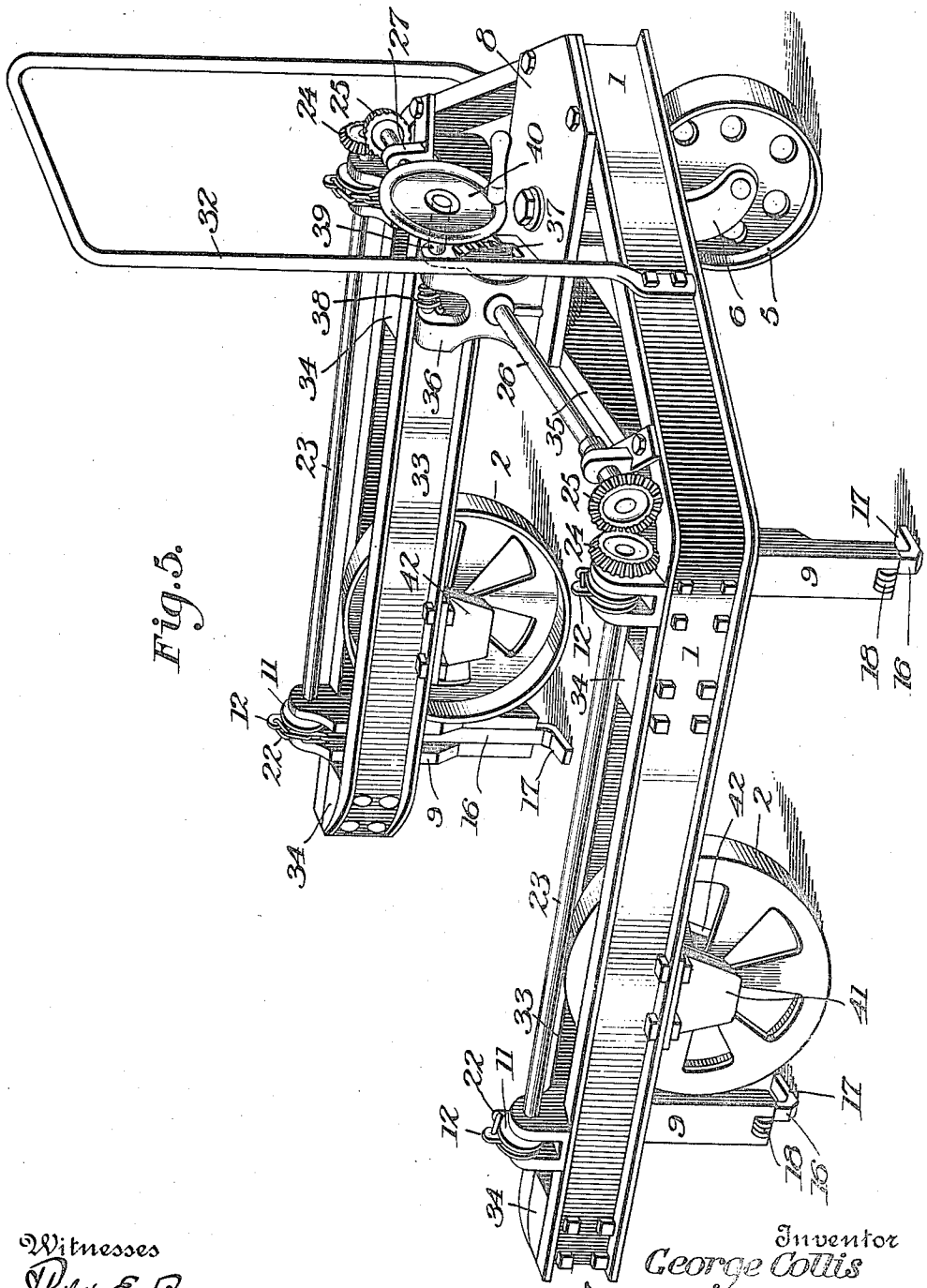


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE COLLIS, OF CLINTON, IOWA, ASSIGNOR TO THE COLLIS CO., OF CLINTON, IOWA, A CORPORATION OF IOWA.

TRUCK.

1,239,771. Specification of Letters Patent. Patented Sept. 11, 1917.

Application filed December 1, 1913. Serial No. 804,016.

To all whom it may concern:

Be it known that I, GEORGE COLLIS, a citizen of the United States, residing at Clinton, in the county of Clinton and State of Iowa, have invented certain new and useful Improvements in Trucks, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to trucks and is especially adapted for use in transporting so-called "battery" chicken-feeding coops.

In an application heretofore filed by me, Serial No. 798,750, I have disclosed an improved form of poultry-feeding coop-structure comprising, in general, a series of superposed cages mounted in a suitable supporting-frame and spaced from each other. This coop-structure, being built of metallic components, is of considerable weight. The present invention is designed primarily for lifting and moving these coop-structures from one place to another.

Heretofore, it has been the general practice to transfer the small chickens from feeding-coops to carrying-coops, the latter holding, say, twenty or more of the chickens. Then the chickens are removed from the carrying-coops and carried by hand to the chicken killers and pickers. In the feeding-coops, the chickens are fed for a predetermined period, on milk, etc., to fatten them. It has been found that when the chickens, thus fed, have been developed to a desirable state of perfection of flesh, they are very easily bruised and, by present methods, when they are handled at least twice before being killed, the chickens are seriously damaged, not only by bruising but, also, as the result of the excitement consequent to the noise incident to the handling of the different chickens.

I have discovered that it is highly desirable, advantageous and convenient to reduce such handling as far as practicable; hence, I am able bodily to transport the coops in which the chickens are fed directly to the killing and picking room or place, and there, to withdraw each chicken just as it is desired to kill it. This obviates the danger of the aforementioned bruising, excitement, etc. They are, thus, individually handled but once. When empty, the coops are returned to the feeding room or place where they are again filled with another lot of chickens preparatory to their being milk-fed for the prescribed period.

The truck which characterizes my present invention, is designed to effect the lifting and transportation of the coops in the manner stated.

The truck includes, generally speaking, a wheel-supported frame, preferably open at one end, and provided with uprights or brackets in which are supported lifting-elements adapted to have a plurality of movements, combined with means for effecting their movement and with means for holding said elements when in their elevated position.

The invention, therefore, resides in this structure, generally, and broadly, and also in the features of construction, combinations of elements, and arrangements of parts, and in various aggroupments thereof, all as will be exemplified in the construction hereinafter set forth, and the scope of application of which will be indicated in the claims hereto appended.

In order that the invention may be clearly comprehended by those skilled in its related art, drawings illustrating two of the many possible utilizations of the same are appended hereto as a part of this disclosure, it being manifest that other possible utilizations and embodiments employing the underlying principles of the invention fall within the spirit thereof and within the objects contemplated thereby.

In the accompanying drawings:

Figure 1 is a view in perspective of a truck constructed in accordance with a practical embodiment of my invention;

Fig. 2 is a view in side elevation showing the truck in position to lift and transport a battery of chicken-coops;

Fig. 3 is a fragmentary view, in sectional elevation, of one of the lifting elements, showing the same, in dotted lines, in its normal or lower position and, in full lines, in its elevated position and supporting the coop-frame;

Fig. 4 is a fragmentary view in front elevation of the lifting element; and

Fig. 5 is a view in perspective, similar to Fig. 1, illustrating another and preferred form of truck embodying my invention.

Referring to the drawings, and to Figs. 1 to 4, the reference-numeral 1 designates

the truck-frame generally, which in this instance is shown as open at the rear and wedge-shaped at the front. This frame is preferably constructed of channel-iron to give strength without great weight.

The frame is supported at the rear by wheels or rollers 2, each carried by a stub-axle 3 mounted in a bracket 4 secured to the side of the frame. At the front, the frame is supported by a single wheel 5 carried by a swiveling bracket 6.

Extending between the sides of the frame is a cross-piece 7, and secured to this and the pointed portion of the frame is an elongated plate 8, to which the bracket 6 is connected.

Mounted on the parallel side-portions of the frame are four lifter-sustaining members 9, each provided with an elongated guide-way or channel 10 and at its top with a pulley 11 which is provided with an outstanding lug 12. At its lower portion, each of said members is provided with a roller-receiving slot or recess 13, as shown. The sides of said members are provided with longitudinally-extending slots 14 adapted to receive the projecting ends of a pin 15 carried by a cage-lifting element 16. Each of the elements 16 is provided at one side of its lower end with a projection or toe 17, and at the other side with a roller 18. The lifting-element 16 is of dimensions to permit its disposal in the aforementioned guide-way 10 in the member 9.

As clearly shown in Fig. 3, the roller-traversed wall 19 of the guide-way 10 curves outward at the lower portion of the member 9 and terminates in the slot 13, thus providing a cam-surface 20 adjacent the slot, as shown.

Secured to the lug 12 on the pulley and attached to the pin 15 on the lifter 16 is a chain 22, and by this means, each lifter is actuated.

Obviously, mechanism for rotating the pulley 11 must be provided and to this end I arrange at each side of the frame and the upstanding bearing-portions of the members 19, two shafts 23 upon which the pulleys are fast. On the forward end of each shaft is a pinion 24 adapted to mesh with and receive motion from a corresponding pinion 25, one on each end of a transverse shaft 26 mounted in two bearing-blocks 27 secured to the upper edges of the converging portions of the frame and resting on the upper edge of the cross-piece 7, and an intermediate bearing-block 28 mounted on the plate 8.

Keyed to the shaft 26 is a handle 29 preferably comprising a barrel and a spindle adapted to telescope into the barrel. When being used, the spindle is drawn out as far as may be necessary and, thus, gives an increased leverage when the handle is operated. To retain the handle in its lower shaft-holding position, a latch-device 30 is mounted on the plate 8.

Secured to the upper edges of the side portions of the frame are parallel guide-pieces 31, the function of which is to guide and hold the cage-frame in proper position in relation to the truck-frame.

Operation: Assuming that a battery of feeding-coops is ready for transportation, the attendant (by the handle-frame 32) pushes the truck so that the coop-structure will be disposed within the truck-frame, as shown in Fig. 2. The feet 17 will then be out of engaging range of the coop-structure. The guard-rails 31 bring the truck into correct position relative to the coop-structure. Then, the handle 29, which (when inactive) is in an upright position (as shown in Fig. 1) is depressed, causing the rotative movement given to the shaft 26 to transmit similar movement to the shafts 23 which carry the pulleys 11. Upon these are thus partially wound the chains 23 and cause the uplift of the lifter-elements from the position shown in dotted lines in Fig. 3, to the position shown in the same figure in full lines. The upward movement of each lifter-element carries its roller 18 upward and, as such roller traverses the cam surface 20, the lifter-element is thrust inward toward the cage-structure (represented by A) so that that the feet 17 are swung under and engage the lower frame-bar (*a*) of the cage-structure. The four feet coöperate to raise the whole structure from the ground or floor (as the case may be) to a distance sufficient to enable the structure to be moved. As the lifter-elements are being elevated, the pins 15 act as fulcra for these elements, as will be readily understood. When the handle 29 has reached the limit of its depressed position, it can be positioned under the latch 30 and be thereby retained. By these means, the lifting and lifted structures will be held in a raised position.

In Fig. 5, I have illustrated another and (in many ways) preferable form of structure, the same differing from that already described principally, in the mechanism for operating the shafts, in the manner of mounting the rear wheels, and in the provision of an auxiliary inside frame paralleling the sides of that on the outside: In this instance, in lieu of the guides 31, I attach, in any desired way, an inside frame 33 spaced (as by blocks 34) from the frame 1 and including a transverse portion 35 corresponding, in some respects, to the cross-piece 7 in the first-described form of structure. As in that structure there is the plate 8 mounted on the forward portion of the frame and also on said transverse portion 35 of the inside frame.

Suitably attached to said plate 8 is a trunnion-member 36 in which the transverse-shaft 26 is journaled. This shaft carries a gear-wheel 37 with which meshes a worm 38 formed on a short shaft 39 and on

this is mounted a hand-wheel 40. By this mechanism the rotation of the shaft 26 and, thus, operation of the connected parts, is facilitated. Moreover, the shafts and parts will, by the worm-and-gear mechanism, be retained in any position to which they are thereby actuated. In view of the fact that the operation of this mechanism is easier and safer than that already described, I prefer it, generally speaking. Besides, with it, the coops can be given a higher lift than may be possible with the corresponding mechanism of the first form.

In this preferred embodiment, also, the frames 1 and 33 are provided with brackets 41 and 42, respectively, and the axles (not shown) of the wheels 2 are journaled therein. In this arrangement, therefore, each of the wheel-axles is supported at opposite ends. This makes for a stronger structure. In other respects, generally speaking, the construction of this second form is similar to that of the first.

From the foregoing, it will be perceived that I have succeeded in devising a truck which is well adapted to achieve the objects and ends in view. The structure is simple and compact and is well suited for handling heavy structures like metallic coops, cages, etc.

As many changes can be made in the above construction and many apparently widely different embodiments of the invention can be made without departing from the spirit thereof, it is intended that all matters contained in the foregoing description and shown in the accompanying drawings shall be interpreted as illustrative and not in any limiting sense.

What I claim is:

1. A truck comprising a wheel supported frame; said frame having approximately parallel side bars converging and joined at one end to form a wedge-shaped structure; a cross piece connecting said side bars between the closed and the other end thereof; a lifting instrumentality comprising lifter sustaining members each provided with an elongated slotted guide way; lifting elements movable in the slots in said guide ways, and each having a projection at one end thereof; a cam roller disposed intermediate the ends of each lifting element and adapted to track in said guide way; means for actuating said lifting elements in unison; and means for locking said lifting elements in their lifted position.

2. A truck comprising a wheel supported frame; said frame having approximately parallel side bars converging and joined at one end to form a wedge-shaped structure; a cross piece connecting said side bars between the closed and the other end thereof; a lifting instrumentality comprising lifter sustaining members each provided with an elongated slotted guide way; lifting elements movable in the slot in said guide ways, and each having a projection at one end thereof; a cam roller disposed intermediate the ends of each lifting element and adapted to track in said guide way; means for actuating said lifting elements in unison; means for locking said lifting elements in their lifted position; and a plurality of guide pieces secured at one end to said side bars and carried back in spaced relation thereto and secured at their other ends to a portion of said frame.

3. A truck comprising a wheel supported frame; said frame having approximately parallel side bars converging and joined at one end to form a wedge-shaped structure; a cross piece connecting said side bars between the closed and the other end thereof; a plate disposed on said cross piece and said side bars; a lifting instrumentality comprising lifter sustaining members each provided with an elongated slotted guide way, lifting elements movable in the slots in said guide ways, and each having a projection at one end thereof; a cam roller disposed intermediate the ends of each lifting element and adapted to track in said guide way; means for actuating said lifting elements in unison; and means comprising a latch mechanism disposed on said plate for locking said raising means in raised position.

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

GEORGE COLLIS.

Witnesses:
FRIEDA E. TRITSCHLER,
CARL C. FEDDERSEN.