

No. 712,579.

Patented Nov. 4, 1902.

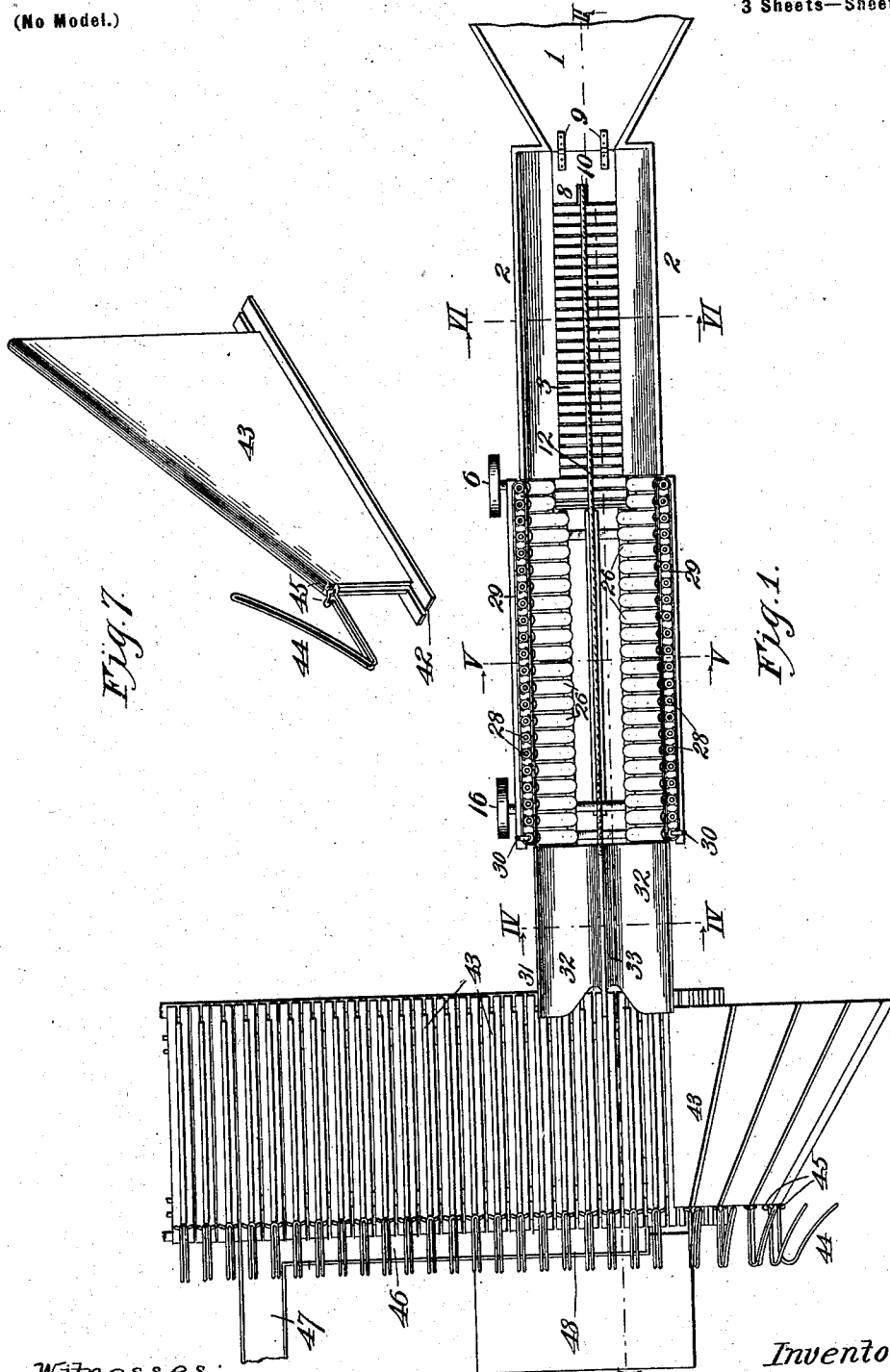
F. E. NICHOLSON & G. I. BLANCHARD.

HOG KILLING BED.

(Application filed June 1, 1901.)

3 Sheets—Sheet 1.

(No Model.)



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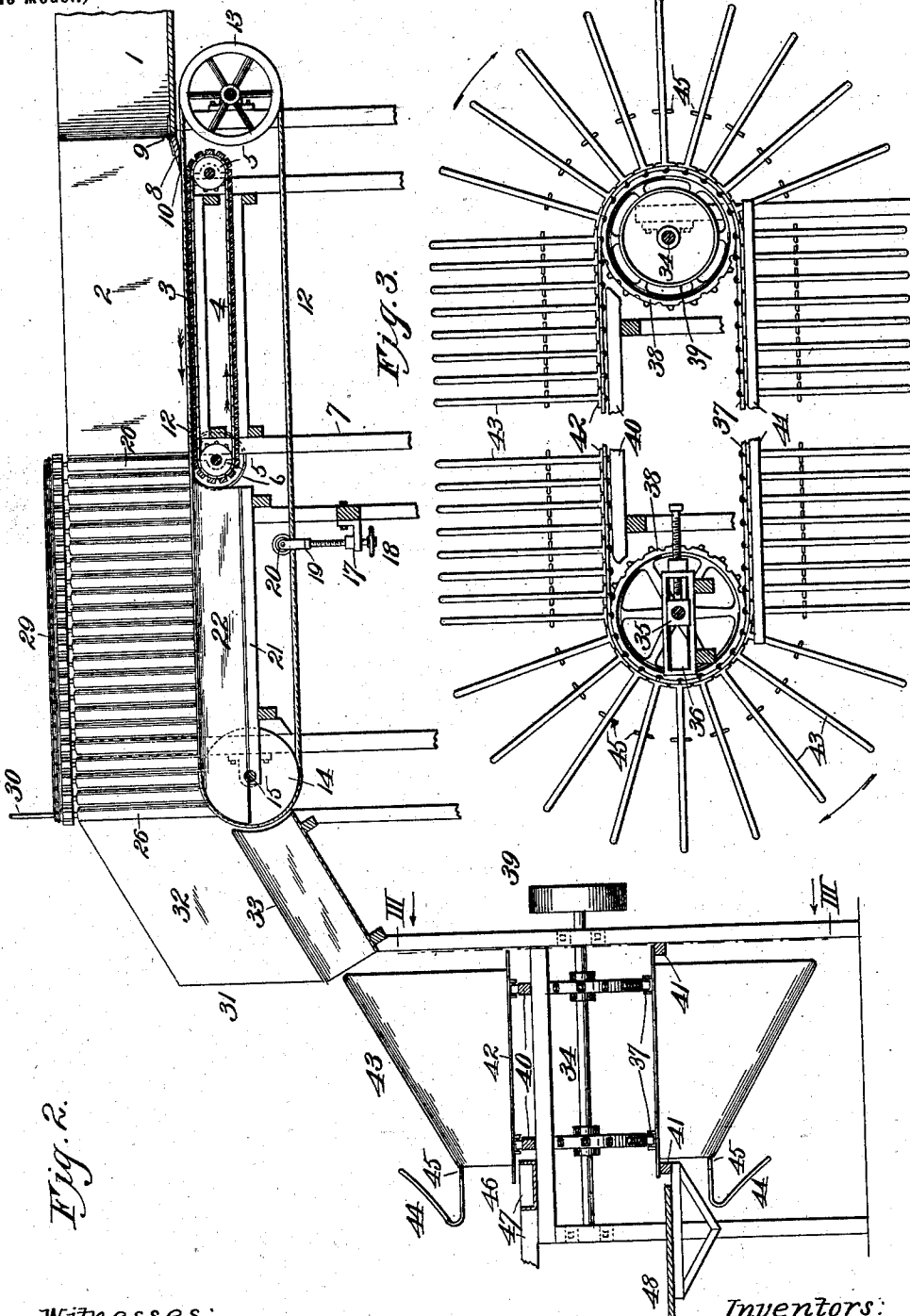
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(Application filed June 1, 1901.)

3 Sheets—Sheet 2.

(No Model.)



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Fig. 6.

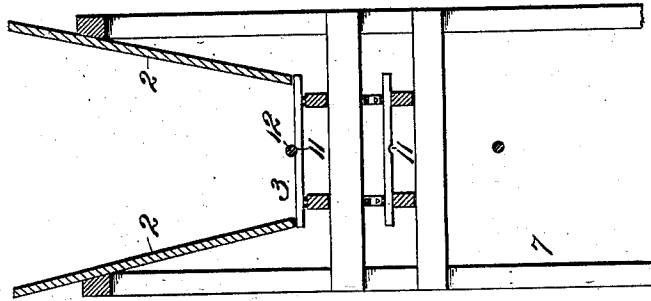


Fig. 5.

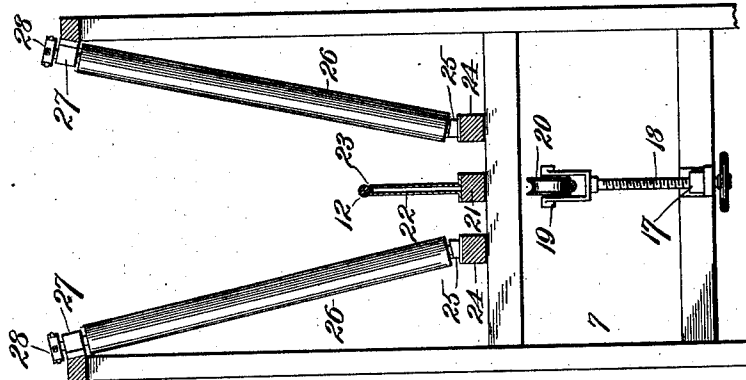
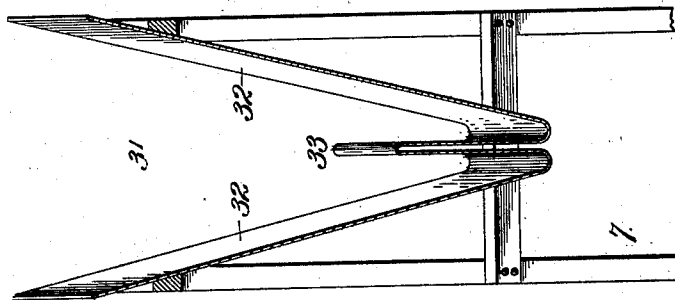


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANK E. NICHOLSON AND GEORGE I. BLANCHARD, OF KANSAS CITY,
KANSAS.

HOG-KILLING BED.

SPECIFICATION forming part of Letters Patent No. 712,579, dated November 4, 1902.

Application filed June 1, 1901. Serial No. 62,735. (No model.)

To all whom it may concern:

Be it known that we, FRANK E. NICHOLSON and GEORGE I. BLANCHARD, citizens of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Hog-Killing Beds, of which the following is a specification.

Our invention relates to hog-killing beds; and our object is to produce means for conveniently, rapidly, and reliably handling hogs and disposing them in the proper position to be "stuck" without the possibility of injury to the hams or loins caused usually by their violent struggles as strung up to be slaughtered.

With this general object in view the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a top plan view of hog-killing beds embodying our invention. Fig. 2 represents a vertical section taken on the line II II of Fig. 1. Fig. 3 is a section of the conveyer on which the hog is slaughtered on line III III of Fig. 2. Fig. 4 is a vertical section taken on the line IV IV of Fig. 1. Fig. 5 is a vertical section taken on the line V V of Fig. 1. Fig. 6 is a vertical section taken on the line VI VI of Fig. 1. Fig. 7 is a perspective view, detached, of one of the slats of the conveyer on which the hog is slaughtered.

Referring to the drawings in detail, where like reference numerals designate corresponding parts, 1 designates a converging chute through which hogs are adapted to be driven, the discharge end being so narrow that only a single hog can pass through at a time into a narrow way consisting of downwardly-converging sides 2 and a movable bottom or walk 3, whereby the hog is conveyed forwardly as he walks or if he refuses to walk. This movable bottom or walk is in the form of an endless slat-conveyer 4, mounted on sprocket-wheels 5 at its ends, and the shaft of one of said sprocket-wheels carries a pulley 6, adapted to be belted to a counter-shaft or other motive power (not shown) and drive

the conveyer in the direction indicated by the arrow, Fig. 2. The shafts of the conveyer are journaled in a skeleton structure, as at 7, or of any other suitable type. Owing to the aversion which all animals naturally have to stepping upon a moving object, and particularly to stepping downward upon such object, we connect the discharge end of the chute with the moving bottom or walk by an inclined walk 8, hinged, preferably, to the chute, as at 9, for convenience in giving access to parts below when repairs or inspection from above is necessary, and this inclined walk is provided with a notch 10, registering with notches 11, which form practically a continuous groove longitudinally and centrally of the moving bottom or walk in order that an endless cable 12 may fit snugly therein and be prevented from lateral movement or vibration, said cable being mounted at its rear end on a grooved wheel 13, suitably supported and journaled, and at its front end in a grooved wheel 14, the shaft 15 of which carries a pulley 16, adapted to be belted to any suitable motive power and to operate the cable at a greater speed than the moving walk, for a purpose which hereinafter appears. The endless cable, as it is adapted to assist in conveying hogs forwardly, is under more or less strain, and must therefore have its slack taken up at intervals. A means for this purpose consists of a bracket 17, secured to the skeleton framework, a screw 18, engaging the bracket, a bracket 19, swiveled on the screw, and a pulley 20, carried by the last-named bracket and bearing down upon the lower strand of the cable. In lieu of this device other well-known constructions may be substituted with equal or better results. Sustaining that portion of the upper strand of the cable forward of the moving walk is a longitudinal bar 21, surmounted by a rib or brace 22, having its upper edge provided with a groove 23 to receive the cable and not only sustain it, but assist the grooved walk in holding it against lateral vibration. Parallel to the bar 21 and arranged in about longitudinal alinement with the side margins of the upper strand of the moving walk are bars 24, provided with bearings 25 at their upper sides for the lower ends of a series of down-

wardly-converging rollers 26, which in effect form a rolling wall, wherein the hog is caught and moved forward, this rolling or moving wall coacting in this respect with the moving cable. The upper ends of the roller-shafts are journaled in bearings 27, secured to the skeleton framework and carry above said bearings small sprocket-wheels 28, engaged by endless chains 29, said chains being driven by any suitable power connected to the shafts of the foremost rollers by preference, the rollers of said shafts being extended upwardly, as shown at 30, Figs. 1 and 2, for this purpose. In advance and connecting with the front end of the rolling walled passage is a passage 31, which is preferably pitched downwardly at a suitable angle, and like the ways or passages hereinbefore described has its side walls 32 converging downwardly and is also supported upon the skeleton framework. This inclined way or passage, like that just described, is provided with a central upwardly-projecting rib 33 in longitudinal alinement with cable 12 and pitched downwardly at a suitable angle, the rib in this case being by preference constructed integrally with walls 32.

At the front end of passage or way 31 a skeleton framework preferably extends transversely, and journaled therein parallel with the cable 12 is a pair of shafts 34, one being stationary and the other journaled in the box 35, adjustably mounted in a slotted frame 36, in order that the endless chains 37, connecting the sprocket-wheels 38 on said shafts, may be tensioned as desired. Movement is imparted, preferably, through the medium of a pulley 39, connected in any suitable manner with a counter-shaft or other motive power and secured by preference upon the stationary shaft 34, and to sustain the upper strands of the sprocket-chains between the wheels bars 40, secured to and forming a part of the framework, are provided, similar bars 41 being secured to the framework as an additional support, the last-named bars being engaged by the bases or flanges 42 of the ribs or slats 43, which connect the chains together and constitute, in conjunction with the latter, a skeleton conveyer. These slats are of approximately triangular form, sloping downward from their rear to their front edges, with the former approximately in the plane of the sloping rib 33. Each slat 43 is preferably constructed of sheet metal bent to inverted-U form, and secured on the bent portion is an approximately V-shaped frame 44 to receive the head of the hog, said frames at their junction with the slats being flanged outwardly, as at 45, to provide stops or shoulders against which the front legs of the animal strike and lodge. The frames are preferably constructed of spring metal for automatic adaptation to hogs of varying sizes, and vertically below them for the greater portion of the length of the conveyer is a trough 46, connected with a branch trough 47, reach-

ing to a suitable point, the operator who "sticks" the hog standing on a platform 48 directly opposite the point of the conveyer, whereon the animal is discharged from the way or passage 31.

In practice a drove of hogs is driven in the usual manner into chute 1, from the small end of which they must pass in single file, the hog in front being forced by the next one down walk 8 and upon the moving walk or bottom should he hesitate, because the rear hogs are kept continuously on the move by an attendant. The hog may walk forward on the moving platform or may lie down thereon. In either case the narrow passage and the downwardly-converging walls 2 thereof force him to assume a position longitudinally of the conveyer and almost invariably with his legs astride the endless cable 12. As he attains the front end of the moving walk he is dropped down upon the cable and supporting-rib 22, usually with his legs astride the same, which cable, in conjunction with rollers 26, moves him forward at a greater speed than the moving walk attains, and therefore effects automatically a separation or spacing between the animals, which might have been jammed one against the other on said moving walk. As the animal reaches the front end of the cable, he slides through way 31 with his legs astride rib 33 thereof and is dropped upon the transversely-moving conveyer with his legs astride one of the slats thereof, which slat being pitched downwardly and forwardly causes him to slide downward and his head to enter the V or wedge shaped frame attached to said slat, the forward movement being checked by the contact of his front legs with the laterally projecting stops or flanges 45. At this instant the attendant on the platform 48 slaughters the animal by sticking a knife into his throat in the usual manner, and the blood streams into trough 46 and is conducted thence by trough 47 to a suitable point.

With this apparatus the animals can be handled and slaughtered so rapidly that they may lie upon the last-named conveyer side by side and almost in contact, being discharged successively into scalding-vats or upon other conveyers or apparatus. In fact, with this apparatus it is difficult to set a limit upon the number of hogs that can be slaughtered per day, as the operation can be performed almost as rapidly as the slaughterer can thrust his knife. The difference in speed between the moving walk and the cable serves to space the animals, as above stated; but to insure a proper working space between them we prefer to arrange way 31 and the conveyer-slats on a fairly steep incline, this arrangement causing the animal to slide rapidly downward upon the moving conveyer, the latter moving at a sufficient speed to move the animal a distance equal to his breadth before the next one is dropped thereon.

From the above description it will be apparent that we have produced a killing-bed

for hogs which automatically arranges and holds them in the proper position to be slaughtered without subjecting them to any great twisting strain or permitting them to struggle, and thereby perhaps break their backs or strain the tendons and flesh of the thigh. In the former case a blood clot forms in the loin, which must be sold as second instead of first class. In the second case the ham is stringy, and being defective from that cause must be sold as second-class hams. In the aggregate a great deal of money is lost from the causes described, and in addition to the advantages whereby these troubles are eliminated our machine also greatly facilitates the slaughtering operation.

It is to be understood, of course, that while we have illustrated and described our preferred embodiment of the invention it is susceptible of change in various particulars without departing from its spirit and scope or sacrificing any of its advantages.

Having thus described the invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus of the character described, a conveyer, provided with upwardly-projecting ribs or slats transversely arranged and having their upwardly-disposed edges sloping downwardly from rear to front, and V or wedge frames attached to the ribs or slats coincidently with the front ends of said pitched edges; the rear ends of said frames being open, and stops movable with said ribs or slats and projecting laterally thereof near their junction with said frames, substantially as described.

2. In an apparatus of the character described, the combination of a way or passage provided with a longitudinally-extending and upwardly-projecting rib, and a conveyer operating transversely of and at the front end of said rib and embracing a plurality of upwardly-projecting ribs or slats transversely arranged and adapted to successively occupy positions in alinement with said rib, and frames attached to the front ends of said ribs or slats to receive and hold the heads of the hogs deposited thereon from said way or passage, substantially as described.

3. In an apparatus of the character described, the combination of a way or passage having downwardly-converging side walls, and provided with a longitudinally-extending and upwardly-projecting rib, and a conveyer operating transversely of and at the front end of said rib and embracing a plurality of upwardly-projecting ribs or slats arranged transversely and adapted to successively occupy positions in alinement with said rib, and frames attached to the front ends of said ribs to receive and hold the heads of the hogs discharged thereon from said way or passage, substantially as described.

4. In an apparatus of the character described, a chute having its side walls converging forwardly, a way or passage connected

thereto, and provided with a moving walk or bottom, the movement being away from said chute, and a cable moving in the same direction as but at a greater speed than said walk or bottom, and extending longitudinally of and upon the latter, substantially as described.

5. In an apparatus of the character described, a way or passage, provided with a moving walk or bottom, a second way or passage connected thereto and having its side walls composed of rollers rotating in the same direction, and provided with a central upwardly-projecting rib, and a cable moving in the same direction as said walk or bottom, and supported by the latter and said rib, substantially as described.

6. In an apparatus of the character described, a way or passage, provided with a moving walk or bottom, a second way or passage connected thereto and having its side walls composed of rollers rotating in the same direction, and provided with a central upwardly-projecting rib, a cable moving in the same direction as said walk or bottom and supported by the latter and said rib, and means to tension said cable, substantially as described.

7. In an apparatus of the character described, a way or passage embodying movable side walls, a central rib extending longitudinally and projecting upwardly of the way or passage, a moving endless cable or conveyer resting upon said rib, and means to cause the movement of the side walls whereby they shall by frictional contact with the object, aid in its forward conduction through the way or passage, by the conveyer, substantially as described.

8. In an apparatus of the character described, the combination of a way or passage having a moving walk or bottom, a second way or passage connected to the front end of the first but deeper than the latter by approximately the length of a hog's leg, a longitudinal rib arranged centrally of and upon the bottom of the last-named way or passage, with its upper edge in about the plane of the moving walk or bottom, and a cable extending longitudinally of and resting upon the moving walk or bottom, and said rib; said cable being adapted for movement at a greater speed than said walk or bottom, substantially as described.

9. In an apparatus of the character described, a way or passage having its side walls composed of rollers rotating so as to force an object forwardly therethrough, and provided with an upwardly-projecting rib extending longitudinally of its center, and an endless cable extending longitudinally of the way or passage and resting upon the upper edge of said rib, substantially as described.

10. In an apparatus of the character described, a converging chute, a way or passage connected thereto, and provided with a moving walk or bottom, the movement being

away from said way or passage, a cable upon
and moving in the same direction as but at a
greater speed than said walk or bottom, and
projecting forwardly beyond the latter, and
5 a second passage in alinement with the first
and provided with an upwardly-projecting
rib, as a support for the forward portion of
the cable, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses.

FRANK E. NICHOLSON.
GEORGE I. BLANCHARD.

Witnesses:
H. C. RODGERS,
G. Y. THORPE.