(No Model.)

3 Sheets—Sheet 1.

G. B. FLANIGAN.

HOG HOISTING APPARATUS.

No. 272,422. Patented Feb. 20, 1883.

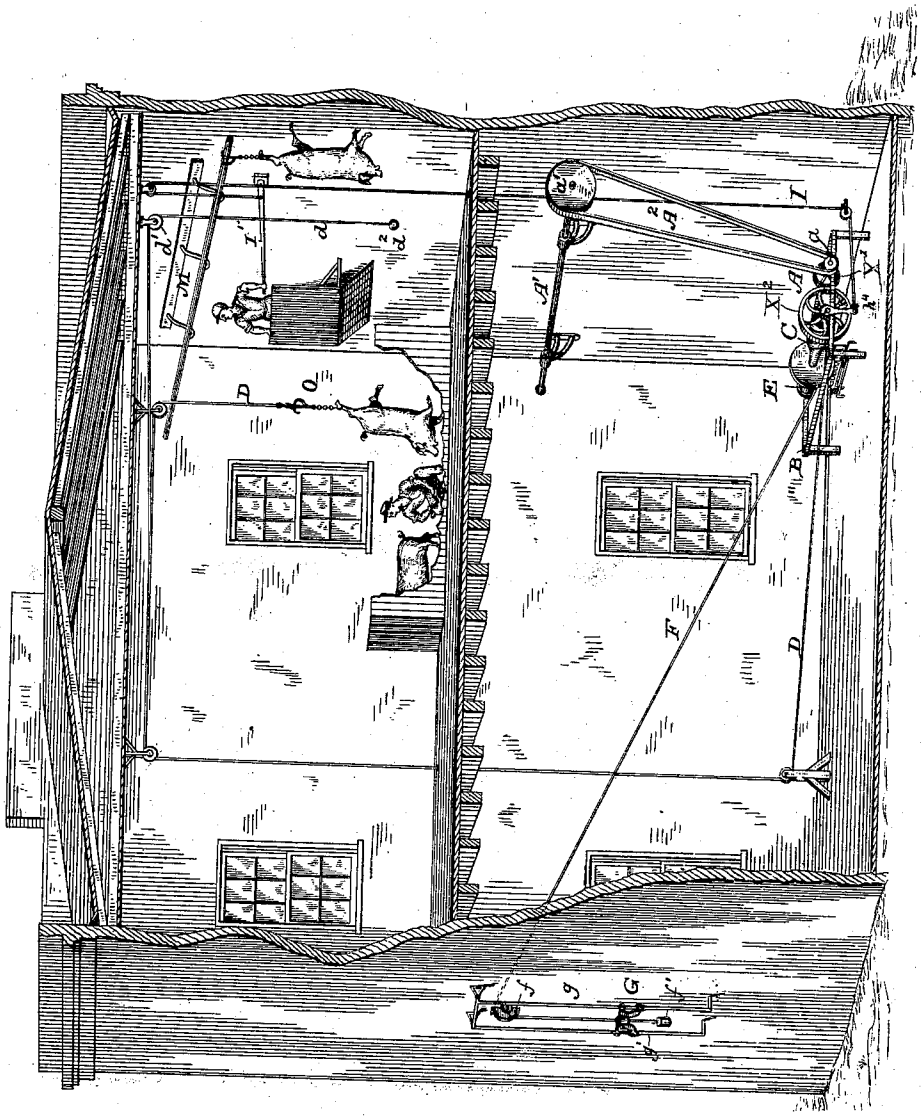


Fig 1.

WITNESSES

Wm A. Skinkle.

Harry King

INVENTOR

George B. Flanigan

By his Attorneys

Baldwin, Hopkins & Peyton.

N. PETERS, Photo-Lithographer, Washington, D. C.

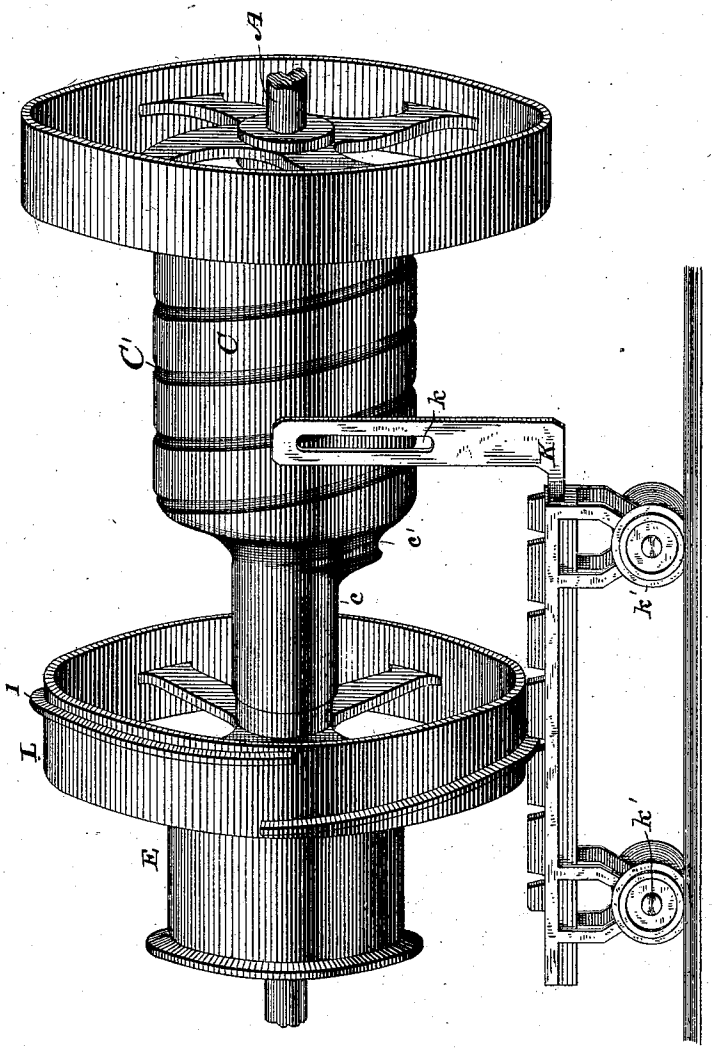
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G. B. FLANIGAN.

HOG HOISTING APPARATUS.

No. 272,422. Patented Feb. 20, 1883.

Fig 2.



WITNESSES

Wm A. Skinkle

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(No Model.)

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G. B. FLANIGAN.

HOG HOISTING APPARATUS.

No. 272,422. Patented Feb. 20, 1883.

Fig. 3.

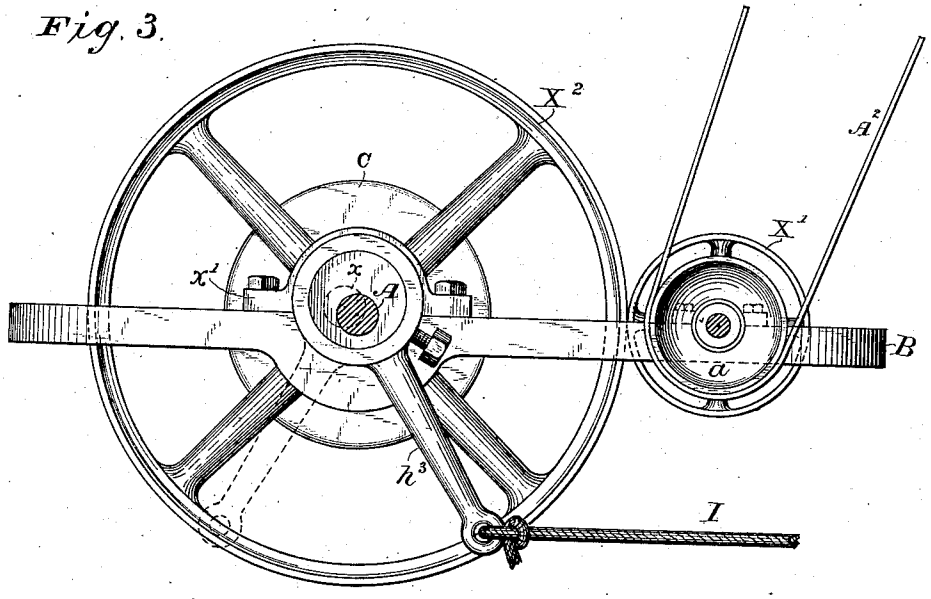
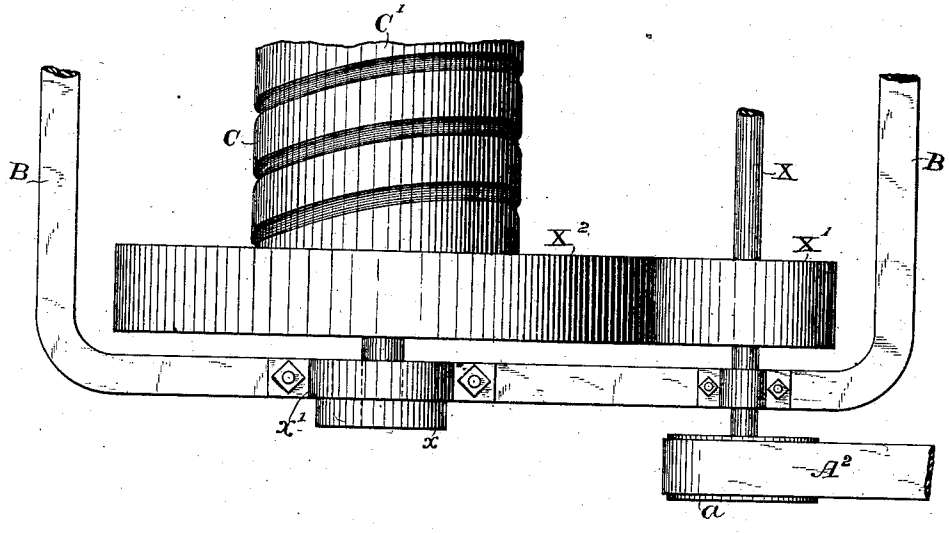


Fig 4



WITNESSES.

Wm A. Skinkle.

Jos. S. Latimer

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UNITED STATES PATENT OFFICE.

GEORGE B. FLANIGAN, OF KANSAS CITY, MISSOURI.

HOG-HOISTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 272,422, dated February 20, 1883.

Application filed July 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. FLANIGAN, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented an Improved Hog-Hoisting Apparatus, of which the following is a specification.

The object of my invention is to provide a machine by means of which hogs can be readily handled, elevated, and suspended on an inclined rail for slaughter, &c., with ease and rapidity.

In the accompanying drawings I have shown my organization of apparatus in connection with a building representing the hog-killing department of a packing-house. Of course, however, this arrangement will be varied in many ways to suit the special convenience of each establishment without varying the general operation or structure of the apparatus.

Figure 1 is an interior sectional view of a packing establishment having my apparatus arranged therein. Fig. 2 is a detailed view of the hog-hoisting drum and rope-guide, and Figs. 3 and 4 are detail sectional views of the clutch devices.

The main shaft A is mounted in suitable bearings in a frame-work, B, in the lower room of the building. This shaft carries a grooved drum, C, on which is wound the hog-lifting rope D, and also with another drum, E, on which is wound the rope F, which lifts the weight G, that serves to return the drums and shaft to their normal position after the lifting operation, as will be presently described. The shaft A is driven from the power-driven shaft A′. A belt, A^2, passes over the pulley a' on the shaft A′ and over the pulley a on the end of a counter-shaft, X, mounted in suitable bearings in the frame B.

The shaft X carries a small friction-pulley, X′, with which the larger friction-pulley, X^2, on the shaft A is thrown into engagement in the following manner: The outer end, in the drawings, of the shaft A has its bearing in an eccentric, x, which is carried in the collar or open end of the lever-arm h^3, which latter turns in the strap or bearing x'. By turning the eccentric in one direction or the other the shaft A may be shifted slightly laterally to throw the pulleys X′ and X^2 into or out of contact. This arrangement is common and forms no part of my invention. The eccentric-lever arm h^3 is operated by a rope, I, which passes over suitable pulleys into the upper room of the building, and is connected with a lever, I′, within reach of the workman in charge of the apparatus, as is clearly illustrated in Fig. 1.

The drum C is reduced, say, about one-sixth of its diameter at the part c, so that at first, when the hog-lifting rope is being wound upon the large portion of the drum, the lift will be comparatively rapid, and will then be promptly slowed up when the rope reaches the reduced portion of the drum and the hog has been elevated to the desired point, as will be hereinafter described.

In order to accurately lay the hog-lifting rope into the groove C′ on the drum C, I employ a traveling guide, K, through an eye, k, in which the hog-lifting rope passes. This guide is provided with wheels k', which travel upon suitable rails, and is caused to traverse back and forth by a cam-rib, l, on the face of the wheel L, which works in a rack on the upper face of the rope-guide. The parts are so proportioned and the movements of the rope-guide so timed to the rotation of the drum C that the eye k will move along the drum at the proper speed to accurately guide the rope into the groove thereon. The groove C′ runs over the edge of the large portion of the drum down to the smaller part, as seen at c', and leads the rope comparatively abruptly, yet accurately, onto the small part. The hog-lifting rope D passes from the lower room over suitable pulleys to the upper floor, and is provided with a hook at its end. A shorter rope, d, is connected with the hog-lifting rope in the upper room, passes over a pulley, d', and carries a weight, d^2, at its end. The weight-rope F, which carries at its end a small weight, f', passes over a pulley, f, which is shown as placed in the wall of the building, but of course may be located wherever convenient. The rope passes through the large weight G, which works on upright guides g, and which is limited in its descent by the shoulders g' on the uprights. When a suitable length of the rope F has been wound upon the drum E the small weight f' will come against the bottom of the weight G and the latter weight will also be lifted. The purpose of this arrangement is that when a

hog has been lifted and the clutch released the weight G will act promptly with sufficient force to return the drums to their normal position, ready for the next lift. The direct strain of the weight, however, will cease when it strikes the shoulders g' g', and the smaller weight f' will be sufficient to take up the slack of the rope and keep it taut. The drums and the various parts of the apparatus are thus returned to normal position with an easy movement and without any jar.

The operation of the apparatus is as follows: The workman in the hog-pen having hooked a hog by the leg and connected the hook with the lifting-rope, the workman on the balcony operates the lever I′ and throws the machine into operation. The hog is lifted very rapidly while the rope D is being wound upon the large portion of the drum C, and then, just as the hog is reaching the rail M, the rope comes upon the small portion of the drum and the movement is slower. The attendant on the balcony catches the hooks on the shackle *o*, which is secured to the hog's leg over the rail M, releases the rope D from the shackle *o*, and then throws the clutch out of gear. The weight G, then acting on the drum E with sufficient force, immediately returns the drums to their normal positions, while the weight d^2 takes up the slack of the rope D and draws it down into the hog-pen again, ready for the elevation of another hog. The hog suspended from the inclined rail will slide along to slaughter; or the attendant on the balcony may be able to slaughter the hogs as well as perform the other operations above described.

I claim as my invention—

1. The combination, substantially as set forth, of the hog-lifting drum, reduced in diameter at one end, the hog-lifting rope, its pulleys, the weight-drum, the weight-rope, and the weight.

2. The combination, substantially as set forth, of the hog-lifting drum, reduced in diameter at one end, the hog-lifting rope, its pulleys, the weight-drum, the weight-rope, the small weight attached thereto, and the loose weight G.

3. The combination, substantially as set forth, of the grooved hog-lifting drum, the traveling rope-guide, and the cam-wheel which operates the guide.

4. The combination, substantially as set forth, of the shaft A, the grooved hog-lifting drum, reduced in diameter at one end, the hog-lifting rope, the traveling rope-guide, the cam-wheel for operating it, the weight-drum, the weight-rope and weight, and clutch mechanism, for the purpose set forth.

5. The combination of the shaft A, the weight-drum carried thereby, the weight-rope, the small weight f', the loose weight G, through which the rope passes, and the guide-rods, for the purpose set forth.

6. The combination of the shaft A, the hog-lifting drum, the hog-lifting rope, its pulleys, the rope *d*, its pulley, and the weight d^2, substantially as and for the purpose set forth.

7. The lifting-drum, made of a larger diameter at one end than at the other, and so arranged that the rope wound thereon will pass directly from one portion to the other, for the purpose set forth.

In testimony whereof I have hereunto subscribed my name.

G. B. FLANIGAN.

Witnesses:
WM. HARRISON,
P. J. BROPHEY.