

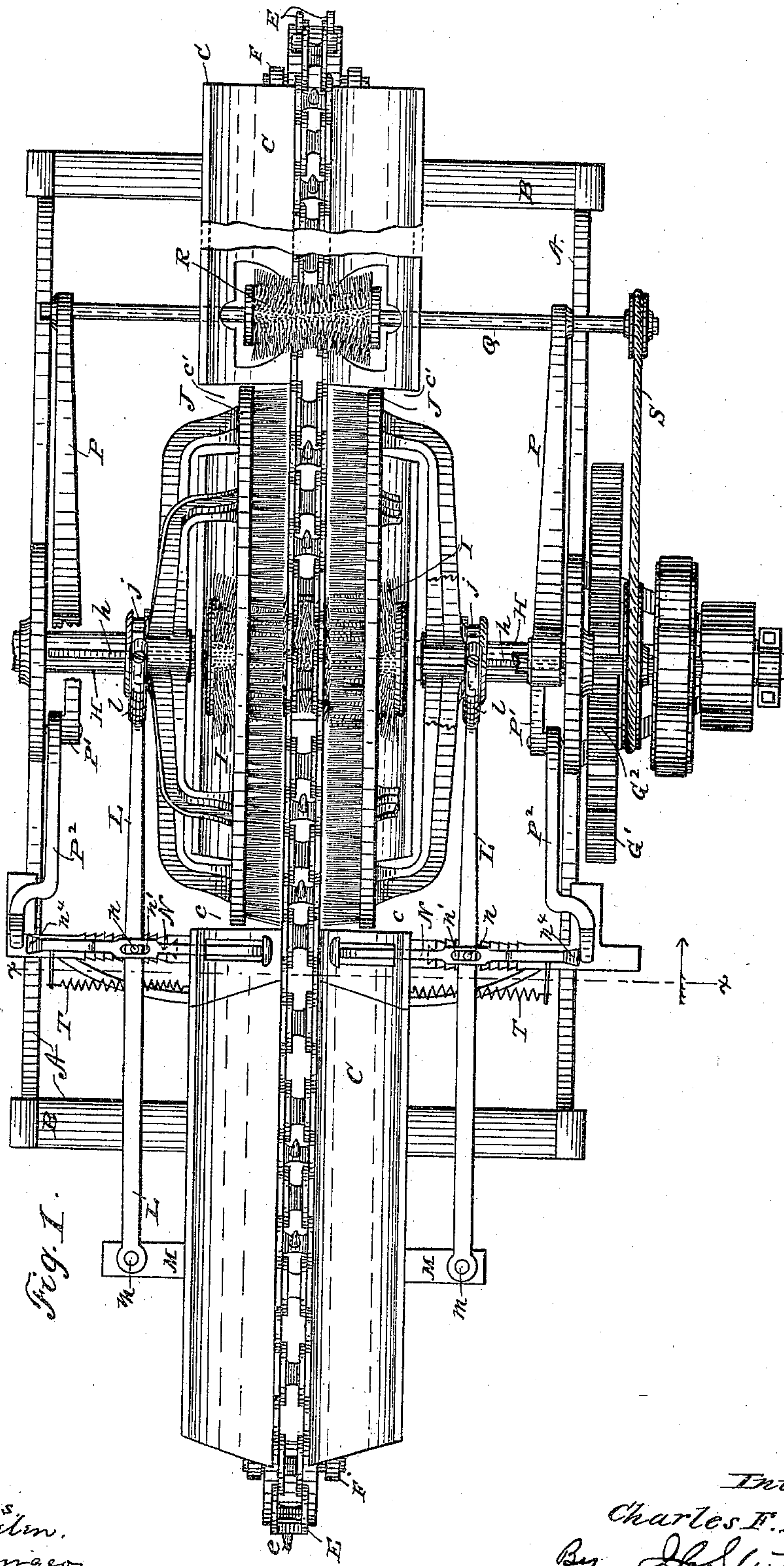
(No Model.)

4 Sheets—Sheet 1.

C. F. BUSH.
HOG SCRAPING MACHINE.

No. 335,742.

Patented Feb. 9, 1886.



Witnesses
W. R. Edelin.
H. M. Ferguson

Inventor.
Charles F. Bush.
By J. H. Sturgeon
Atty

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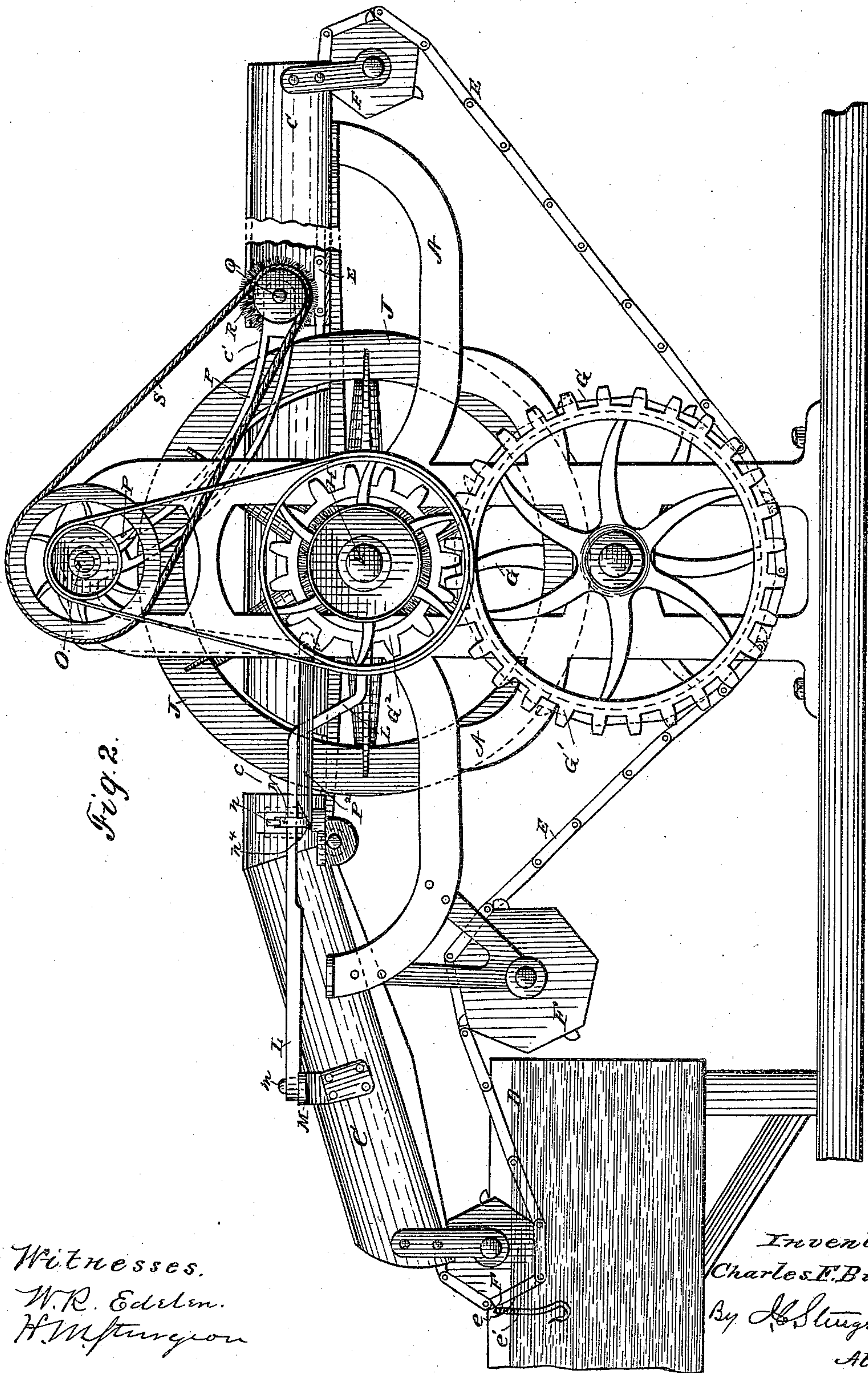


Fig. 2.

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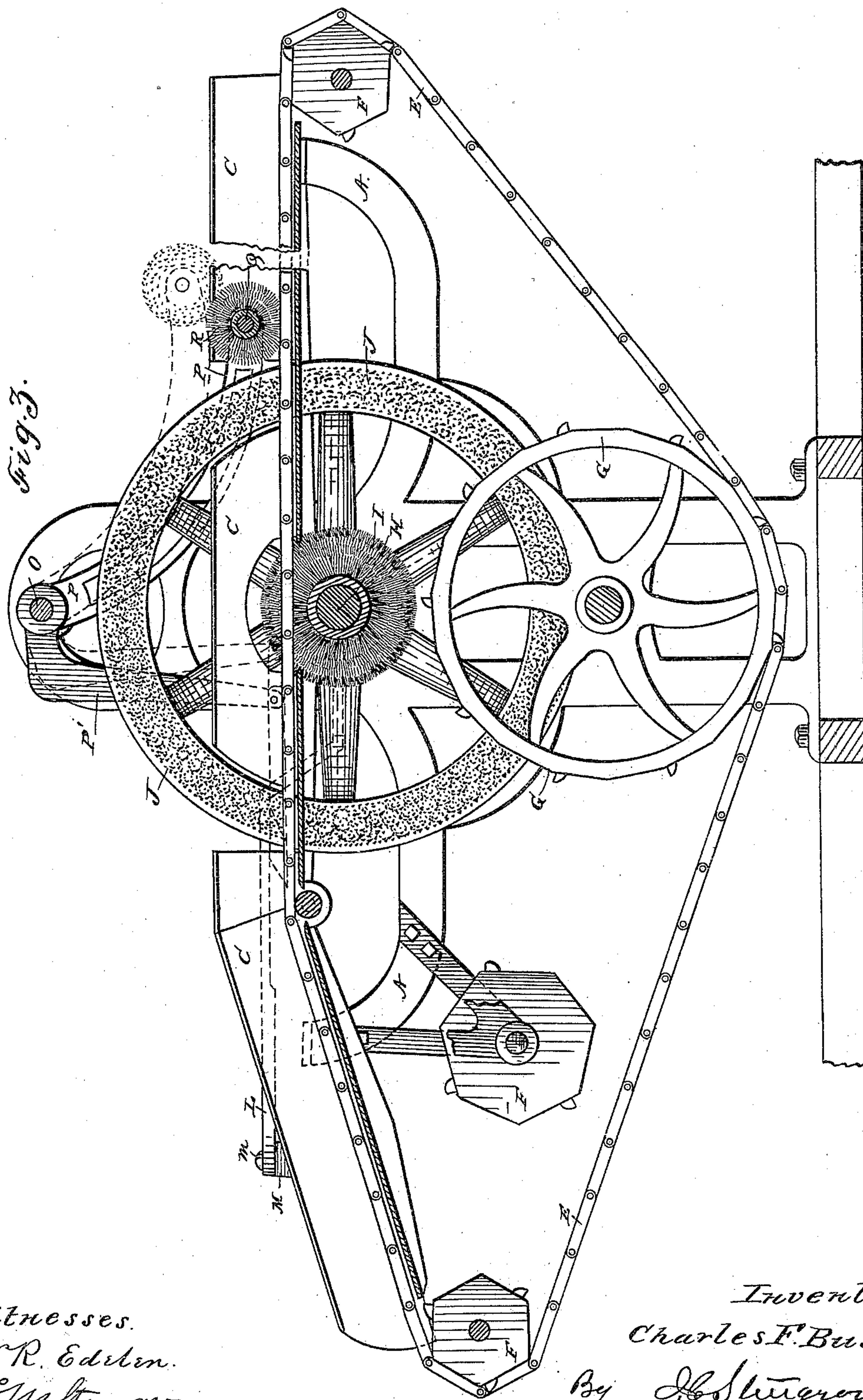
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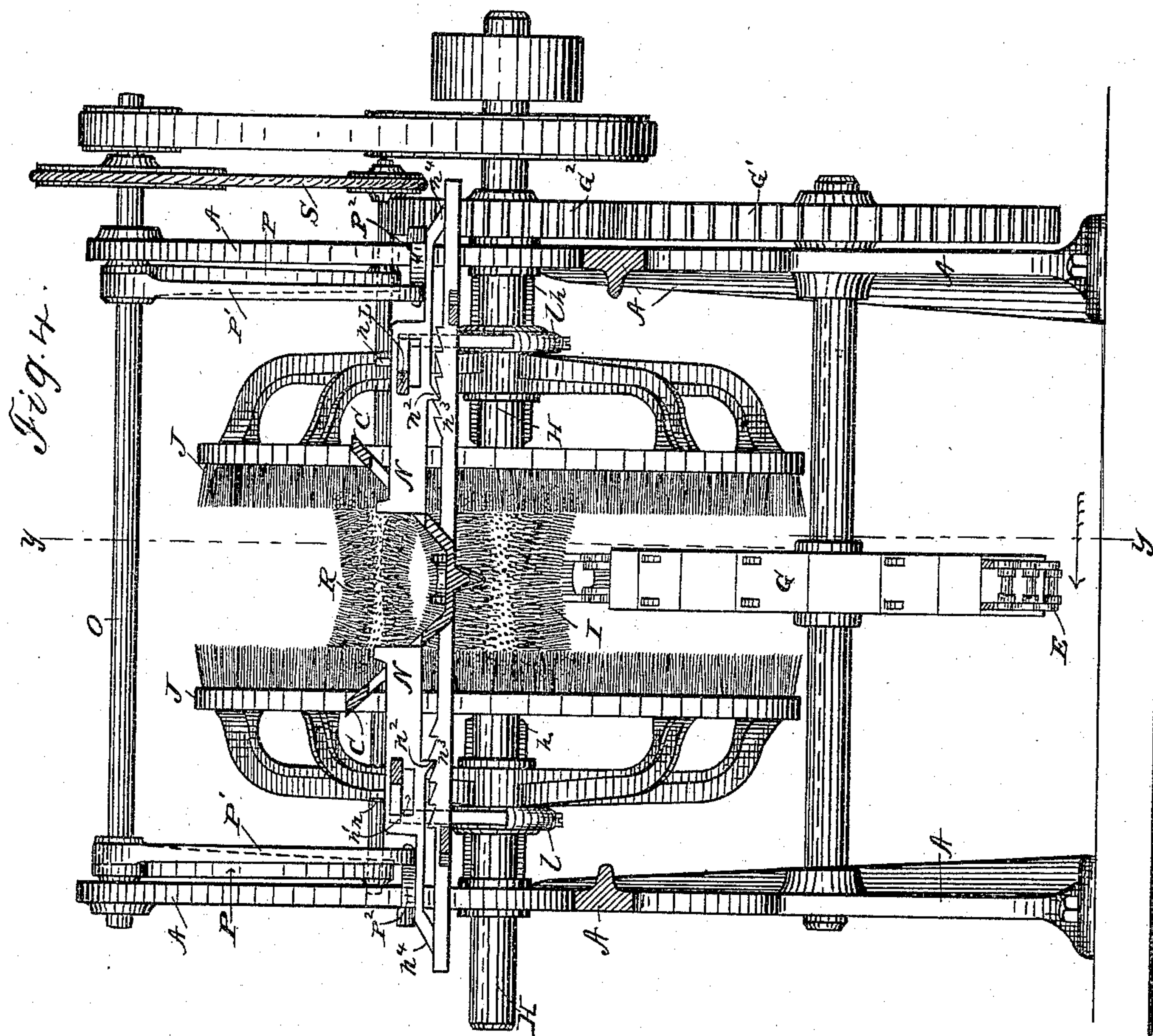
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UNITED STATES PATENT OFFICE.

CHARLES F. BUSH, OF ERIE, PENNSYLVANIA.

HOG-SCRAPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 335,742, dated February 9, 1886.

Application filed June 18, 1885. Serial No. 169,134. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. BUSH, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Hog-Scraping Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming a part of this specification.

My invention relates to improvements in hog-scraping machines, and particularly to that class of such machines in which the scraping is performed by rotary brushes; and it consists in the improvements hereinafter set forth and explained.

In the accompanying drawings, illustrating my invention, Figure 1 is a top or plan view of my improved hog-scraping machine. Fig. 2 is a side elevation of same. Fig. 3 is a vertical longitudinal section of same on the line *y y* in Fig. 4. Fig. 4 is a vertical cross-section of same on the line *x x* in Fig. 1.

Like letters designate like parts in all the figures.

In the construction of my machine shown, A A designate the side sections, and B B cross-sections of the frame thereof. This frame is provided with a V-shaped conveyer-trough, C, the sides of which are cut away at *c c'*, for the purpose hereinafter set forth. This conveyer-trough projects over the frame of the machine, at its receiving end, far enough to reach a convenient hog-scalding tank, D, and receive and carry scalded hogs therefrom into the machine. At the other end of the machine the conveyer-trough C may extend to any point convenient for the delivery of the scraped hogs from the machine. In the bottom of the conveyer-trough C is an endless conveyer-chain, E, provided at convenient intervals with studs *e*, adapted to catch and retain hog-hooks *e'* thereon. This conveyer-chain is of ordinary construction, and operates on convenient sprocket-rollers, F F F', at the ends of the conveyer-trough, and on the frame of the machine, and is operated by a

large sprocket-wheel, G, mounted in the frame-work of the under part of the machine, which sprocket-wheel G is driven by gearing G' on the shaft thereof, which intermeshes with a pinion, G², on the main shaft of the machine.

The main driving-shaft H is mounted in the central portion of the frame-work A B, at right angles with and directly under the conveyer or trough C. The central portion of the shaft H is provided with a revolving brush, I, preferably made of steel wire, either round or flattened, as may be preferred, which brush I revolves with the main shaft H. At either end of the brush I are mounted, on said main shaft H, movable brush-wheels J J, preferably constructed in the form shown, provided on their inner faces with continuous circular brush-surfaces, constructed, preferably, of steel wires. These brush-wheels J J are loosely mounted on the shaft H, and connected therewith by means of grooves and splines *h h*, so that they will move freely back and forth on said shaft to accommodate themselves to any sized hog passing between them, the conveyer-trough C being partially cut away at *c* and *c'*, to admit of such movement.

Connected with the hubs of the wheels J J, by means of grooves *j* and yokes *l*, are levers L L, which extend to and are attached to arms M M, which extend laterally from the sides of the conveyer-trough C, the levers L L being connected thereto by means of stud-pins *m*. In order to move the levers L L, and thereby also the brush-wheels J J, I insert sliding arms N N through the sides of the conveyer-trough near the cuts *c* therein, these sliding arms N N being connected with the levers L L by means of stud-pins *n n* on the levers L L, operating in slotted holes *n' n'* in the sliding arms N N. The under sides of the arms N N are provided with projections *n²*, which operate in a toothed rack, *n³*, attached to the frame-work of the machine. The outer ends, *n⁴*, of the arms N N are also beveled off to operate under the levers P² P², hereinafter referred to.

The sliding arms N N and the brush-wheels J J are shown in their normal position in Fig. 1. When, however, a hog is being drawn into the machine by the conveyer-chain E, as

the nose and head of the hog is being drawn between the ends of the sliding arms N N they are forced apart sufficiently to allow the body of the hog to pass between them, which
 5 action of the arms N N upon the levers L moves the brush-wheels J J the proper distance apart to operate on the sides of the hog's body, where they are held by the action of the projections n^2 , acting in the racks n^3 until re-
 10 leased and moved back, as hereinafter described.

Mounted in the frame-work A A of the machine, over the brush-wheels J J, is a cross-shaft, O, which is driven by a belt from a
 15 pulley on the main shaft H. This cross-shaft O has mounted thereon a pair of arms, P P, which swing upon said shaft, and have mounted in the outer ends thereof a shaft, Q, bearing a rotary brush, R, the shaft Q and rotary brush
 20 thereon being driven by a belt, S, which extends from the pulley on the shaft O to a pulley on the shaft Q. A second set of arms, P' P', also extend from the axis of the arms P P, the two sets thus forming bell-crank levers, and to
 25 the outer ends of the arms P' P' are hinged sliding levers P² P². The outer ends of the levers P² P² are wedge-shaped.

After the body of the hog has been drawn between the brush-wheels J J, it passes on and
 30 is drawn under the rotary brush R, which raises this brush as the hog is drawn under it. The action of raising the brush R operates on the arms P' P' of the bell-crank levers P P P' P', drawing back the sliding levers P² P² so
 35 that their wedge-shaped points are in convenient position to pass under the sliding levers N N. When the body of the hog has passed the rotary brush R, it immediately falls down to its normal position, as shown in Figs. 2, 3,
 40 and 4, which movement, acting through the bell-crank levers P P P' P' upon the sliding levers P² P², forces them under the sliding levers N N, raising them sufficiently to release the projections n^2 n^2 from the racks n^3 n^3 ,
 45 when the springs T T operate to force the sliding levers N N, and by means of their connections, hereinbefore described, the brush-wheels J J, back to their normal position, ready for the next hog.

50 I have described and shown a convenient means for moving the wheels J J out and in; but I am aware that the same result may be accomplished by means of weights or springs or other convenient mechanism.

55 The operation of this machine is obvious to those conversant with the art to which it appertains without further description thereof.

I am aware that many portions of my machine may readily be modified and substantially the same results attained; therefore I

do not confine myself to the particular form of mechanism shown, as the essence of my invention is not so much in the particular mechanism shown and described as in the construction and arrangement of a series of auto-
 65 matically-adjustable rotary brushes in such relation to each other that as a hog is being drawn between them they will not only readily adjust themselves to its size, but at the same time will practically reach and scrape all or
 70 the greater portion of its body, and after the hog has passed through the machine it will immediately readjust itself so as to be ready for the next hog being drawn into it.

Therefore what I claim as new, and desire
 75 to secure by Letters Patent of the United States, is—

1. The combination, in a hog-scraping machine, of a series of rotary wire brushes, so arranged with relation to each other that they
 80 will scrape the body of a hog being conveyed between them, with a conveyer mechanism consisting, substantially, of a conveyer-trough extending between said rotary brushes, and an endless conveyer-chain operating in said
 85 conveyer-trough, substantially as and for the purpose set forth.

2. In a hog-scraping machine, the combination of a fixed rotary wire brush and movable
 90 rotary wire brushes with a conveyer mechanism consisting, substantially, of a stationary trough extending between said rotary brushes, and an endless conveyer-chain operating in said conveyer-trough, substantially as and for the purpose set forth.

3. In a hog-scraping machine, the combination of a fixed rotary wire brush with automatically-adjustable rotary wire brushes adapted to adjust themselves to the body of a hog being passed between them, and conveyer mechanism consisting, substantially, of a stationary
 100 trough extending from a scalding-tank between said rotary wire brushes, and an endless conveyer-chain operating in said trough, substantially as and for the purpose set forth.

4. In a hog-scraping machine, the combination of the fixed rotary brush I, the movable vertical brush-wheels J J, the levers L I, the sliding arms N N, and springs T T, with the movable rotary brush R, the lever mechanism
 110 P P' P², the conveyer-trough C, belt E, gears G G', and intermediate connections, substantially as and for the purpose set forth.

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

CHARLES F. BUSH.

Witnesses:

H. M. STURGEON,
 WM. P. HAYES.