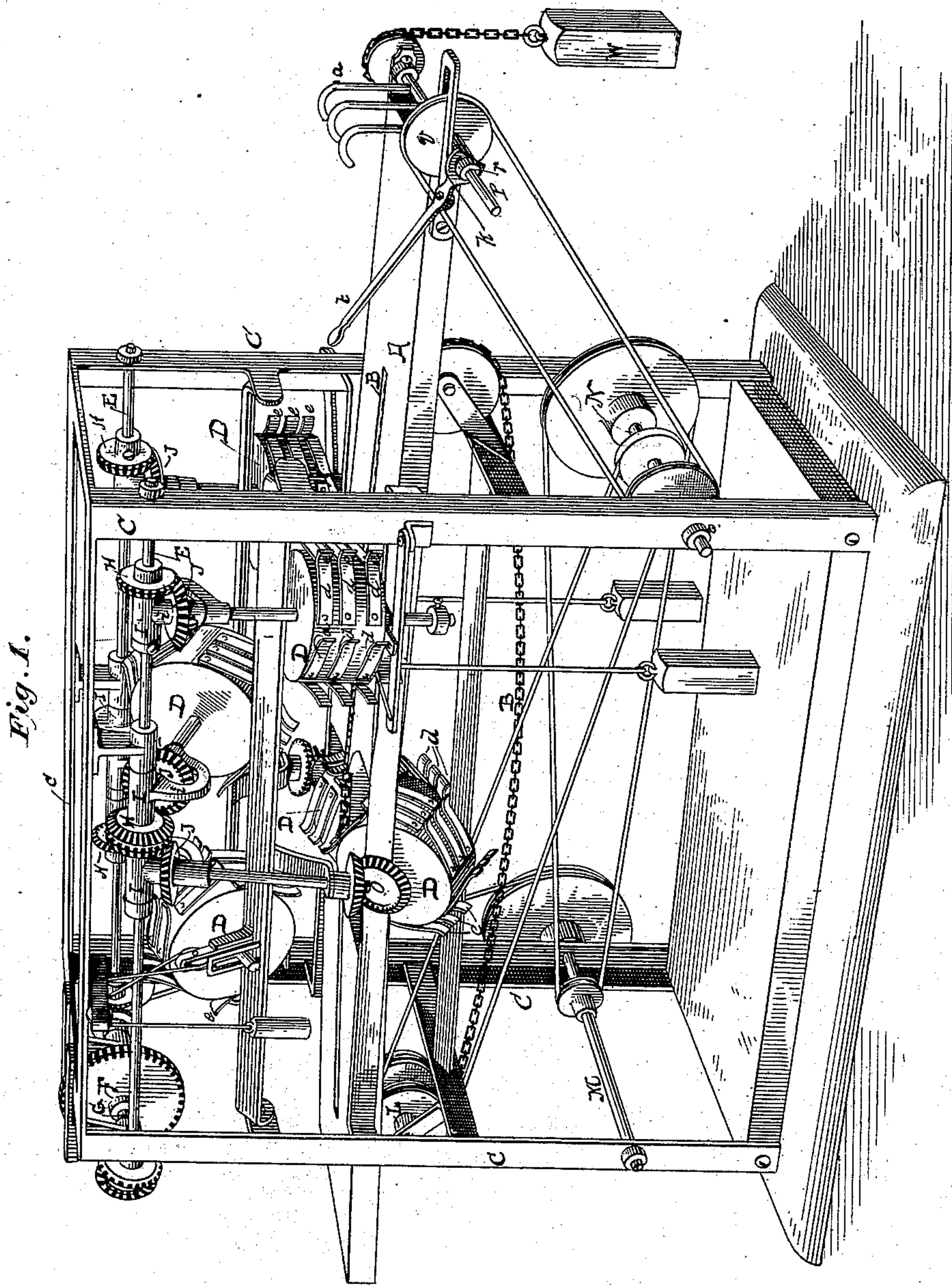


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Hog Scraping Machine.

2 Sheets—Sheet 1.

No. 235,731.

Patented Dec. 21, 1880.



Witnesses:

Aug<sup>d</sup> Jordan  
D. P. Cowl

Inventor:

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By his atty R. O. Smith



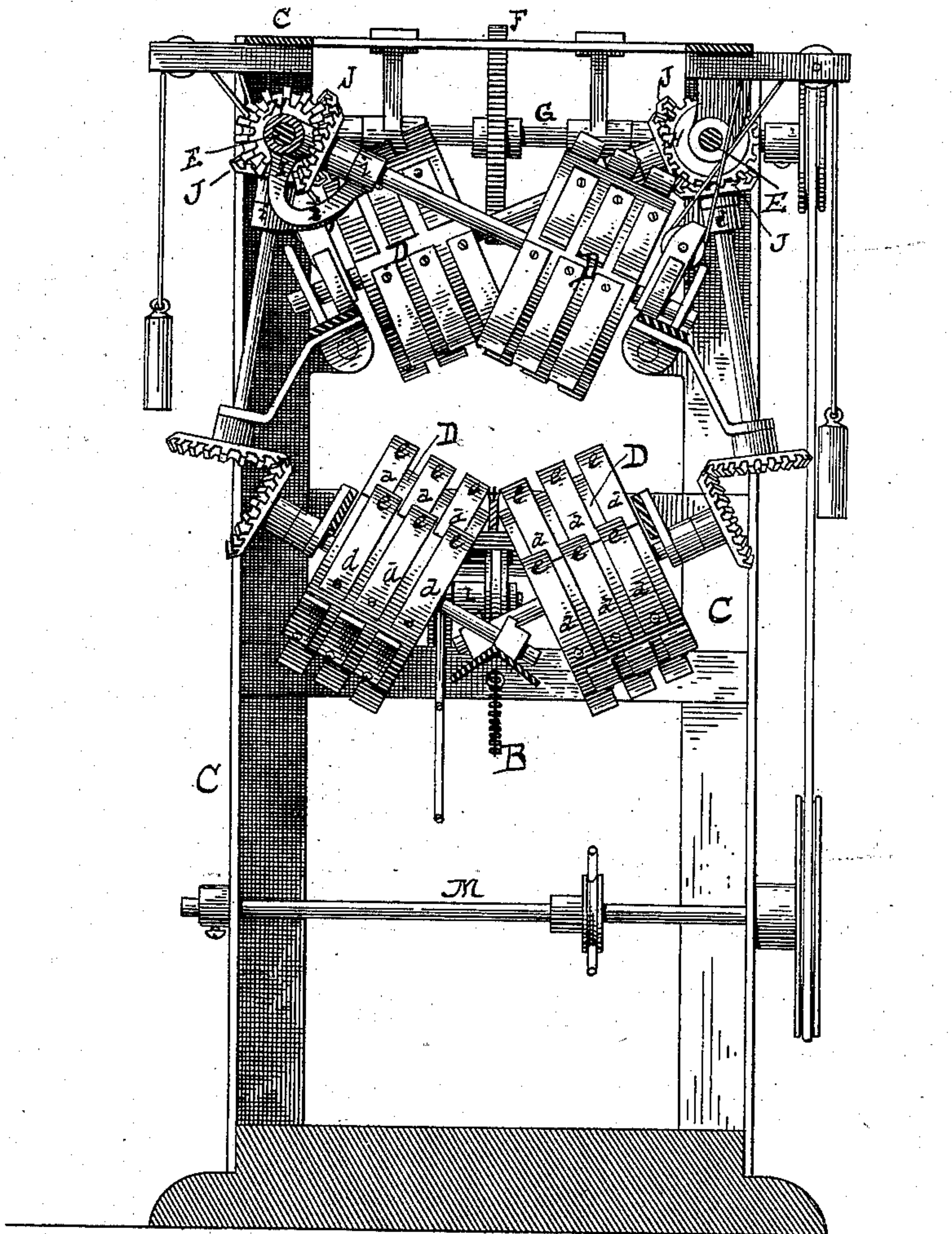
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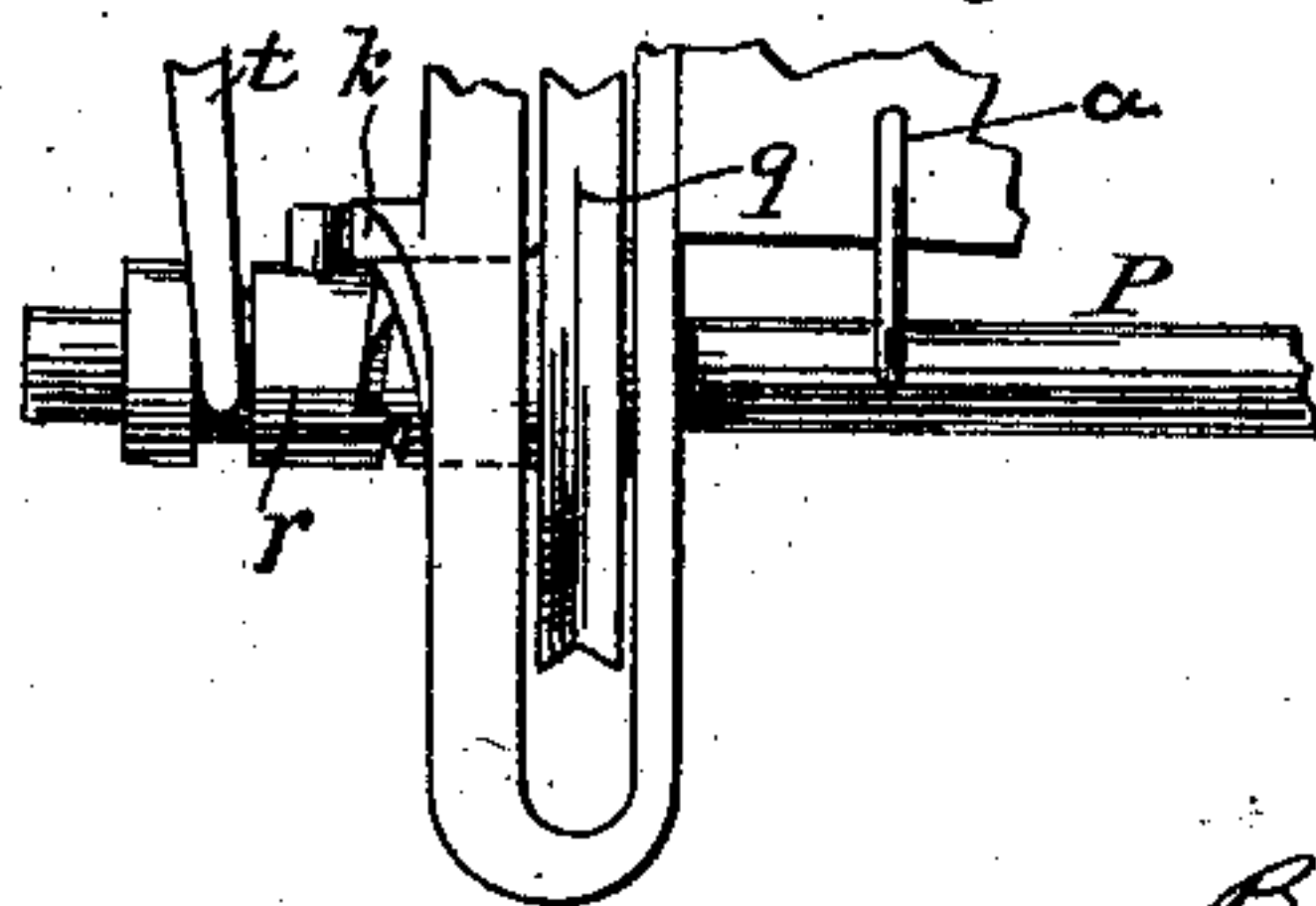
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*Fig. 2.*



*Fig. 3.*



Witnesses:

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*R. O. Smith*



# UNITED STATES PATENT OFFICE.

JOHN BOUCHARD, OF CHICAGO, ILLINOIS.

## HOG-SCRAPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 235,731, dated December 21, 1880.

Application filed December 4, 1879.

*To all whom it may concern:*

Be it known that I, JOHN BOUCHARD, of the city of Chicago, in the county of Cook, in the State of Illinois, have invented a new and useful Improvement in Hog-Scraping Machines for Cleaning the Carcasses of Hogs of Hair, Scurf, Slime, &c., after scalding, and I do hereby declare that the following is a full and exact description of the same.

To effectually remove the skin covering after scalding requires the application of actual scrapers with considerable power, and the power of such application should be nearly uniform, and the machine should be entirely self-adjusting to the varying sizes of the carcasses passing through, and also to the varying outlines of the carcasses.

My invention therefore consists, first, in a series of cylinders, each armed with sets of elastic scrapers, arranged with respect to each other, so that one scraper traverses a line left more or less vacant by its predecessor, said cylinders being distributed at different points along a chute through which the carcass is drawn, and in planes radial to the axis of said chute; second, a set of self-adjusting depilating scraper-cylinders arranged opposite different points along the path which the carcass must travel, and independently, capable of receding or advancing to accommodate carcasses of varying sizes, and to follow the contour of each carcass as it passes through; third, it also consists in structural details, hereinafter set forth.

That others may fully understand my invention, I will particularly describe it, having reference to the accompanying drawings, wherein—

Figure 1 is a perspective view of my machine. Fig. 2 is a transverse section of the same. Fig. 3 is a plan of the cradle-shaft clutch and let-off.

A is the staging, upon one end of which the hogs are landed from the scalding-vat by the cradle *a*. The stage A also forms the floor of the chute, along which the hog is drawn by the chain B, between the scrapers. Above and around the staging A a frame, C C, is erected to support the bearings of the working machinery.

D D are the several cylinders or rollers,

each armed with sets of elastic scrapers, arranged in relation to each other, as before mentioned—that is to say, so that the scrapers of one set cover the intervals between the scrapers of the preceding set.

The scrapers *d d* are formed from flat strips of elastic metal—say steel—having one end, *e*, bent outward to constitute the scraper, while the other end is firmly secured to the cylinder D. These scrapers, therefore, stand tangential to the surface of the cylinder, and have a considerable range of motion at their free ends. They are made of flat strips having sufficient width to prevent them from twisting out of position when they strike the rounded side of the carcass.

The number of the cylinders D is indefinite, and may include as many as experience proves to be necessary to accomplish the desired result with completeness. They are therefore placed at different points, and may be arranged in opposing pairs, or otherwise, and are placed at such various angles as may be required to cover the whole field of operation.

The requisite power to resist torsion makes it necessary that the springs shall be comparatively short and broad, and it is necessary that each cylinder itself shall be movable, so as to recede when required to permit the passage of a large carcass or to follow the contour of the carcass, and this self-adjustment must be automatic and independent of the other cylinders, and also independent of the size or weight of the carcass. This self-adjustment is not required for those cylinders which are beneath the carcass, because gravity causes the carcass to conform to the scraper beneath it, and the bearings of those cylinders may be therefore made stationary.

The frame-work C supports the bearings for the driving-shafts E, and the power is received from any convenient prime mover, and may be applied to the driving-shaft in any desirable way—say by means of a gear-wheel, F, upon a counter-shaft, G.

A series of bevel-gears, H H, are mounted upon the shafts E, and also a corresponding series of sleeves, I, each of which is provided with an arm, *i*, projecting laterally therefrom, and bearing at its outer end a box or bearing for the shaft of one of the cylinders. The op-



posite end of said cylinder-shaft is seated in a box which is movable in a plane transverse to the axis of the shaft E. All lateral movements of the cylinder-shafts are in orbital lines around the axis of the gear-wheel H, and therefore the wheels H J are always properly in mesh. The cylinders are counterbalanced or weighted, as the case may require, by a system of weights and levers, as shown, so as to yield readily and independently to follow the contour of the carcass, yet with a uniform pressure thereon.

It is desirable that the same general power shall be applied to drive the drag-chain and also to work the cradle, whereby the hog is raised from the scalding-vat and delivered upon the stage A. I therefore place in a convenient location shafts L M N with suitable pulleys and belts speeded to the required velocity. Also, at the end of the stage A, I place a cradle-shaft, P, having upon it a loose pulley, q, taking motion from one of the other shafts as a driver. A clutch, r, upon said shaft may be brought into engagement with the pulley q at any moment by means of the clutch-lever t, and a hog thereby lifted out of the vat by power of the engine. A stationary cam, k, throws the clutch out of engagement and releases the cradle at the proper time, and it is immediately returned to the scalding-trough by the weight W.

Having described my invention, what I claim as new is—

1. In a machine for cleaning or dressing

hogs, a series of scraper-cylinders revolving in various planes radial to the path the carcass must travel and opposite different points along said path, each of said cylinders being independently movable and free to advance and recede to follow the contour of the carcass.

2. In a hog-cleaning machine, a series of cylinders each armed with scrapers, each of said cylinders being mounted upon a shaft, one end whereof is mounted in a sleeve-bearing upon its driving-shaft, and radially movable thereon, combined with controlling-weights, whereby the pressure of the scrapers upon the hog's carcass is controlled and adjusted.

3. In a hog-cleaning machine, one or more line driving-shafts having mounted thereon bevel driving-wheels and sleeve-bearings to support the boxes for the cylinder-shafts, so that the latter may be movable in radial directions, for the purpose set forth.

4. In a hog-cleaning machine, a series of cylinders, each armed with elastic scrapers mounted upon shafts capable of swinging in planes transverse to the line of advance of the carcass, combined with sliding boxes at the lower ends of said shafts, and weight-controlled levers attached thereto to control said sliding boxes and adjust the pressure of said cylinders upon the surface under treatment.

JOHN BOUCHARD.

Witnesses:

JESSE B. BARTON,  
D. J. SIMPSON.