

(No Model.)

D. PETERS.
ROTARY MEAT CUTTER.

No. 246,812.

Patented Sept. 6, 1881.

Fig. 1

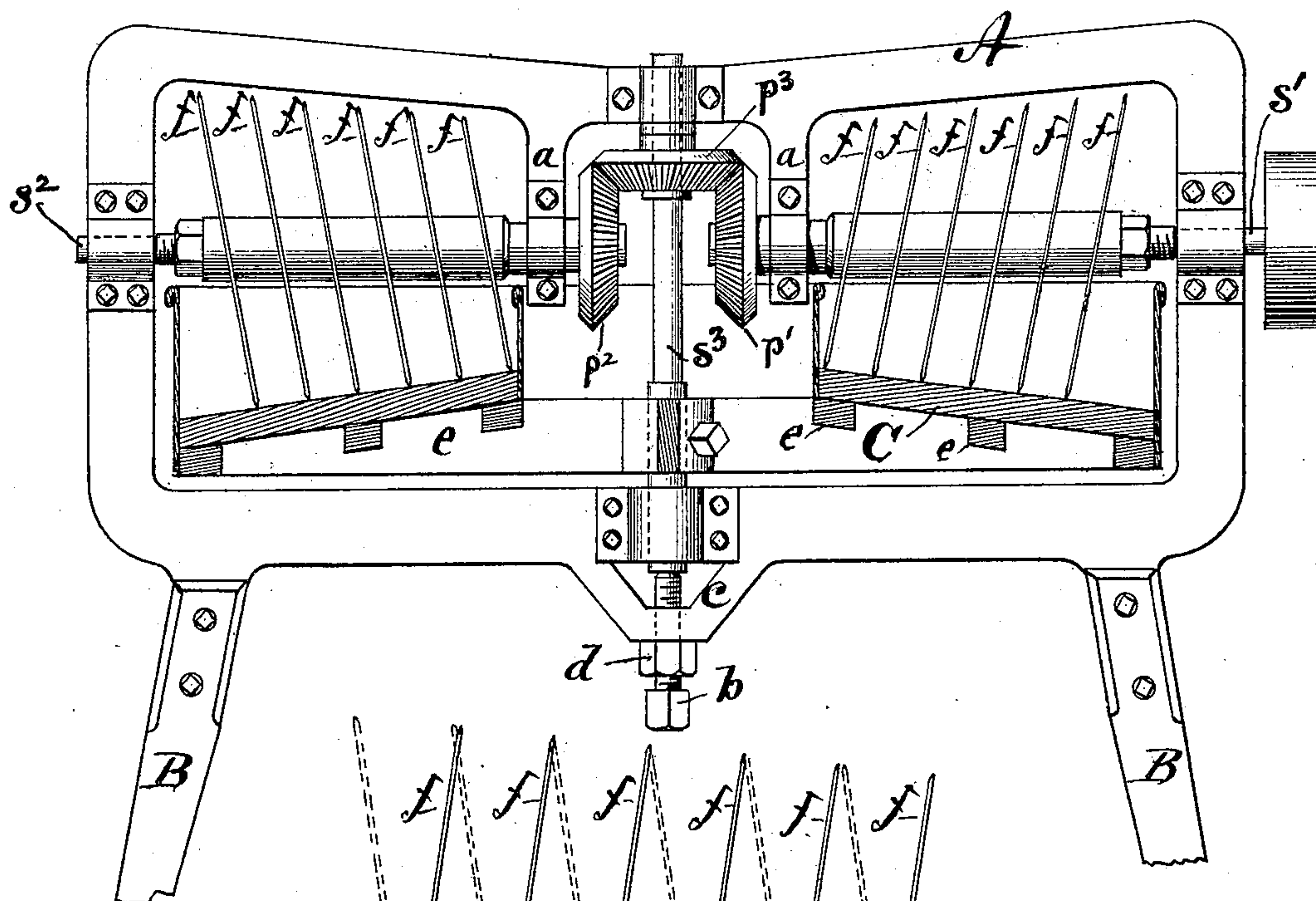
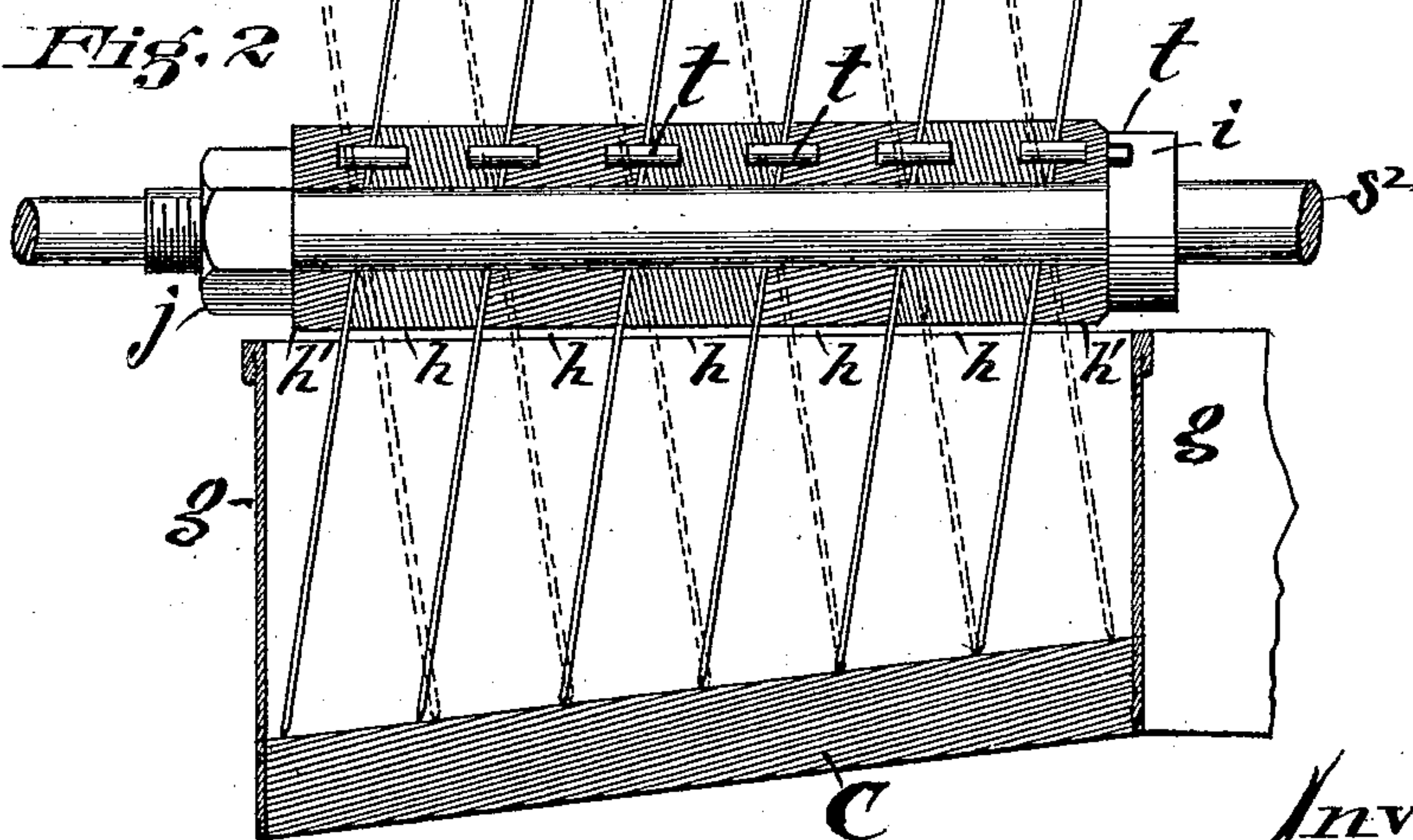


Fig. 2



Attest

CP Doolittle

Ed Kelham

Inventor
Daniel Peters
by Wm. H. Hovey
Attorney

UNITED STATES PATENT OFFICE.

DANIEL PETERS, OF CINCINNATI, OHIO.

ROTARY MEAT-CUTTER.

SPECIFICATION forming part of Letters Patent No. 246,812, dated September 6, 1881.

Application filed May 20, 1881. (No model.)

To all whom it may concern:

Be it known that I, DANIEL PETERS, a citizen of the United States, residing at Cincinnati, Hamilton county, Ohio, have invented 5 new and useful Improvements in Rotary Meat-Cutters, of which the following is a specification.

My invention relates to meat-cutting machines employing rotary cutters; and its object is to improve and render such cutters more 10 efficient.

To this end my invention consists, first, in combining with a rotating cutting-board having a conical upper surface a shaft in the plane 15 of and at right angles to the vertical axis of the cutting-board, provided with circular eccentric cutting-disks arranged obliquely to the shaft and parallel with each other, and graduated in size according to their distance from 20 the axis of the cutting-board, with their cutting-edges in contact with the face of the cutter; second, in combining with a cutting-board, shaft, and disks, constructed and arranged in the manner described, a second shaft similarly 25 provided in the line of the first, but on the opposite side of the axis of the cutting-board and in a similar relation thereto, and means for driving said shafts simultaneously in opposite directions; third, in the combination 30 and arrangement of the supporting-frame and driving mechanism of the cutting-board and shafts carrying disks.

My invention is embodied in mechanism illustrated in the accompanying drawings, in 35 which—

Figure 1 is a side elevation of my improved meat-cutter with the cutting-board in section; and Fig. 2 is a side elevation of one of the cutter-shafts enlarged, showing the collars in section. 40

Similar letters of reference indicate similar parts in both specification and drawings.

Referring to the drawings, A designates the supporting-frame, s' s^2 the cutter-shafts, C 45 the cutter-board, and s^3 the pivot-shaft on which the cutter-board is mounted. These parts constitute the principal features of the cutter, the details of which may be described as follows:

50 The frame A is approximately rectangular, and is supported by feet B, in the usual man-

ner. Two shafts, s' s^2 , arranged in the same line, extend across the frame, having their bearings respectively in the short sides of the frame, and in each of two projections, a , depending from the upper side of the frame near 55 the center. One of the shafts, s' , extends quite through the frame, and is provided at its extremity with a band, gear-wheel, or crank, by which power is applied for its rotation. The 60 inner ends of the shafts are provided with similar bevel-pinions, p' p^2 , gearing with an idler bevel-pinion, p^3 , running loosely upon a vertical shaft, s^3 , arranged in the plane of and between the shafts s' and s^2 , and having its 65 bearings in the upper and lower sides of the frame A. The shaft s^3 projects below the frame A, and is recessed and borne upon the point of a set-screw, b , passed upward through a loop, c , formed below and upon the lower side 70 of the frame A, the purpose of which construction, as will more clearly appear hereinafter, is to adjust the cutting-board to the cutters. An auxiliary nut, d , upon the set-screw serves to secure it in position when adjusted. 75

The cutting-board C is annular, with a conical upper surface, and is secured upon a suitable supporting-frame, e , which is rigidly centered upon the shaft s^3 within the frame A, and held to the shaft by a set-screw permitting its 80 ready disengagement for any purpose. At the inner and outer edges of the cutting-board are walls g , extending upward nearly to the shafts, forming a trough, of which the cutting-board is the bottom. 85

The cutting apparatus proper consists of a series of eccentric disk-cutters, f , preferably of steel, graduated in size to the angle formed between the shafts and the cross-sectional edge of the cutting-board. These cutting-disks 90 are arranged upon the shafts at an inclination to its axis and parallel to each other, the eccentricity and inclination of the cutters being in such relation to the coning of the cutting-board as that when the shafts are rotating the 95 edges of the cutting-disks shall be always in contact with the cutting-board while traversing paths alternately receding from and approaching the true center of the cutting-board.

It is also desirable to have the disks so far 100 inclined as that the extreme limits of their cutting-paths shall coincide, and thus cover

every portion of the board, as indicated by the dotted lines in Fig. 2.

The cutters are secured upon the shaft in the following manner: Washers or thimbles *h*,
5 with ends formed to the proper angle, are interposed between the disks, with suitable end washers, *h'*, one fitting against a fixed collar, *i*, upon the shaft and the other against a nut, *j*, adjustable upon threads cut upon the shaft,
10 for the purpose of forcing the disks with their interposed washers against the collar *i*. Each washer is provided with a short pin, *t*, projecting from one end and a corresponding recess in the opposite end, each pin passing
15 through an aperture in the disk and engaging in the recess of the adjacent washer, and that of the last washer, *h'*, into the collar *i*. By this construction the disks, when removed for sharpening or for any other purpose, may be
20 readily replaced, the pins and recesses forming a certain means of replacing them always in their proper positions, at the same time securing a rigid attachment to the shaft.

The reason for coning the surface of the cutter-board and graduating the sizes of the cutting-disks is that the path of each disk upon the cutter-board is a circular line of greater or less length, depending on its distance from the center of the rotating cutter-board. Since the
30 cutters of each set are all mounted on the same shaft, and therefore have a common revolution, the diameter of the cutting-disks must increase in proportion as their paths are longer, in order that they may not scrape upon and
35 wear out the surface of the cutting-board, as they would necessarily do if they were uniform in size and the cutter-board flat.

Another advantage of this construction is that the cutters, when placed at an angle to the axis of the shaft, are round, and are simply placed eccentrically upon the shaft, and are therefore easily made and repaired, whereas with a flat cutter-board the disks would be of a peculiar oval shape, whose curves would be
45 difficult to adjust and maintain.

The operation will be readily understood. Motion given to the shaft *s'* is transmitted by the bevel-gearing to the opposite shaft, *s*², and the respective series of disks, acting upon the
50 cutting-board C, cause it to revolve, carrying the meat placed thereon under the cutters,

and the eccentric paths described by the cutter-edges practically cover every portion of the cutting-board and produce a uniform wear and prevent the formation of ridges and depressions. 55

Heretofore a series of circular cutters of the same diameter have been arranged upon a shaft placed radially above a flat circular rotating cutting-board, said cutters being set
60 obliquely upon the shaft; but such construction is obviously inoperative, and such is not my invention.

Having described my invention, I claim and desire to secure by Letters Patent— 65

1. In a meat-cutting apparatus, the combination of the cutting-board, provided with a conical upper face, and a series of cutting-disks arranged upon a rotating shaft at an inclination thereto and graduated in diameter
70 to the angle formed between the said shaft and the cross-sectional edge of the cutting-board, substantially as described.

2. In a meat-cutting apparatus, the combination of the annular cutting-board, provided with a conical upper face, with two
75 shafts rotating in unison in a stationary frame-work, and a series of cutting-disks arranged upon the shafts at an inclination thereto and graduated in diameter to the angles formed
80 between the said shafts and the cross-sectional edge of the cutting-board, substantially as described.

3. A meat-cutter combining in its structure a stationary frame-work, A, having depending projections *a*, the two shafts *s'* *s*², journaled
85 in stationary bearings in the sides of the frame-work and the depending projections, the inclined cutting-disks *f*, arranged on the said shafts, the bevel-pinions *p'* *p*², arranged on the
90 inner ends of the shafts, and the idler bevel-pinion *p*³, by which the power from the driven shaft is transmitted to the other shaft, all substantially as described.

In testimony whereof I have hereunto set my
95 hand in the presence of two subscribing witnesses.

DANIEL PETERS.

Witnesses:

C. P. DOOLITTLE,
L. M. HOSEA.