

(No Model.)

2 Sheets—Sheet 1.

O. D. WOODRUFF.  
MEAT CUTTER.

No. 547,468.

Patented Oct. 8, 1895.

Fig. 1.

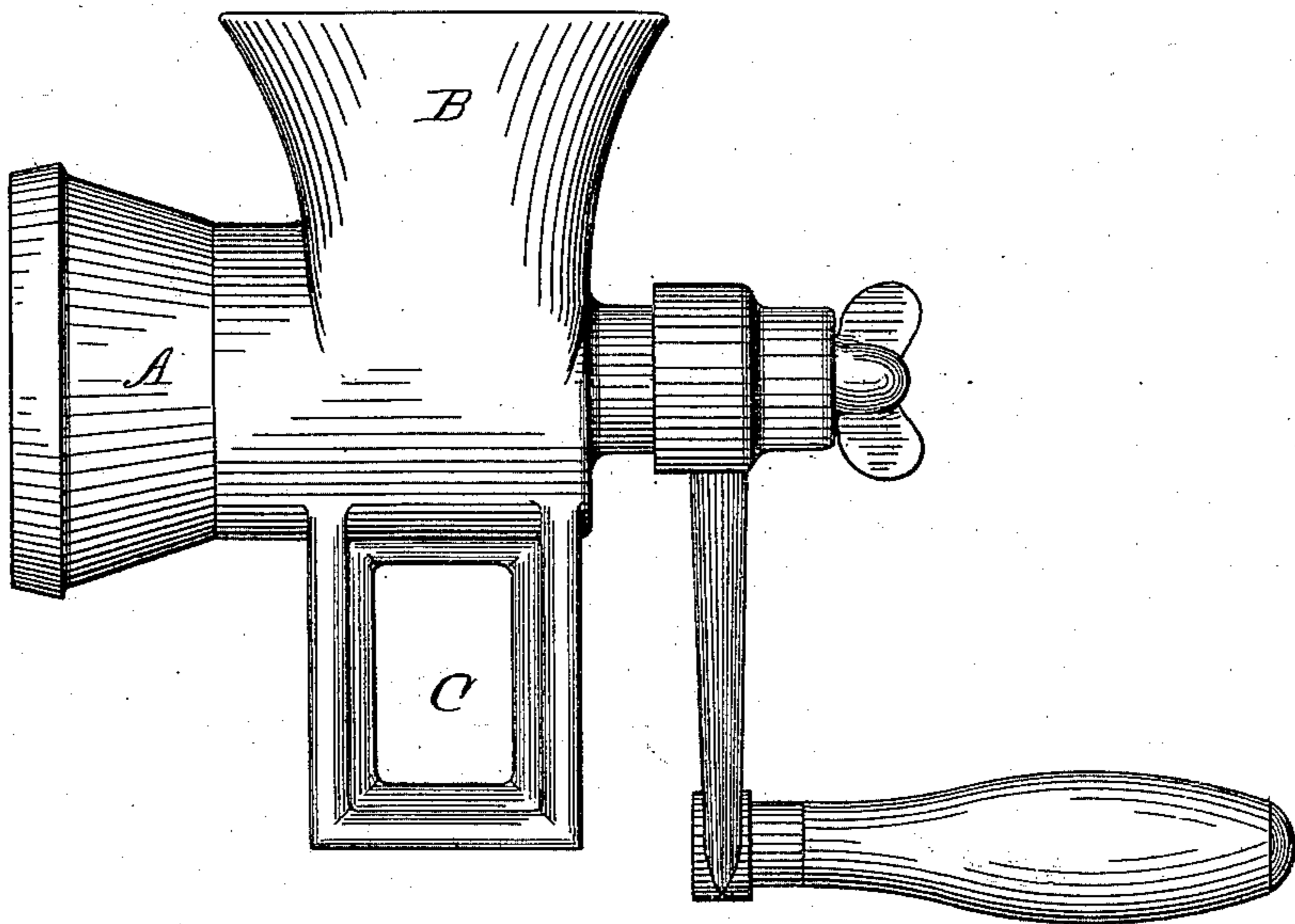


Fig. 2.

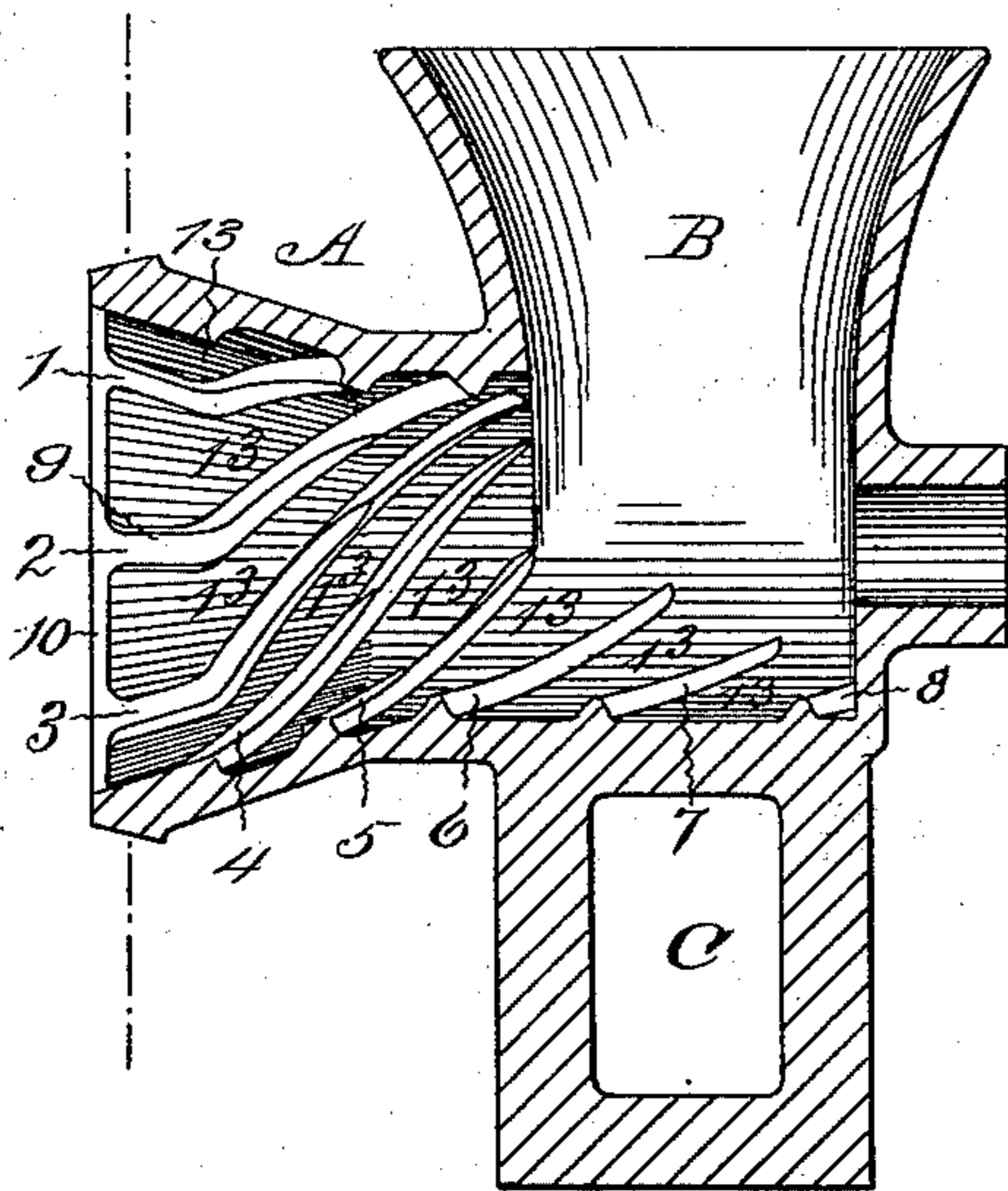
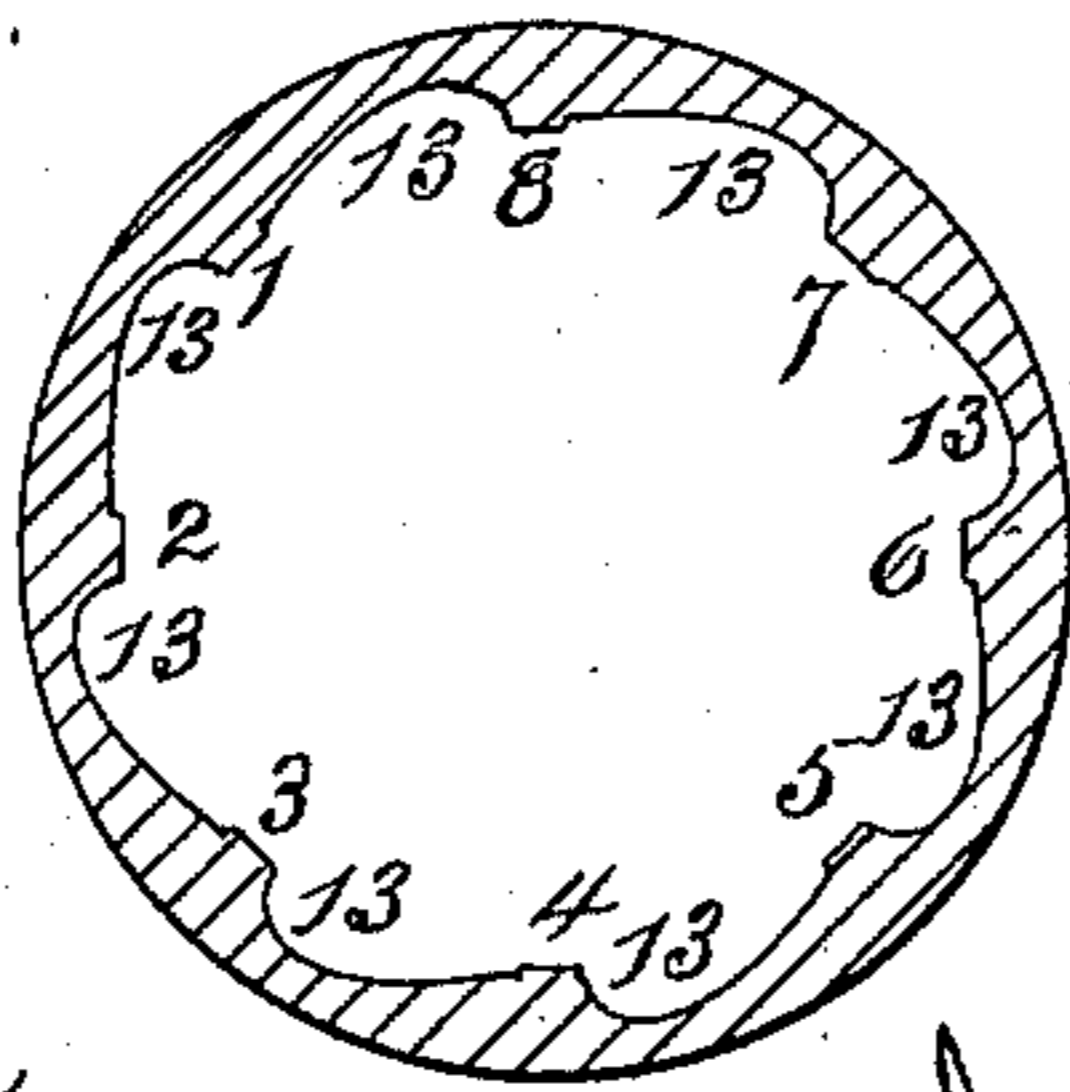


Fig. 3.



Witnesses:

W. Williams  
L. H. Smith

Inventor:  
O. D. Woodruff  
by Albert E. Walker, Atty.

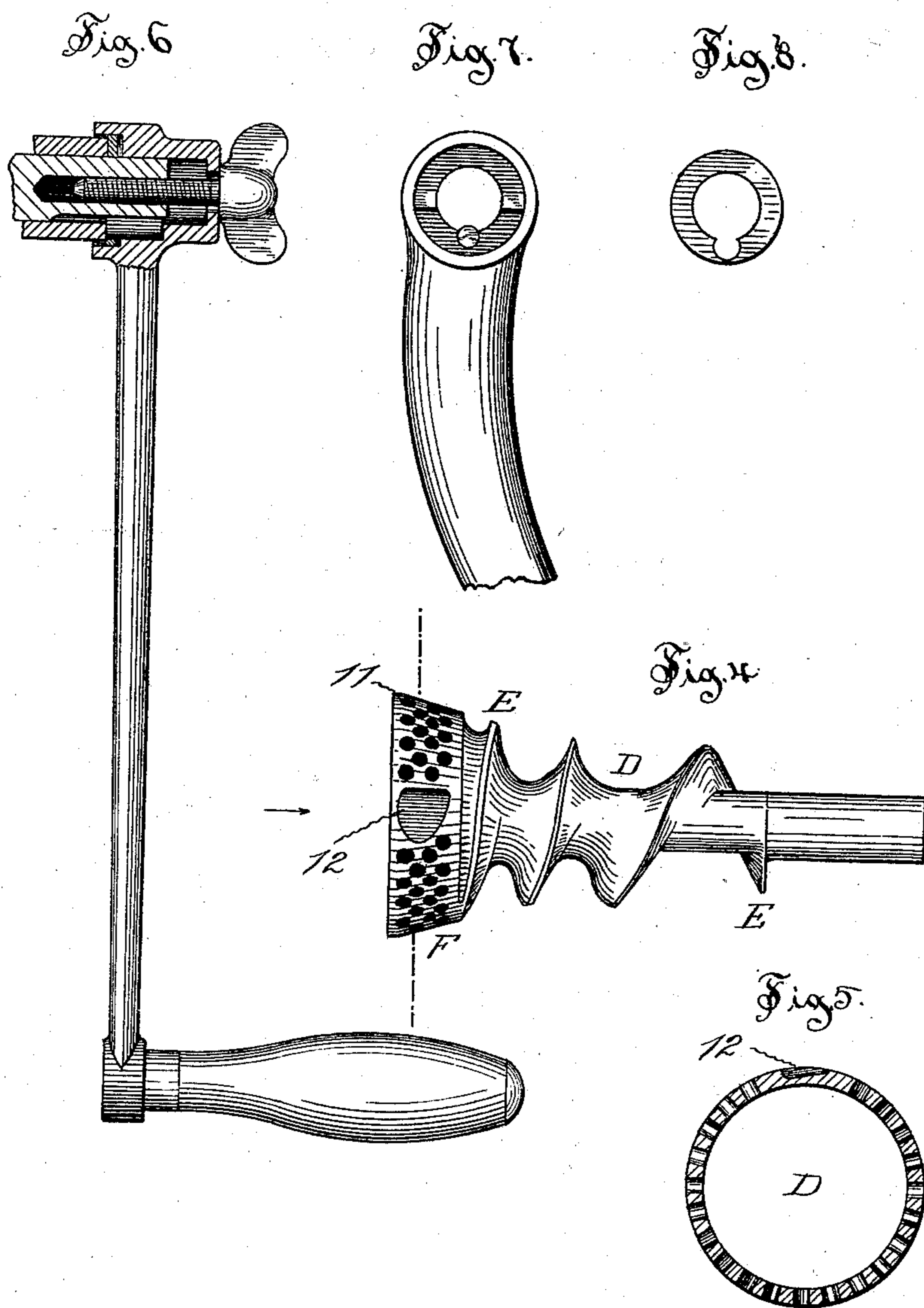
(No Model.)

2 Sheets—Sheet 2.

O. D. WOODRUFF.  
MEAT CUTTER.

No. 547,468.

Patented Oct. 8, 1895.



Witnesses:  
H. R. Williams  
Scott H. Smith.

Inventor  
O. D. Woodruff  
By Albert H. Walker, Atty.

# UNITED STATES PATENT OFFICE.

OLIVER D. WOODRUFF, OF SOUTHTON, CONNECTICUT.

## MEAT-CUTTER.

SPECIFICATION forming part of Letters Patent No. 547,468, dated October 8, 1895.

Application filed June 28, 1895. Serial No. 554,307. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER D. WOODRUFF, of Southington, Connecticut, have invented a new and useful Improvement in Meat-Cutters, of which the following description and claims constitute the specification, and which is illustrated by the accompanying two sheets of drawings.

This invention relates to rotary meat-cutters of the class to which belongs the rotary meat-cutter shown and described in Letters Patent No. 529,149, granted to me November 13, 1894, and the meat-cutter shown in the accompanying drawings and described in this specification constitutes the most improved kind of meat-cutters in that class, and, as I believe, in any class, and is already commercially known as the "Connecticut" meat-chopper.

Figure 1 is a side view of a No. 2 Connecticut meat-cutter. Fig. 2 is a central longitudinal section of the case. Fig. 3 is a vertical section looking toward the right on the broken line of Fig. 2. Fig. 4 is a view of the screw which belongs in the interior of the case. Fig. 5 is a vertical section on the broken line of Fig. 4. Fig. 6 is a view of the crank and includes a central vertical section of the hub of the crank and of the adjacent end of the screw and of the adjacent end of the case and of a washer around that end of the screw between that end of the case and the hub of the crank, showing how those parts are held together by a thumb-screw. Fig. 7 is a view of the left-hand end of the hub of the crank. Fig. 8 is a view of the washer which belongs in the annular recess in that end of the hub.

A is the case of the machine, which is outwardly tapering from its hopper B toward its delivery end. The inside of the case is provided with a series of ribs 1, 2, 3, 4, 5, 6, 7, and 8, the number of which may be varied within reasonable limits, and each of which is spirally inclined from the hopper toward the delivery end of the case, but before reaching the delivery end changes its course into a nearly or quite straight longitudinal reach, as indicated by the numeral 9, in respect of the rib 2, and those longitudinal reaches terminate near the delivery end of the case in the plain annular surface 10.

The screw D is fitted in the case so that its larger end occupies substantially the same

vertical plane with the delivery end of the case, and that screw has the spiral rib E extending from the rear wall of the hopper to the perforated annular part F of the screw, and that spiral rib, at least for some distance adjacent to the part F, turns in close contact with the spiral ribs in the case, so as to shear or cut meat into strips between them. The part F tapers outwardly in close conformity to the outward taper of the reaches 9 of the ribs of the case; but the zone of that taper which is opposite the annular surface 10 of the interior of the case is slightly reduced in taper, as indicated by the numeral 11, in order to prevent friction between it and the annular surface 10. The perforations through the annular perforated part of the screw are preferably arranged in several rows around the same, as shown in Fig. 4; but those perforations do not necessarily extend entirely around the annular part of the screw, but may leave a small portion of that part of the screw to be occupied by the shallow recess 12. That recess is preferably deeper at its wide than at its narrow end, and should, indeed, be as shallow at its narrow end as it can be and still have a cutting-edge around that end.

A recess 13 is in the interior of the case between each of the ribs 1, 2, 3, 4, 5, 6, 7, and 8, and that part of each of those recesses which is between two longitudinal reaches 9 is much wider than those parts which are between the spiral portions of those ribs, and is preferably much deeper on the side which is adjacent to the convex side of the bend between the spiral portion and the longitudinal reach of a rib than it is on the side which is adjacent to the concave side of such a bend, and, indeed, the last-mentioned side of that part of each of those recesses should be as shallow as is consistent with the adjacent side of the adjacent longitudinal reach having a cutting-edge.

I do not herein particularly describe the construction of parts shown in Figs. 7, 8, and 9, because that construction constitutes a new and useful invention of Levi T. Snow, who proposes to make an application for Letters Patent of the United States thereon and assign those Letters Patent to me.

The mode of operation of my improvement is as follows: The spiral rib forces the meat

which is introduced into the hopper forward into the spaces between the ribs of the case and the rib of the screw, and as the meat is so forced the rib of the screw and the ribs of the case working together shear the meat into strips. The outer ends of those strips are forced into the wide parts of the recesses 13 in the case, and then are forced along the inclined bottoms of those parts of those recesses into the perforations in the annular part of the screw. As those perforations during the revolution of the screw are carried past the longitudinal reaches 9 of the ribs in the case, the meat which has been forced into those perforations is severed from the meat behind them by the cutting-edges of the reaches 9. If any pieces of bone which are too large to pass into a perforation happen to be in the meat in the recesses 13, they are forced into the shallow recess 12, where they are broken up into finer pieces by the reaches 9 passing over that shallow recess, and when they have been thus broken up they are carried or scraped by the reaches 9 away from that recess into the perforations, through which they are forced with the meat coming from the recesses 13. That wide zone of the annular tapering part of the screw which is occupied by the perforations is lubricated by the meat which is continually scraped along that zone by the reaches 9; but the narrow zone 11 of that part of the screw is not thus lubricated, because no meat passes or can get between it and the annular surface 10 of the delivery end of the case. For this reason the taper of the zone 11 is reduced, as compared with the taper of the perforated zone of the annular part of the screw, enough to prevent it from touching the annular surface 10 of the case, but not enough to give entrance to any meat between those two annular surfaces.

The wide portions of the recesses 13 preferably have bottoms which incline from the deep side toward the shallow side of those recesses, respectively, as shown in Fig. 3, in order to enable meat to be forced along those bottoms into the perforations of the annular part of the screw D with less expenditure of power at the crank than would be necessary if the bottoms of those portions of those recesses were equally deep throughout; but the bottoms of those portions of those recesses may be of equal depth throughout, the chief characteristic of this meat-cutter in respect of those recesses residing in their having the said wide portions, whether their bottoms are inclined or not. The merit of that characteristic consists in the fact, which I discovered after much study and experiment, that recesses having very wide parts, like the recesses 13, and bounded, like them, by the longitudinal reaches 9 of the ribs in the case are much superior in every way to all earlier forms of recesses between such ribs.

The narrow end of the recess 12 is preferably made shallower than its wide end, in order that the reaches 9 when scraping over that recess from the wide toward the narrow end shall break up the pieces of bones in that recess into finer pieces than they could do if that recess were as deep at its wide as at its narrow end, and the wide end of that recess is preferably made deeper than its narrow end, in order that it may receive larger pieces of bone to be crushed than it could otherwise receive; but the bottom of that recess may be of equal depth throughout, such a recess being new, whether its bottom is inclined or not. It is not essential that the recess 12 should be narrower at its shallow end than at its deep end or that it should have any particular outline; but it may properly have such an outline as that shown in Fig. 4, and two or more recesses 12 may be made in the surface of the annular tapering part of the screw and preferably at equal distances apart, the perforations being omitted at those places for that purpose.

I claim as my invention—

1. A part of a rotary meat cutter, consisting of a tapering case, having a series of interior ribs, each of which ribs has a spiral part and a longitudinal reach, and which case has a recess between each two of those ribs, and which recess has a narrow part between the spiral parts of the adjacent ribs, and a wide part between the longitudinal reaches of those ribs; all substantially as described.

2. A part of a rotary meat cutter, consisting of a tapering case, having a series of interior ribs, each of which ribs has a spiral part and a longitudinal reach, and which case has a recess between each two of those ribs, and which recess has a narrow part between the spiral parts of the adjacent ribs, and a wide part between the longitudinal reaches of those ribs, and which wide part has an inclined bottom; all substantially as described.

3. A part of a rotary meat cutter, consisting of a tapering screw, having a spiral rib, and an annular perforated part, and which perforated part has a recess on its surface where perforations are absent, for the reception and breaking up of pieces of bone; all substantially as described.

4. A part of a rotary meat cutter, consisting of a tapering screw, having a spiral rib, and an annular perforated part, and which perforated part has a recess on its surface where perforations are absent, for the reception and breaking up of pieces of bone, and the bottom of which recess is inclined; all substantially as described.

OLIVER D. WOODRUFF.

Witnesses:

ALBERT H. WALKER,  
MABEL WARREN.