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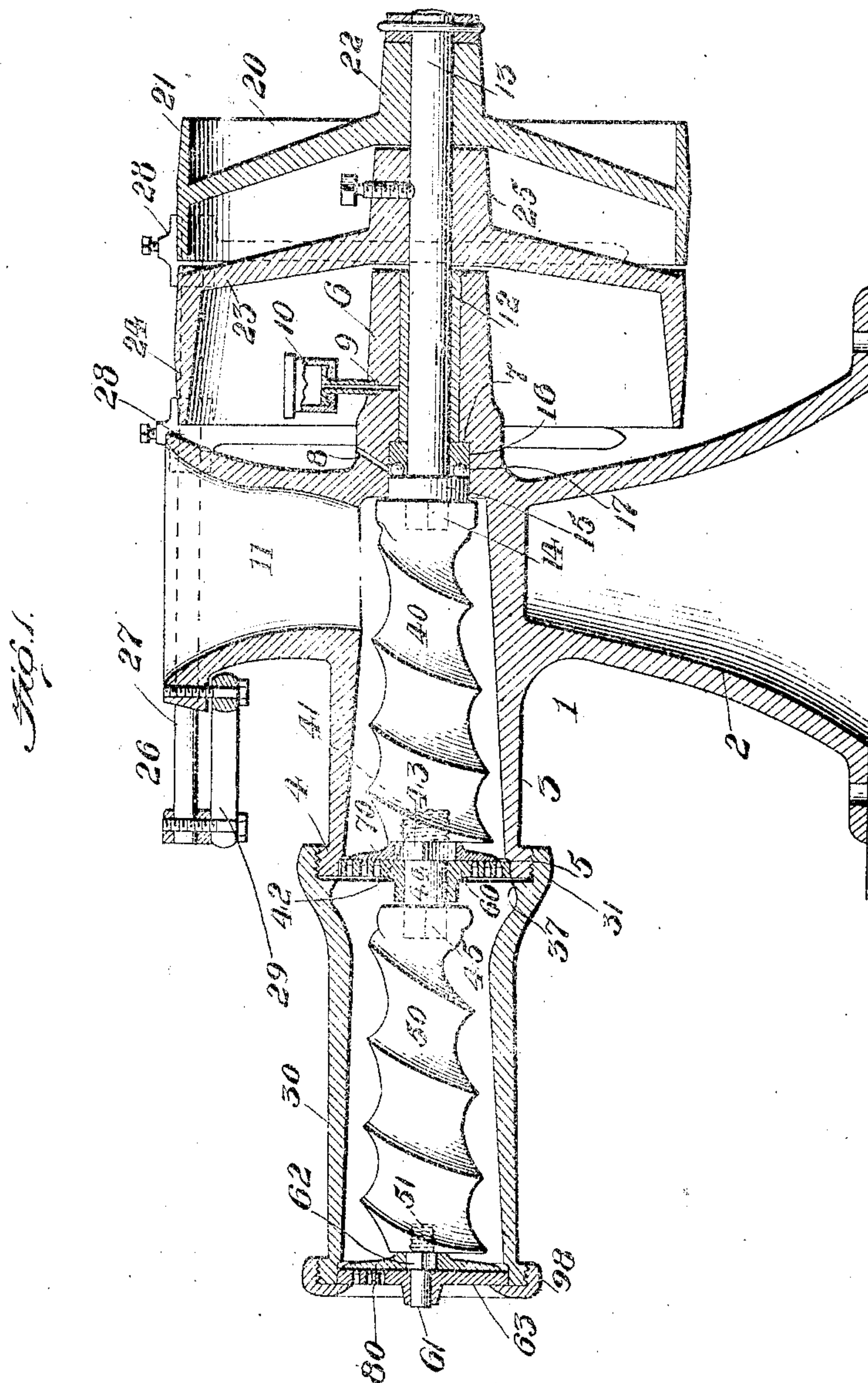
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F. A. CAPENER, L. BUMP, E. GUST & J. SHIELDS.

MEAT CUTTING MACHINE.

APPLICATION FILED MAR. 3, 1906.

2 SHEETS—SHEET 1.



Witnesses

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334

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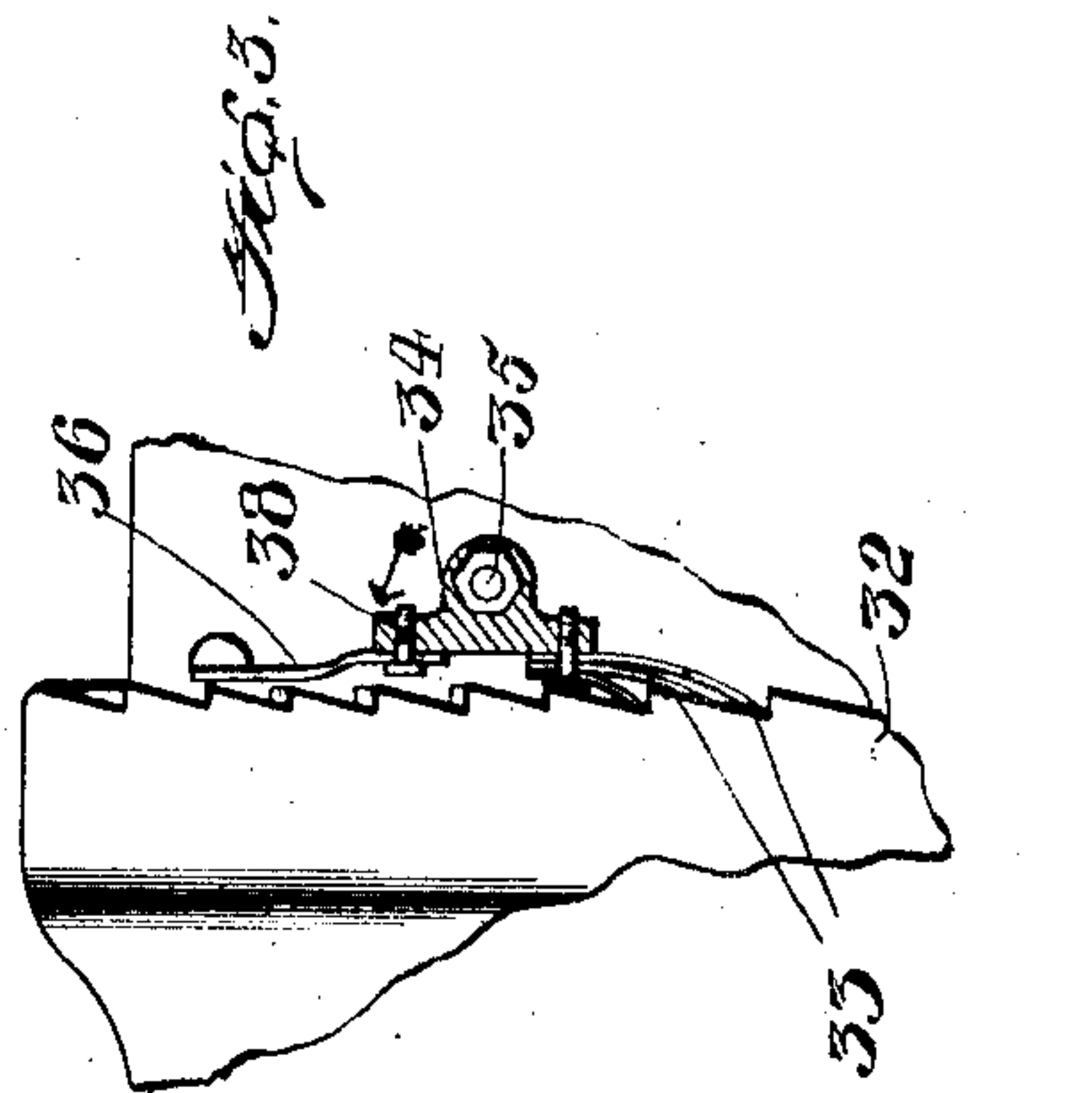
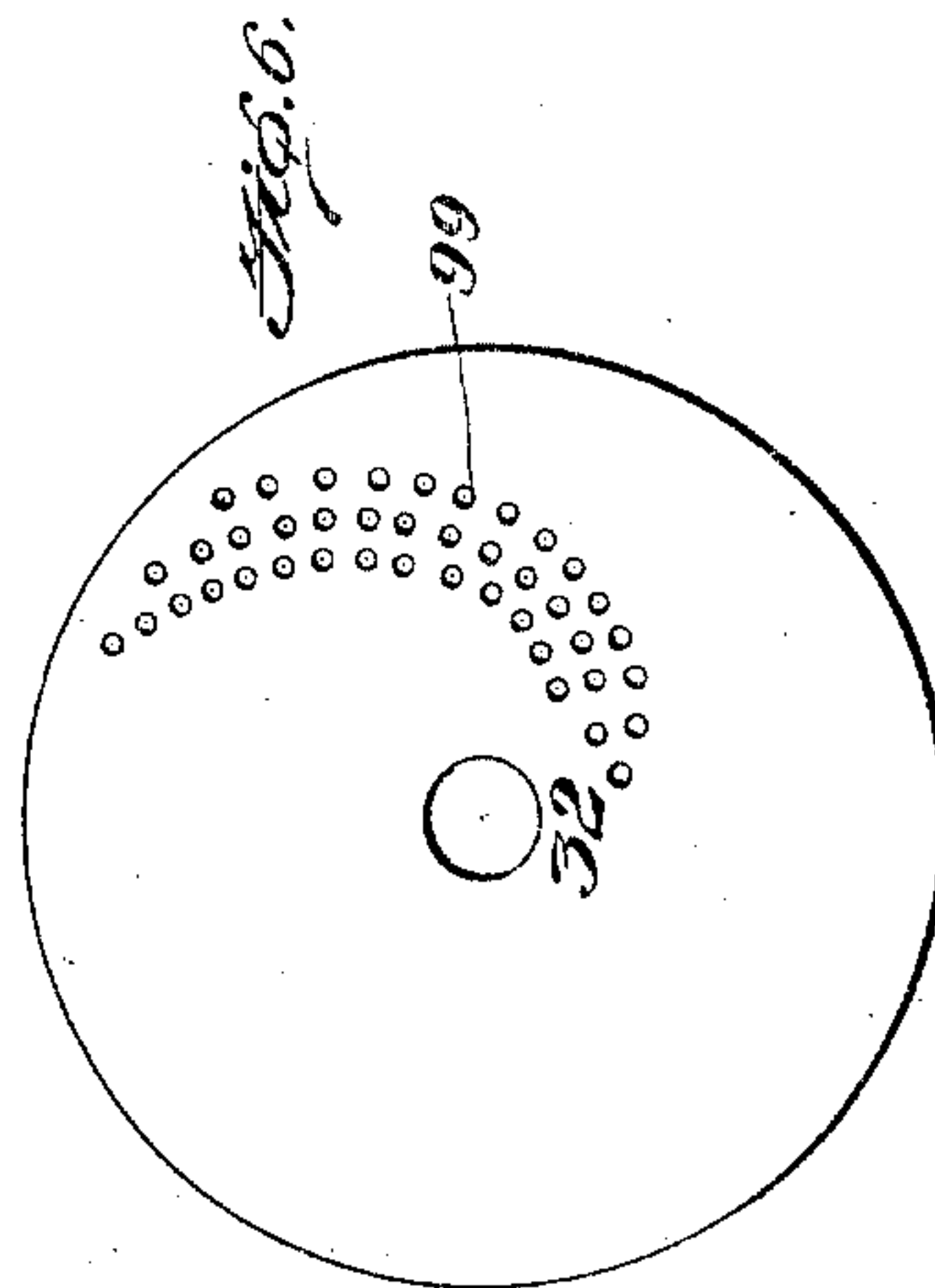
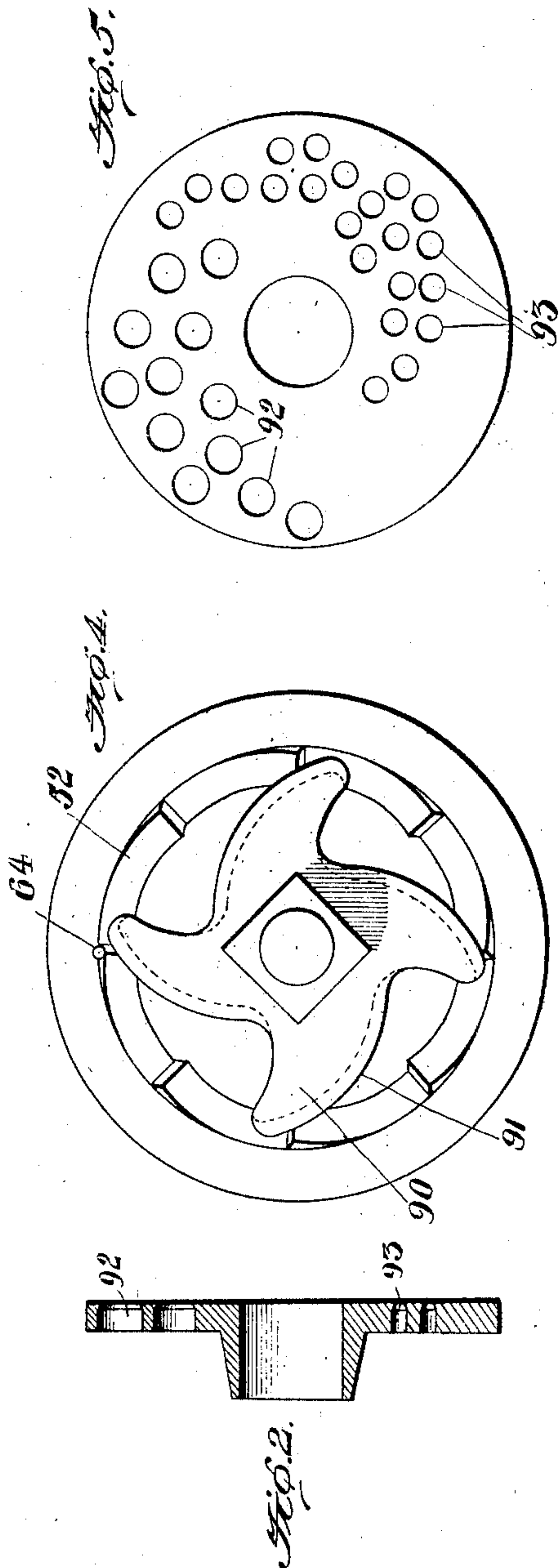
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2 SHEETS—SHEET 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

FRANK A. CAPENER, LUCIUS BUMP, EMIL GUST, AND JOHN SHIELDS,  
OF BARABOO, WISCONSIN.

## MEAT-CUTTING MACHINE.

No. 840,041.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed March 2, 1906. Serial No. 304,148.

*To all whom it may concern:*

Be it known that we, FRANK A. CAPENER, LUCIUS BUMP, EMIL GUST, and JOHN SHIELDS, citizens of the United States, residing at Baraboo, in the county of Sauk and State of Wisconsin, have invented new and useful Improvements in Meat-Cutting Machines, of which the following is a specification.

Our invention pertains to meat-cutters of the cylinder and concave type; and it contemplates the provision of a machine possessed of large capacity and constructed with a view of reducing meat to the desired fineness in one operation, and this quickly and with the expenditure of but a minimum amount of power.

The invention also contemplates the provision of a machine embodying such a construction that it is well adapted to withstand the usage to which meat-cutters are ordinarily subjected.

Other advantageous features of the invention will be fully understood from the following description and claim when the same are read in connection with the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section of the machine constituting the present embodiment of our invention. Fig. 2 is an enlarged diametrical section of the primary foraminated disk of the machine removed. Fig. 3 is a detail enlarged section illustrative of the means for preventing casual turning of the funnel or outer cylinder of the machine, said view being on an enlarged scale. Fig. 4 is a view illustrating the outer end of the funnel or outer cylinder-section as the same appears subsequent to the removal of the secondary foraminated disk and the nut for holding the same in position. Fig. 5 is an elevation of the primary foraminated disk removed, and Fig. 6 is a similar view of the secondary foraminated disk.

Similar numerals designate corresponding parts in all of the views of the drawings, referring to which—

1 is the main frame of our novel machine. The said main frame is preferably formed in one piece and made up of a base or pedestal 2, a cylinder 3, which is preferably enlarged gradually toward its outer end and is provided at said end with an exterior flange 4,

having an exterior thread and also having a shoulder 5 on its inner side for a purpose presently set forth, a tubular extension 6, arranged in alignment with the cylinder 3 and having an interior shoulder 7 and oil-ducts 8 and 9, the latter of which is preferably provided with an oil-cup 10, and a hopper 11, arranged above and communicating with the portion of the cylinder 3 adjacent to the tubular extension 6.

12 is a soft-metal lining in the tubular extension 6 of main frame 1; 13, the main shaft of the machine, which is journaled in said lining 12 and is provided with an inner angular end 14; 15, a ring of steel mounted on the shaft 13 immediately adjacent to the angular end 14; 16, a ring of steel arranged in the tubular extension 6 and against the shoulder 7, and 17 anti-friction-balls interposed between the rings 15 and 16. By virtue of this construction it will be observed that the endwise thrust due to the operation of the screw conveyers presently described will be placed on the ring 16 and the friction attendant on such thrust will be reduced to a minimum. This will be appreciated as an important advantage when it is considered that it tends to materially prolong the usefulness of the machine.

20 is an idle pulley loosely secured on the main shaft 13 and having its rim 21 disposed in a vertical plane at the left of that in which its hub 22 is arranged, and 23 is a driving-pulley which is securely fastened to shaft 13 and has its rim 24 disposed wholly at the left of its hub 25, this being materially advantageous, since it places the bearing evenly on the shaft 13 and the tubular extension 6 of the main frame 1, and in that way conduces materially to the prolongation of the period of usefulness of the machine. 26 is the belt-shipper of the machine. This shipper may be of any construction compatible with the purpose of the machine, though we prefer to have it comprise an endwise-movable rod 27, suitably guided on the main frame 1, arms 28, fixed to and extending at right angles to the said rod, and a suitable hand-lever 29, mounted on the main frame 1 and connected to the rod 27. By simply moving the lever 29 the operator or attendant is enabled to quickly and easily move the belt from one pulley to the other as conditions require.



30 is the funnel or outer cylinder of the machine. This funnel or outer cylinder is provided at its inner end with an enlargement 31, interiorly threaded to engage the flange 4 of cylinder 3, and it is provided also with beveled teeth 32 on its inner end, as shown in Fig. 3. These teeth 32 are designed to be engaged by spring-dogs 33, carried by a body 34, which is pivoted at 35 to the outer side of the cylinder 3 and is provided with a laterally-swinging finger-piece 36, designed to bear against the teeth 32, as illustrated. The means just described effectually prevent casual turning of the funnel or outer cylinder 30 in a backward direction, and this will be noted as an important advantage when it is stated that the said funnel or outer cylinder 30 serves by reason of its interior shoulder 37 to hold the primary foraminated disk against the primary knife and to its work. When it is desired for any purpose to turn the funnel or outer cylinder 30 off the cylinder 3, the operator has but to swing the finger-piece 36 laterally outward from the cylinder 3 on the pivot 35, when, as will be readily apparent, the body 34 may be rocked in the direction indicated by arrow in Fig. 3, so as to carry the spring-dogs 33 out of engagement with the teeth 32. This will obviously release the funnel or outer cylinder, and the same may then be turned off the cylinder 3 with but little effort.

40 is the primary screw conveyer of the machine, which is disposed longitudinally in the cylinder 3. The said screw conveyer is provided in its rear end with an angular socket to receive the angular end 14 of the shaft 13 and is also provided in its forward end with a threaded socket 41. We prefer to gradually increase the diameter of the screw conveyer 40 from its rear end to its forward end, as shown, but do not desire to be understood as confining ourselves to such specific form. The socket 41 is for the reception of the threaded end of a subshaft 42, which, in addition to the threaded end, has an intermediate angular portion 43, a circular plain portion 44 and an angular end 45. The shaft 42 has for its purpose to connect the primary conveyer 40 and a secondary conveyer 50, which latter is disposed in the funnel or outer cylinder 30 and is provided in its rear end with an angular socket to receive the angular end 45 of subshaft 42 and in its forward end with a threaded socket 51.

We prefer to provide the funnel or outer cylinder 30 with ridges 52 on its inner side, as shown in Fig. 1, and we also prefer to provide the inner cylinder 3 with similar ridges.

60 is the primary foraminated disk which receives the circular portion 44 of subshaft 42 and is held against turning in the cylinder 3 by a key such as hereinafter described with reference to the secondary foraminated plate 63 or other means.

61 is a subshaft screwed into the socket 51 of the secondary conveyer 50 and having an intermediate angular portion 62 and an outer circular portion. 63 is the secondary foraminated disk, which receives the said outer portion of the subshaft and is held against turning in the funnel or outer cylinder by a key 64. (Shown in Fig. 4.)

70 is the primary knife, and 80 is the secondary knife, which are arranged to turn close against the faces of the disks 60 and 63, respectively, as shown in Fig. 1. The construction of the said knives is shown in Fig. 4, and by reference to said figure it will be clearly understood that the knives have reclining blades 90, provided with convex cutting edges 91, beveled at their rear sides.

As best shown in Figs. 2 and 5, the primary disk 60 has two groups of transverse apertures—i. e., a group of large apertures 92 and a group of medium-size apertures 93. Each of the said apertures is drilled partly through the disk to a point adjacent the side thereof which is presented to the knife 70 and is then gradually diminished in diameter to the said side, whereby it will be seen that the cutting efficiency of the aperture is materially increased. It will also be seen that because of the apertures being of even diameter from their diminished portions to their forward ends they permit free passage of the cut meat through the disk. The large apertures 92 are arranged four in a row, and any desired number of rows may be employed. It will be noticed, however, that the reclination of the rows is opposite to that of the blades of the knife 70, this being advantageous, since it contributes materially in enabling the machine to cut easily. Of the medium-size holes the rows are of seven holes each; but it will be noticed that these rows are reclined also in a direction opposite to that of the knife-blades. The holes 99 in the secondary disk 63 are similar to the holes 92 and 93 of the disk 60, with the exception that they are smaller. Said holes 99 are preferably arranged fourteen in a row, and there may be eighteen (more or less) rows, as deemed expedient. Said rows, however, recline in the direction opposite to the reclination of the blades of the knife 80, for the purpose before described.

In the practical operation of our novel machine the shaft 13 is rotated and the meat to be cut is placed or fed into the hopper 11. On this being done the primary conveyer 40 will feed the meat toward the disk 60, where the meat will be reduced to certain sizes and forced through the apertures in the disk into the funnel or outer cylinder 30. In this latter the meat will be forced forward by the screw conveyer 50 and will be discharged in a further-reduced state through the apertures 99 in the disk 63.

By reference to the left of Fig. 1 it will be



noted that the disk 63 is held in position by an annular nut 98, which is threaded to engage the threaded outer end of the funnel or sleeve 30 and is provided with an inwardly-directed flange arranged against the outer side of the disk 63. The nut 98 serves to position and retain in proper position relative to the knife 80 and the screw conveyor 50 the secondary foraminated disk 63, while the funnel or outer cylinder 30 serves a similar purpose with reference to the primary foraminated disk 60.

It will be gathered from the foregoing that our novel machine, while possessed of high capacity, is simple, compact, and inexpensive in construction, is adapted to be easily operated and taken care of, and is free from delicate parts such as are likely to get out of order after a short period of use.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

A meat-cutting machine comprising a main frame having a cylinder exteriorly threaded at its outer end, a funnel or outer cylinder having an interiorly-threaded inner end turned on the outer end of the first-mentioned cylinder and also having beveled teeth on said inner end, a dog arranged to engage said teeth, a body carrying said dog and fulcrumed on the side of the first-men-

tioned cylinder and arranged to swing in the direction of the length thereof, a finger-piece pivoted to the opposite end of said body, with reference to the dog, and arranged to swing at a right angle to the direction in which the body is movable, whereby it may be moved into and out of engagement with the teeth on the end of the funnel or outer cylinder, conveyers arranged in the cylinder, an auxiliary shaft connected to one conveyor and having an angular end arranged in an angular socket of the other conveyor, primary and secondary foraminated disks and knives, a shaft-bearing in the main frame and connected to the inner conveyor, a bearing-ring surrounding the shaft and opposed to an abutment in the main frame, a second bearing-ring mounted on the shaft at the inner end of the inner conveyor, and anti-friction devices interposed between the bearing-rings.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

FRANK A. CAPENER.  
LUCIUS BUMP.  
EMIL GUST.  
JOHN SHIELDS.

Witnesses:

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W. H. THOMAS.