

C. W. KUHN.
MEAT CUTTER.

APPLICATION FILED APR. 6, 1907.

928.389.

Patented July 20, 1909.

3 SHEETS—SHEET 1.

Fig. 1.

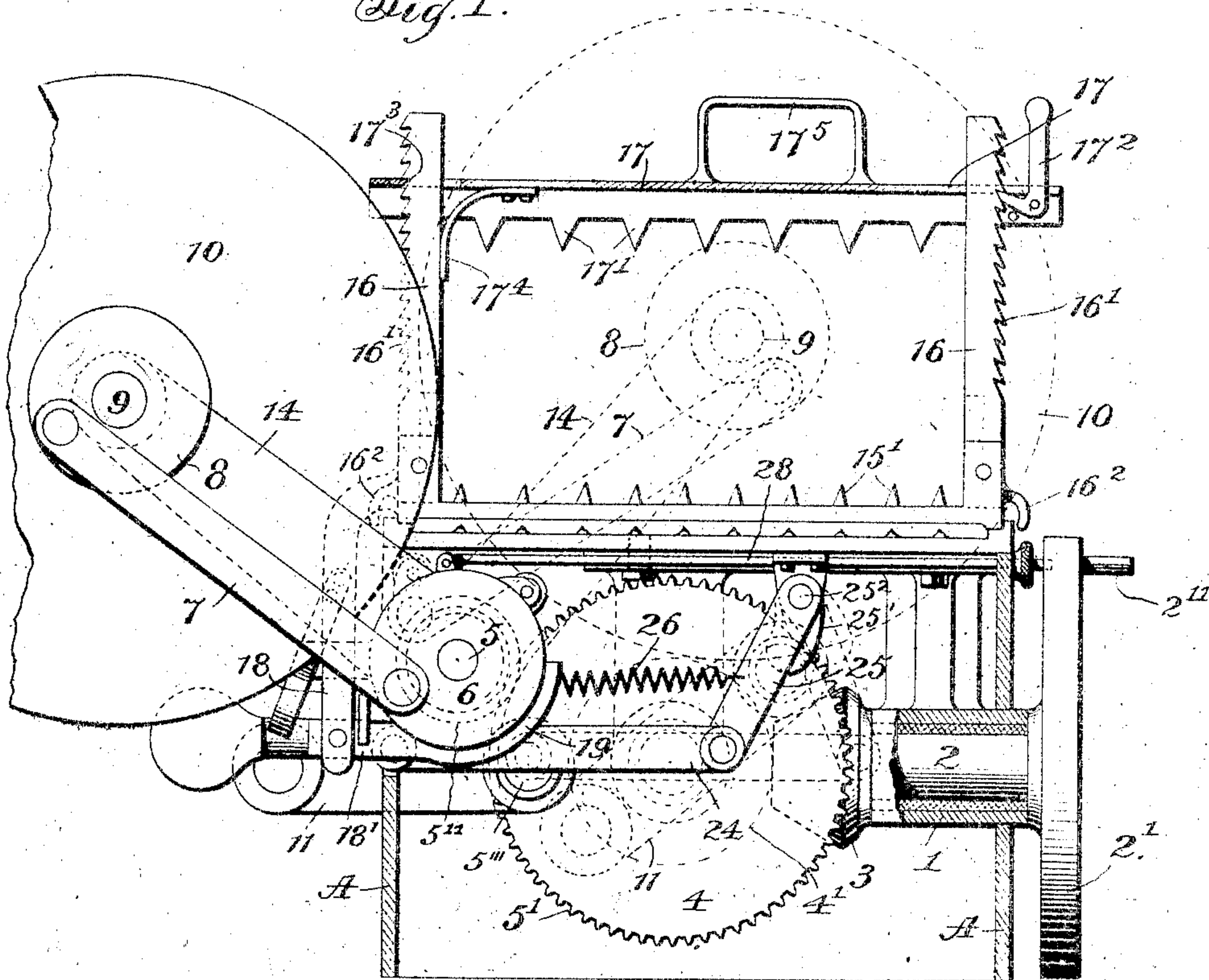


Fig. 5.

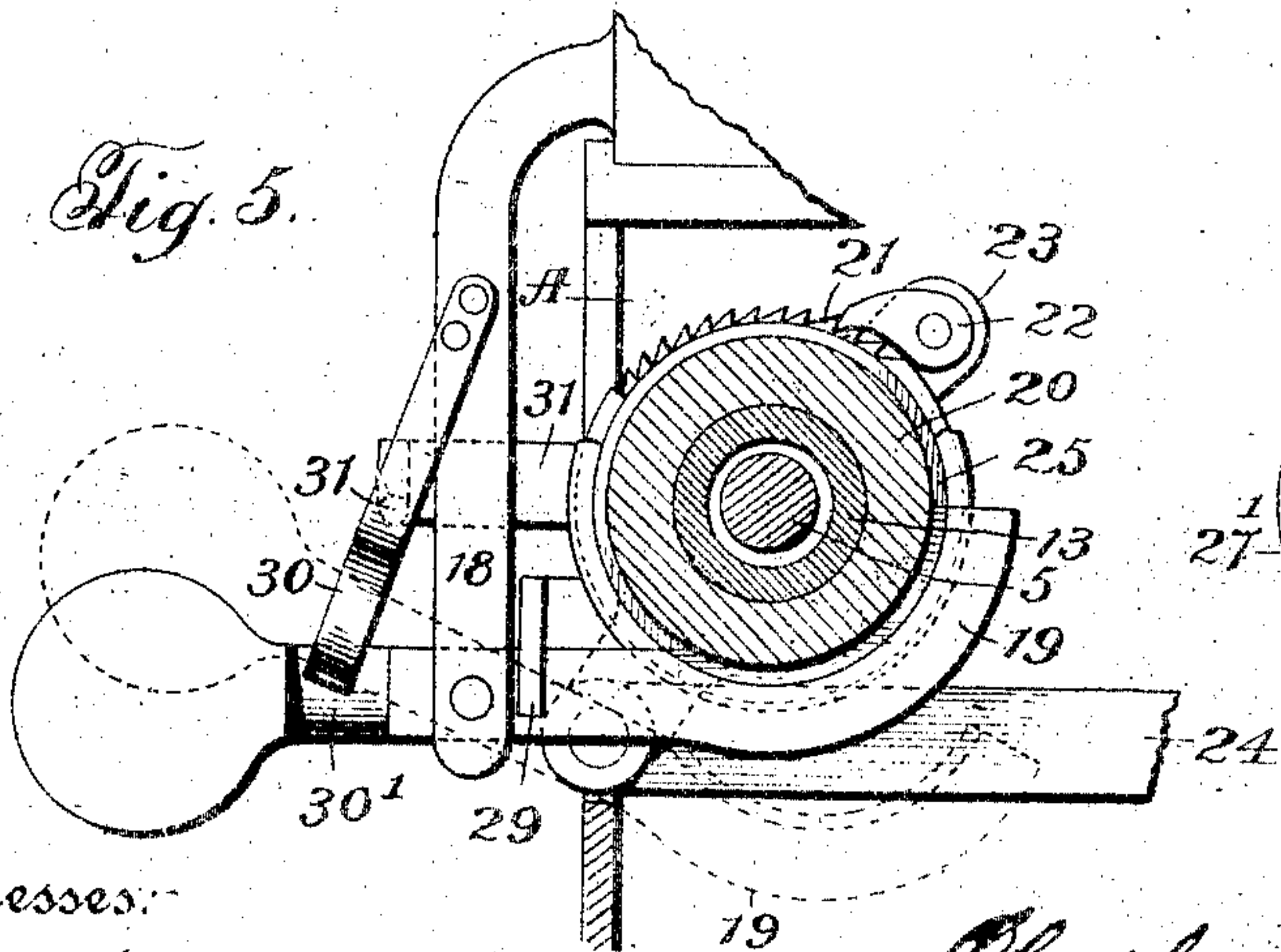
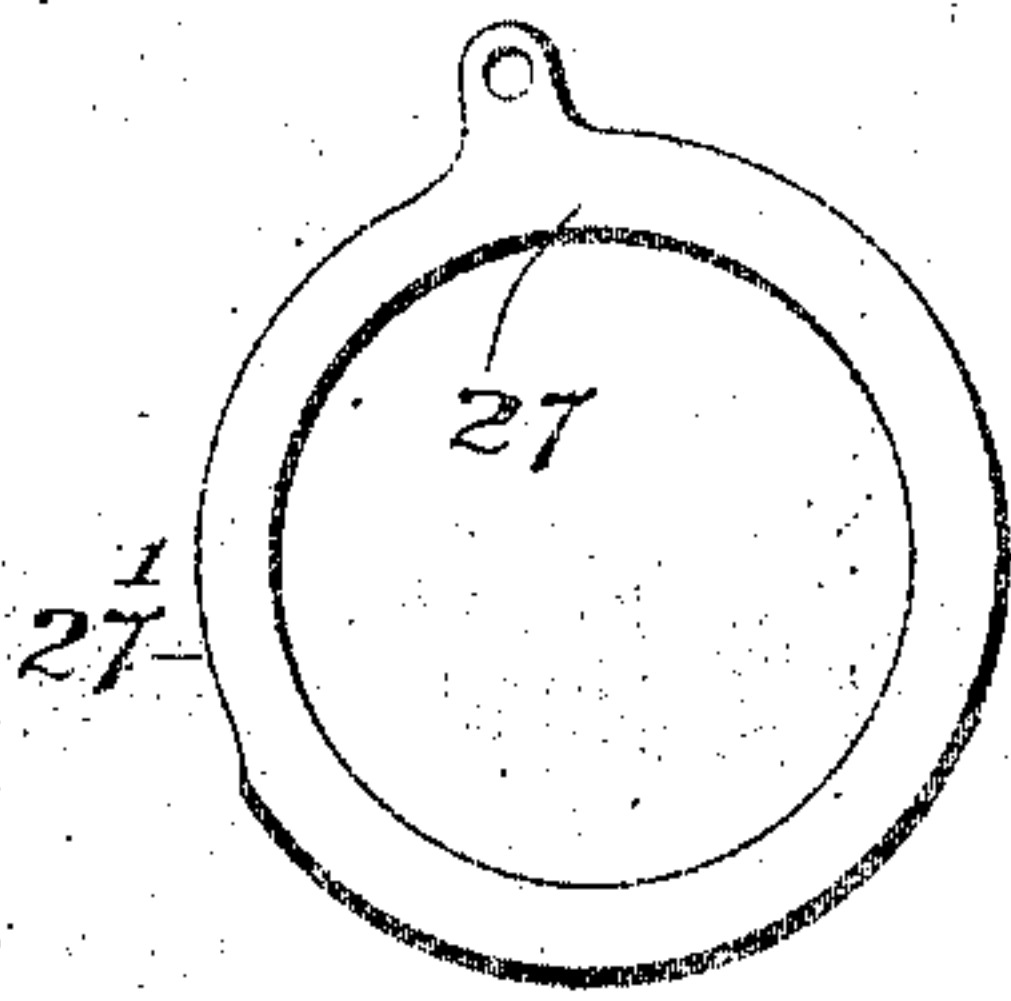


Fig. 6.



Witnesses:

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Marshall L. Faber.

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3 SHEETS—SHEET 2.

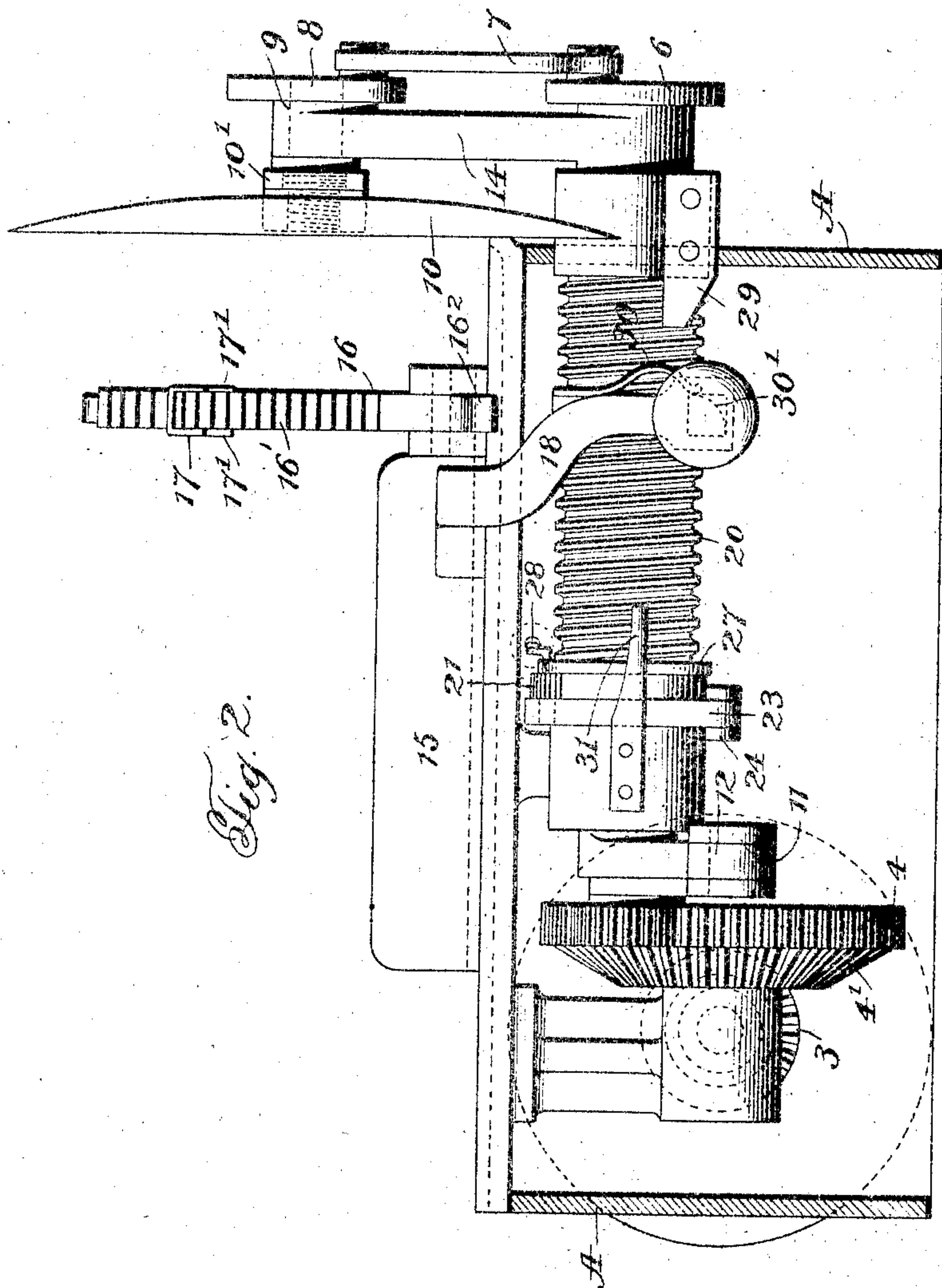


Fig. 2.

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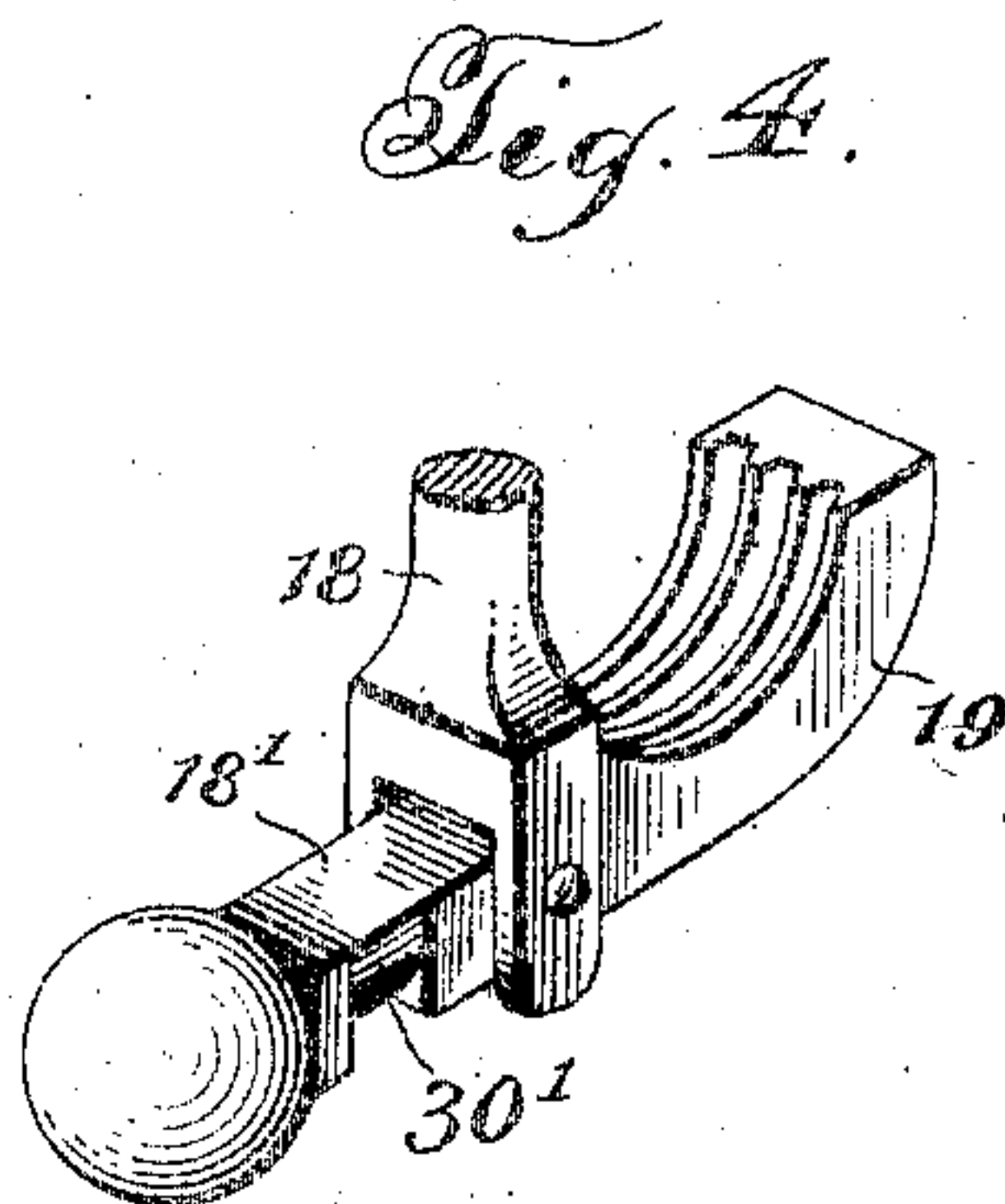
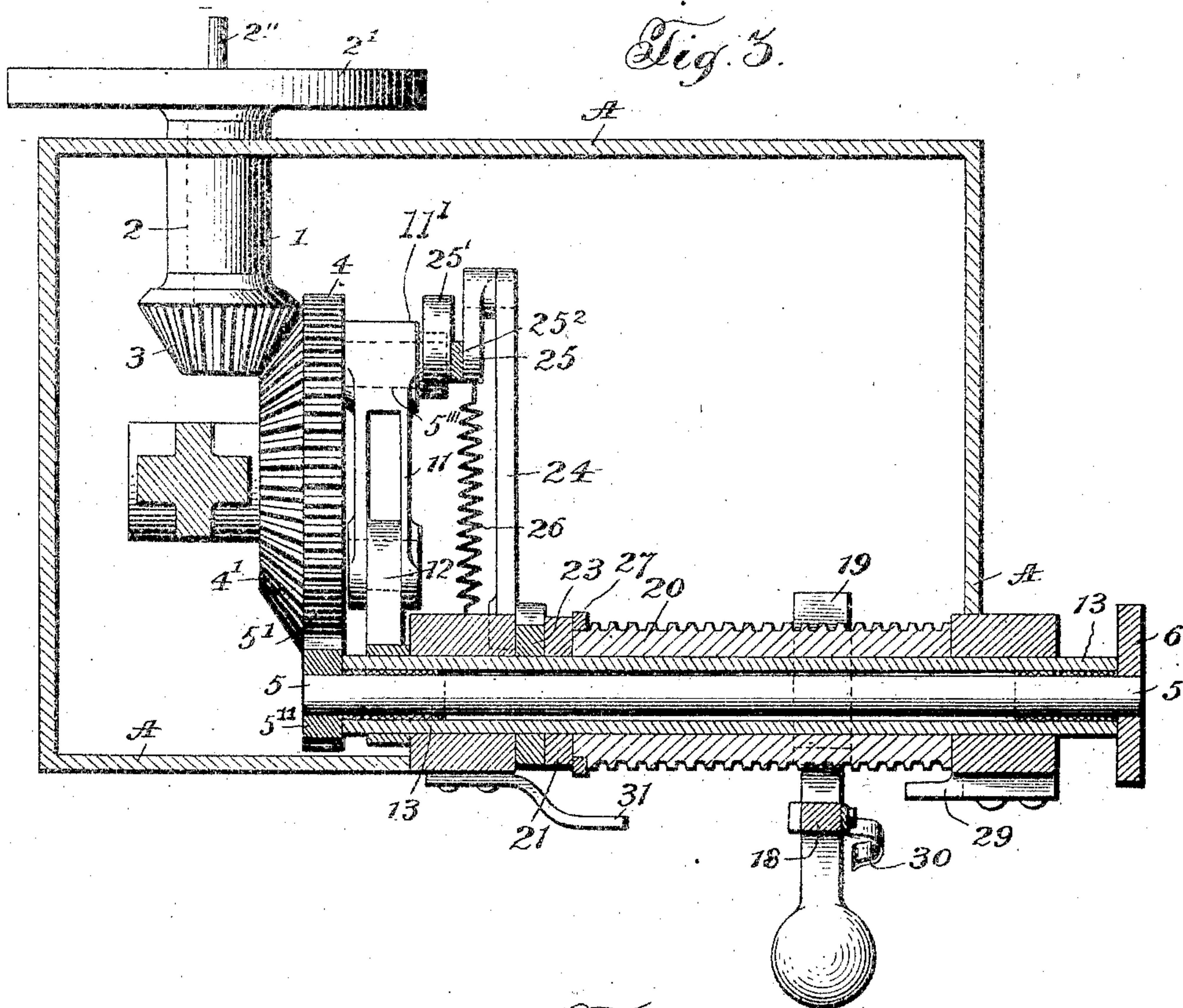
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3 SHEETS—SHEET 3.



Witnesses.

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Marshall L. Faber

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UNITED STATES PATENT OFFICE.

CHARLES W. KUHN, OF WASHINGTON, DISTRICT OF COLUMBIA.

MEAT-CUTTER.

No. 928,389.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed April 6, 1907. Serial No. 366,813.

To all whom it may concern:

Be it known that I, CHARLES W. KUHN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Meat-Cutters, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to cutting machines, and though susceptible of a variety of different uses, for instance the cutting of vegetables, bread and the like, it is especially designed for the cutting of meat.

The improvement relates to that class of machines wherein a cutter is arranged to act upon the meat as it emerges from the discharge end of the guide-way or support, along which the meat is fed.

More particularly, the invention resides in improved means for imparting to the knife or cutting member a reciprocating movement transverse to the direction of feed and also a continuous rotary movement.

While the invention contemplates chopping and otherwise acting upon the meat, yet it has primary reference to the slicing thereof, and in order that the size of the slices may be regulated to a nicety, an automatic intermittent feed is arranged with novel means for accurately adjusting the limit of movement thereof.

With the above and other objects in view, applicant combines novel details in construction and arrangement of parts, with the result that a compact, yet simple structure results, thus doing away with a great many parts heretofore made necessary in this type of machine, and which made them more or less bulky in appearance. Again, applicant so combines in a single machine in co-operative relation certain apparatus heretofore made the subject-matter of independent machines.

In order to more clearly understand the invention, reference is directed to the accompanying drawings, wherein is disclosed a convenient embodiment of the invention for the purpose of illustration. These drawings are made a part hereof, and in the same Figure 1 is a sectional view of the machine. Fig. 2 is a rear elevation. Fig. 3 is a top plan view partly in section. Figs. 4, 5 and 6 are detail views of certain parts detached.

Referring more particularly to the drawings, wherein like reference characters designate corresponding parts throughout the

several views, a suitable body support or casing A is provided. Mounted within an opening in one of the sides of the body support is a cylindrical bearing 1, in which is rotatably secured a shaft 2 extending at its outer end without the casing and carrying a drive wheel 2' adapted to be driven by suitable means, as by a power driven belt, not shown, but more conveniently operated manually by the handle 2".

Secured at the inner end of the shaft 2 and beyond the inner end of the bearing 1 is a bevel pinion 3, arranged to mesh with co-operating gearing 4', secured to one side of a drive wheel 4 mounted in any desired manner to a stationary part of the machine. Gear teeth 5' are also arranged upon the periphery of the drive wheel 4, and rotated thereby, through the medium of an inter-meshing pinion 5'', is a driven shaft 5 carrying a wheel 6 at its outer end and arranged to impart rotary movement to a stub shaft 9 through the medium of a pitman 7 secured at one end to said wheel and at its opposite end to a wheel 8 mounted upon the stub shaft.

10 is a convex cutting disk secured to the inner end of the stub shaft 9, and rotatable therewith. The said cutting disk or knife 10 has screw-threaded engagement with the stub shaft 9, whereby as the cutting edge of the knife becomes worn, the same may be adjusted, a locking nut 10' being provided to hold the parts in adjusted position.

Pivotally mounted eccentrically on the wheel 4 to the inner side thereof, through the medium of a pintle 5''' is a link 11, which latter is pivotally connected at its opposite end to a link 12, secured to a rock sleeve 13, loosely mounted upon the shaft 5, and terminating at its outer end at a point short of said shaft 5 and carrying a rock arm 14, the upper end of which has an opening there-through constituting a bearing for the stub shaft 9.

From the operation thus far described, it will be seen that by imparting rotation to the wheel 4, the eccentrically mounted link 11 will, through the medium of the connected link 12 and rock sleeve 13 impart a back and forth movement to the arm 14 and cutter 10.

Slidably mounted in suitable ways upon the support A is a meat holder or pan 15 of any desired formation, and in order to hold the meat snugly in its adjusted position on the path, oppositely disposed uprights 16 are

pivoted at their lower ends to the pan and have serrated or notched outer edges 16'. Slidable upon said uprights and through means of suitable slotted portions is a follower 17 having downwardly extending prongs 17' adapted to impinge the meat against similarly arranged prongs 15' on the holder. A lever 17² is pivoted to the follower at one end and has a pointed end constituting a dog arranged to engage the serration of the adjacent upright member. The serrations on the opposite upright member are arranged to be engaged by a knife edge 17³ on the follower itself, and to secure a close engagement thereof, a spring member 17⁴ contacting with the inner end of said upright is secured to the follower. It is seen that the follower may be readily adjusted by simply removing the pointed end of the lever 17² out of engagement with the serrations of the adjoining upright, and imparting up or down movement to the follower by a handle 17⁵. Lugs 16'² are arranged to engage the sides of the holder support when the follower 17 is removed and thereby limit the movement of said uprights about their pivot points.

Connected to the holder 15 is a downwardly extending bracket 18, to which is pivotally secured a weighted arm 18', carrying at its inner end a segmental nut 19 threaded complementary to threads extending around a screw shaft 20, the said screw shaft being rotatable about the rock shaft 13. The shaft 20 carries at one end a fixed notched or serrated disk 21 adapted to be engaged by a suitable dog 22 carried by a rotatable disk 23 loosely sleeved upon the sleeve 13. Pivoted to an ear or lug on said disk 23 is a reciprocating arm 24 having pivotal connection at one end with a supplemental arm 25 carried at one end of a rock shaft 25² mounted in a suitable support. The said rock shaft has at its opposite end a projection 25', arranged to be contacted by an anti-friction bearing 11' upon the inner end of the arm 11, as it rotates with the wheel 4, thus moving the connected shaft 25² and arm 25. It follows that with each revolution of the wheel 4 the pivotally connected arms 24 and 25 are moved outwardly and by reason of their connection with the disk 23 will rotate the same and the dog carried thereby, the latter moving the notched disk and screw shaft 20, thereby imparting forward movement to the segmental nut 19 and the connected meat holder 15. A suitable spring 26 is suitably supported at one end in any desired manner and at the opposite end to the arm 25, and is constructed and arranged to apply tension to said arm, and thereby normally hold the projection 25' in the path of the bearing 11', whereby it is engaged by the latter.

Means are provided to regulate the inter-

mittent movement imparted to the holder 15, in order to obtain various sized slices to suit the desired use, the said means comprising a guide disk 27 arranged at one side of the disk 21, and of a diameter preferably exceeding that of the notched disk 21, whereby the dog, which extends over the periphery of said disk 27 is held out of engagement with the notches on the disk 21, except for a limited movement to be regulated by the position of a cut away portion 27' of said guide disk relative to the path of movement of the dog. To this end the guide disk 27 is adjustable, being pivotally connected to an arm 28 having a thumb screw adjustment with the support A. By adjusting the arm 28, and in turn the guide disk 27, the position of the slotted portion thereof will be changed relative to the path of movement of the dog and the amount of each movement of the pan 15 thereby regulated, the same being, as before stated, dependent upon the length of engagement between the dog and said notched portion of the disk 21.

In order to stop the feeding and prevent disassembling or breakage of parts when the pan reaches the end of the guide-way, I provide means for removing the segmental nut 19 from the path of the screw shaft 20, the same comprising a cam 29 suitably arranged at the end of the screw shaft and adapted to engage the arm 18' carrying said nut. By this engagement the nut is moved about its pivot and out of contact with the screw shaft.

30 is a curved spring member carried by the arm 18 and arranged to snugly fit about a similarly curved seat 30' on the arm 18', when the nut is removed from contact with the screw shaft. The nut is held in this position until released by a cam 31 which engages the spring member 30 upon the pan being shifted back to starting position.

The operation is plain. The meat is placed upon the pan and is secured by the follower 17 in position. Power is applied to the wheel 2 and drive wheel 4 which latter rotates the driven shaft 5 to impart rotary movement to the knife 10. At the same time a reciprocating movement is given to said knife by the operation of the rock arm 14 through the medium of the rocking sleeve 13 and link connection 11—12 with the driven nut 4. The guide disk 27 having been previously adjusted to suit the desired use, at each revolution of the wheel 4 forward movement is imparted to the pan 15 by the nut and screw engagement 19—20, the latter being also operated by lever connections with said drive wheel 4.

Claims.

1. In an apparatus of the character described, the combination of a bed or frame, a cutting member mounted thereon, a support therefor, including a rock sleeve and a rock arm having a rigid connection with the rock

sleeve at one end and a connection at its opposite end with the cutting member, and means for imparting movement to the rock sleeve comprising a rotary member and a plurality of connected links, one of said links being pivotally connected to said rotary member and the other link being rigidly connected to the rock sleeve, and means having operative connection with said rotary member for imparting rotary movement to the cutter.

2. In an apparatus of the character described, the combination of a main support, a cutting member, a support therefor mounted on the main support and including a rock arm, a connection between the rock arm and the cutting member, and means for imparting movement to the rock arm including a rock sleeve having a rigid connection with the rock arm having bearings on the said main support, a drive wheel, a link pivotally connected at one end eccentric to said wheel and free at its opposite end, and an auxiliary link pivoted to the free end of said first mentioned link and rigidly connected at its opposite end to said rock sleeve.

3. In an apparatus of the character described, the combination of a bed, a cutting member, a support therefor including a rock sleeve mounted on the bed, a rock arm rigidly connected to the sleeve and operatively connected with said cutting member, means for imparting movement to the rock sleeve including a rotary member and connected links, one of which being pivotally connected to said rotary member and the other rigidly connected to said rock sleeve, a meat support on the bed, and means operated by one of said links for imparting movement to said meat support toward the cutting member.

4. In an apparatus of the character described, the combination with a main support, of a cutting member mounted thereon, a support for the cutting member including a rock arm, and a connection between the rock arm and the cutting member, and means for imparting movement to the rock arm including a rock sleeve mounted on the main support, and the said sleeve having a rigid connection with the rock arm, a drive wheel, a link pivotally connected at one end eccentrically to said wheel and free at its opposite end, and an auxiliary link pivoted to the free end of said last mentioned link and rigidly connected to said rock sleeve, a meat support and feeding means for moving the material toward the knife including a reciprocating arm arranged in the path of and adapted to be operated by the first mentioned link, and a nut and screw connection between said reciprocating arm and feed means.

5. In an apparatus of the character described, the combination of a drive wheel, a support therefor, a main shaft rotated by

the drive wheel, bearings for the shaft, a rock sleeve loosely sleeved upon the main shaft, a rock arm on the rock sleeve, a supplemental shaft rotatably mounted on the rock arm, a cutting member connected to said supplemental shaft, means for transmitting the movement of said main shaft to the supplemental shaft and the cutting member carried thereby, and means for moving the rock sleeve including a link connection between said drive wheel and rock sleeve.

6. In an apparatus of the character described, a cutting device, a support therefor, a feed for the material to be acted upon by the cutter including a slidable holder, a support for the holder, a segmental nut carried by the holder, a rotatable screw member in engagement with the nut, means for rotating the screw member to impart longitudinal movement to the nut and holder, means for moving the nut out of engagement with the screw member, and spring means for automatically locking the nut in this position.

7. In an apparatus of the character described, the combination of a cutting member, a rotary drive wheel having an operative connection with the cutting member, a support for feeding meat to the cutter, means for imparting slidable movement to the support including a nut and screw engagement, means for imparting rotary movement to the screw, including a dog arranged to grip a part carried by the screw, a disk sleeved upon the screw carrying the dog, a projection carried by and movable with the drive wheel, and a plurality of connected links interposed between said disk and projection, and controlled by the latter for operating the disk.

8. In an apparatus of the character described, the combination of a supporting bed or frame, a cutting member, a member arranged to feed the material toward said cutter, a rotatable shaft, means for converting the rotary movement of said shaft into a slidable movement of said feeding member, and means for rotating the shaft including a dog arranged to grip a part carried by the shaft and having a rotatable support, means for adjusting the limit of rotation of said shaft including a disk arranged to normally hold the dog out of engagement with the shaft and having a slotted portion permitting said engagement, and means for adjusting the slotted portion of the disk relative to the dog including an elongated arm pivoted to the disk and adjustably connected at its outer end to said supporting bed or frame.

9. In an apparatus of the character stated, the combination of a rotary cutting member, a main shaft, means for rotating the same and means for imparting rotation to the cutting member from said shaft, a support for

the shaft and cutting member, a rock sleeve sleeved upon the main shaft, a rock arm having a rigid connection with the rock sleeve and operatively connected with the cutting member to impart a reciprocating movement thereto, a feeding member for moving the material to be acted upon toward the cutting member, a guide support for the feed member, a rotary member loosely sleeved upon said rock sleeve, and means operated by the rotary member to impart movement to said feed member.

10. In an apparatus of the character described, the combination of a cutting member, a support therefor including a rock sleeve and an arm having connection with the rock sleeve, and cutting member respectively, and means for imparting movement to the rock sleeve comprising a rotatable member, a link pivotally connected with the rotary member and having a connection with the rock sleeve, a member adapted to feed the material toward the cutter, a rotatable sleeve mounted upon the rock sleeve, means for converting the rotation of said rotatable sleeve to a slidable movement of the feed member, means for rotating the rotatable sleeve including a dog arranged to grip a part carried by the rotatable sleeve, an operating member for the dog actuated by said link, and means for adjusting the limit of rotation of said rotatable sleeve including a guide disk arranged to be engaged by the dog.

11. In a meat cutting apparatus, the combination of a cutting member, a support therefor including a rock arm and means for imparting movement toward the latter including a drive member, a link connection between the driving member and the rock arm, a meat support, and feeding means for moving the meat support toward the knife, and means actuated by said link connection for governing the movement of the feeding means.

12. In a meat cutting apparatus, the combination of a cutting member, a support therefor including a rock arm, and means for imparting movement toward the latter including a driving member, a link pivotally connected at one end to said member, and having pivotal connection with an auxiliary link, said auxiliary link, an operative connection between the auxiliary link and the rock arm, a meat support and feeding means for moving the meat toward the cutting member, a reciprocating arm arranged in the path of and adapted to be reciprocated by the first mentioned link, and an operative connection between the reciprocating arm and feeding means.

13. In an apparatus of the character described, the combination of a cutting member, a support therefor, including a rock sleeve a rock arm rigidly connected to the

rock sleeve and having a connection with the cutting member, and means for imparting movement to the rock sleeve comprising a rotatable member and a plurality of connected links, one of said links being pivotally connected to said rotary member and the other link being rigidly connected to the rock sleeve, a member adapted to feed the material toward the cutter, a rotatable feed shaft sleeved upon said rock sleeve, means for converting the rotation of said feed shaft to a slidable movement of the feeding member, and means for rotating the feed shaft including a dog arranged to grip a part carried by the feed shaft, a rock member carrying said dog, and means actuated by said one of said connected links for imparting movement to said rock member.

14. In an apparatus of the character described, the combination of a cutting member, a support therefor including a rock sleeve, a rock arm rigidly connected to the rock sleeve and having a connection with the cutting member, and means for imparting movement to the rock sleeve comprising a rotatable member, a plurality of connected links, one of said links being pivotally connected to said rotary member and the other link being rigidly connected to said rock sleeve, a member adapted to feed the material toward the cutter, a rotatable feed shaft sleeved upon said rock sleeve, means for converting the rotation of said feed shaft to a slidable movement of the feeding member, and means for rotating the feed shaft including a dog arranged to grip a part carried by the feed shaft, a rock member carrying said dog, a rock shaft operably connected with said member, and a projection on said rock shaft adapted to be contacted by a bearing on one of said connected links.

15. In an apparatus of the character described, the combination of a cutting member, a member arranged to feed the material toward said cutter, a rotatable shaft, means for converting the rotation of said shaft to a slidable movement of said feeding member and means for rotating the shaft including a dog arranged to grip a part carried by the shaft, a rock member carrying said dog and sleeved upon the shaft, a reciprocating arm pivoted at one end to the rock member and at its opposite end to a supplemental arm, said supplemental arm, a rock shaft upon which said supplemental arm is mounted, and means for operating the rock shaft.

16. In an apparatus of the character described, the combination of a cutting member, a member arranged to feed material toward the cutter, supporting means for the said members, a rotatable shaft, means for converting the rotary movement of said shaft to a slidable movement of said feeding member, and means for rotating the shaft including a dog arranged to grip a part carried

by the shaft, a disk sleeved upon the shaft and carrying the dog, and arranged to move back and forth, a reciprocating arm pivoted at one end to the disk and at its opposite end to a supplemental arm, said supplemental arm, a rock shaft upon which the supplemental arm is mounted, a projection upon the rock shaft, and an antifriction bearing arranged to engage said projection, and actuating means for the bearing and the cutting member.

17. In an apparatus of the character described, the combination of a suitable support, a rotatable drive wheel, an elongated shaft, a cutter, a rock sleeve mounted upon said shaft intermediate its ends, a rock arm rigidly connected to the rock sleeve and having a connection with the cutter for imparting rocking movement to the cutter, a connection between the drive wheel and rock sleeve for operating the latter, a gear connection between one end of the shaft and the drive wheel for rotating the shaft, and a drive connection between the opposite ends of the shaft and cutter for imparting a rotary movement to the cutter.

18. In apparatus of the character described, the combination of a rotatable drive wheel, an elongated shaft, a cutter, a rock sleeve mounted upon said shaft intermediate its ends, a rock arm rigidly connected to the rock sleeve and connected to the cutter for imparting movement to the cutter, a connection between the drive wheel and rock sleeve for operating the latter, a gear connection between one end of the shaft and drive wheel for rotating the shaft, and a drive connection between the opposite end of the shaft and cutter for rotating the latter, said drive connection comprising a wheel upon said opposite end of the shaft, a wheel movable with the cutter and means for imparting the rotation of the wheel of the shaft to the other wheel.

19. In a machine of the character described, the combination of a rotatable drive wheel, an elongated shaft, a cutter, a rock sleeve mounted upon said shaft intermediate its ends, a rock arm connected to the cutter at one end and rigidly connected at its opposite end to the rock sleeve cutter for imparting rocking movement to the cutter, and a connection between the drive wheel and rock sleeve for operating the latter, a gear connection between one end of the shaft and drive wheel for rotating the shaft, and a

drive connection between the opposite ends of the shaft and cutter for rotating the latter, said drive connection comprising a wheel upon said opposite end of the shaft, a wheel movable with the cutter, and a rod rigidly connected to the respective wheels for communicating the rotary movement of the one to the other.

20. In an apparatus of the character described, having a suitable support, a rotary cutter, a rock sleeve and means for connecting the same to the cutter for imparting rocking movement to the latter, a rotatable shaft loosely fitting within the rock sleeve, a drive connection between the shaft and cutter, a drive wheel for the shaft, and means interposed between and having direct connection with the drive wheel and rock sleeve respectively for imparting rocking action to the sleeve.

21. In an apparatus of the character described, having a suitable support, a rotary cutter, a rock sleeve, a rotatable shaft loosely fitting within the rock sleeve, an arm extending between and connected to the sleeve and cutter for rocking the latter, a drive connection between the shaft and cutter, a drive wheel for said shaft, and means interposed between and connected with the drive wheel and rock sleeve respectively for imparting rocking movement to the sleeve.

22. In an apparatus of the character described, having a suitable support, a rotary cutter, a rock sleeve, means for connecting the cutter to the rock sleeve, comprising a rock arm connected at one end to the cutter and rigidly connected at its opposite end to the rock sleeve a rotatable shaft loosely fitting within the rock sleeve, a drive connection between the shaft and cutter, a drive wheel geared directly to said shaft and means interposed between and having direct connection with the drive wheel and rock sleeve respectively for imparting rocking movement to the sleeve and shaft comprising a link pivotally connected to the drive wheel and an auxiliary link pivoted to the first mentioned link and having a rigid connection at its opposite end with the rock sleeve.

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

CHARLES W. KUHN.

Witnesses:

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E. EDMONSTON, Jr.