

No. 896,862.

PATENTED AUG. 25, 1908.

E. F. SMITH.  
SLICER.

APPLICATION FILED JULY 25, 1907.

3 SHEETS—SHEET 1.

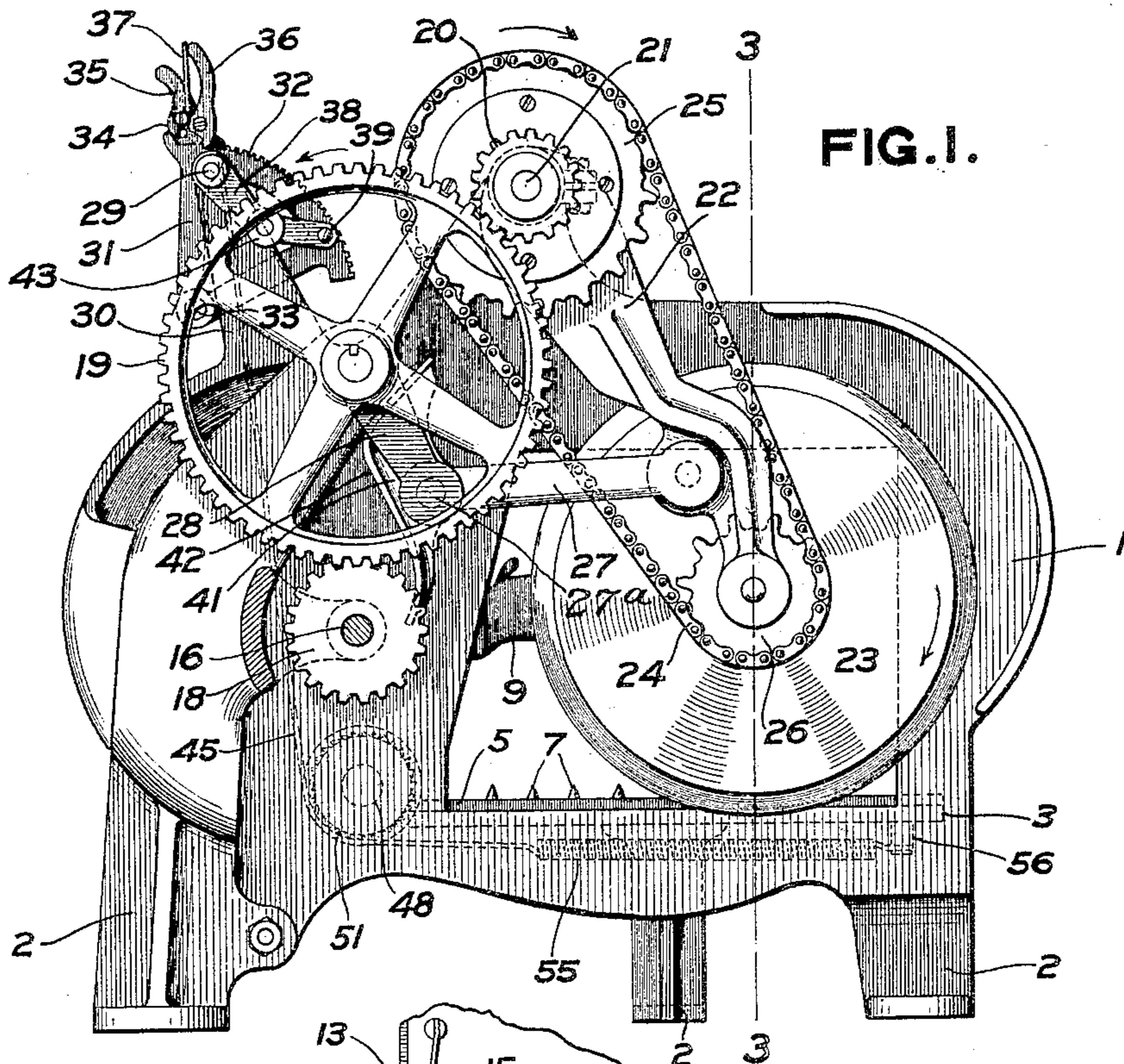
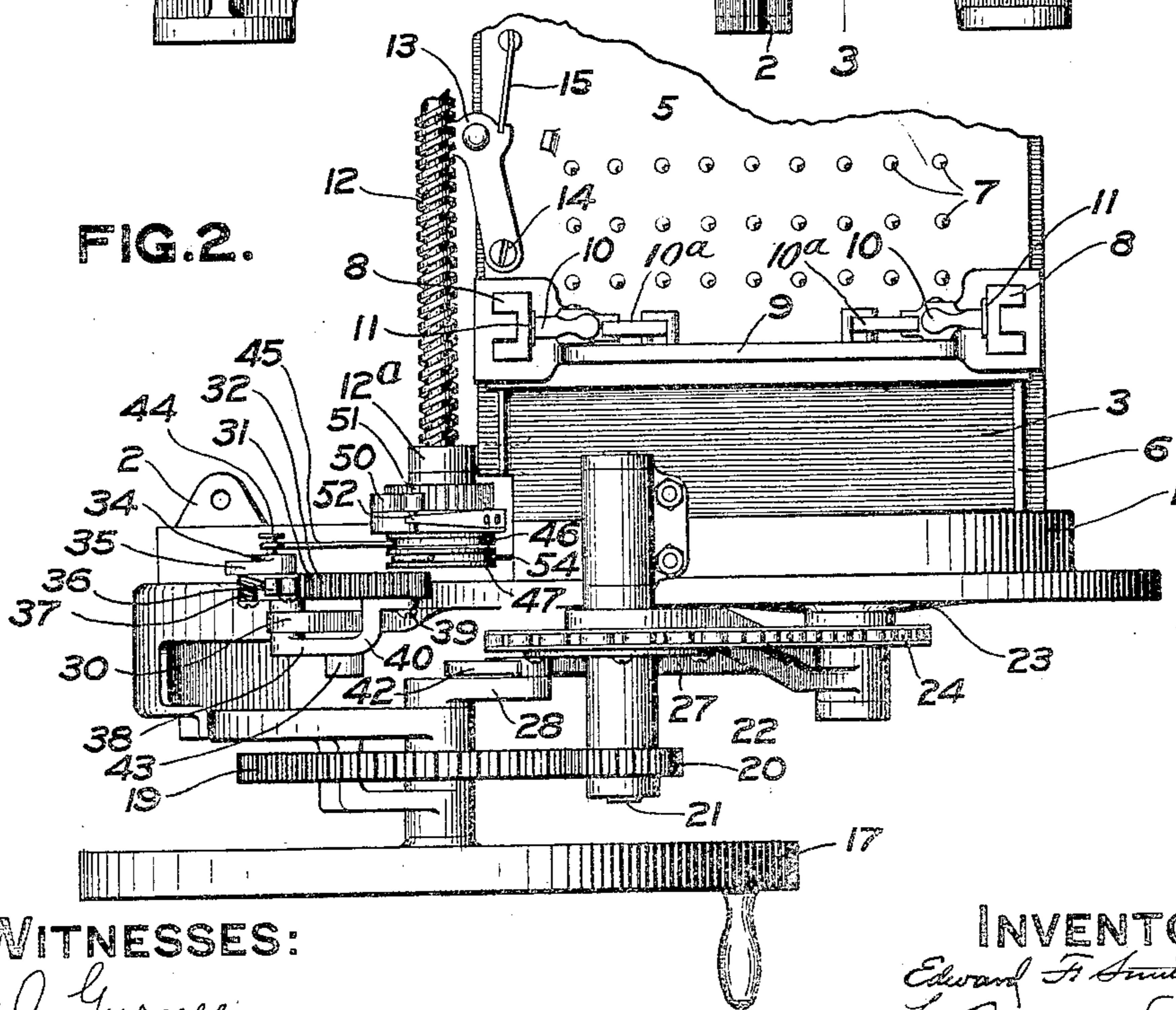


FIG. 2.



WITNESSES:

*W. Gurnee*  
*L. Thon.*

INVENTOR:

*Edward F. Smith*  
*by O. J. Davis*  
*his atty.*

No. 896,862.

PATENTED AUG. 25, 1908.

E. F. SMITH.  
SLICER.

APPLICATION FILED JULY 25, 1907.

3 SHEETS—SHEET 2.

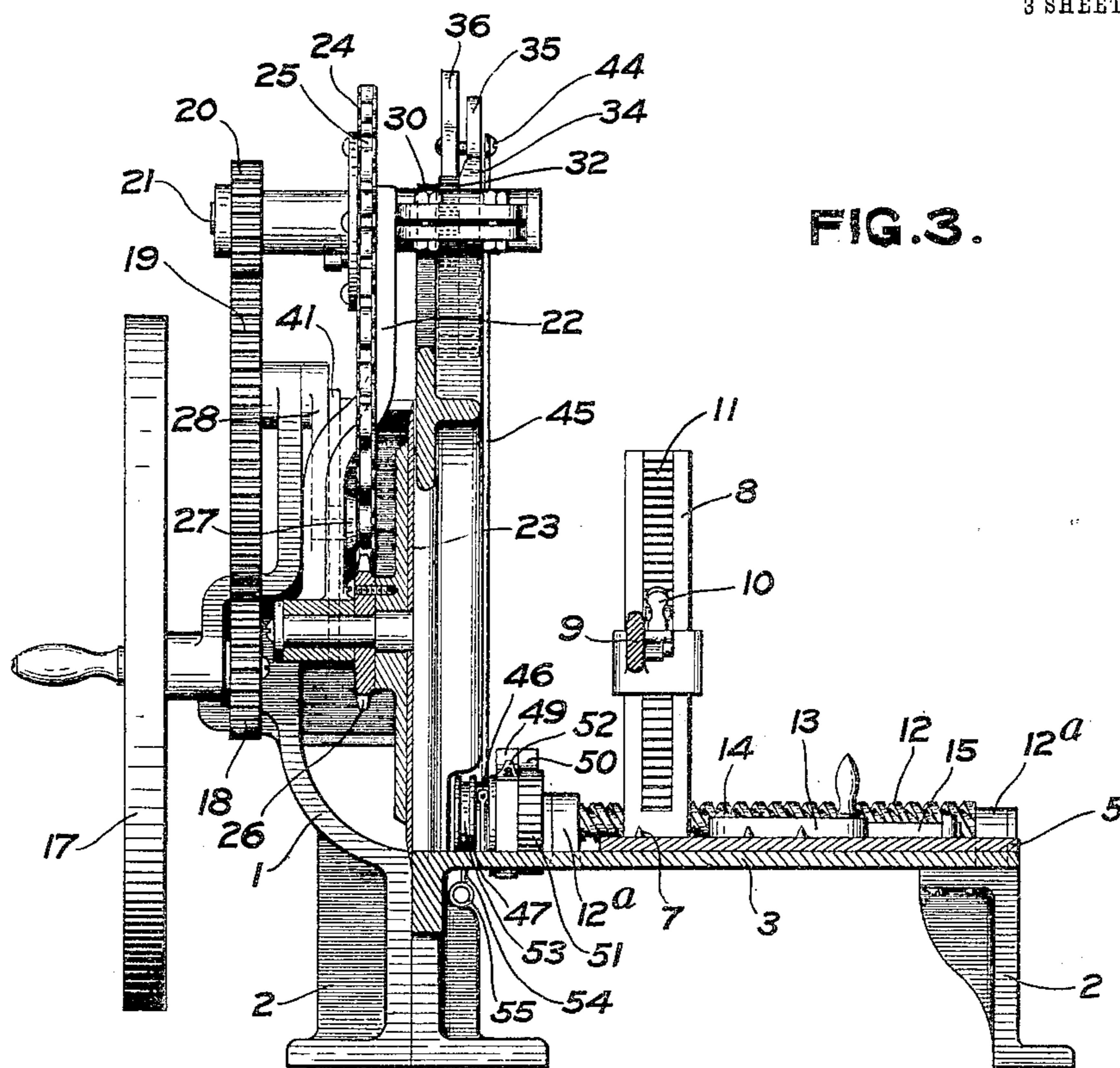


FIG. 3.

FIG. 4.

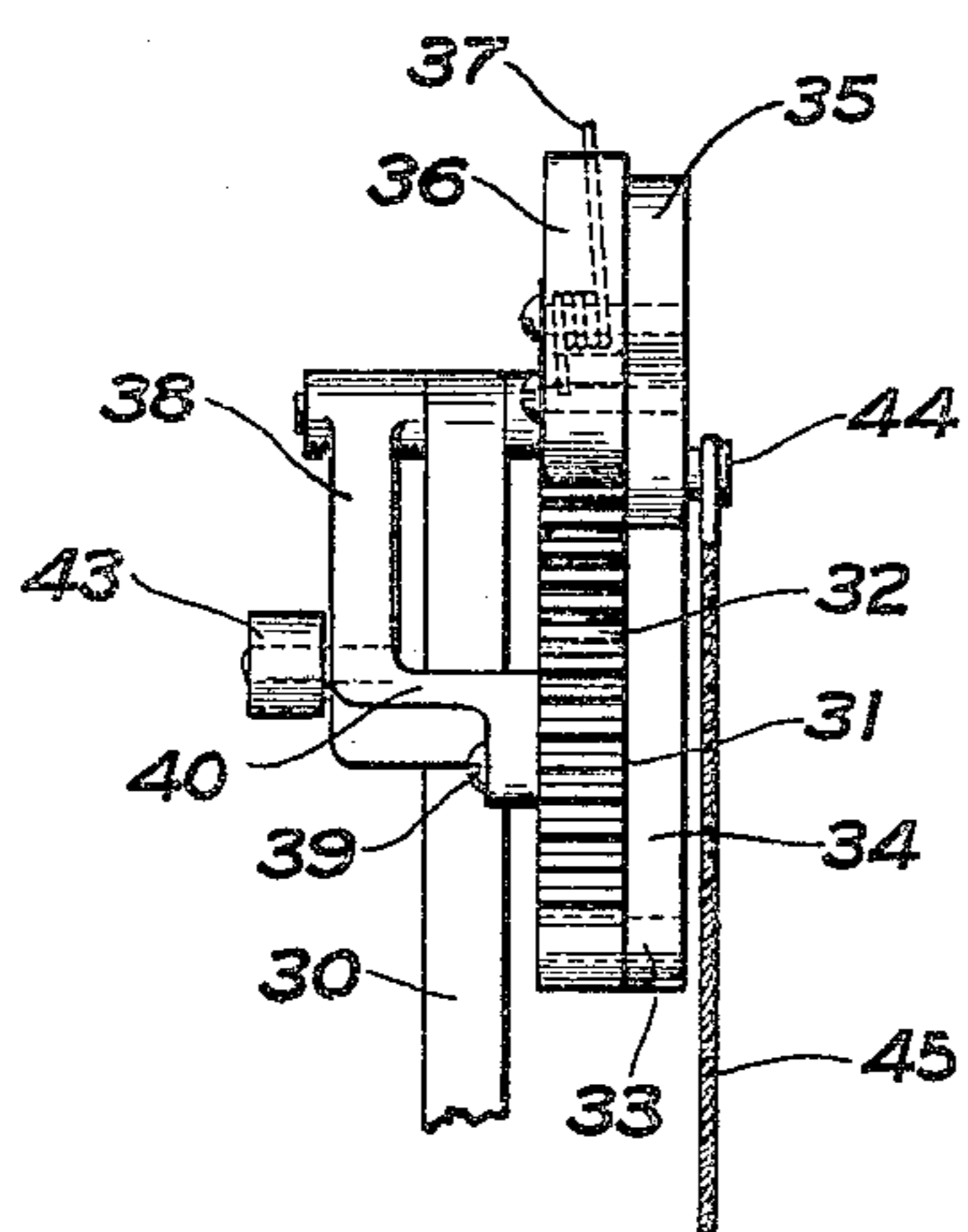
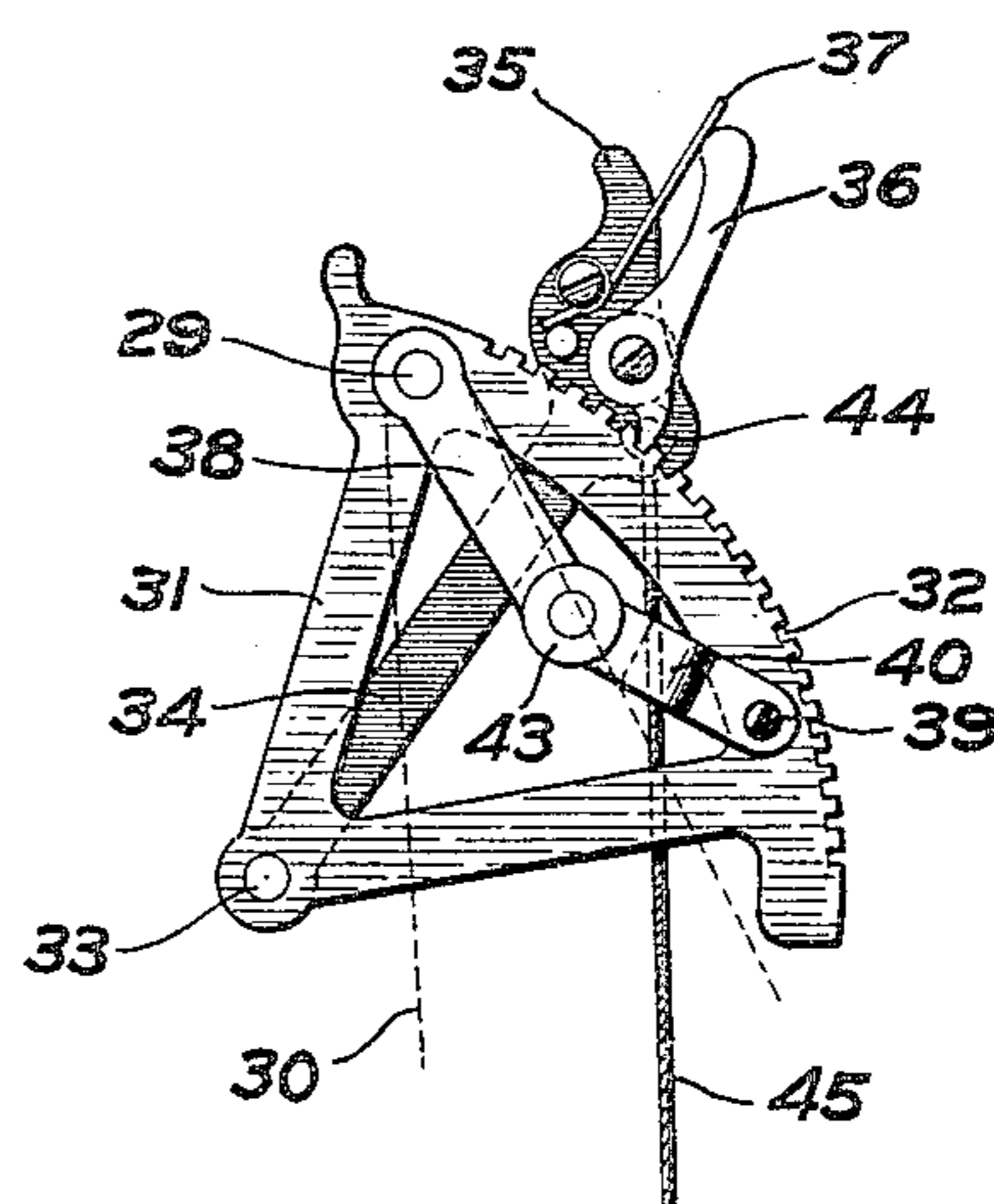


FIG. 5.



WITNESSES:

W. Gurnee.  
L. Thon.

INVENTOR:

Edward F. Smith  
by Ogden & Davis  
his attys

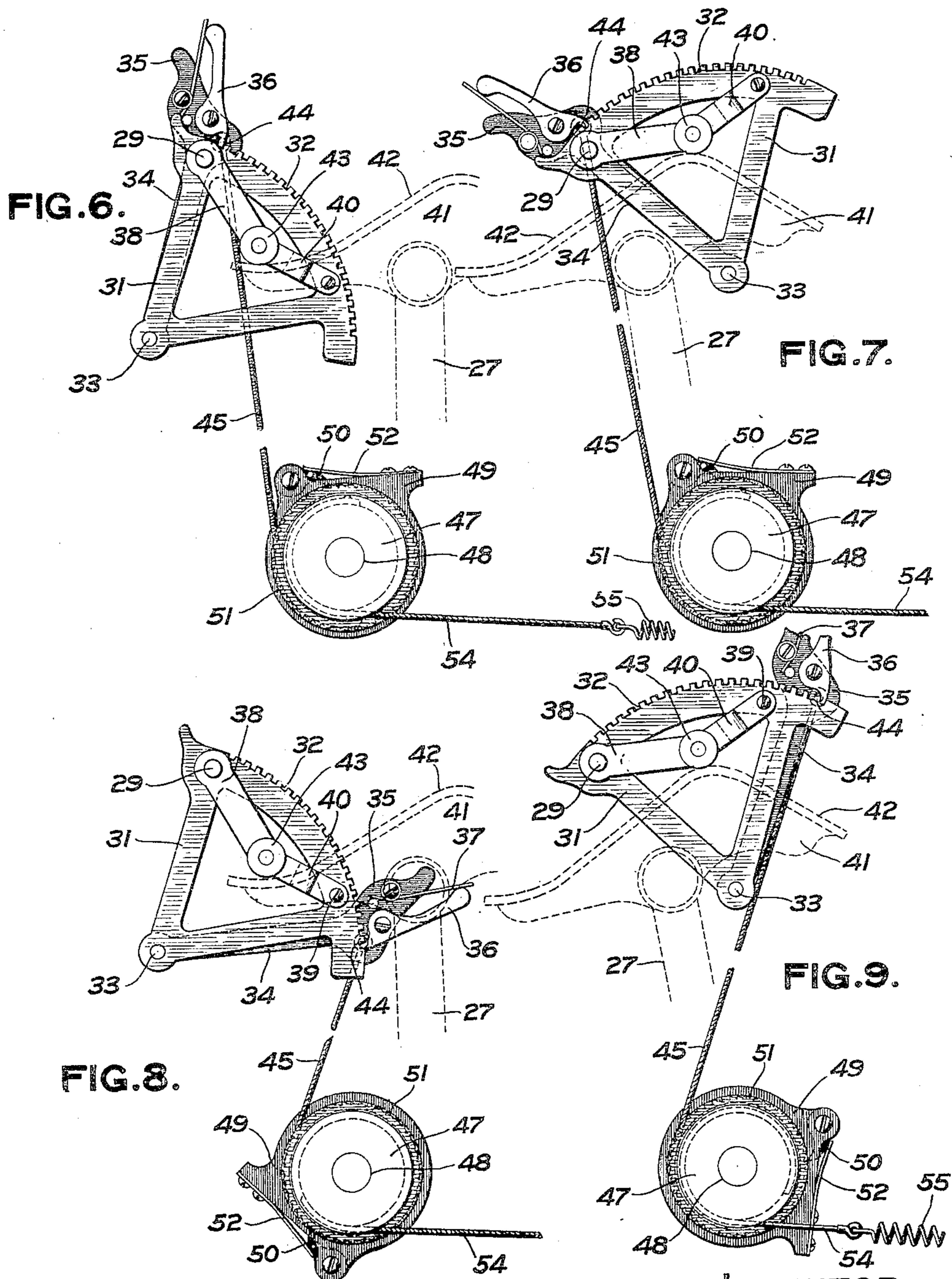
No. 896,862.

PATENTED AUG. 25, 1908.

E. F. SMITH.  
SLICER.

APPLICATION FILED JULY 25, 1907.

3 SHEETS—SHEET 3.



WITNESSES:

Clarence W. Carroll  
H. Gurnee

INVENTOR:

Edward F. Smith  
by Osgood & Davis  
his attys

# UNITED STATES PATENT OFFICE.

EDWARD F. SMITH, OF ROCHESTER, NEW YORK, ASSIGNOR TO JOSIAH ANSTICE, OF ROCHESTER, NEW YORK.

## SLICER.

No. 896,862.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed July 25, 1907. Serial No. 385,569.

*To all whom it may concern:*

Be it known that I, EDWARD F. SMITH, a citizen of the United States, and resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Slicers, of which the following is a specification.

This invention relates to slicers for cutting or slicing bread, meat etc., into pieces of uniform thickness, and especially to a novel form of feed mechanism, whereby the thickness of said slices may be regulated accurately and may be varied.

In the drawings:—Figure 1 is a front elevation; Fig. 2 is a top plan view; Fig. 3 is a section on the line 3—3 of Fig. 1; Fig. 4 is a partial elevation of the feed-adjusting device, viewed in the same direction as Fig. 3; Fig. 5 is a front elevation of the same parts; Fig. 6 is a front elevation of the complete feed-adjusting mechanism in normal position, set for cutting the thinnest slices of which the machine is capable; Fig. 7 is a similar view, with the parts in extreme operating position; Fig. 8 is a similar view, with the parts in normal position, set for cutting thickest slices; and Fig. 9 is also a like view, with the parts in extreme operating position.

The machine has a frame 1, provided with legs 2. Fixed to the rear of the frame 1 is a horizontal table 3, on which a carriage 5 slides in guideways 6. Pins or lugs 7 project upward from said carriage, for the purpose of engaging the material to be cut. Posts 8 on the sides of the carriage 5 act as vertical guide-bars for a clamp 9, which is pressed downward by hand upon the said material, and is prevented from springing upward again by the automatic engagement of pawls 10, actuated by springs 10<sup>a</sup>, Fig. 2, with ratchet teeth 11 on the inner faces of said posts.

The means for moving the carriage 5 comprises a worm 12 revoluble in bearings 12<sup>a</sup>, and adapted to engage a toothed block 13, pivoted at 14 on said carriage. The block 13 is held in or out of engagement with the worm 12 by means of a spring device 15. The mechanism for revolving said worm will be described in detail. When the toothed block 13 is in engagement with the worm 12, and the latter is intermittently revolved through a greater or smaller number of degrees of arc, the carriage 5 will be moved forwardly proportionately.

Supported on a shaft 16 in a suitable part

of the frame 1, is a driving pulley or fly-wheel 17. On the same shaft is a pinion 18, which meshes with an idler gear 19, and the latter in turn meshes with a pinion 20 on a shaft 21. One end of an offset knife arm 22 is journaled on the shaft 21, and in the other end of said knife arm is journaled a circular knife 23. A sprocket chain 24 runs over sprockets 25 and 26 fixed on the shaft 21 and on the knife 23, respectively, and forms means by which the knife is revolved.

A link 27 connects the knife arm 22 by a pin 27<sup>a</sup> with the end of a crank 28 on the gear 19. As said gear and crank revolve in the direction indicated by the arrow in Fig. 1, the arm 22 and knife 23 will be swung from right to left at a comparatively rapid rate, and back again from left to right more slowly, thus producing a slow cutting movement and a quick return.

The carriage 5 is moved forward by the thickness of one slice, after the knife 23 has reached the extreme left position, and the meat, etc., thereon will be projected beyond the front edge of the table 3. Then, as the knife 23 returns toward the right side, its rear face bears against the front of the table 3 and the rapidly revolving sharp circular edge slices off smoothly whatever portion of said meat, etc., projects over the front of said table.

Pivoted at 29 on a bracket 30 on the frame, there is a feed arm in the form of a quadrant 31, having teeth or notches 32 in its curved edge. On the pivot 33, from which the arc of said quadrant is described, is pivoted one end of a lever 34. The outer end 35 of the lever 34 carries a latch 36, normally held in engagement with one of the notches 32 by the pressure of a spring 37. When the latch 36 is raised out of a notch, the lever 34 may be moved to any desired position on the quadrant 31. One end of a bracket 38 is fastened at 39 to the quadrant 31, and at its opposite end to the pivot 29. An offset is formed in said bracket so as to strike the side of the bracket 30 and limit the downward movement of the said quadrant. Means are provided that are actuated during the return movement of the knife for swinging the feed arm or quadrant 31 to produce movement of the carriage 5.

On the end of the link 27 adjacent to the crank 28 is a head 41, having a cam face 42 on its outer edge. As the gear 19 revolves,

the link 27 and head 41 will be brought to the position shown by dotted lines in Figs. 6 and 8, and the cam face 42 will then strike a roller 43 that is supported on the bracket 38.

5 As the gear 19 continues to revolve, the head 41 will be moved to the left, and the roller 43 will ride up the inclined portion of the cam face 42, swinging the quadrant 31 upward about the pivotal point 29 (Figs. 7 and 9).

10 It is obvious on reference to the drawings that the latch 36, or any point on the lever 34 adjacent thereto, will have less vertical movement if said lever is in the position shown in Fig. 6, than would be the case if  
15 said lever were placed as shown in Fig. 8.

A pin 44 (Fig. 4) is fixed in the rear side of the lever 34, and one end of a flexible band or wire cord 45 is attached thereto. The opposite end of said cord is made fast in one  
20 groove 46 of a sheave 47 (Fig. 2), which turns freely upon an extension 48 of the worm 12. Integral with said sheave is a disk 49, and a pawl 50 thereon is held in engagement with a ratchet 51 by the pressure of a flat spring 52.  
25 The ratchet 51 is fixed solidly upon the extension 48. The sheave 47 has a second groove 53, in which is fastened a cord 54. The opposite end of said cord is attached to a coiled spring 55 under the table 3. The  
30 spring 55 is also made fast to a part of said table at 56. The cords 45 and 54 are attached to the sheave 47 in such a manner that a revolution of said sheave in one direction will unwind the cord 45 and wind up the  
35 cord 54 against the action of the spring 55, while a revolution in the other direction will have an opposite effect.

When the latch 36 is placed on the quadrant 31 in the position shown in Fig. 6, and  
40 said quadrant is lifted by the cam 42 into the position shown in Fig. 7, the pin 44 swings in an arc that is close to the pivot 29, and therefore gives the cord a very small movement. In so moving, the cord 45 is  
45 pulled upward, and the sheave 47 is rotated, carrying with it the disk 49 and pawl 50, which latter advances the ratchet-wheel 51 the length of one ratchet tooth. This movement turns the worm 12 and moves the carriage 5 forward a very short distance. Then  
50 the cam 42 moves out from under the roller 43, and the spring 55 (which pulls continuously on the cord 54) causes the sheave 47 to revolve in the opposite direction to that  
55 just described, and drags the pawl 50 back over the ratchet-wheel 51. The cord 45 will be wound on said sheave, pulling the quadrant 31 downward until the offset 40 of the bracket 38 strikes the bracket 30.

60 If the lever 34 is moved to the point shown in Fig. 8 most distant from the pivot 29, the action of the spring 55 will unwind nearly all of the cord 54 from the sheave 47, and wind on said sheave a great deal of the cord 45.  
65 Then when the cam 42 carries the quadrant

31 to the topmost point, the sheave 47 and ratchet 51 will be advanced nearly three-fourths of a revolution (Fig. 9), and the carriage 5 will therefore be moved a considerable distance forward. The knife 23, on its  
70 cutting movement, will cut a comparatively thick slice from the meat or bread held in said carriage. By placing the latch 36 in any other notch on the quadrant, a slice any  
75 desired thickness may be cut. The thickness of the slice is entirely dependent upon the distance of the pin 44 on the lever 34 from the pivot point 29; increasing as said lever is moved away from said pivot, and  
80 vice versa.

What I claim is:—

1. In a slicing machine, a movable knife, a carriage for the material to be sliced movable toward and from the position of the path of  
85 the knife, an arm pivoted on the frame of the machine, a part movable along said arm and adapted to be fastened in different positions thereon, a connection between said movable part and said carriage, and means  
90 actuated during the return movement of the knife for swinging said arm to produce movement of said connection and of said carriage.

2. In a slicing machine, a movable knife, a carriage for the material to be sliced movable  
95 toward and from the position of the path of the knife, a toothed arm pivoted on the frame of the machine, a part movable along said arm and having a latch adapted to engage the teeth thereof, a connection between  
100 said movable part and said carriage, and means actuated during the return movement of the knife for swinging said arm to produce movement of said connection and of said carriage.  
105

3. In a slicing machine, a movable knife, a carriage for the material to be sliced movable toward and from the position of the path of  
110 the knife, an arm pivoted on the frame of the machine and having a curved edge, a lever pivoted to said arm and having a part adapted to be fastened at different positions on said curved edge, a connection between said  
115 lever and said carriage, and means actuated during the return movement of the knife for swinging said arm to produce movement of said connection and of said carriage.

4. In a slicing machine, a movable knife, a carriage for the material to be sliced movable  
120 toward and from the position of the path of the knife, an arm pivoted on the frame of the machine and having a curved, toothed edge, a lever pivoted to said arm and having a latch adapted to engage in the teeth on said  
125 curved edge, a connection between said lever and said carriage, and means actuated during the return movement of the knife for swinging said arm to produce movement of said connection and of said carriage.

5. In a slicing machine, a movable knife, a  
130

carriage for the material to be sliced movable toward and from the position of the path of the knife, an arm pivoted on the frame of the machine, a part movable along said arm and adapted to be fastened in different positions thereon, a rotary shaft, means for moving said carriage by the rotation thereof, a wheel, a pawl and ratchet connection between said wheel and said shaft, a flexible band around said wheel and connected to said movable part, and means actuated during the return movement of the knife for swinging said arm to produce movement of said carriage.

6. In a slicing machine, a movable knife, a carriage for the material to be sliced movable toward and from the position of the path of the knife, an arm pivoted on the frame of the machine having a curved, toothed edge, a lever pivoted to said arm having a latch adapted to engage the teeth along said curved edge, a rotary shaft, means for moving said carriage by the rotation of the shaft, a wheel, a pawl and ratchet connection between said wheel and said shaft, a flexible band around said wheel and connected to said lever, and means actuated during the return movement of the knife for swinging said arm to produce movement of said carriage.

7. In a slicing machine, a movable knife, a carriage for the material to be sliced movable toward and from the position of the path of the knife, an arm pivoted on the frame of the machine, a part movable along said arm and adapted to be fastened in different positions thereon, a rotary shaft, means for moving said carriage by the rotation thereof, a wheel, a pawl and ratchet connection between said wheel and said shaft, a flexible band around said wheel and connected to said movable part, means for actuating said knife, and a striker carried by said actuating means and set to strike and to swing said arm to produce movement of said carriage.

8. In a slicing machine, a movable knife, a carriage for the material to be sliced movable toward and from the position of the knife, an arm pivoted on the frame of the machine having a curved, toothed edge, a lever pivoted to said arm having a latch adapted to engage the teeth along said curved edge, a rotary shaft, means for moving said carriage by the rotation of the shaft, a wheel, a pawl and ratchet connection between said wheel

and said shaft, a flexible band around said wheel and connected to said lever, means for actuating said knife, and a striker carried by said actuating means and set to strike and to swing said arm to produce movement of said carriage.

9. In a slicing machine, a movable knife, a carriage for the material to be sliced movable toward and from the position of the path of the knife, an arm pivoted on the frame of the machine, a part movable along said arm and adapted to be fastened in different positions thereon, a rotary worm shaft, a toothed part on said carriage for engaging said worm shaft, a wheel, a pawl and ratchet connection between said wheel and said worm shaft, a flexible band around said wheel and connected to said movable part, and means actuated during the return movement of the knife for swinging said arm to produce movement of said carriage.

10. In a slicing machine, a movable knife, a carriage for the material to be sliced movable toward and from the position of the path of the knife, an arm pivoted on the frame of the machine, a part movable along said arm and adapted to be fastened in different positions thereon, a rotary worm shaft, a toothed part on said carriage for engaging said worm shaft, a wheel, a pawl and ratchet connection between said wheel and said worm shaft, a flexible band around said wheel and connected to said movable part, means for actuating said knife, and a striker carried by said actuating means and set to strike and to swing said arm to produce movement of said carriage.

11. In a slicing machine, a movable knife carried by a swinging knife arm, a carriage for the material to be sliced movable toward and from the position of the path of the knife, a feed arm pivoted on the frame of the machine, a part movable along said arm and adapted to be fastened in different positions thereon, a connection between said movable part and said carriage, a rotary driving mechanism for swinging said knife arm comprising a crank and a link attached to said arm, and a part carried by said link for engaging and swinging said feed arm to produce movement of said carriage.

EDWARD F. SMITH.

Witnesses:

H. L. OSGOOD,  
D. GURNEE.