

E. F. SMITH.
SLICING MACHINE.
APPLICATION FILED JAN. 8, 1903.

908,896.

Patented Jan. 5, 1909.

2 SHEETS—SHEET 1.

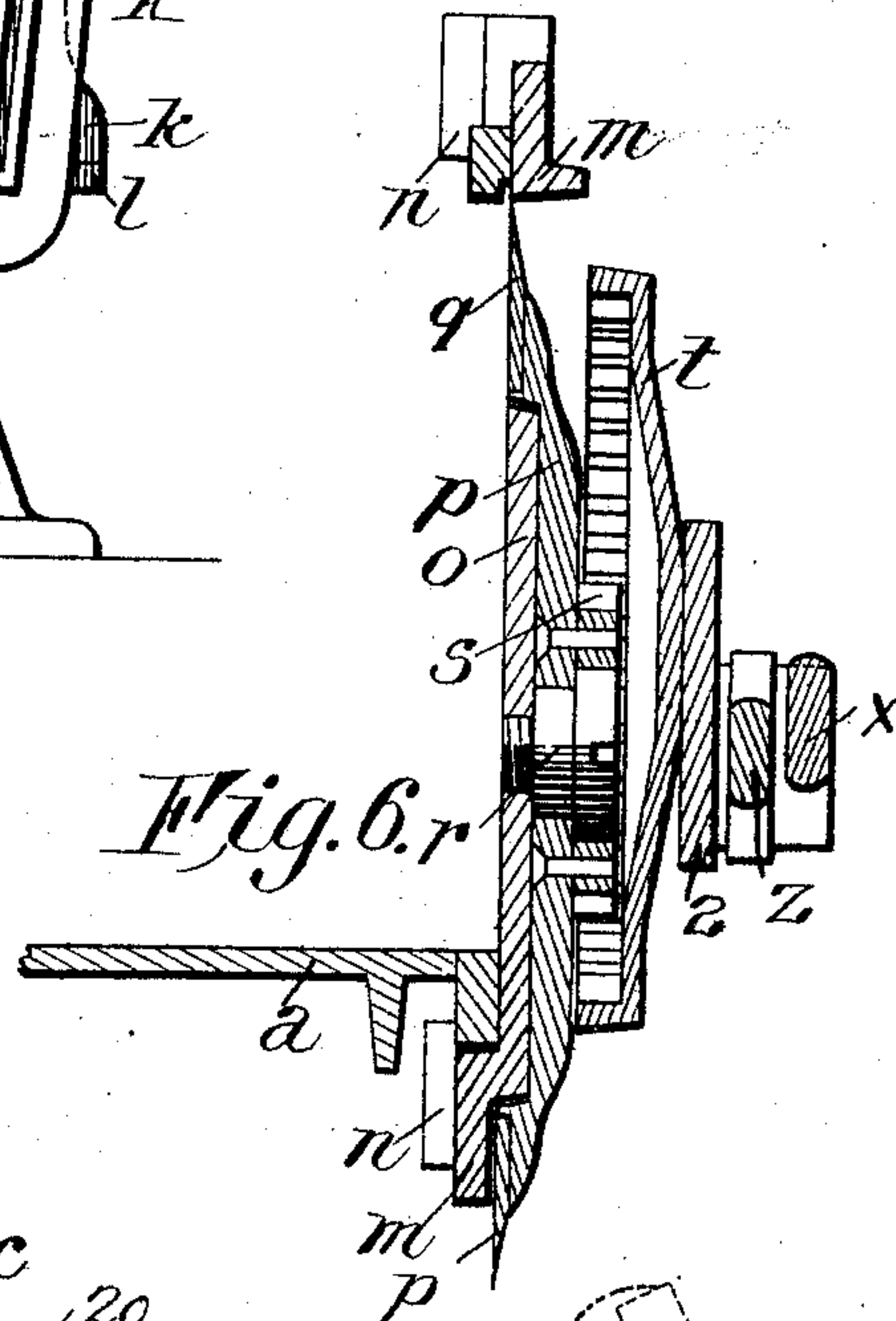
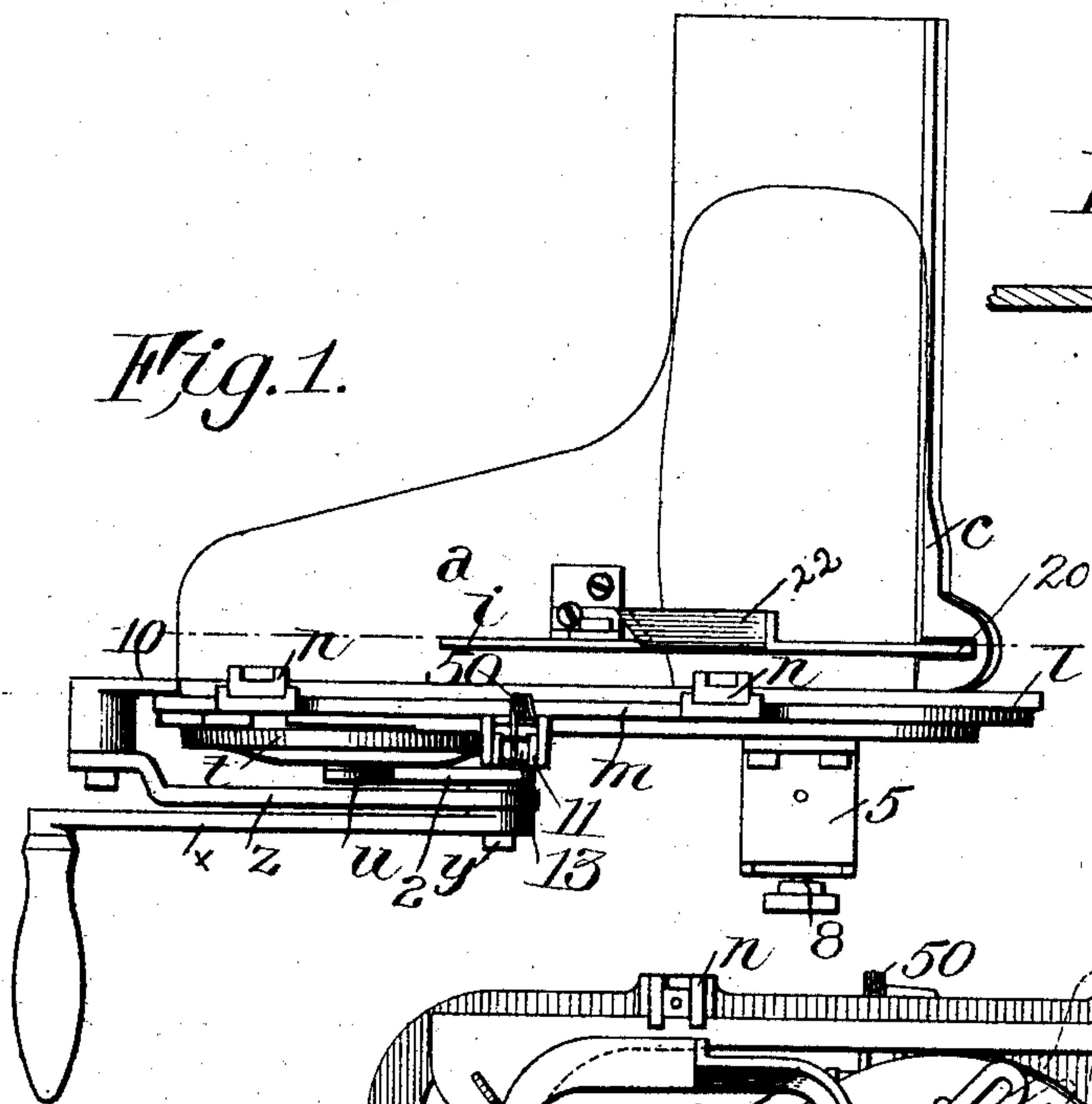
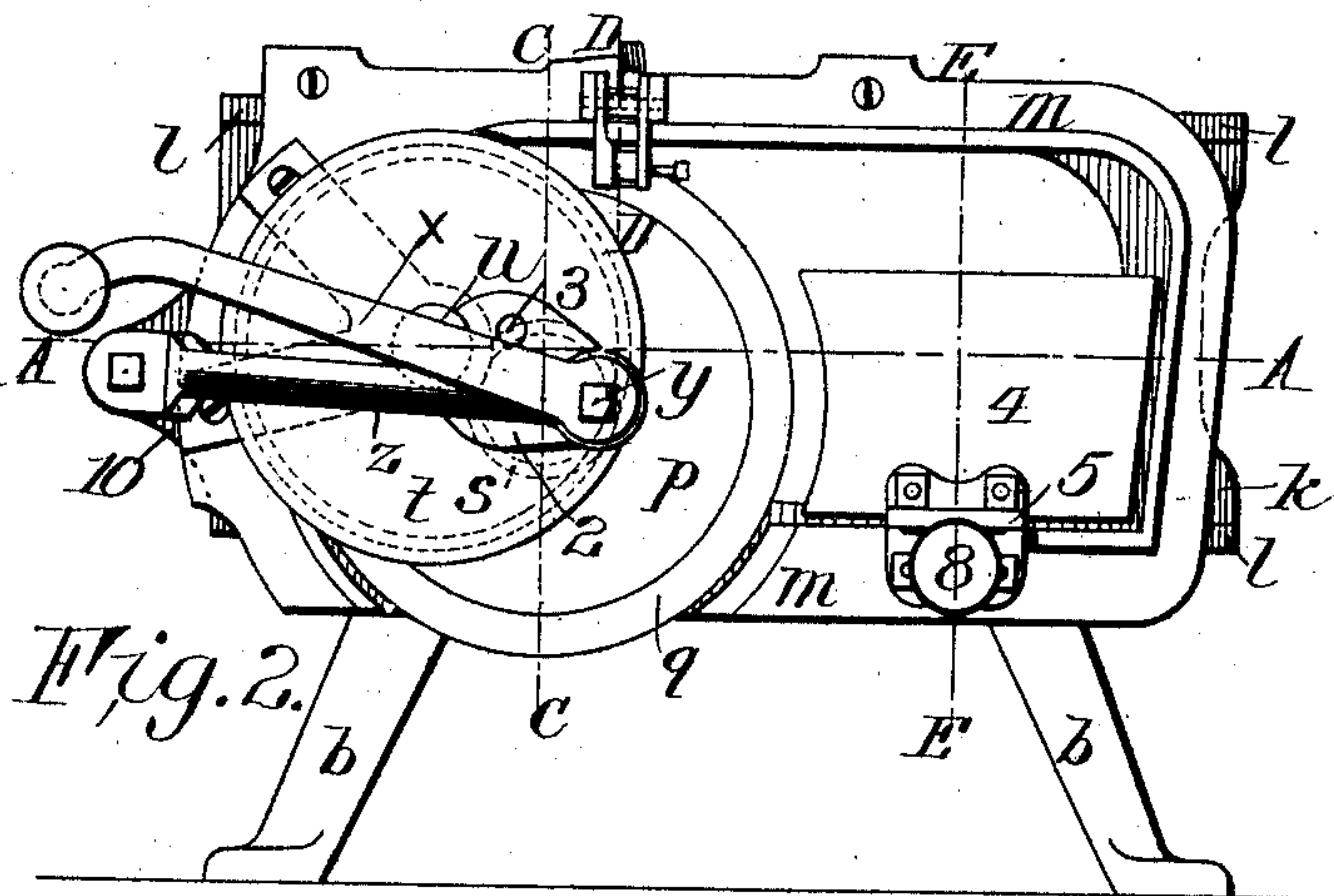
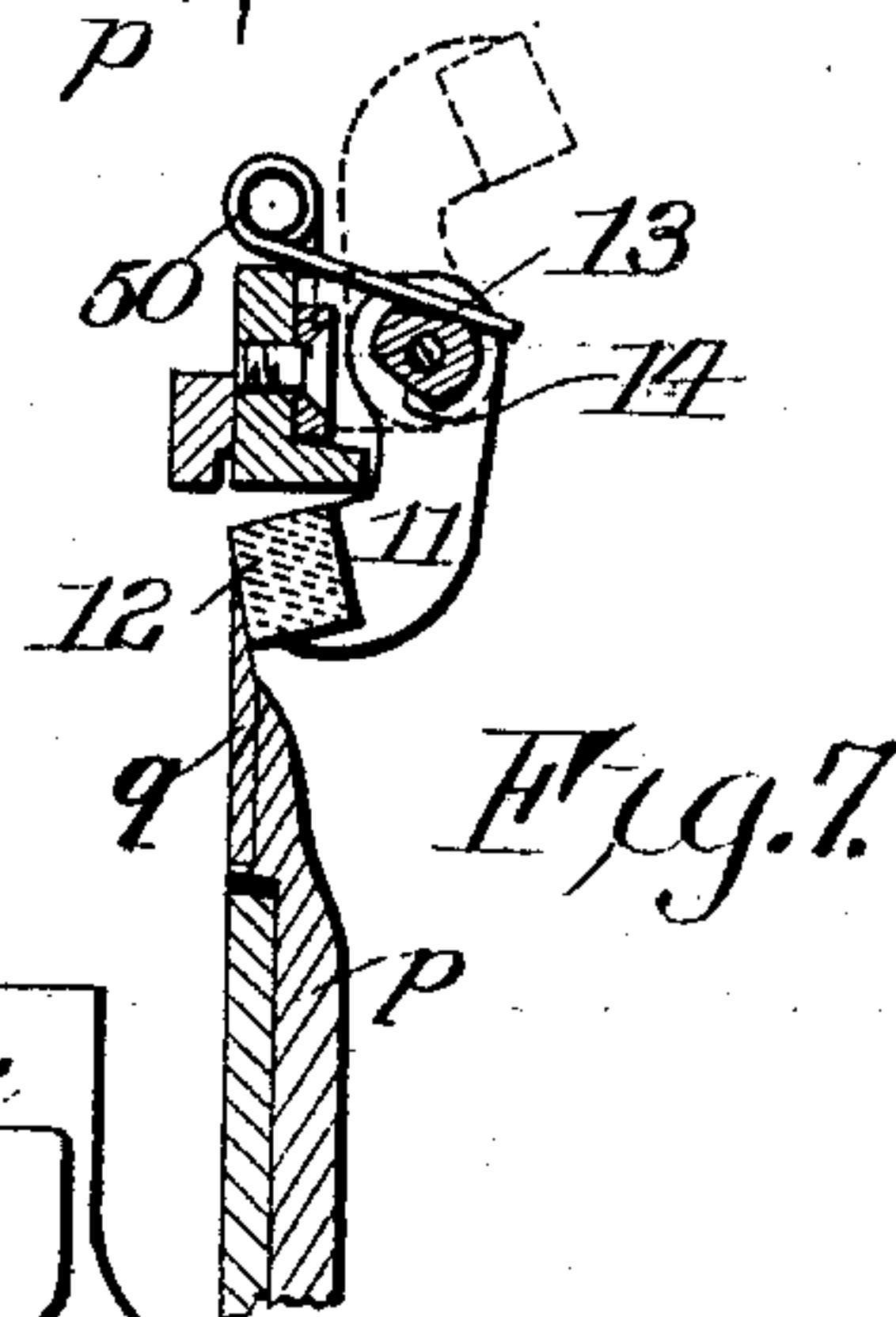
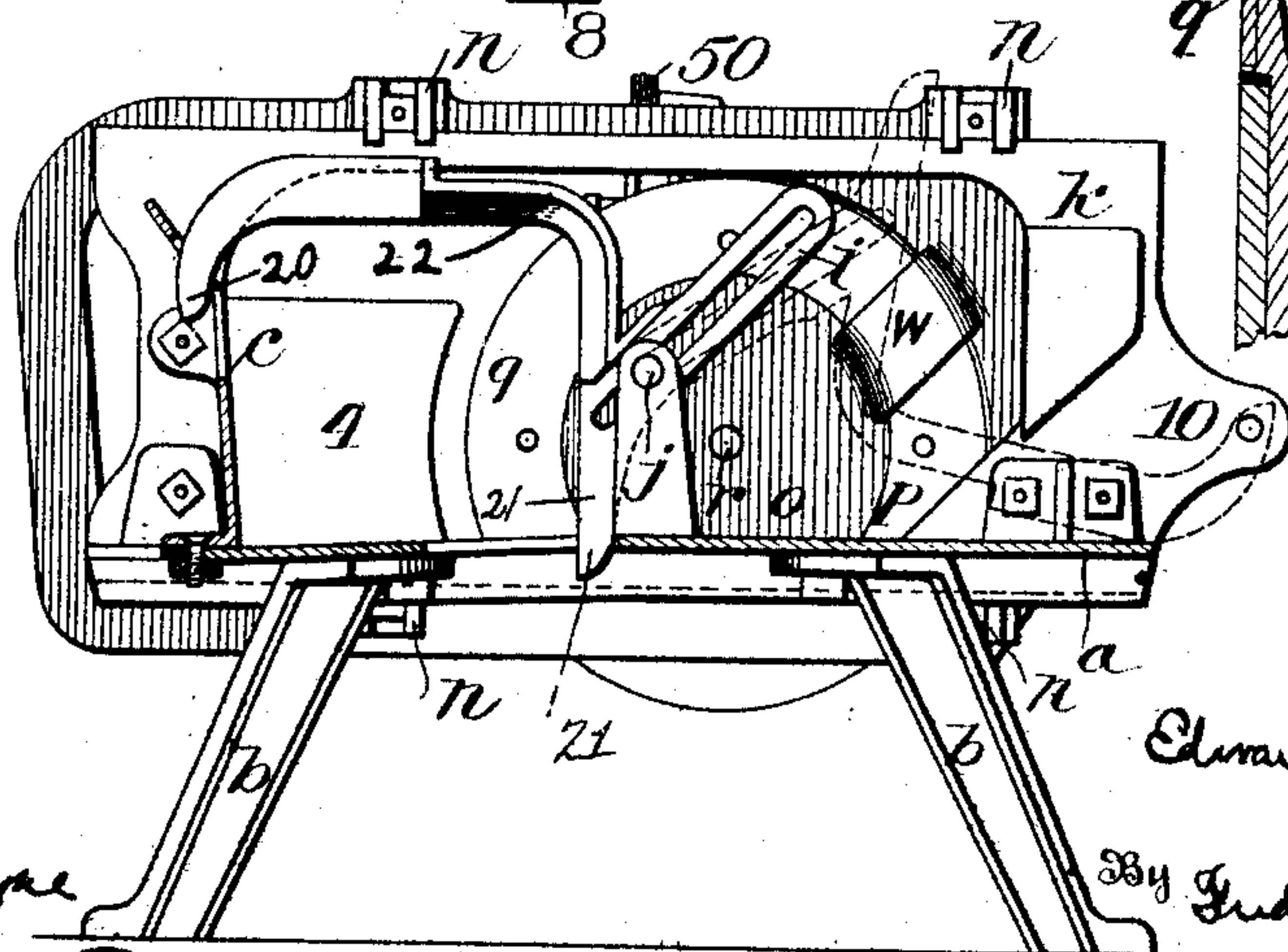


Fig. 4.



Witnesses
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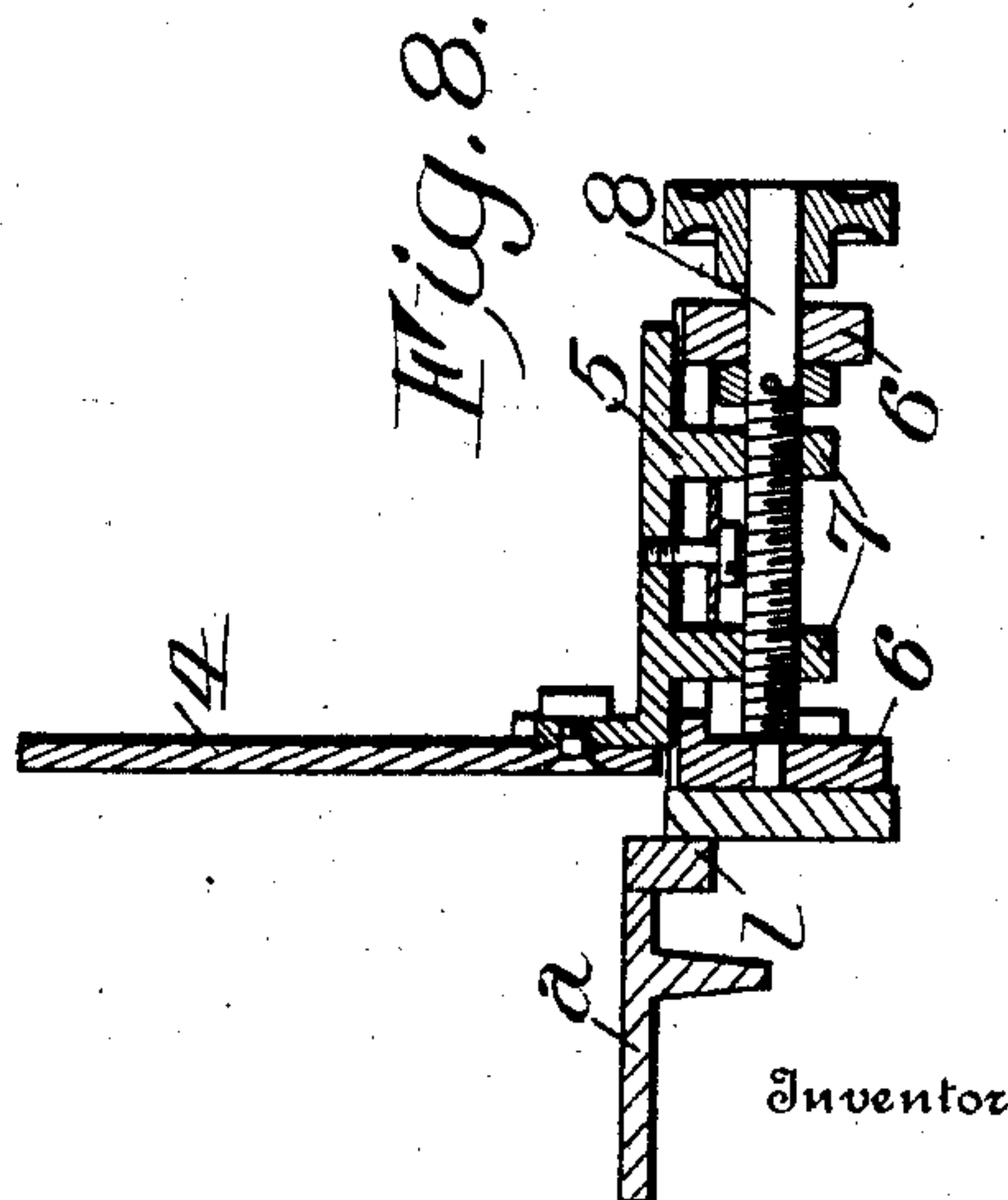
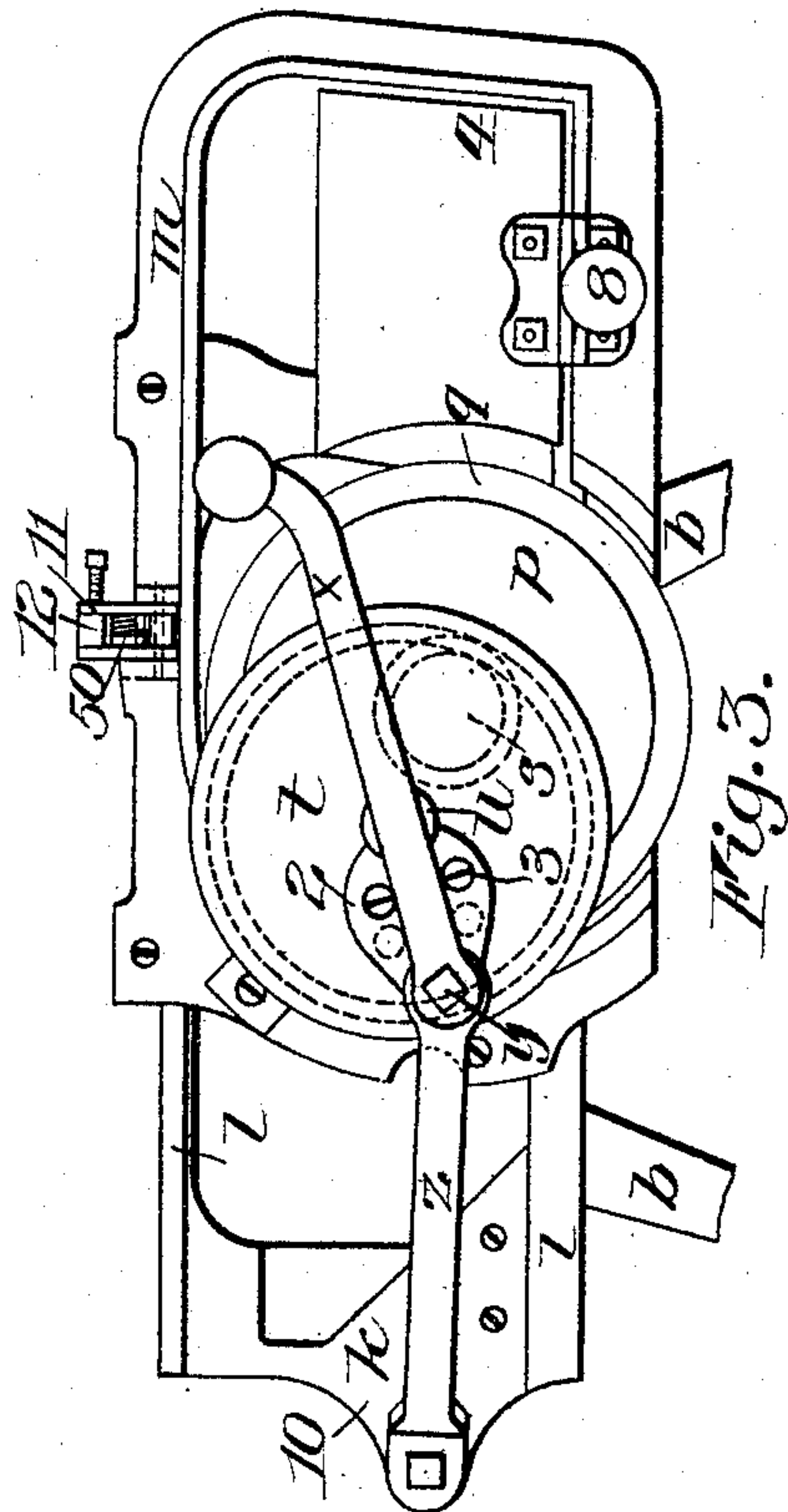
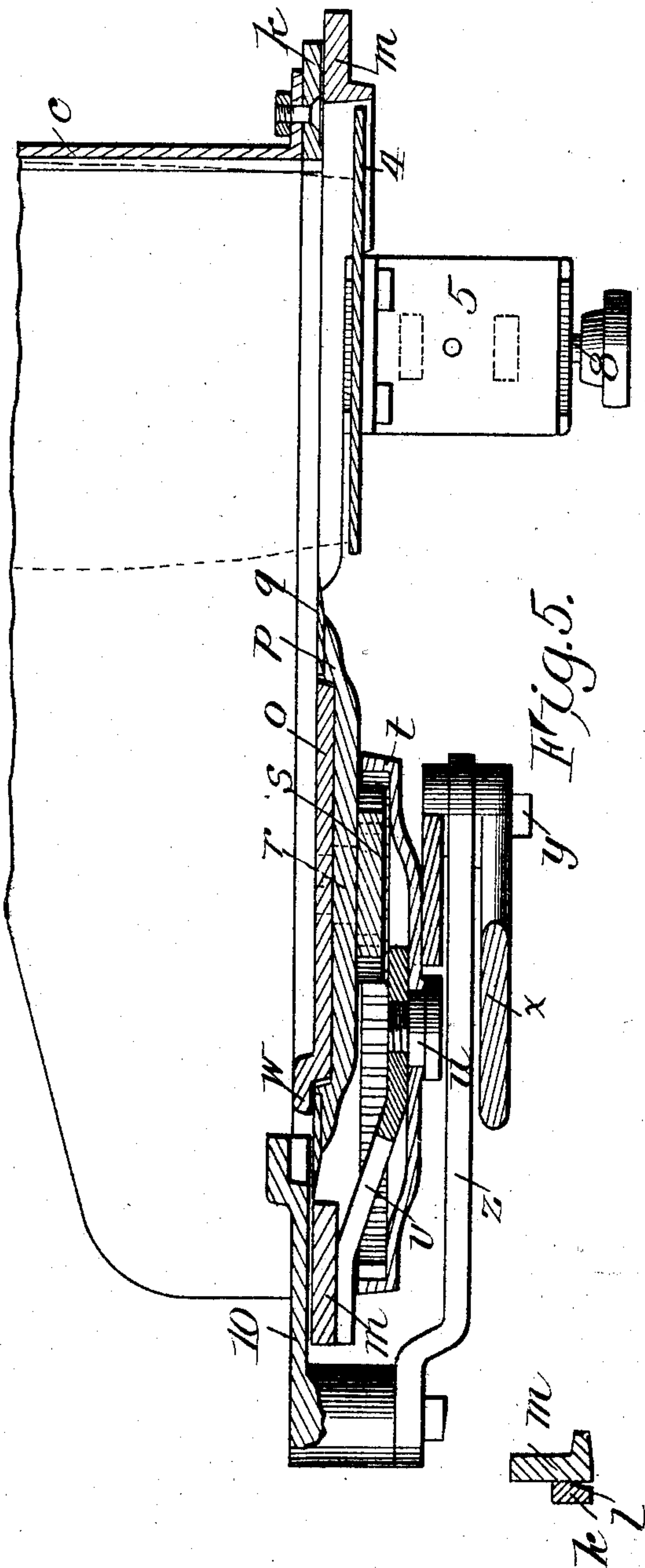
By Frederick H. Hunt
his Attorney

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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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SLICING-MACHINE.

No. 908,896.

Specification of Letters Patent.

Patented Jan. 5, 1909.

Application filed January 8, 1903. Serial No. 138,210.

To all whom it may concern:

Be it known that I, EDWARD F. SMITH, of Rochester, in the county of Monroe and State of New York, have invented certain
5 new and useful Improvements in Slicing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of
10 this specification, and to the reference-numerals marked thereon.

My present invention has for its object to provide a machine for slicing meat, bread and similar material and it embodies generally a support or holder and a reciprocatory carriage having mounted thereon a
15 continuously operated rotary cutter and means for operating it and reciprocating the carriage whereby a draw cut is effected.

20 My invention also has for its object to provide means for adjusting the movement of the carriage relatively to the movement of the cutting portion of the knife whereby a greater or lesser portion of the blade may
25 be moved in contact with the material, depending upon the nature thereof and to these and other ends my invention consists in certain improvements and combinations of parts all as will be fully described and the
30 novel features pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a top plan view of a slicing machine constructed in accordance with my invention. Fig. 2 is an
35 end elevation thereof showing the parts at the beginning of the slicing operation. Fig. 3 is a similar view showing the parts at the completion of said operation. Fig. 4 is a rear elevation shown partly in section. Fig.
40 5 is a horizontal sectional view taken on the line A—A of Fig. 2. Fig. 6 is a vertical sectional view through the cutting knife taken on the line C—C of Fig. 2. Fig. 7 is a detail sectional view on the line D—D of
45 Fig. 2 showing the sharpening device. Fig. 8 is a detail sectional view on the line E—E of Fig. 2.

Similar reference numerals in the several figures indicate similar parts.

50 A slicing machine constructed in accordance with my invention embodies a supporting frame or holder *a* which may be conveniently mounted upon a table or other support or mounted as shown, upon suitable
55 downwardly extending legs *b*. At one side

of the frame is provided a trough or receptacle, adapted to contain the material to be sliced, which is formed by vertically extending sides *c*. The material to be operated
upon, such as bread or meat is conveniently
60 operated toward the cutting knife by hand although it will be understood any suitable means may be employed for this purpose and in order to hold it firmly during the slicing
operation I form the bottom of the trough
65 at a slight angle to a horizontal plane, at its outer or forward end, as shown particularly in Fig. 4 so that the material supported
thereon will be naturally crowded against
70 the outer wall *c* of the trough. To this end I also arrange a movable guard frame provided with the top and side adapted to engage the corresponding portions of the material and which are movable relatively to
75 both the bottom and side of the trough. This frame or presser may be formed in a variety of ways but the construction which I deem preferable is that, shown in Figs. 1
and 4, in which it is provided with its upper
80 and lower ends 20 and 21 respectively guided in apertures formed in the holder *a* and wall *c* and having at its side an outwardly and upwardly extending arm or guide *i* provided
with a slot through which extends a pin *j*
85 upon a suitable bracket whereby the frame may be adjusted relatively to the side and
bottom of the holder to accommodate both
small and large pieces of material.

At the center or angle portion of the guard
frame is provided the flange 22 flaring out-
90 wardly, in the direction from which the material is advanced, so that as irregularities of the material engage therewith the guard will
be raised and lowered and the frame held in
contact with the material at all times pre-
95 venting the operator's fingers from accidental contact with the cutting knife. If the operator desires he may conveniently remove the frame by tilting it to the position shown in
dotted lines in Fig. 4.
100

At the forward end of the support or holder
a is a vertically extending supplemental
frame *k*, provided at its upper and lower
sides with ways *l*, upon which is movably
105 mounted a reciprocatory and transversely movable carriage *m* movably secured to the frame *k* by means of clamping pieces *n* adapted to engage over the guides, as shown in
Figs. 4 and 6. Arranged on the carriage is a
relatively stationary stop plate *o* adapted to
110

be engaged by the material to be sliced and pivotally mounted in rear of said stop plate is a rotary cutting knife *p*, having the overhanging cutting portion or edge *q* arranged in the plane of the stop plate, as shown in Figs. 5 and 7, and as a convenient means of construction I mount the cutter upon a stud *r* attached to the plate. The rotary and reciprocatory motion of the cutter and carriage respectively is accomplished by a single operating means as will be further described. The rotary motion of the cutter is imparted to it by means of a small pinion *s* rigidly secured thereto and meshing with the teeth of an internal gear formed on the plate or disk *t*, pivotally journaled upon a stud *u* secured to an arm *v* on the reciprocatory carriage extending in rear of the stop plate, (see Fig. 5).

w indicates an arm attached to the carriage and to the stop plate *o* to strengthen the latter, said arm being offset as will be understood to accommodate the overhanging edge of the knife or cutter.

The disk *t* constituting a driving wheel, is adapted to be rotated by a handle *x* which is attached to a wrist pin *y*, and also journaled on the latter is a radius arm or link *z*, the outer end of which is pivotally attached to a lug or extension 10 on the frame *k* so that as the driving wheel is operated by the movement of the handle, a reciprocatory motion will be imparted to the carriage. In order that the distance through which the carriage is moved, at each revolution of the crank handle, may be adjusted to accommodate it to the nature of the material to be operated upon, I provide means for adjusting the wrist pin *y* relatively to the journal *u* of the driving wheel. In the present instance I have shown the wrist pin arranged upon a plate 2 which is secured to the disk *t* by means of screws or bolts 3 which latter may be readily removed and inserted in other threaded apertures (as shown in dotted lines in Fig. 3) to increase the diameter of the circle described by the rotation of the pin thereby causing the carriage to be operated through a greater or less distance as may be required by the nature of the material operated upon. For instance in operating upon a small piece of relatively hard material the wrist pin is arranged near the center of rotation and the rotary movement of the cutting edge will be the same while the amount of reciprocation of the carriage will be shorter.

Arranged at the forward end of the carriage *m* is a gage plate 4 which is adapted to be normally in line with the forward or open end of the trough and in order that the thickness of the slices of material to be removed, may be varied, I provide said gage plate with a rearwardly extending foot 5 supported upon a bracket 6 and having downwardly extending threaded lugs or ears 7 engaged by an

adjusting screw 8, by means of which the gage plate may be moved relatively to the plane of the knife or cutter.

As a convenient means for sharpening the rotary knife *q* I have provided at the upper side of the frame *m* ears or lugs between which are pivoted arms 11 carrying at their outer ends a piece of abrasive material, indicated by 12, which is adapted to engage the edge of the knife, as shown in full lines in Figs. 2 and 7. The arms 11 are attached to a hub, as shown, having flattened or angular surfaces 13 and 14 against which engages a spring-operated finger 50, said surfaces being so arranged that when the block is moved into the operative position it will be held yieldingly in contact with the edge of the knife, during the rotation of the latter, and when the finger 50 is in engagement with the face 14 the device will be supported in the operative position, as shown in dotted lines in Fig. 7. The grinding device being mounted upon the carriage *m* it may be moved into contact therewith and employed to sharpen the knife during a slicing operation.

The operation of the machine will now be understood. The material to be cut, such as shown in full lines in Fig. 1 and in dotted lines in Fig. 5, is placed in the trough or holder between the side plates *c* and it is moved into engagement with the gage plate 4 which may be adjusted to determine the thickness of the slice. The operator revolving the handle *x* moves the carriage *m* from the position shown in Figs. 1 and 2 to that shown in Fig. 3. This occurs simultaneously with the rotation of the knife, through the operation of the pinion *s* and the cooperating gear teeth on the driving wheel or disk *t* causing the knife to be moved across the end of the material severing a slice therefrom. As the gage plate 4 is moved out of contact therewith the slice is allowed to fall away from the machine into any suitable receptacle. The continued rotation of the handle causes the carriage to be retracted allowing the material to be again moved into contact with the gage plate and an additional slice to be cut therefrom.

I do not claim herein anything shown or described in my Patent No. 731,561, dated June 23, 1903, which was a co-pending application with the application on my present invention.

I claim as my invention—

1. In a slicing machine, the combination with a holder, a reciprocatory carriage thereon and a cutter journaled on the carriage, of a driving member journaled independently of the cutter on the carriage, driving connections between it and the cutter and connections between the driving member and holder for reciprocating the carriage.

2. In a slicing machine, the combination with a holder, a movable carriage thereon

and a cutter journaled on the carriage and provided with a pinion, of a gear wheel journaled on the carriage and meshing with the pinion, means for rotating the gear wheel and connections between the gear wheel and holder for causing a transverse and reciprocatory movement of the carriage.

3. In a slicing machine, the combination with a holder, a reciprocatory carriage thereon, a stop plate on the carriage and a rotary cutter journaled on the carriage behind the plate and having an overhanging edge arranged substantially in the plane of the face of the plate, of a pinion on the cutter, a gear journaled on the carriage meshing with the pinion and provided with a wrist pin, a link pivotally connected to the holder and the wrist pin and means for revolving the gear wheel.

4. In a slicing machine, the combination with a holder, a reciprocatory carriage thereon, a rotary cutter journaled on the carriage and a rotary operating device for said cutter mounted on the carriage, of a wrist pin secured to said operating device and adjustable relatively to the center of rotation and a link connected to the holder and journaled on said pin to reciprocate the carriage and knife.

5. In a slicing machine, the combination with a holder, a reciprocatory carriage thereon and a rotary cutter journaled on the carriage, a pinion on the cutter and an internal gear journaled on the carriage having teeth meshing with the pinion, of a wrist pin on the gear wheel, a link attached to the pin and the holder, means for adjusting the pin relatively to the center of the gear wheel to vary the movement of the carriage, and means for rotating the gear wheel.

6. In a slicing machine, the combination with a reciprocatory frame or support, a rotary knife carried on the frame and means for revolving it, of an arm pivoted to the frame at one side of the edge of the knife and adapted to be rotated into operative position over the knife, a knife sharpener carried

by the arm and adapted to rest on the edge of the knife, and means for holding the sharpener either in the operative or inoperative position.

7. In a slicing machine, the combination with a frame or support, a movable knife and means for operating it, of an arm pivoted on the frame and provided with bearing surfaces arranged at opposite sides of its center of rotation, a knife sharpener carried on the arm and a spring finger adapted to cooperate with the surfaces to hold the sharpener either in or out of engagement with the knife.

8. In a slicing machine, the combination with a holder, a reciprocatory and transversely movable carriage thereon having a stop plate and a rotary cutter journaled on the plate and provided with a pinion, of an arm on the carriage extending over the cutter, an internally toothed gear journaled on the arm and cooperating with the pinion, connections between the gear and holder for causing a relative reciprocatory movement between the holder and carriage and means for revolving the gear.

9. In a slicing machine, the combination with a holder having a bottom and side portion, and a slicing knife, of a bracket, a guard frame supported thereon adapted to extend over the top and side of the material operated upon and movable bodily longitudinally of the bracket in a direction laterally toward the side of the holder and downwardly toward the bottom thereof.

10. In a slicing machine, the combination with a holder and a movable knife, of a guard having the tapering outer side and adapted to rest loosely against the top and side of the material operated upon, a bracket and an upwardly and laterally projecting guide on the guard engaging the bracket and sliding longitudinally thereon.

EDWARD F. SMITH.

Witnesses:

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