

(No Model.)

4 Sheets—Sheet 1.

W. GLYNN.
CANDY ROLLING AND CUTTING MACHINE.

No. 432,937.

Patented July 22, 1890.

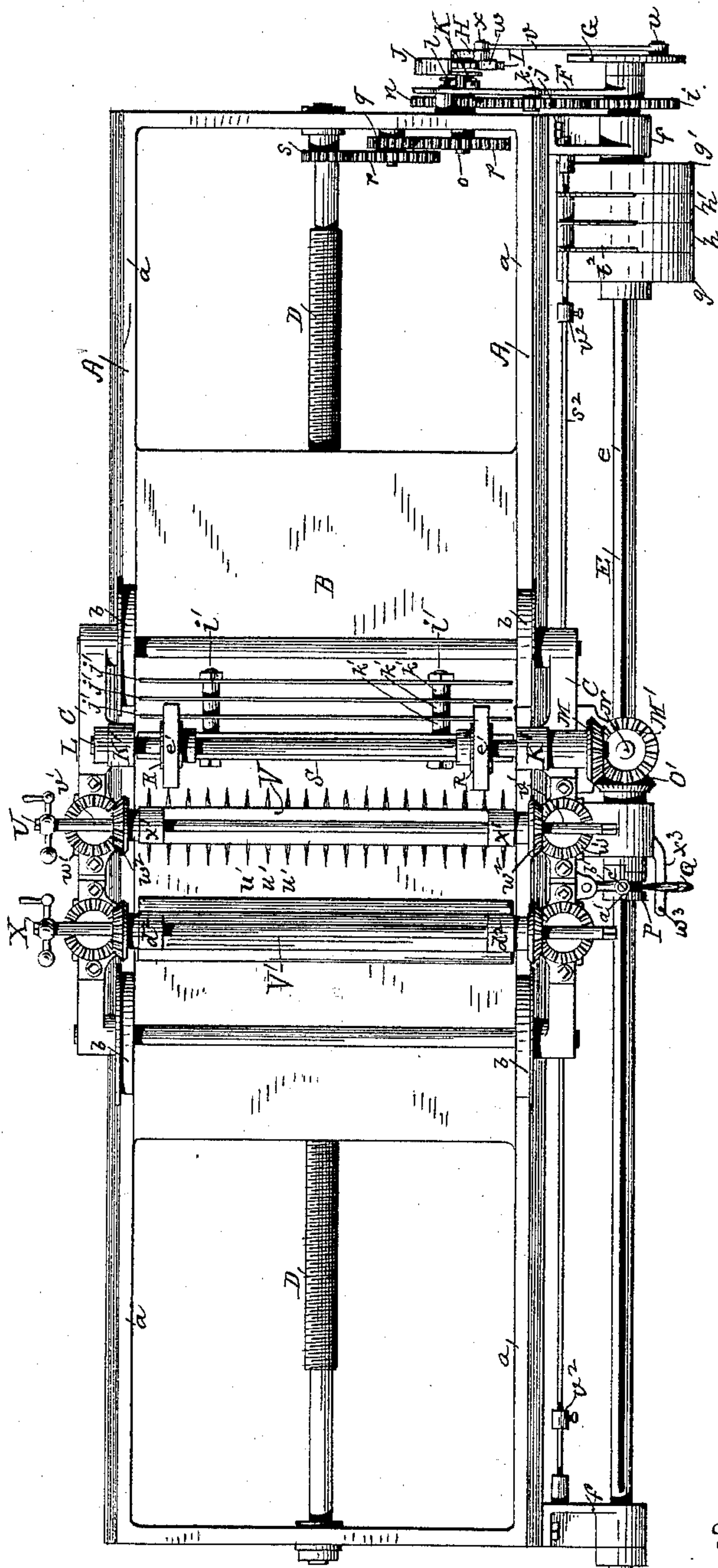


Fig. 1.

Witnesses
Mark A. Heath
Chas. F. Schmelz

By his Attorney

Inventor
William Glynn
S. Scholfield

(No Model.)

4 Sheets—Sheet 2.

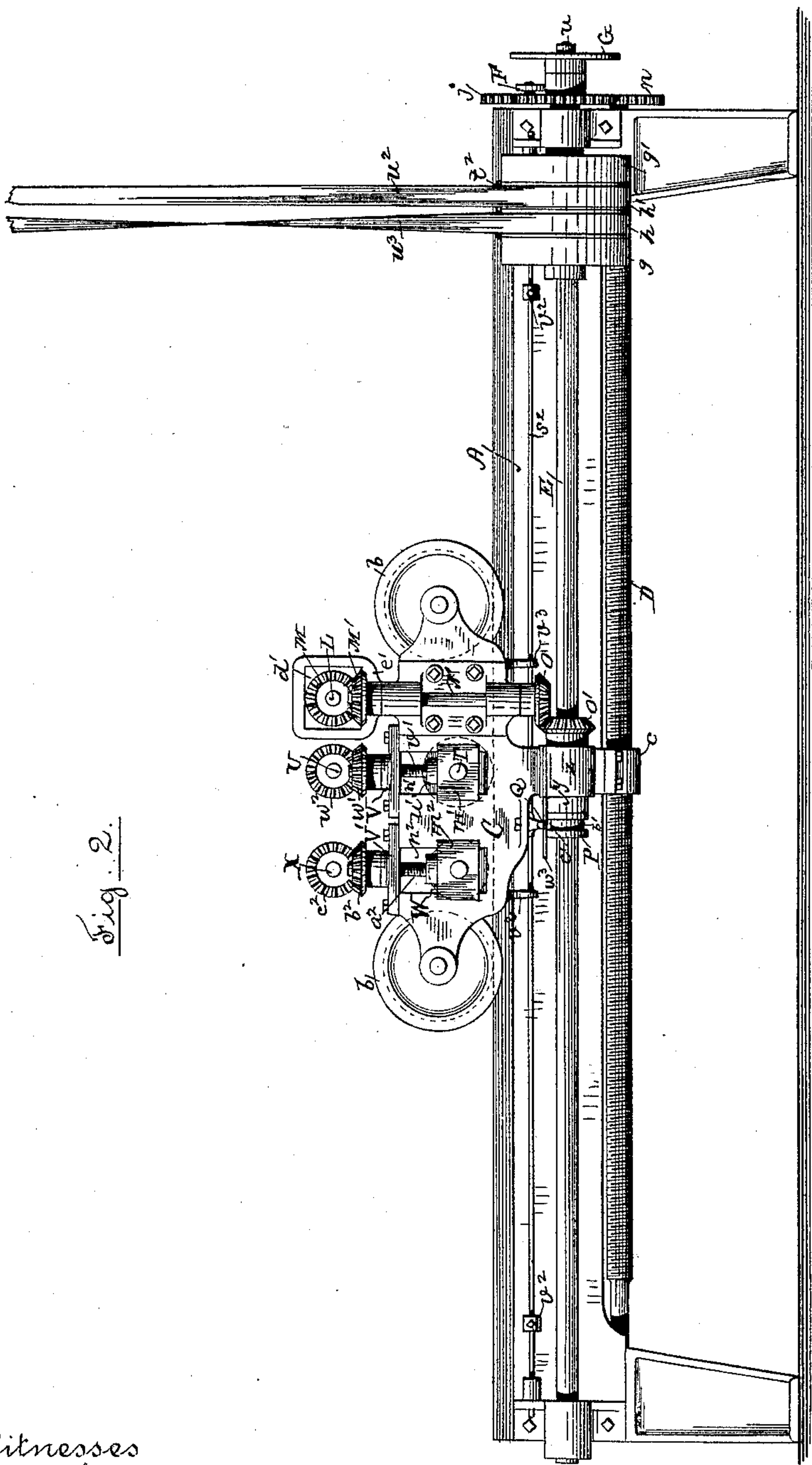
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Fig. 2.



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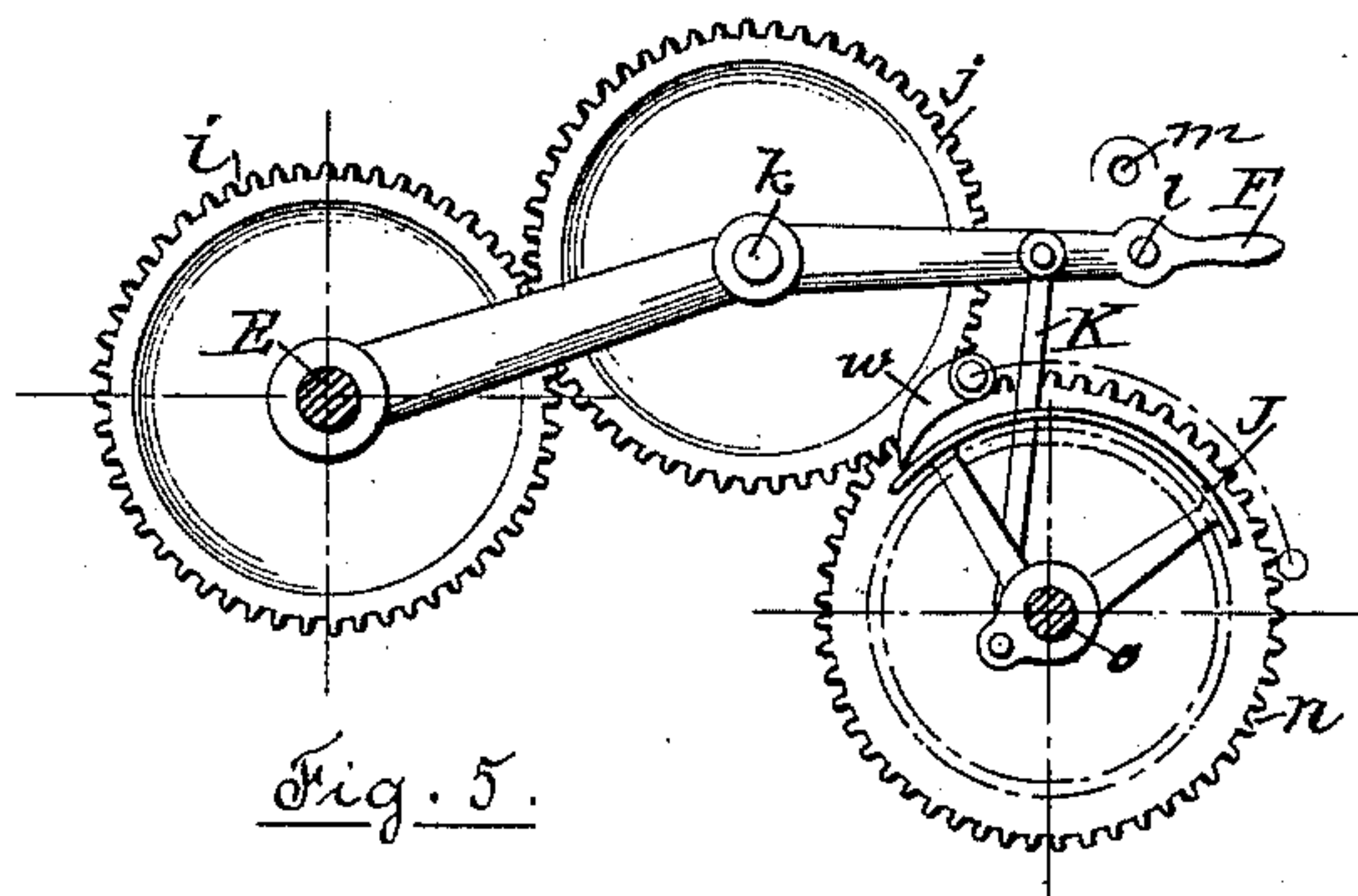
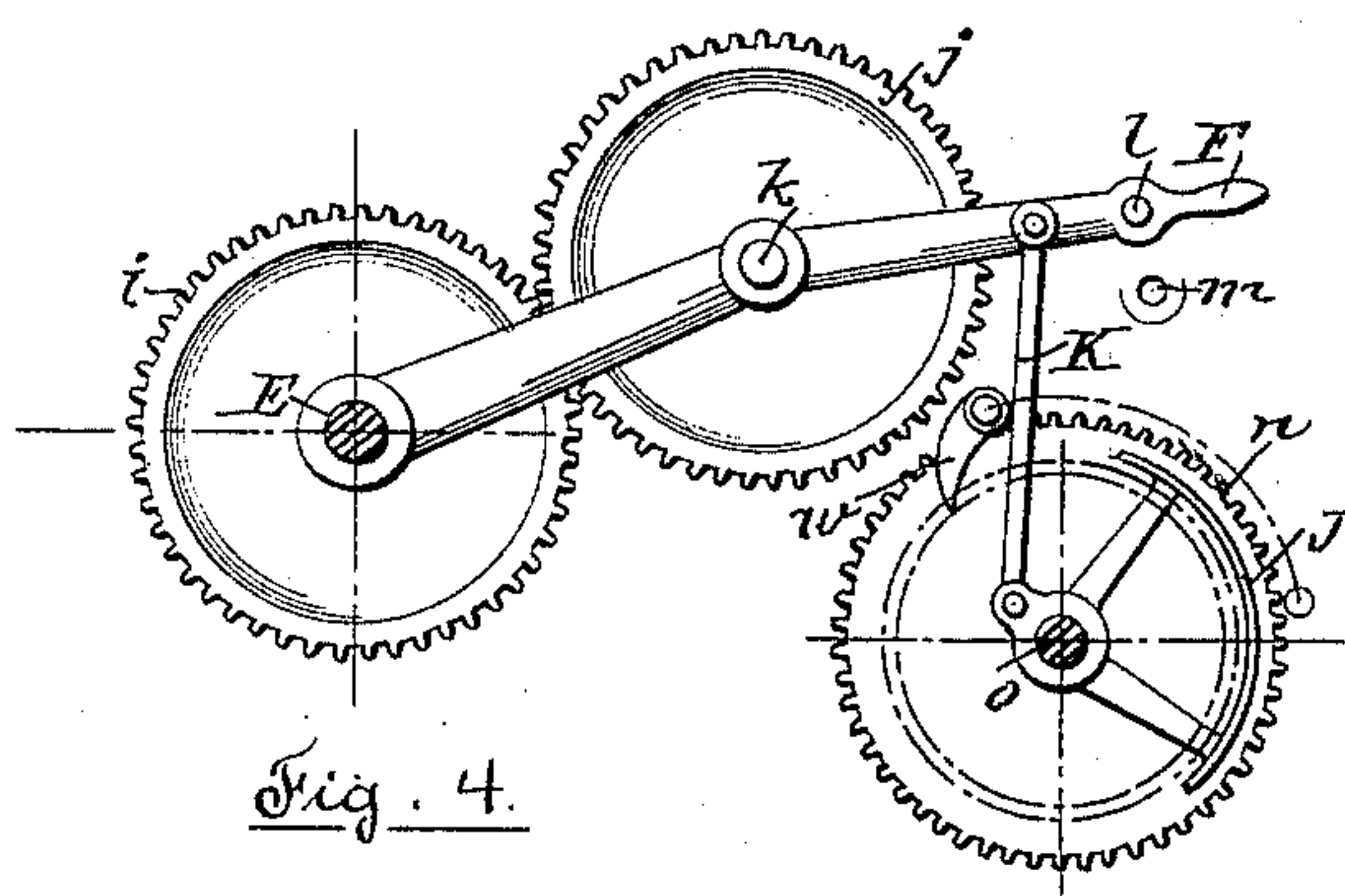
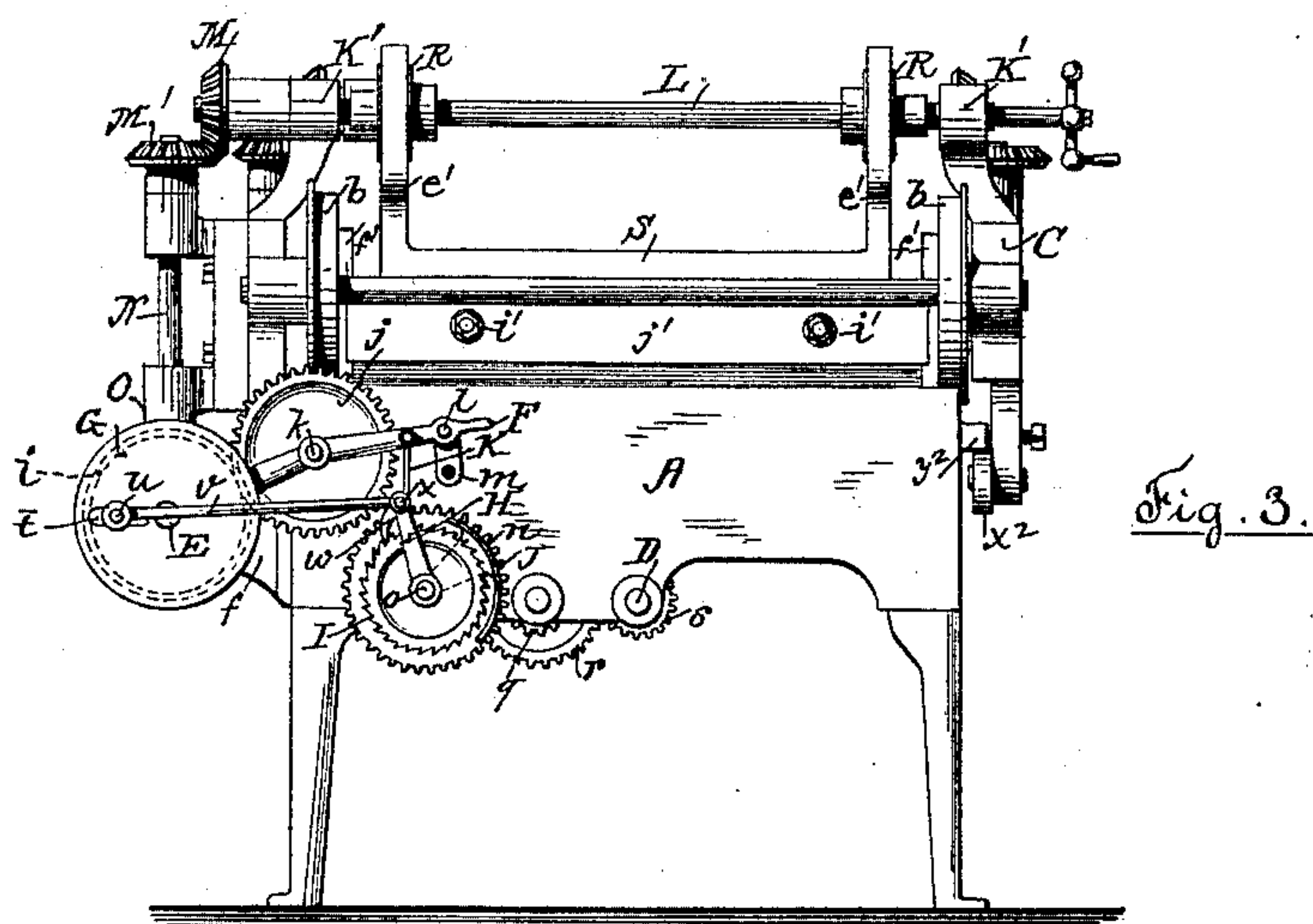
4 Sheets—Sheet 3.

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Fig. 6.

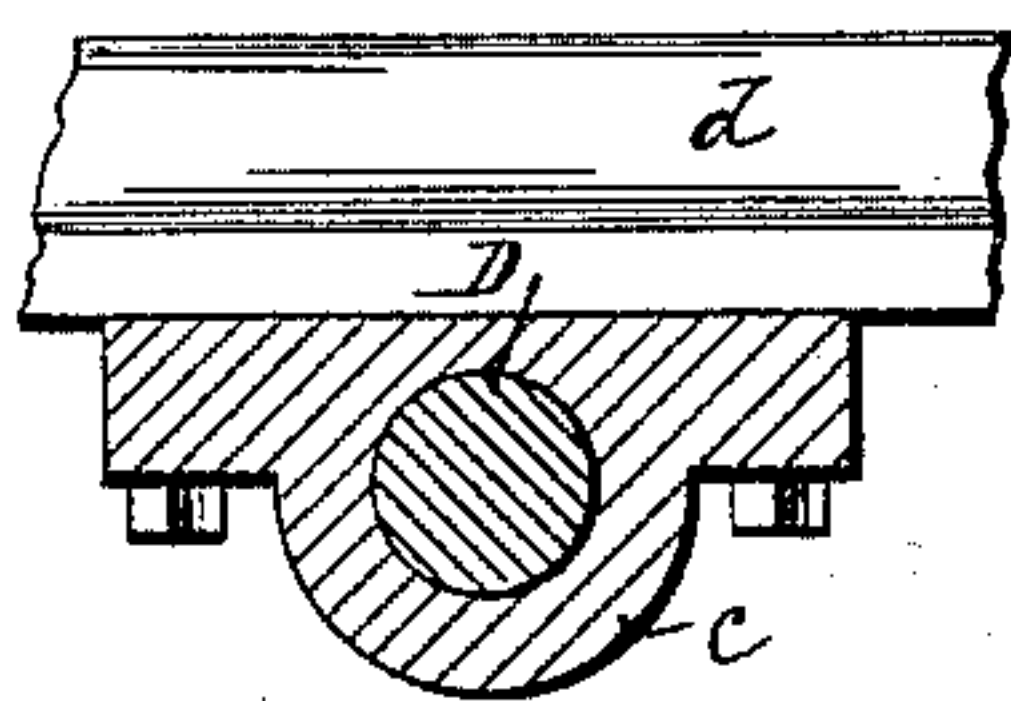
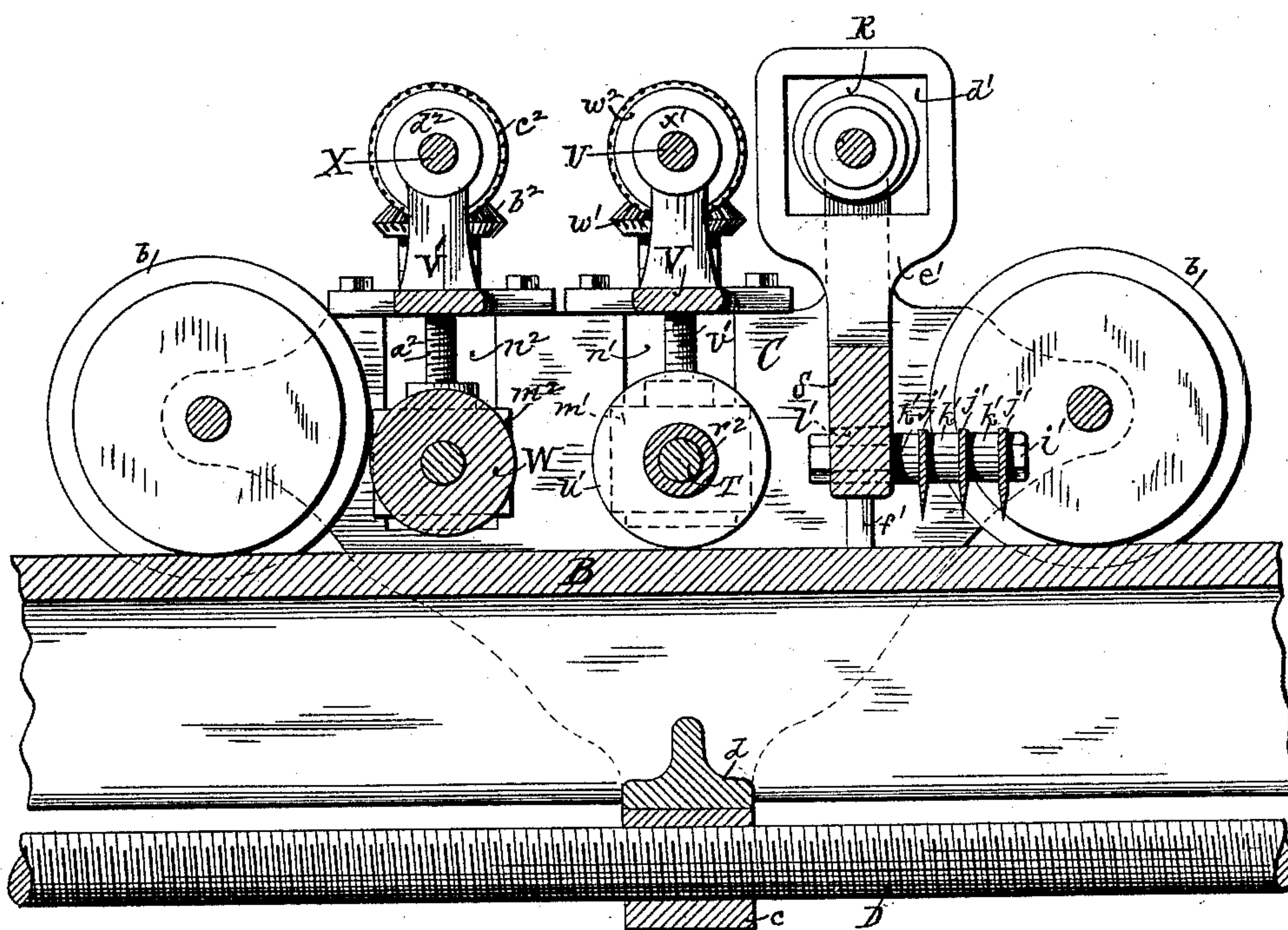


Fig. 7.

Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM GLYNN, OF BOSTON, ASSIGNOR TO HIMSELF, AND EDWARD H. MARSH, OF SOMERVILLE, MASSACHUSETTS.

CANDY ROLLING AND CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 432,937, dated July 22, 1890.

Application filed November 22, 1889. Serial No. 331,248. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GLYNN, residing at Boston, in the State of Massachusetts, have invented a new and useful Improvement in Candy Rolling and Cutting Machines, of which the following is a specification.

My invention consists in the improved construction and arrangement of the several parts of the machine, as hereinafter fully set forth.

Figure 1 represents a plan view of my improved machine. Fig. 2 represents a side elevation of the same with a portion of the feeding mechanism removed. Fig. 3 represents an end elevation of the machine. Figs. 4 and 5 are enlarged detail views illustrating a portion of the carriage-driving mechanism. Figs. 6 and 7 are detail sectional views illustrating the connection of the carriage with the feeding mechanism.

In the accompanying drawings, A is the frame of the machine, upon which is secured the horizontal marble slab or stone B, upon which, inclosed by a suitable frame or bars, the melted candy is to be poured. The frame A extends each way beyond the ends of the slab B and forms a track *a a* for the guide-rollers *b b* of the carriage C, which carriage is arranged to travel back and forth over the slab B. Centrally of the frame A is journaled the screw D, which, by operating through a nut *c*, attached to the cross-bar *d* of the carriage, serves to operate the same.

The main driving-shaft E is provided longitudinally with a groove *e*, and is journaled in the projecting brackets *f f* at the side of the frame A, and upon the shaft E are placed the tight pulleys *g g'* and the loose pulleys *h h'*, which are adapted to receive an open belt *u²* and a crossed belt *u³*, whereby the shaft E can be driven in opposite directions. The screw D is rotated from the driving-shaft E by means of the gear *i*, attached to the shaft E, the disengaging-gear *j*, which is held loosely upon a stud *k*, attached to the hand-lever F, which is pivoted to the shaft E and held in its properly-set position by means of the spring-operated pin *l*, the point of which enters suitable holes *m* to hold the same firmly in position, also the gear *n* upon a short shaft

o, the multiplying gears *p, q*, and *r*, and the gear *s*, attached to the screw D, and when the lever F is raised the teeth of the gear *j* will be raised out of engagement with the teeth of the gear *n*, thus stopping the rotation of the screw, and when the lever F is moved in the reverse direction the teeth of the gear *j* will be caused to engage with the teeth of the gear *n* to cause the continued rotation of the screw to produce the required movement of the carriage C. Upon the outer end of the shaft E is attached the crank-disk G, which is provided with a radial slot *t*, within which is held the adjustable crank-pin *u*, from which connection is made to the loose vibrating arm H upon the shaft *o* by means of the connecting-rod *v*. To the upper end of the vibrating arm H is secured the loose ratchet-dog *w*, which is held upon a stud *x*, and which engages with the teeth of the ratchet-wheel I, secured to the shaft *o*, so that upon the vibration of the arm H an intermittent rotary movement in one direction will be imparted to the screw D.

Upon the shaft *o*, at the inner side of the ratchet-wheel I, is loosely placed the ratchet-guard J, from which connection is made to the hand-lever F by means of the connecting-rod K, so that when the lever F is raised to disengage the gears *j* and *n* the guard J will be thrown back so as to allow the dog *w* to act upon the teeth of the ratchet-wheel, as shown in Fig. 4, and when the lever F is brought back to a position in which the teeth of the gear *j* will engage with the teeth of the gear *n*, then the guard J will be brought forward so as to prevent the engagement of the dog with the ratchet-teeth, as shown in Fig. 5; and in this case the screw D will be driven continuously from the driving-shaft E, the engagement of either one of the driving means for the screw D serving to automatically effect the disengagement of the other, thus preventing liability to accident and breakage of the parts of the machine.

The carriage C is provided with the standards K' K', at the upper ends of which is journaled the shaft L, having secured upon one end of the same a bevel-gear M, the said bevel-gear being made to engage with a corresponding bevel-gear M' at the upper end of

the upright shaft N, which is journaled to the side of the carriage C and is provided at its lower end with the bevel-gear O, which engages with the bevel-gear O', loosely held upon the shaft E. The gear O' is provided with an elongated hub y , which is held in a bearing z at the side of the carriage, and is prevented from endwise movement within its bearing z by suitable means. The rearward end of the hub y is recessed at one side, as shown in Fig. 1, and adapted to form a clutch with a corresponding sleeve P, which is loose upon the shaft E, and is prevented from rotation thereon by means of a spline or pin a' , which enters the groove e of the shaft. The clutch-sleeve P is provided with an annular groove b' , which is adapted to receive the engaging-pin c' of the hand-lever Q, by means of which the clutch-sleeve P can be readily operated for engagement or disengagement with the hub of the gear O', and the clutch-sleeve P is held in position by means of a pin at the under side of the lever Q, which enters the hole w^3 in the guide-bar x^3 , projecting from the carriage C.

Upon the shaft L are secured two eccentrics R R, which operate within the openings d' at the upper end of the arms e' of the vertically-moving knife-carrier S, which is guided in its up and down movement by means of the slides $f' f'$ at the inner side of the carriage-frame. Upon the projecting studs $i' i'$ at the lower portion of the knife-carrier S are secured the transversely-arranged parallel knives $j' j' j'$, which are separated from each other by means of removable collars k' , thus providing for the adjustment of the knives to any required distance from each other to suit different grades of work, and the studs $i' i'$ are held in the slots l' , (shown by dotted lines in Fig. 6,) whereby the knives can be properly adjusted to cut the sheet of candy upon the slab B to any required depth upon the rotation of the shaft L. Within the vertically-adjustable bearing-boxes $m' m'$, which are held in the openings $n' n'$ in the sides of the carriage-frame, is held the rotary cutter-shaft T, upon which are arranged, at equal distances from each other, the circular cutters $u' u' u'$, which serve to divide the sheet of candy in a direction longitudinally of the machine, the said cutters being separated from each other by the removable washers $r^2 r^2$, by means of which the distance between the cutters can be varied, as desired, and the cutter-shaft T is made vertically adjustable in order to cut the candy to the required depth by means of the screws $v' v'$, which are threaded into the bearing-boxes $m' m'$ and are operated simultaneously to raise or lower both ends of the cutter-shaft alike by means of the bevel-gears $w' w'$, secured to the upper ends of the screws $v' v'$, and the bevel-gears $w^2 w^2$, which engage with the gears $w' w'$, and are located upon the hand-operated shaft U, which shaft is supported for rotation in the bearings $x' x'$, which project upward from the cap-piece V.

The candy smoothing and evening roller W is journaled within the adjustable bearing-boxes $m^2 m^2$, which are held in the openings $n^2 n^2$ in the sides of the carriage-frame, and the said roller W is made vertically adjustable in order to roll the candy to the desired thickness by means of the screws $a^2 a^2$, which are threaded into the bearing-boxes $m^2 m^2$ and are operated simultaneously to raise or lower both ends of the roller alike by means of the bevel-gears $b^2 b^2$, secured to the upper ends of the screws $a^2 a^2$, and the bevel-gears $c^2 c^2$, which engage with the gears $b^2 b^2$, and are located upon the hand-operated shaft X, which shaft is supported for rotation in the bearings $d^2 d^2$, projecting upward from the cap-piece V'. The carriage C is held at one side firmly against the action of the knives j' upon the candy by means of a roller x^2 , (shown in Fig. 3,) which engages with a track y^2 at the side of the frame A, and a similar roller and track may be used at the opposite side of the machine in case the shaft E should be too light to properly hold the carriage at that side.

When the melted candy has been poured upon the slab B, the rotary cutters u' and the vertically-reciprocating knives j' having been raised from the slab, so as not to engage with the candy, the clutch-sleeve P, disengaged from the hub of the gear O' to prevent the reciprocation of the knives, and the gears j and n made to engage with each other by the required movement of the hand-lever F, then, upon alternately shifting the open and crossed belts u^2 and u^3 from their respective loose to their tight pulleys, the carriage C and smoothing-roller W can be reciprocated back and forth over the slab B until the sheet of candy has been brought to the required thickness to be cut into bars or cakes, after which, by turning the hand-operated shaft X, the roller W can be raised from the slab B out of contact with the candy; or, if preferred, the roller can be left in contact therewith, and the revolving cutters u' can be brought down to their proper position for action by turning the hand-operated shaft U, and then, having the carriage first located at one end of the machine, the clutch-sleeve P in engagement with the hub of the gear O', and the gears j and n disengaged from each other, so that the guard J will be moved away to allow the dog w to act upon the ratchet-teeth, and upon starting the shaft E in the proper direction, by shifting the required open belt u^2 or the crossed belt u^3 from the loose to the tight pulley, the knives j' will be reciprocated in a vertical direction to separate the sheet of candy transversely of the machine in timely relation to the intermittent feeding movement of the carriage by the action of the ratchet mechanism, the carriage being at rest when the knives are in engagement with the candy, and as the carriage progresses over the slab the friction of the candy will cause the revolution of the cutters u' and consequent separation of the sheet of candy.

ration of the candy sheet longitudinally of the machine, and by this means the candy will be divided into cakes or bars in a rapid and efficient manner; and in order to provide against accident, due to the carelessness of operatives, I provide a belt-shipper rod s^2 , extending the length of the machine, with a belt-fork f^2 for each of the driving-belts $u^2 v^3$, which are represented in the drawings as being held upon the loose pulleys, and at near each end of the rod s^2 , I arrange a stop v^2 , adapted to engage with a downwardly-projecting arm v^3 upon the carriage C, whereby when the carriage has reached its proper point of movement in either direction the belt will be automatically shifted from the fast to the loose pulley, thus stopping the further movement of the carriage and the operation of the machine.

It is to be understood that I do not limit my invention to the employment of a screw for operating the carriage in connection with the ratchet mechanism and the vertically-reciprocating knives, as the intermittent progressive movement of the carriage can be imparted from the ratchet mechanism by other well-known devices; and the ratchet mechanism can be employed without the ratchet-guard to raise the dog out of engagement with the ratchet-teeth, the dog being in this case thrown back out of action by the operator of the machine whenever the gears j and n are placed in engagement.

I claim as my invention—

1. In a candy-cutting machine, the combination, with the slab, the carriage-track, and the carriage adapted to move along the track over the slab, of the vertically-reciprocating knives for dividing the candy transversely of the machine, the rotary cutters for dividing the candy longitudinally of the machine, the roller for reducing the candy to the proper thickness upon the slab, and means for moving the carriage with its connected knives, cutters, and roller over the slab, substantially as described.

2. In a candy-cutting machine, the combination, with the slab, the carriage-track, and the carriage adapted to move along the track over the slab, of the screw and nut for moving the carriage, the ratchet-dog and the ratchet-wheel operatively connected with the screw for imparting an intermittent progressive movement to the carriage, the driving-shaft, means for operating the ratchet-dog from the driving-shaft, the knives attached to the carriage and arranged to reciprocate vertically over the slab in timely relation to the intermittent movement of the carriage, the loose gear upon the driving-shaft, and the connected means for reciprocating the knives, substantially as described.

3. In a candy-cutting machine, the combination, with the slab, the carriage-track, and the carriage adapted to move along the track over the slab, of the screw and nut for mov-

ing the carriage, the ratchet-dog and the ratchet-wheel for imparting an intermittent progressive movement to the carriage, the ratchet-guard for preventing the engagement of the ratchet-dog with the ratchet-teeth, the connected system of gearing for imparting a continuous movement to the carriage, a clutch-gear for disengaging the carriage from the continuous action of the driving-shaft, and a connection from the clutch-gear to the ratchet-guard, whereby when the clutch-gear is in engagement the ratchet-dog will be disengaged, and when the clutch-gear is disengaged the ratchet-dog will be in engagement, substantially as described.

4. In a candy-cutting machine, the combination, with the slab, the carriage-track, and the carriage adapted to move along the track over the slab, of the longitudinally-grooved driving-shaft, the loose gear and clutch-sleeve upon the driving-shaft and moving with the carriage, and the vertically-reciprocating knives connected to the carriage and driven from the loose gear and clutch-sleeve, and means for operatively connecting the knives with the loose gear upon the driving-shaft, substantially as described.

5. In a candy-cutting machine, the combination, with the slab, the carriage-track, and the carriage adapted to move along the track over the slab, of the driving-shaft E, adapted for revolution in opposite directions, the gear i , hand-lever F, gear j , attached to the lever F, shaft o , gear n upon the shaft o , crank G, connecting-rod v , vibrating arm H, ratchet-dog w , ratchet-wheel I, screw D, and nut c , whereby the carriage can be progressively operated with either a continuous or intermittent movement, substantially as described.

6. In a candy-cutting machine, the combination, with the slab, the carriage-track, and the carriage adapted to move along the track over the slab, of the driving-shaft E, adapted for revolution in opposite directions, the gear i , hand-lever F, gear j , attached to the lever F, shaft o , gear n upon the shaft o , crank G, connecting-rod v , vibrating arm H, ratchet-dog w , ratchet-wheel I, ratchet-guard J, screw D, and nut c , and a connection from the hand-lever F to the ratchet-guard, whereby the change from a continuous to an intermittent movement of the carriage over the slab can be effected without liability to accident, substantially as described.

7. In a candy-cutting machine, the combination, with the slab, the carriage-track, and the carriage adapted to move along the track over the slab, of the driving-shaft E, which passes through a bearing upon the carriage and serves to hold the carriage down at that side of the machine, and the roller x^2 and track y^2 , which serve to hold the carriage at the opposite side, substantially as described.

8. In a candy-cutting machine, the combination, with the slab, the carriage-track, and the carriage adapted to move along the track

over the slab, of the driving-shaft provided with fast and loose pulleys for both open and crossed driving-belts, the combined systems of gearing for optionally operating the carriage
5 either continuously or intermittently along the track, as desired, the belt-shipper rod, and the projecting stop-arms adapted for engage-

ment with the carriage, whereby the carriage will be automatically stopped at the end of the machine, substantially as described.

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Witnesses:

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