No. 840,416.

PATENTED JAN. 1, 1907.

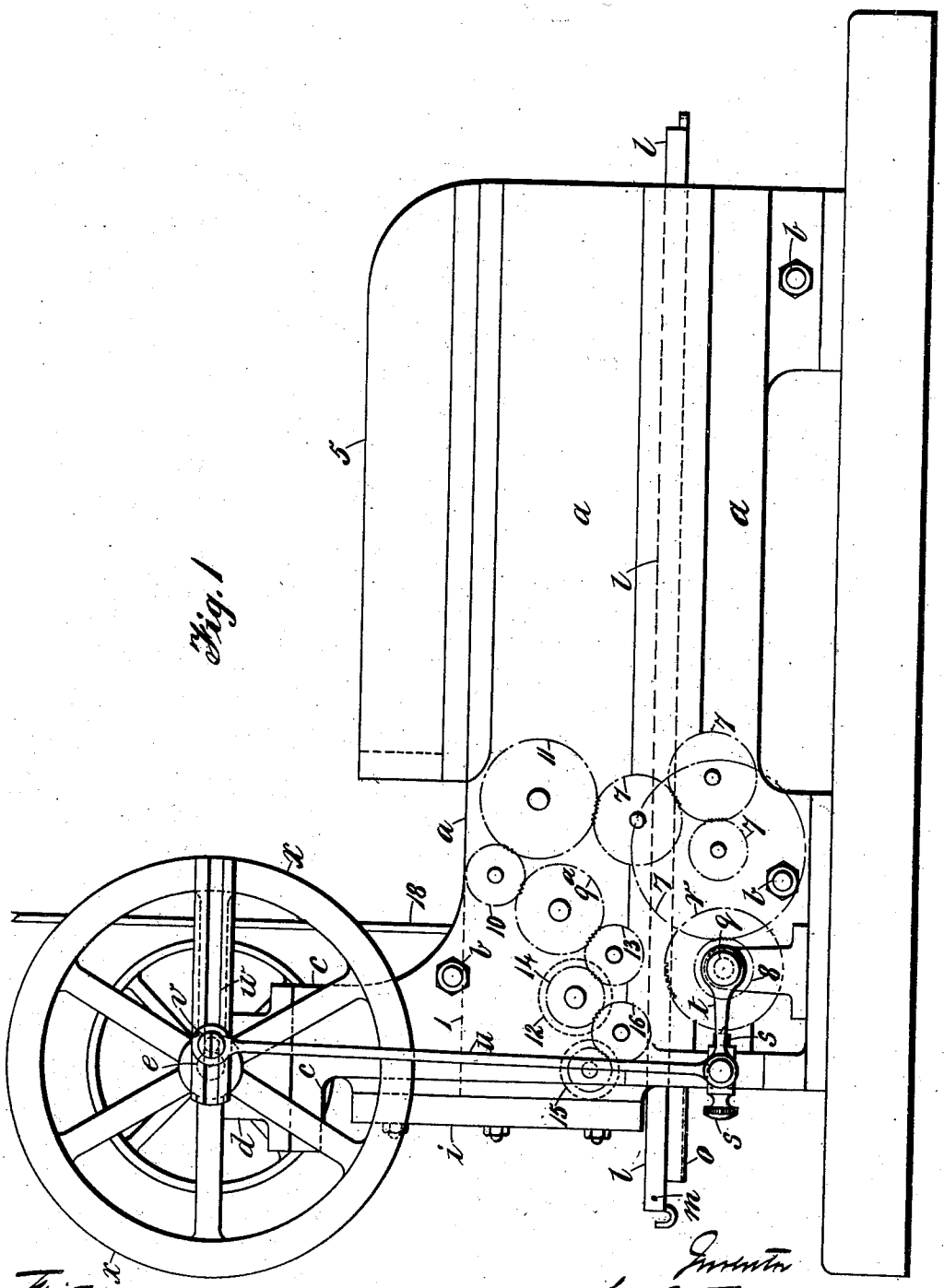
L. APTEKMAN.

TOBACCO CUTTING MACHINE.

APPLICATION FILED JAN. 29, 1906.

3 SHEETS—SHEET 1.

Fig. 1



Witnesses:
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Samuel Turley.

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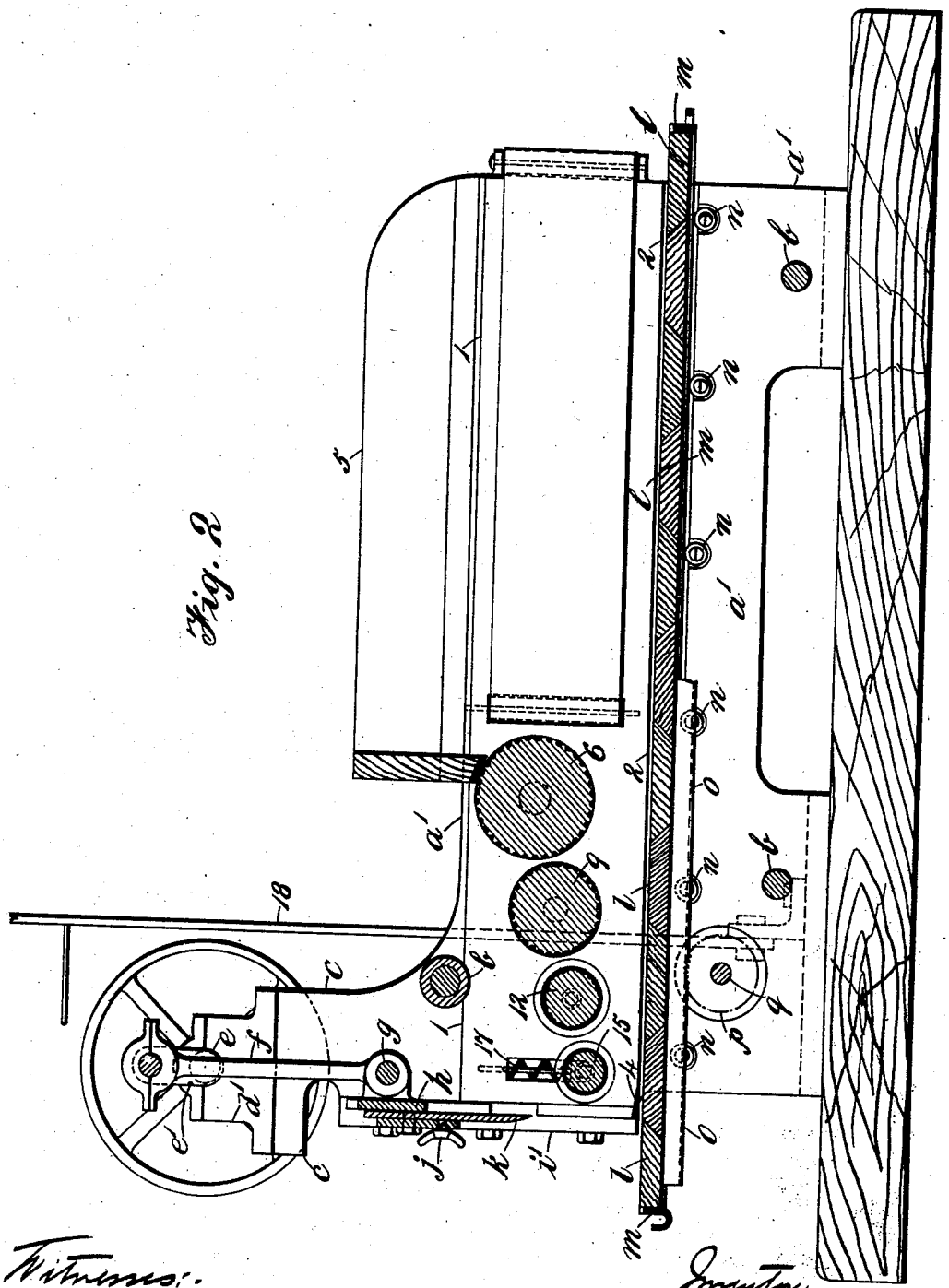
3 SHEETS—SHEET 2.

Fig. 2



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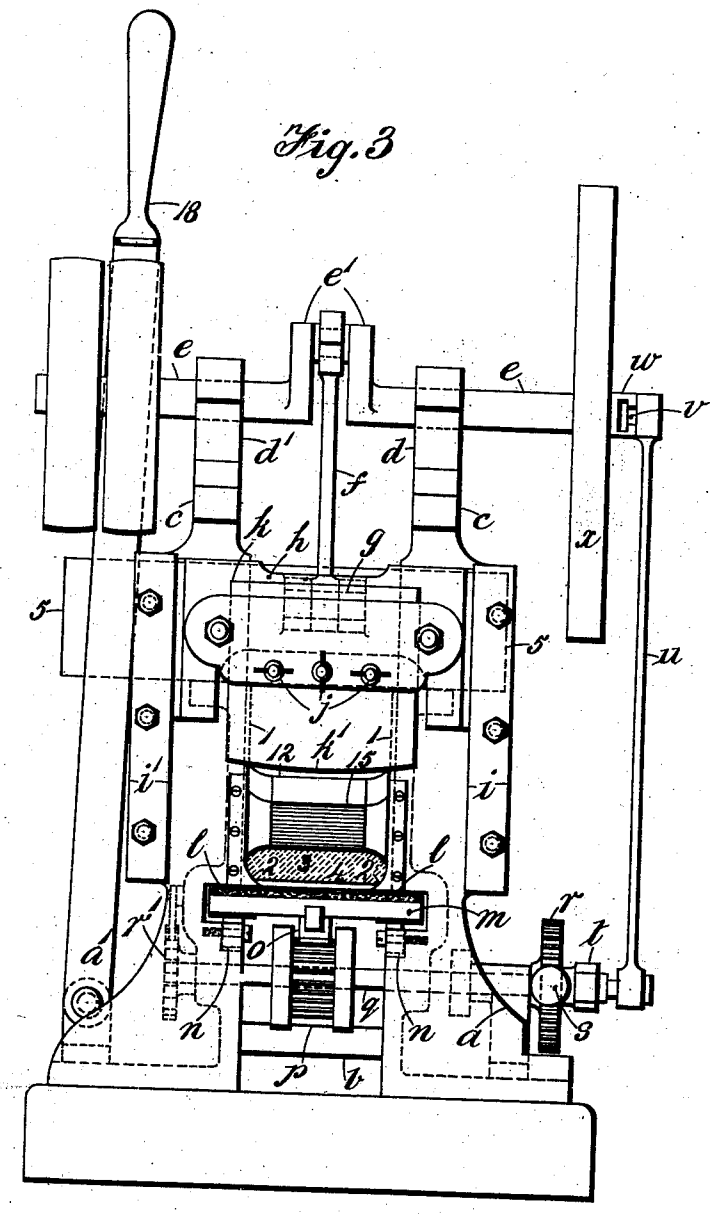
3 SHEETS—SHEET 3.

Fig. 3



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UNITED STATES PATENT OFFICE.

LAZARIDAS APTEKMAN, OF LONDON, ENGLAND.

TOBACCO-CUTTING MACHINE.

No. 840,416. Specification of Letters Patent. Patented Jan. 1, 1907.

Application filed January 29, 1906. Serial No. 298,482.

To all whom it may concern:

Be it known that I, LAZARIDAS APTEKMAN, foreman, a subject of the Sultan of Turkey, residing at 42 Settle street, London, England, have invented a new and useful Tobacco-Cutting Machine, of which the following is a specification.

My invention relates to improvements in tobacco-cutting machines in which a vertically-reciprocating knife-blade operates upon the body of the tobacco which is fed forward under it upon an intermittently-moving table or support made to travel forward after each stroke of the knife-blade; and the objects of my improvements are, first, to provide feeding-rollers operating intermittently upon a mass of tobacco fed upon the surface of a traveling feeding-table moving at the same speed as the circumference of the feeding-rollers; second, to form the feeding-rollers in such shape that they press and curve the upper longitudinal edges of the mass of tobacco supplied; third, to provide fixed longitudinal guide-plates having curved lower edges over which the tobacco passes and its lower longitudinal edges are pressed and curved; fourth, to provide means for varying as desired the length of the pieces of tobacco cut off from the mass by the reciprocating knife-blade, and, fifth, to render the shreds of tobacco cut by the knife perfectly uniform in length and character. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the entire machine. Fig. 2 is a longitudinal section of the same. Fig. 3 is a front end view.

Similar characters refer to similar parts throughout the several views.

a a' are the side frames of the machine, held firmly together at the proper distance apart by stay-bolts *b*. The upper part of the frames *a a'* are extended up at *c* and carry bearings *d d'*, in which revolves a driving-shaft *e*, fitted with driving and loose pulleys and formed with a crank *e'* at its center, having fitted upon it the upper end of a connecting-rod *f*, the lower end of which is jointed at *g* to the vertical sliding plate *h*, the ends of which work in adjustable guides *i i'*, carried by the frames *a a'*, so that the revolution of the shaft *e* causes the up-and-down reciprocation of the plate *h* in the guides. To the plate *h* is firmly fixed by screws *j* the cutting-blade *k*, the lower cutting edge of which is made slightly convex in front view, as shown at *k'*, Fig. 3, which facilitates the easy and perfect cutting of the tobacco.

l is a wood or metal horizontal feeding-table, which if made of wood is preferably built up in several sections, as illustrated in Figs. 2 and 3, so as to present the end grain of the wood in the best position to the edge of the knife if the latter touches it at the bottom of its stroke. The sections of wood are held in a metal frame *m*, which is carried upon freely-revolving adjustable rollers *n* or pivots screwed into the frames *a a'*, so that it can travel forward in the direction in which the tobacco is to be gradually fed to the cutting-knife. The feeding-table *l* is made to travel forward through a space which is readily adjustable between each cut of the knife-blade *k* in the following way: The frame of the feeding-table *l* is provided on its under surface with a longitudinal toothed rack *o*, with which gears a corresponding toothed wheel *p*, fixed upon a transverse spindle *q*, which revolves in bearings carried by the side frames *a a'* and is made to move round intermittently by means of a ratchet-toothed wheel *r*, keyed upon the end of the spindle *q* and actuated by an adjustable spring-pawl device *s* upon a lever *t*, which turns freely upon the spindle *q*. A toothed ratchet-wheel and pawl (shown in dotted lines in Fig. 3 at *r'*) prevents the backward movement of the spindle *q*. The lever *t* is made to oscillate by a connecting-rod *u*, the lower end of which is jointed to it, while the upper end is pivoted to a pin *v*, which can be adjusted and fixed in any desired position in a grooved radial arm or crank *w*, carried and fixed upon a fly-wheel *x*, keyed upon the end of the driving-shaft *e* above, which actuates the cutting-knife *k*, so that any desired length of stroke may be obtained, and accordingly the length determined of the tobacco being cut. Instead of the ratchet-toothed wheel *r* and pawl *s* a friction-wheel driven in the usual way by a friction-pawl may be used.

1 1 are two longitudinal lateral side plates fixed to the inner sides of the frames *a a'* of the machine. The lower edges of these side plates are formed with longitudinal projecting ribs 2 2, rounded or curved in toward each other, their lower flat edges projecting above the surface of the traveling table *l*, so that the mass of tobacco as it is fed forward with the table *l* is rounded instead of square at its

lower edges, while its upper surface is also rounded at its edges by the rollers already described, under which it passes, as shown in Fig. 3, so that the mass of tobacco as it is fed forward is of a transverse section resembling the widely-sectioned space 3 in Fig. 3.

A cross-bar 4 is shown fixed across the space between the side plates 1 1 slightly above the surface of the moving table *l*, its back edge being tapered down, while its front edge serves as a guiding or cutting edge against the side of which the cutting edge of the cutting-knife *k* comes down, and the cutting is as perfectly effected as if the knife came down upon the table *l*.

The tobacco to be cut is supplied into a hopper or space 5 above the traveling table *l* at the back of the machine. It is then fed forward under the feeding-roller 6, which is made to revolve, so that its lower periphery travels in the same direction as that in which the tobacco is fed by means of the toothed wheels and pinions 7, (indicated in dotted lines in Fig. 1,) which are themselves driven by a toothed pinion 8 upon the spindle *q*, which drives the feeding-gear for the traveling table *l*. The tobacco is then passed under a second roller 9 (shown of smaller diameter than 6) by means of an intermediate toothed wheel 10, Fig. 1, driven by a toothed wheel 11 on the spindle of the roller 6 and a toothed wheel 9^a on the spindle of the roller 9, and it then passes under a still smaller roller 12, having its ends or flanges curved in and driven by the intermediate toothed wheel 13, gearing with the toothed wheels 9 and 14, whence it passes under the smallest roller 15, also having its flanged ends curved in, and either running loose and held down by an adjustable spring 17, Fig. 2, or driven by the intermediate toothed wheel 16 from the wheel 14.

18 is a lever and handle by which the driving-belt can be shifted on the fast and loose driving-pulleys.

From below the roller 15 the tobacco is delivered above the inclined bar 4 and under the convex edge of the reciprocating knife-blade *k*, by which it is cut up, the cut tobacco being delivered into a chute. (Not shown in the drawings.)

The curved-in flanges at the ends of the rollers 12 and 15 are separate from the body of the rollers and run freely upon the spindles.

By the novel machine the tobacco is very quickly and perfectly cut up into pieces of any desired length, and by the shape of the rollers and their curved ends and of the ribs on the side plates and the edge of the cutting-blade the cutting of the tobacco is perfectly uniform. The length of the feed forward can be exactly regulated as desired.

Having fully described my invention, what I desire to claim and secure by Letters Patent is—

1. In a device of the character described, a driving-shaft, a counter-shaft, a pair of ratchet-wheels secured on said counter-shaft, a crank carried by one end of said counter-shaft and having an extension thereon, a spring-pressed pawl held in said extension and engaging one of said ratchet-wheels, and a crank-rod adjustably connected to said driving-shaft and to the end of said crank whereby an intermittent rotation is imparted to said counter-shaft, substantially as described.

2. In a device of the character described, a driving-shaft, a counter-shaft, a pair of ratchet-wheels secured on said counter-shaft, a crank carried by one end of said counter-shaft and having an extension thereon, a spring-pressed pawl held in said extension and engaging one of said ratchet-wheels, a crank-rod adjustably connected to said driving-shaft and to the end of said crank whereby an intermittent rotation is imparted to said counter-shaft, and a pawl engaging the other of said ratchet-wheels to prevent the reverse movement of said counter-shaft, substantially as described.

3. In a device of the character described, a driving-shaft, a fast and a loose pulley carried by said driving-shaft, a belt-shifting device, a counter-shaft, a pair of ratchet-wheels secured on said counter-shaft, a crank carried by one end of said counter-shaft and having an extension thereon, a spring-pressed pawl held in said extension and engaging one of said ratchet-wheels, a crank-rod adjustably connected to said driving-shaft and to the end of said crank whereby an intermittent rotation is imparted to said counter-shaft, and a pawl engaging the other of said ratchet-wheels to prevent the reverse movement of said counter-shaft, substantially as described.

4. In a belt-driven device of the character described, the combination with a driving-shaft having fast and loose pulleys mounted thereon, of means for shifting the belt from one of said pulleys to the other, an intermittently-operated feed-table, antifriction-rollers disposed beneath and in the path of travel of said feed-table, means for intermittently moving said table forward, means for preventing the backward movement of said table, and a cutting-blade reciprocated by said driving-shaft to cut the tobacco fed forward by said table, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

LAZARIDAS APTEKMAN.

Witnesses:

ARTHUR E. EDWARDS,

H. D. JAMESON.