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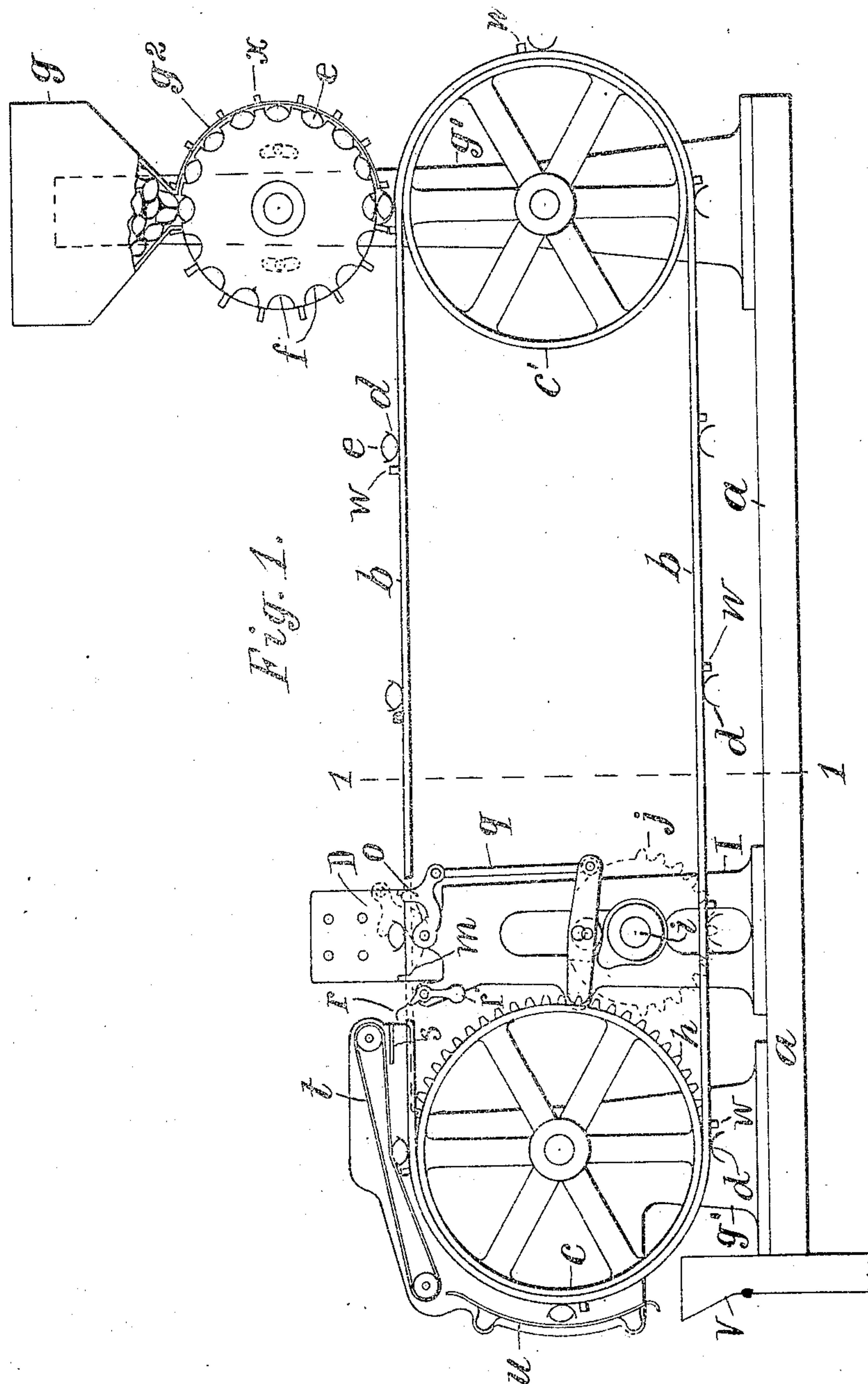
PATENTED MAY 19, 1908.

A. BOUCHER.

INDIVIDUAL CIGARETTE TIPPING MACHINE.

APPLICATION FILED NOV. 14, 1906.

3 SHEETS—SHEET 1.



Witnesses:
L. Lee
Danson & Purrington

Inventor.
Alexander Boucher, per
Thomas S. Crane, atty.

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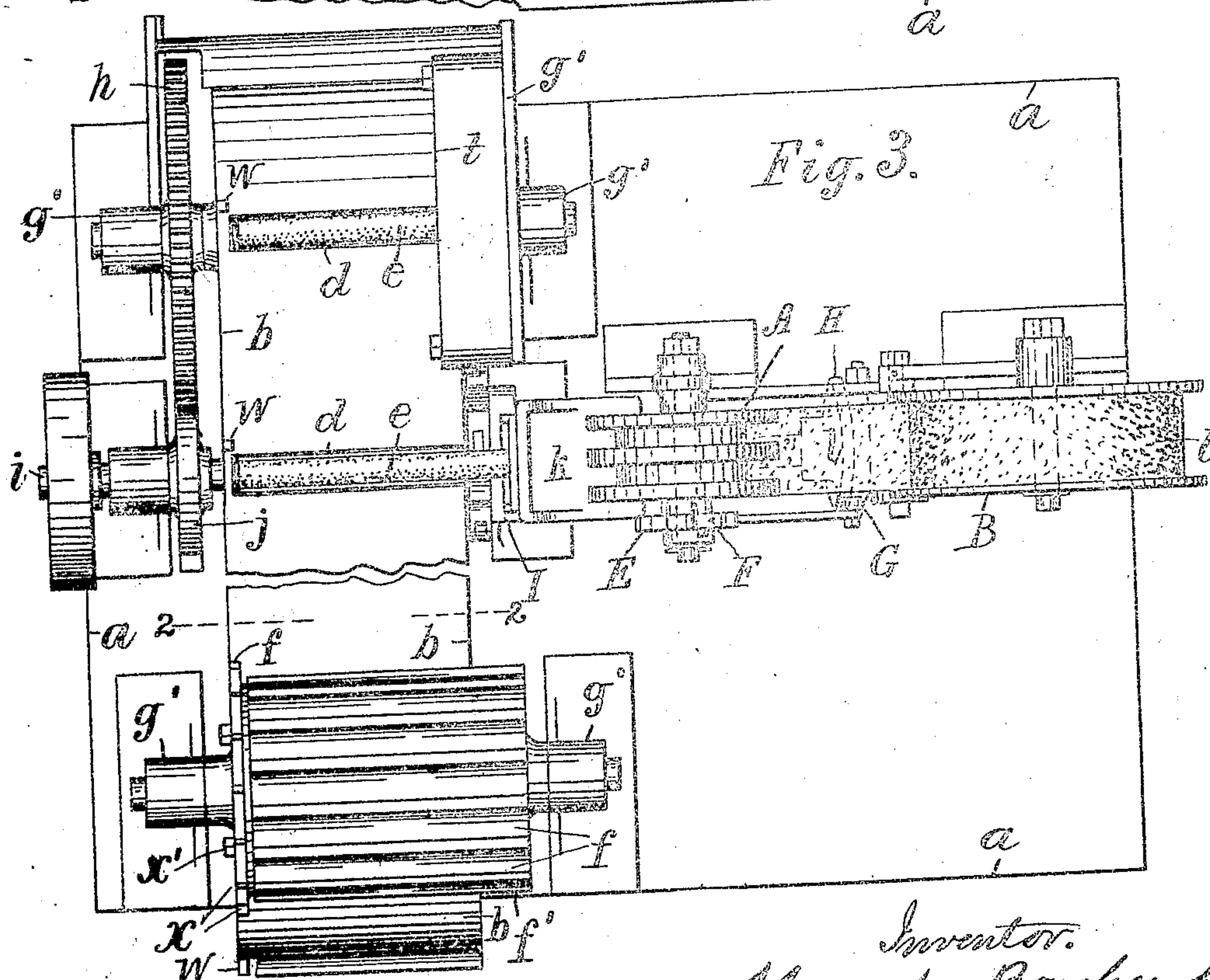
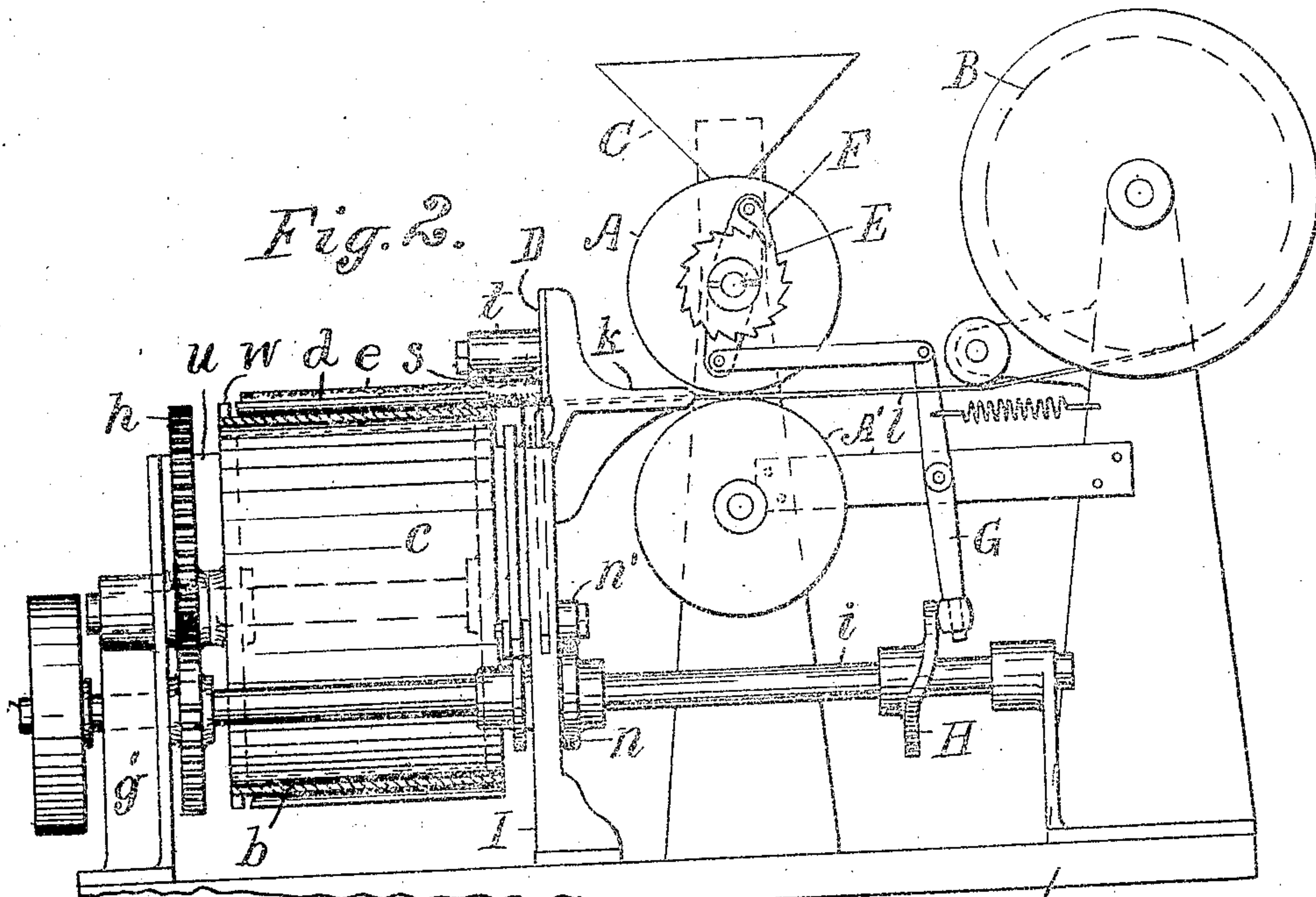
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3 SHEETS—SHEET 2.



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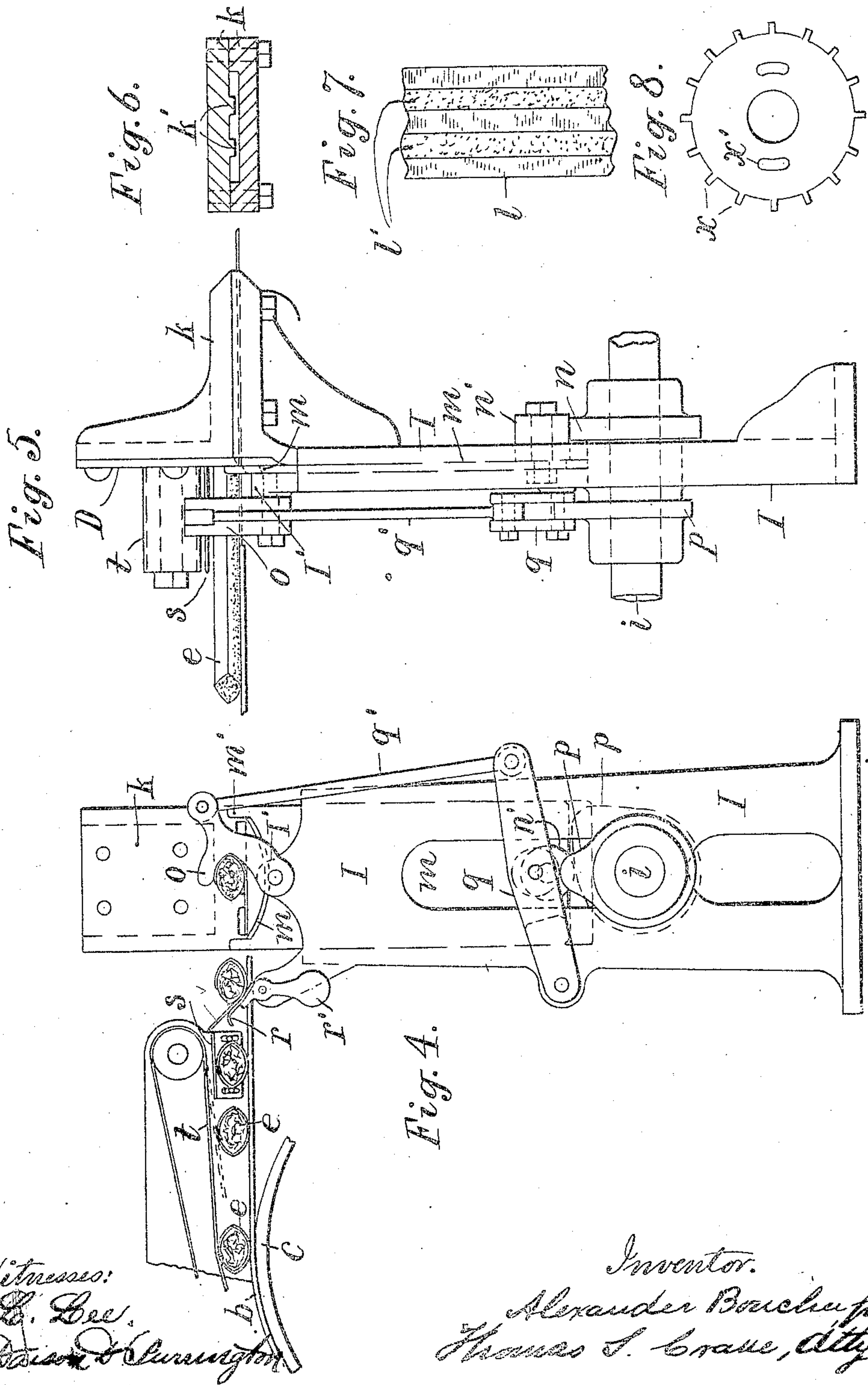
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3 SHEETS—SHEET 3.



Witnesses:

L. Lee,
 James S. Crane

Inventor.

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UNITED STATES PATENT OFFICE.

ALEXANDER BOUCHER, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO ARTHUR L. BOUCHER, OF NEW YORK, N. Y.

INDIVIDUAL-CIGARETTE-TIPPING MACHINE.

No. 887,761.

Specification of Letters Patent.

Patented May 12, 1903.

Application filed November 14, 1900. Serial No. 243,327

To all whom it may concern:

Be it known that I, ALEXANDER BOUCHER, a citizen of the United States, residing at No. 1180 Degraw street, Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Individual-Cigarette-Tipping Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The present invention relates to means for delivering cigarettes successively to a tipping device, feeding the end of a pasted ribbon of tipping material by the side of the cigarette tip, severing a portion of such ribbon to form the tipping section, and wrapping such section upon the tip of the cigarette. By this mechanism, the ends of the cigarettes are gaged into exact adjustment with the tipping section and such section is applied exactly even with the end of the cigarette, and such tipping section is pasted and fed into the proper relation to the cigarette tip while it is still a part of the ribbon, thus avoiding the handling of the tipping section separately or independently.

In practice, I feed the cigarettes from a magazine successively to holders upon a belt which is moved intermittently to carry the cigarettes successively to the tipping device where the pasted section is partially wrapped thereon, and the wrapping completed by a renewed movement of the belt carrying the cigarette past a yielding finger and an apron which complete the wrapping of the section. Such tipping sections are often made of cork which is only five-thousandths of an inch thick, and a great advantage is secured in handling such thin material in the manner which I employ.

The invention will be understood by reference to the annexed drawing, in which

Figure 1 is a side elevation of the machine with a part of the magazine broken away, the nearer standards g' and the gearing removed, and the parts h , j , x and x' indicated diagrammatically, to show their relations to the other parts. Fig. 2 is an end elevation of the machine with the parts omitted which are shown below the line 2, 2, in Fig. 3; and Fig. 3 is a plan of the machine with the cigarette-carrier belt broken for want of room upon the drawing. Fig. 4 is a side view of the standard I with the upper cut-

ter removed but showing the folding agencies; Fig. 5 is an edge view of the standard, and Fig. 6 is a section of the ribbon guide. Fig. 7 shows a piece of pasted ribbon; and Fig. 8 the disk y .

a is the bed carrying the working parts, b is the carrier-belt mounted upon a driving-wheel c and idle-pulley c' and provided with the cigarette-holders d .

The holders are supplied successively with cigarettes e from grooves f in a feeding-drum f' which receive the cigarettes from a hopper g . The idle pulley c' and the drum f' are journaled upon standards or bearings g' which also support the hopper g , and a half-casing g'' is extended from the hopper around the delivery side of the grooved drum to hold the cigarettes in the grooves until they reach the lowest point, where the termination of the casing permits them to drop. One edge of the belt has a tooth or dog w adjacent to each holder, which dog acts upon studs x upon the grooved drum, and turns the drum the width of one groove when a holder is moved to the open end of the casing g'' . Such intermittent turning of the drum discharges the cigarettes successively into the holders.

The axle of the driving-wheel c is provided with a gear-wheel h , and an adjacent driving-shaft i , termed the "cam-shaft" herein, is provided with a segmental or mutilated gear-wheel j which is rotated continuously and operates to turn the driving-wheel intermittently, and thus move the belt to carry the cigarettes in their holders from the drum f' to the tipping device. The cigarette-holders are thus stationary for a part of the time, and opposite one of their stations a guide k is supported upon a standard I to receive the ribbon l of tipping material from a paste roll A which, in conjunction with a presser-roll A' draws the ribbon from a reel B.

The cigarettes project over the edge of the belt b sufficiently to apply the tipping material to their ends, and an upper cutter D is mounted adjacent to the path of such ends at the station where the tipping section is applied, the cutter being supported upon the same standard by the ribbon guide k . The edge of such cutter stands at the bottom edge of the cigarette, and the end of the ribbon of tipping material is fed beneath the cutter and the lower side of the cigarette tip when the cigarette reaches such station.

The paste roll A is formed with three disks to lay central and lateral strips of paste upon the ribbon so as to leave spaces l' upon the upper surface of the ribbon, which move
5 through the guide k in contact with tongues k' , and the pasted surface of the ribbon is thus prevented from contact with the guide. (See Figs. 6 and 7).

As the strips of paste lie along the edges and middle of the ribbon, they provide each
10 section with a strip of paste along its edges, which secures one of the edges to the cigarette wrapper, and secures the other edge with a lap-joint upon the first one, when the
15 section is folded upon the cigarette. The paste roll is turned by a ratchet-wheel E and a pawl F carried by an arm upon the axle of the paste roll A, and oscillated through a lever G by a cam H upon the cam-shaft.

The standard I forms a cutter-guide which is slotted vertically, and has a movable cutter m fitted therein to move against the face of the cutter D. The cam-shaft i passes through the standard or cutter-guide I, as
20 shown in Fig. 1, and has adjacent to one side of the standard a cam n which operates upon a roll n' journaled upon the cutter m . The rotation of the cam-shaft operates to raise the cutter m at the proper time to sever a
25 section from the ribbon l , and a folder o is hinged adjacent to the junction of the cutters and moved, as soon as the section is severed, to press or fold its rear edge around one side of the cigarette tip, thus pasting such edge
30 to the tip.
35 to the tip.

As the tipping section lies in contact with one side of the cigarette tip, the section could not be severed by a straight cutter without interference from the tip, and the
40 cutter m is therefore hollowed or concaved upon its cutting end so that it commences to cut the edges of the ribbon first, and severs the middle portion last, in contact with the under side of the cigarette, the pressure of
45 the cutter serving in its final movement to stick the center strip of paste to the cigarette.

To keep the edges of the cutters m and D in working relation, tongues m' are shown in
50 Fig. 4 formed upon the outer corners of the cutter m and lie constantly in contact with the cutter D, and the ribbon l advances between such tongues before the section is cut off.

The ribbon guide k and upper cutter D are mounted upon a support upon one side of the cutter-guide, and the folder o is hinged or pivoted upon a support I' upon the opposite
55 side of the cutter-guide which supports it directly beneath the cigarette tip projecting over the edge of the belt.

The folder is actuated by a cam p upon the cam-shaft, acting on a roll upon a lever q pivoted to one side of the cutter-guide and
60 linked to the folder by a rod q' . An ear upon

the support I' carries a pivoted finger r having a counter-weight r' to hold it yielding in the path of the cigarette tip when the cigarette moves from its station before the cutter D, and such finger exerts a yielding pressure
70 upon the forward edge of the tipping section v and presses the same upwardly into the path of an adjacent wiper s . A folding apron t succeeds the wiper s in the path of such portion of the tipping section and completes the
75 folding as the cigarette tip is carried beneath it. The action of the finger, the wiper and the folding apron is illustrated in Fig. 4, where the action of each element upon the tipping section is clearly shown, completing
80 the folding of the section and wrapping one of its pasted edges over the other.

The wiper s and apron t are made only a little wider than the tipped portion of the cigarette, as shown in Fig. 3. The folding
85 apron t is moved merely by the frictional contact of the cigarette with the same as the cigarette is carried around the driving-wheel c ; the apron inclining toward the surface of the belt b to produce the desired pressure
90 upon the tipping section, and thus lapping the opposite edge against that first folded upon the cigarette, and forming a pasted lap-joint. A guard u is supported adjacent to the outer side of the driving-wheel c to guide
95 the cigarettes into a chute v which delivers them to a suitable receptacle.

The cigarette holders upon the belt b are provided, as shown in Fig. 2, with a sloping head at the front which sets the cigarettes
100 with the rear end projecting uniformly upon the opposite edge of the belt, to receive the tipping material. The dogs w are at the front edge of the belt, and the studs x are formed upon a disk y secured adjustably by
105 slot and bolt x' upon one end of the drum, so that the disk can be adjusted to regulate the operation of the dogs, and deliver the cigarettes exactly into the holders d .

The apparatus is wholly automatic in its
110 operation after the cigarettes are supplied to the hopper g and the ribbon of tipping material is placed upon the reel B; so that the tipping material is supplied with paste, divided into sections and wrapped upon the
115 cigarette tip without any injury or defacement of the cigarette or the tipping material.

Having thus set forth the nature of the invention what is claimed herein is:

1. In a cigarette tipping machine, the combination, with a carrier having cigarettes supplied thereto with the end to be tipped projecting beyond the edge of the carrier sufficiently to receive a pasted tip, of means for moving the carrier with the cigarette ends
120 projecting, to a station for applying the tip, the carrier remaining stationary during the tipping operation, means for feeding the end of a pasted ribbon of tipping material longitudinally toward the projecting end of the
125 130

cigarette beneath the same, an upper cutter transverse to the end of the cigarette, a lower cutter movable toward the under side of the cigarette and operating with the upper cutter to sever a section of the tipping material flush with the end of the cigarette, and means for folding the severed section about such projecting end.

2. In a cigarette tipping machine, the combination, with a belt having cigarette holders, of means for supplying cigarettes to the belt with the end to be tipped projecting, means for feeding the end of a pasted ribbon of tipping material beneath such projecting end, a folder operating to wrap the tipping section around one side of the tip, a yielding finger to bend the section around the opposite side of the tip when carried past the same by the belt, and a presser to complete the folding of the section around such opposite side of the tip.

3. In a cigarette tipping machine, the combination, with a belt having holders to receive the cigarettes with the tip projecting at the edge of the belt, of a cigarette hopper over one end of the belt and a grooved drum arranged between the hopper and the belt and turned intermittently to carry the cigarettes from the hopper to the belt.

4. In a cigarette tipping machine, the combination, with a belt having holders to receive the cigarettes, with the tip projecting at the edge of the belt, of a cigarette hopper over one end of the belt, a grooved drum arranged between the hopper and the belt with a casing upon one side to retain cigarettes in the grooves, and means actuated by the belt for rotating the drum intermittently to discharge the cigarettes into the holders.

5. In a cigarette tipping machine, the combination, with a belt having holders to receive the cigarettes with the tip projecting at the edge of the belt, of a cigarette hopper over one end of the belt, a grooved drum arranged between the hopper and the belt with a casing upon one side to retain cigarettes in the grooves, studs upon the drum intermediate to the grooves and dogs upon the belt adjacent to the holders to actuate the drum intermittently to discharge the cigarettes successively into the holders.

6. In a cigarette tipping machine, the combination, with a belt having cigarette holders and means for supplying cigarettes to the belt with the end to be tipped projecting, of means for shifting the belt to bring each cigarette to the cutter to receive a tipping section, means for feeding the end of a ribbon of tipping material beneath the cigarette tip, an upper cutter held at the end of the cigarette tip, a movable cutter with concave end operating to cut the tipping section from the ribbon, and means for wrapping the pasted section about the tip.

7. In a cigarette tipping machine, the com-

bination, with a belt having cigarette holders and means for supplying cigarettes to the belt with the end to be tipped projecting, of means for shifting the belt to bring each cigarette holder to a cutter to receive a tipping section, means for feeding the end of a ribbon of tipping material beneath the cigarette tip, an upper cutter held at the end of the cigarette tip, a movable cutter with concave end operating to cut the tipping section from the ribbon, a folder operating to wrap the section around one side of the tip, and stationary devices operated when the belt is in motion for wrapping the tipping section around the remainder of the tip.

8. In a cigarette tipping machine, the combination, with a belt having cigarette holders and means for supplying cigarettes to the belt with the end to be tipped projecting, of means for shifting the belt to bring each cigarette holder to a cutter and holding it thereat to receive a tipping section, means for feeding the end, of a ribbon of tipping material beneath the cigarette tip, a vertical cutter-guide mounted below the cigarette tip with a cutter movable vertically therein, a support upon one side of the knife-guide with a stationary cutter held at the end of the cigarette tip, and a support upon the opposite side of the knife-guide with a folder jointed thereto and means for oscillating the folder while the cigarette is held stationary.

9. In a cigarette tipping machine, the combination, with a belt having the transverse holders *d* for the cigarettes with the tip projecting beyond the belt, of the driving-wheel *c* for the belt, the gear-wheel *h* for turning the same, the cam-shaft *i* having a mutilated gear for intermittently turning the gear-wheel and shifting the belt, means for feeding the end of a pasted ribbon of tipping material beneath the cigarette, a cutter, a cam upon the cam-shaft for actuating the same to sever a tipping section from the ribbon, a folder, and a cam upon the cam-shaft to actuate the same to fold the severed section around one side of the tip.

10. In a cigarette tipping machine, the combination, with a belt having holders to carry the cigarettes with the tip projecting over the edge of the belt, of means for supplying a pasted section of tipping material to one side of the tip, a folder for folding such pasted section over one side of the tip, a yielding finger held in the path of the tip to bend the section against the other side of the tip, and rollers with an apron held adjacent to the path of the tip to fold the remainder of the section down upon the tip.

11. In a cigarette tipping machine, the combination, with a belt having cigarette holders to receive the cigarettes with the tip projecting at the edge of the belt and means for shifting the belt to bring the cigarettes successively to a tipping device, of a cutter

adjacent to the end of the cigarette when shifted, a ribbon guide adjacent to the cutter, means for feeding a ribbon of pasted tipping material through the guide at one side of the
 5 cigarette tip, means for cutting a section of material from such ribbon and means for wrapping it upon the cigarette tip.

12. In a cigarette tipping machine, the combination, with a belt having cigarette
 10 holders to receive the cigarettes with the tip projecting at the edge of the belt, a feed-wheel for shifting the belt to bring the cigarettes successively to a tipping device, a cutter adjacent to the end of the cigarette when
 15 shifted, a ribbon guide adjacent to the cut-

ter, a feed-roll and a paste-roll adjacent to the ribbon guide, a cam-shaft with connections for driving the belt-wheels intermittingly, and a cam on the cam-shaft with connections to the paste-roll for intermittingly
 20 turning the same to feed the ribbon through the ribbon guide.

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

ALEXANDER BOUCHER.

Witnesses:

L. LEE,

THOMAS S. CRANE.