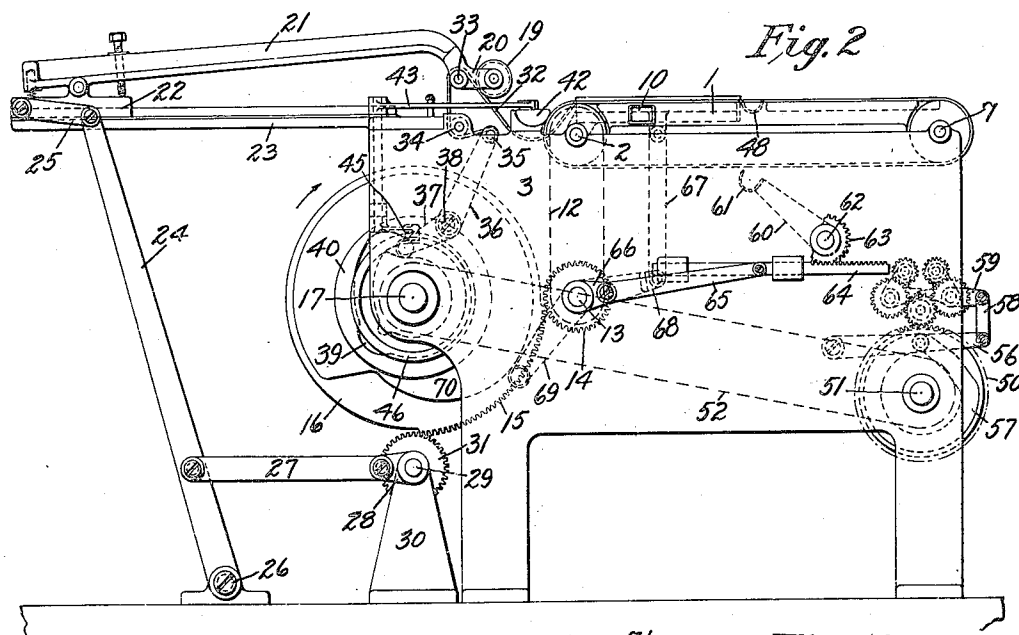
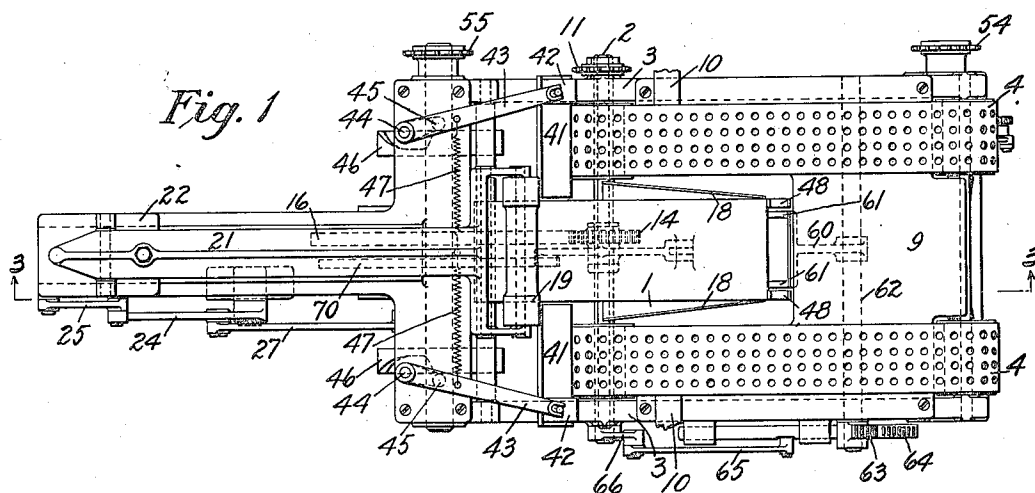


S. I. PRESCOTT.
 APPARATUS FOR MAKING CIGAR BUNCHES.
 APPLICATION FILED MAY 6, 1906.

1,051,005.

Patented Jan. 21, 1913.

2 SHEETS—SHEET 1.



WITNESSES:

A. White
G. Galiani

Fig. 11



INVENTOR

Sydney J. Prescott

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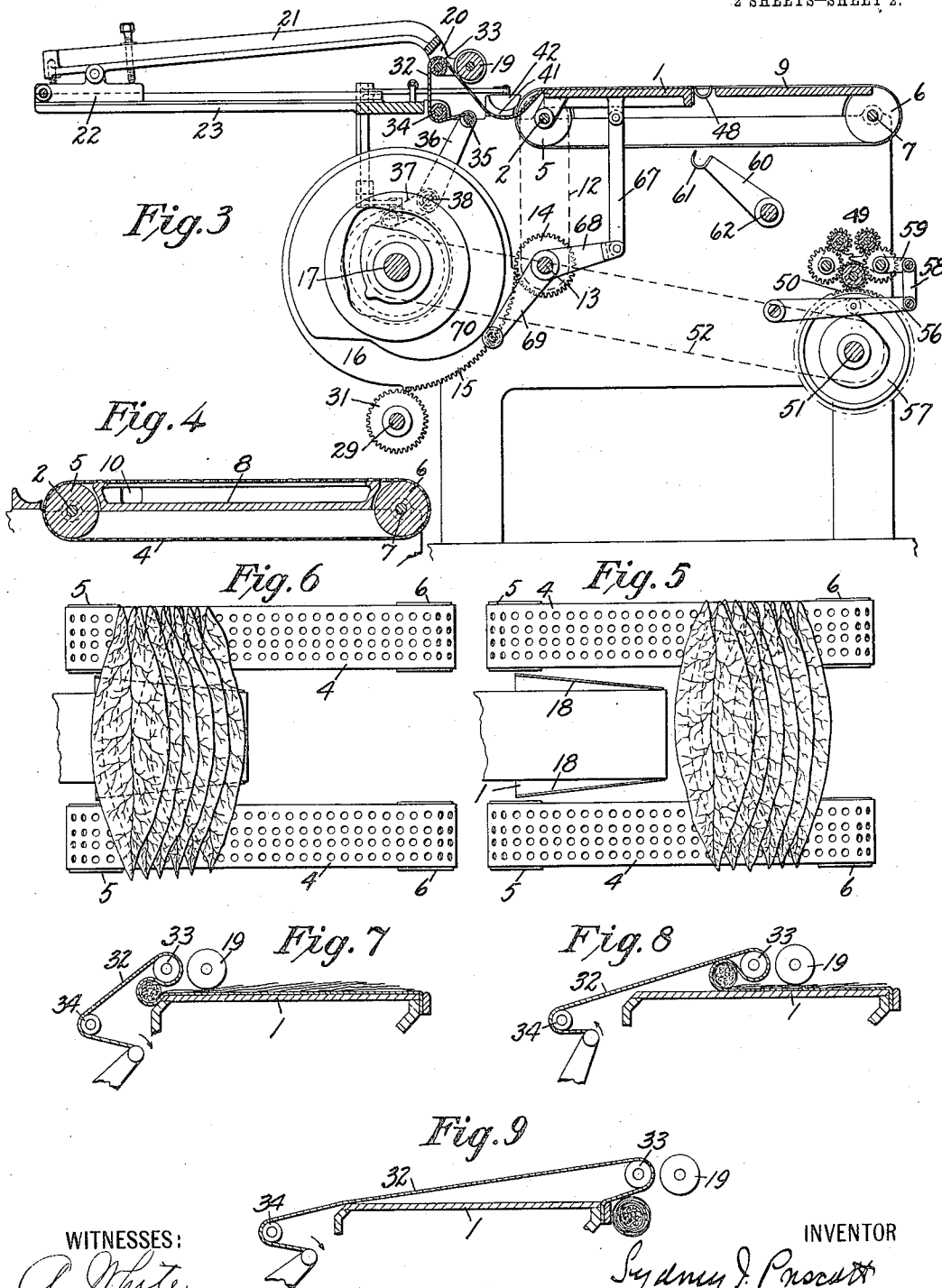
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UNITED STATES PATENT OFFICE.

SYDNEY I. PRESCOTT, OF NEW YORK, N. Y., ASSIGNOR TO INTERNATIONAL CIGAR MACHINERY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

APPARATUS FOR MAKING CIGAR-BUNCHES.

1,051,005.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Application filed May 5, 1906. Serial No. 315,301.

To all whom it may concern:

Be it known that I, SYDNEY I. PRESCOTT, a citizen of the United States, residing at New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Apparatus for Making Cigar-Bunches, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in cigar machines.

Cigars are now ordinarily made by applying a wrapper either to what is known as a "German bunch" or a "Spanish bunch." The so-called "German bunch" consists of a filler inclosed in a binder, the filler consisting of a number of pieces of tobacco crushed together and arranged parallel to the longitudinal axis of the cigar, the length of these pieces varying according to the character of the cigar. In high grade cigars, the filler extends substantially the entire length of the bunch, while in the cheapest cigars, short pieces, known as "scrap" are used. The "Spanish bunch" is customarily made by superposing a number of flat or outspread filler leaves, the leaves decreasing in size from the bottom leaf, the pile being rolled up from one edge. While cigars employing the German type of bunch are made by machinery, cigars employing the Spanish type of bunch have been hitherto made entirely by hand.

The invention has for its object to produce a machine for forming cigars of the Spanish bunch type.

The invention further extends to certain improvements in mechanism for preparing the tobacco for rolling into bunches, some of these improvements, however, being useful in machines which prepare tobacco to be used in making cigars which employ other than the Spanish type of bunches.

With these objects generally stated in view, and other objects not specifically referred to, the invention consists in certain constructions and in certain parts, improvements and combinations as will be hereinafter fully described and then specifically pointed out.

Referring to the accompanying drawings—Figure 1 illustrates, in plan view, a

machine embodying the invention. Fig. 2 is a side view of the machine illustrated in Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a sectional detail illustrating the carrier mechanism. Figs. 5 and 6 are detail plan views illustrating the operation of certain parts of the machine. Figs. 7, 8 and 9 are diagrams illustrating the bunch forming operation. Fig. 10 is a side elevation of the bunch formed by the particular machine illustrated. Fig. 11 is a central vertical section of the bunch shown in Fig. 10.

The particular machine which has been selected as illustrating an embodiment of the invention, includes means for converting outspread or flat leaves into a bunch and means for applying a wrapper to the bunch thus formed. When the machine is embodied in machines of the general type illustrated, means will be provided for sustaining the leaves in an outspread condition, and these means should further be of such a character as to retain the leaves in position with respect to each other. While the means employed may be varied and will vary according to the type of machine employed, in the particular construction illustrated, the sustaining means includes a table, as 1, this table being hung on a shaft 2 which is supported in the side frames 3 forming a part of the machine frame. In the particular machine illustrated, this table also forms a part of the rolling mechanism, as will hereinafter appear. The particular machine illustrated also includes means for automatically bringing the leaves into position with respect to the sustaining means. While these means may be varied widely, as illustrated, they include a carrier consisting of perforated belts 4, these belts running over driven pulleys 5 on the shaft 2 and over idle pulleys 6 on a shaft 7 extending across the machine. Coöperating with the upper run of these perforated belts are suction boxes 8, these boxes being, in the particular construction shown, formed in one piece with a casting 9 which forms a table, the boxes and casting being supported in side frames. These boxes 8 are connected, through pipes 10, with any suitable form of suction producing means, not shown.

In the operation of the particular mecha-

nism illustrated, the tobacco leaves to be converted into a bunch are spread in flat overlapped form, as illustrated in Figs. 5 and 6, on the table 9, the ends of the leaves being retained in position on the carrier belts 4 by means of the suction. The leaves having been laid on the table and carrier, are advanced by giving the carrier a suitable movement. In the particular construction illustrated, this is accomplished by providing the shaft 2 with a sprocket 11 over which runs a driving chain 12, indicated in dotted lines in Fig. 2, this chain passing around a sprocket mounted on a shaft 13 extending across the machine. This shaft 13 is provided with a driving gear 14 which, as the movement of the carrier in the particular machine shown, is intermittent, meshes at proper times with a segment 15 formed on a segment wheel 16, this wheel being supported on a shaft 17 which forms the main driving shaft of the machine.

While the leaves might be cut to proper length and shape, if a shaped bunch is to be made, before being introduced into the machine, in the best constructions, the leaves will be shaped after they have been introduced into the machine. The shaping mechanism when it is employed will vary widely according to the type or shape of bunch to be produced. In the particular machine illustrated, the shaping is effected by providing knives 18 which are located alongside the table 1 and supported thereon in any suitable way, as, for instance, by being screwed thereto. Coöperating with these knives 18 is a cutting roll 19, this roll being supported between forks 20 formed on an arm 21, this arm being pivoted to a slide 22 which works in ways in an extension 23 of the frame. This slide is, in the machine illustrated, operated by a lever 24 connected to the slide 22 by a link 25 and pivoted at 26 to the bed on which the machine stands. This lever 24 is operated by a link 27 secured to a crank arm 28, this crank arm being carried on a short shaft 29 supported in a standard 30, this shaft being provided with a gear 31 which at proper times meshes with the segment 15 before referred to.

While the rolling of the bunches may be effected by any suitable mechanism, in the particular construction illustrated, this is effected by means of a belt of the type known in the art as a Chianti belt, this belt being marked 32. In the particular machine illustrated, this belt is secured at one end to the table 1, and after passing around the usual loop forming roller, indicated at 33, passes over a guide roll 34. It may be here remarked that whatever the type of rolling mechanism employed in carrying out the invention, so far as it relates to machines for making Spanish bunches, it should be of such a character that the size or diameter of

the rolling cavity can be increased proportionately to the increase in size of the bunch. In wrapping a German bunch, it is not necessary to increase the size of the rolling cavity, for the reason that all the filler is placed in the rolling cavity at one time, and the introduction of the binder does not substantially increase the diameter of the bunch. In forming a Spanish bunch, however, the bunch increases in size during the rolling operation, thereby necessitating an increase in diameter of the rolling cavity. While the means employed for increasing the size of the rolling cavity may be varied and will vary according to the type of rolling mechanism employed, in the particular construction illustrated, this is effected by securing the end of the belt 32 opposite to that which is secured to the table to a bar 35 supported by a pair of bell-cranks 36—37, these bell-cranks being pivoted on studs 38 extending inward from the side frames. The arms 37 of these bell-cranks carry rollers which work in cam grooves 39 in cam disks 40 supported on the main shaft 17. The configuration of these grooves is such as to so control the belt that a comparatively small rolling cavity is formed in it by the loop forming roller in the first instance, the size of the diameter of this cavity increasing as the bunch increases in size. These grooves are so formed as to tighten the belt somewhat suddenly as the rolling operation is completed so as to expel the bunch.

The particular machine illustrated is designed to form a bunch which while it consists in the main of rolled leaves is provided with a central core made of filler somewhat similar to that of which the German bunch is entirely formed. When the invention is embodied in a machine which forms a bunch with a core in the manner described, the core forming devices may be of any suitable construction. In the machine selected to illustrate an embodiment of the invention, these devices are of such a character as to form the core from the parts of the leaves cut off during the shaping operation. The parts of the leaves cut off by the knives 18 and which adhere to the carrier belts are forwarded by the belts and deposited in receptacles 41 which lie at the ends of the runs of the belts and on each side of the slack of the rolling belt when the loop forming roller is in its retracted position. Coöperating with these receptacles 41 are plungers 42 which are operated by arms 43 carried on upright shafts 44, the lower ends of these upright shafts being provided with operating arms 45 which coöperate with suitable cam disks 46, the arms being held against the disks by springs 47 connected to the levers 43. In the rolling operation, and after a bunch has been rolled, and the loop

forming roller 33 has retreated to the position shown in Fig. 3, the plungers 42 operate to move into the rolling belt the ends of the leaves cut away in the formation of the preceding bunch. After the plungers have thus introduced this core forming material into the belt, the loop forming roller starts forward, the slack in the belt being taken up so as to form a small rolling cavity and suitably compress the core. As the roller advances, the overlapped outspread leaves enter the bunch forming cavity in the belt, the operation being made clear by the diagrams Figs. 7 and 8.

Inasmuch as the loop forming roller 33 is mounted on the arm which carries the cutting roll, this roll moves just in advance of the loop forming roller. By thus cutting the leaves during the rolling operation, they are securely held by the carrier belts until substantially the time when they enter the rolling cavity, so that they do not become displaced with respect to each other. The operator can, therefore, lay the proper number of leaves to form a bunch on the belts and be sure that they will be fed into the rolling mechanism in proper relation to each other. After the rolling is completed, the bunch is discharged into a suitable receiver, the receiver illustrated being a set of bent fingers 48 mounted on the end of the table 1. After the leaves are converted into bunches, the wrappers will be applied thereto. While this might be done in a separate machine, in the best construction, the wrapper applying mechanism will form a part of the machine. The wrapper applying mechanism employed may be of any suitable type. That illustrated includes a group of intergearing rollers 49, these rollers being driven from a gear 50 mounted on a shaft 51 extending across the machine. This shaft may be driven in any suitable manner, as, for instance, by a chain indicated in dotted lines at 52 in Figs. 2 and 3, the chain running over a sprocket 54 on the shaft 51 and a sprocket 55 on the shaft 17. These rollers are mounted in the usual side frames, not herein shown, so as to be opened and closed at proper times to receive and deliver the bunch. The opening and closing mechanism is indicated, the same consisting of a cam lever 56 cooperating with a cam 57 on the shaft 51, this lever being connected by a link 58 to an arm 59 on the shaft which supports one of the driving pinions for the group of rolls. The specific construction of rolling mechanism not being herein claimed, the illustration thereof has been made diagrammatic merely in the interests of brevity and clearness. The means for supplying wrappers to this wrapping mechanism is also omitted for the same reasons, the special construction thereof having no relation to the present invention.

Suitable transferring devices may be employed for transporting the bunches from the bunch forming mechanism to the wrapping mechanism. In the construction shown, these transferring devices consist of an arm 60, this arm being provided with a pair of hooks 61 and being mounted on a shaft 62 suitably supported in the frame. This shaft 62, in the particular construction illustrated, is provided with a segment 63 which is in mesh with a sliding rack 64 suitably supported in the machine, this rack being driven by a connecting rod 65 which is fast to the crank arm 66 on the shaft 13 before referred to. In the particular construction illustrated, the bunch is brought into the range of action of the transferring arm by rocking the table 1 down, this being effected by connecting the table by a link 67 to one of the arms 68 of a bell-crank 68, 69 hung on the shaft 13. The arm 69 of this bell-crank is provided with a roller which cooperates with a cam 70 mounted on a shaft 17 before referred to. This movement of the table is desirable in machines of the type illustrated not only for the purpose of bringing the bunch within the range of action of the transferring arm, as stated, but for the further reason that the table is moved out of the way as a group of leaves is advanced by the carrier so that the leaves are not liable to be misplaced by being dragged over the table and rolling belt.

The completed bunch before the wrapper is applied thereto is illustrated in Figs. 10 and 11, the outer wound leaves of the bunch being marked 71 and the core portion 72. The peculiar shape of the leaves shown in the bunch is due to the action of the shaping mechanism which produces a bunch having parallel smoke passages extending through it from end to end, the bunch being shaped so that a compression thereof after rolling, as in a mold, is unnecessary.

The invention may be embodied in machines which differ widely in their construction from that which has been described, and it may be further stated that certain features of the invention may be used independently of other features, and in machines which do not make bunches of the particular type herein described and illustrated. The invention is not, therefore, to be confined to the specific details of construction herein described.

What is claimed is:—

1. In a cigar machine, the combination with means for shaping a selected number of outspread leaves to produce a Spanish bunch, of means acting on such shaped leaves to form a bunch, and means acting upon the formed bunch to convert it into a cigar.

2. In a cigar machine, the combination with means for advancing leaves in an out-

- spread condition, of means for shaping the
outspread leaves in sections to produce a
Spanish bunch, and means acting upon the
sections to assemble the same to form a
bunch.
3. In a cigar machine, the combination
with means for advancing leaves in an out-
spread condition, of means for shaping the
outspread leaves in sections to produce a
Spanish bunch, means acting upon the sec-
tions to assemble the same to form a bunch,
and means acting upon the formed bunch to
convert it into a cigar.
4. In a cigar machine, the combination
with means for shaping a number of out-
spread leaves to produce a Spanish bunch,
and means acting on the shaped leaves to
form a bunch.
5. In a cigar machine, the combination
with means for shaping a number of out-
spread leaves to produce a Spanish bunch,
a rolling mechanism acting on the shaped
leaves to form a bunch, and means acting
upon the formed bunch to convert it into
a cigar.
6. In a cigar machine, the combination
with a bunch forming mechanism, of means
for supplying a core to said mechanism, and
means for supplying a plurality of out-
spread overlapped leaves to be successively
wound about the core.
7. In a cigar machine, the combination
with a cutting mechanism, of means for
supplying tobacco leaves in an outspread
condition thereto, a rolling mechanism,
means for transferring parts of the leaves
to the rolling mechanism to form cores, and
means for feeding parts of the leaves to
the rolling mechanism in an outspread con-
dition.
8. In a cigar machine, the combination
with a rolling mechanism to which leaves
are successively presented to form a bunch,
of positively operated means for increasing
the size of the rolling cavity proportion-
ately to the increase in size of the bunch
during the rolling operation.
9. In a cigar machine, the combination
with a cutting mechanism adapted to shape
filler tobacco, of a carrier, means for re-
taining filler tobacco therein with the stems
of the filler leaves lying across the line of
feed, and means for producing a relative
movement between the cutting mechanism
and the carrier.
10. In a cigar machine, the combination
with a cutting mechanism adapted to shape
filler tobacco, of a carrier, means for retain-
ing filler tobacco therein with the stems of
the filler leaves lying across the line of
feed, and means for operating the carrier
to bring the leaves within the range of ac-
tion of the cutting mechanism.
11. In a cigar machine, the combination
with a cutting mechanism adapted to shape
filler, of a suction carrier adapted to retain
leaves thereon with their stems crosswise
of the line of feed, and means for producing
a relative movement between the cutting
mechanism and the carrier.
12. In a cigar machine, the combination
with a cutting mechanism adapted to shape
filler, of a suction carrier adapted to retain
leaves thereon with their stems crosswise
of the line of feed, and means for moving
the carrier to present the leaves to the cut-
ting mechanism.
13. In a cigar machine, the combination
with a carrier constructed to forward leaves
in an outspread condition, of a table over
which the leaves are fed, and a rolling belt
cooperating with the table.
14. In a cigar machine, the combination
with a carrier constructed to forward leaves
in an outspread condition, of a table over
which the leaves are fed, a rolling belt co-
operating with the table, and a wrapper
applying mechanism.
15. In a cigar machine, the combination
with a carrier constructed to forward leaves
in an outspread condition, of a table over
which the leaves are fed, a cutting mecha-
nism for shaping the leaves on the table,
and a rolling belt cooperating with the
table.
16. In a cigar machine, the combination
with a carrier operating to advance a num-
ber of leaves in an outspread condition to
produce a Spanish bunch, of a table over
which the leaves are carried, a cutting
mechanism for shaping the outspread leaves
on the table, a rolling belt cooperating with
the table to form the shaped leaves into a
bunch, and means for converting the bunch
into a cigar.
17. The combination with a carrier, of a
table over which the leaves are fed in an
outspread condition, a rolling belt coop-
erating with the table, and positively oper-
ated means for increasing the size of the loop
in the belt as the bunch increases in size.
18. In a cigar machine, the combination
with a table, of a rolling belt cooperating
therewith, and positively operated means
for gradually increasing the diameter of
the loop in the belt during the rolling oper-
ation.
19. In a cigar machine, the combination
with a rolling mechanism, of means for
feeding leaves successively thereto, and
means for cutting the leaves as they are fed
to the rolling mechanism, said cutting
means operating substantially parallel to
the line of feed.
20. In a cigar machine, the combination
with a table, of a rolling belt cooperating
therewith, said table and belt being adapted
to support and roll filler into a bunch, and
means for cutting the filler during the roll-
ing operation.

21. In a cigar machine, the combination
with a rolling table, of a rolling belt co-
operating therewith, knives located along-
side the table, coöperating knives, and
5 means for bringing the knives into opera-
tion during the rolling operation.

22. In a cigar machine, the combination
with a carrier comprising two suction belts,
of a table located between the belts, a roll-
10 ing belt coöperating with the table, and

cutting devices operating between the car-
rier belts and the table.

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

SYDNEY I. PRESCOTT.

Witnesses:

A. WHITE,
JAMES Q. RUI.
