(No Model.) 2 Sheets—Sheet 1.

R. A. BRIGHT.

ROLL FOR CIGAR WRAPPING MACHINES.

No. 386,235. Patented July 17, 1888.

Fig. 1.

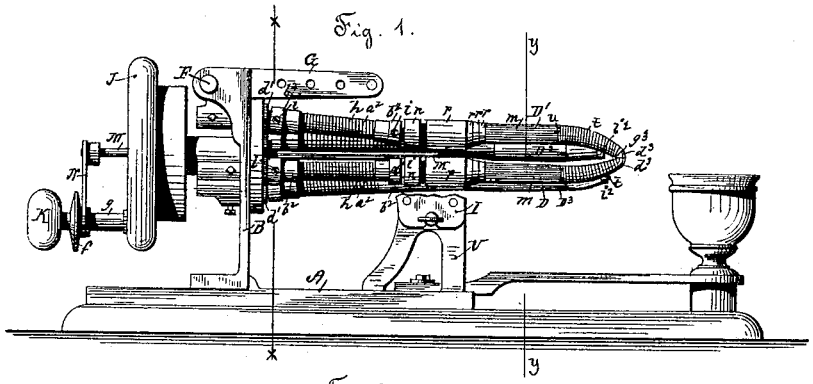


Fig. 2.

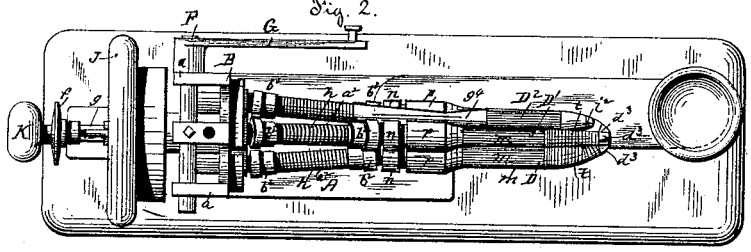


Fig. 3.

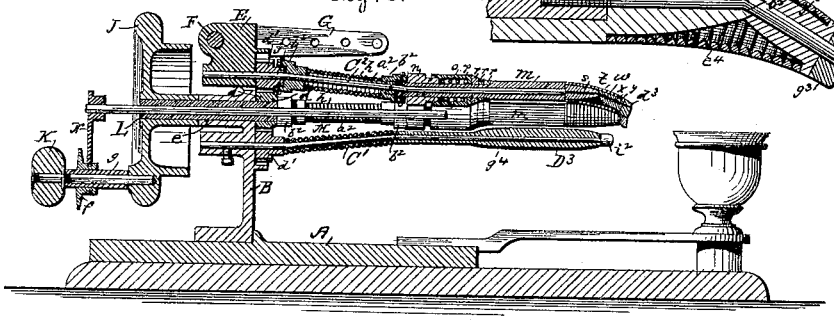


Fig. 6.

Fig. 4.

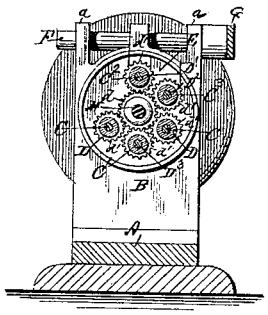
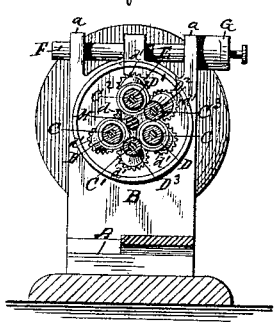


Fig. 5.



Witnesses.
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James W. Brennan

Inventor,
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By his Attorney.
S. Schofield.

(No Model.) 2 Sheets—Sheet 2.

R. A. BRIGHT.

ROLL FOR CIGAR WRAPPING MACHINES.

No. 386,235. Patented July 17, 1888.

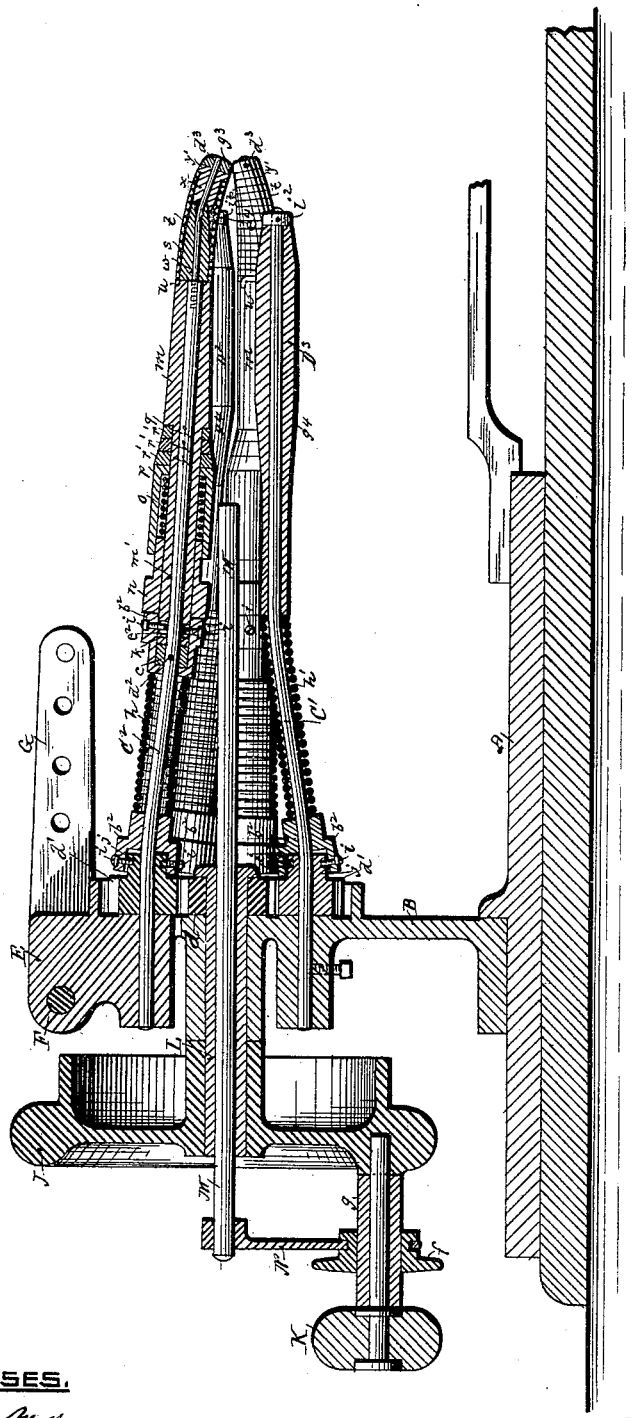

FIG. 7.

WITNESSES.

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Fred. L. Fuller.

INVENTOR.

Richard A. Bright

per J. Schofield Attorney.

UNITED STATES PATENT OFFICE.

RICHARD A. BRIGHT, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO WALTER A. PECK, TRUSTEE, OF SAME PLACE.

ROLL FOR CIGAR-WRAPPING MACHINES.

SPECIFICATION forming part of Letters Patent No. 386,235, dated July 17, 1888.

Application filed December 3, 1887. Serial No. 256,955. (No model.)

To all whom it may concern:

Be it known that I, RICHARD A. BRIGHT, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Rolls for Cigar-Wrapping Machines, of which the following is a specification.

My invention consists, broadly, in the combination, with a roll-section having a comparatively rigid surface adapted to operate upon the body portion of the cigar, of an operatively-attached flexible spiral wire coil and means for imparting the desired form to the wire coil to properly roll the head of the cigar.

It also consists in the improved combination, with a roll-section having a comparatively rigid surface adapted to operate upon the body portion of the cigar, of an operatively-attached flexible spiral wire coil and means for supporting the same in a deflected position, whereby a yielding action will be secured upon the head of the inclosed cigar-bunch, which will tend to cause the instant rolling of a soft unmolded bunch when the same is first placed between the rolls, and also tend to prevent the breaking of a partially-dried binder upon a molded bunch when inserted between the rolls for rolling on the final wrapper.

It also consists in the combination, with the cluster-rolls which serve to form the tuck and head of the cigar, of intermediate supplementary rolls which are adapted to yield to the irregularities of the cigar-bunch and cause the same to revolve properly between the cluster-rolls.

Figure 1 represents a front elevation of a cigar-wrapping machine with the ordinary wrapper-smoothing plate broken away in order to fully show the cluster-rolls. Fig. 2 is a plan view of the same. Fig. 3 is a vertical longitudinal section. Fig. 4 is a transverse section taken in the line *x x* of Fig. 1. Fig. 5 is a transverse section taken in the line *y y* of Fig. 1. Fig. 6 is an enlarged axial section of the forward end of one of the cluster-rolls, showing the yielding spiral wire coil at the forward end of the roll. Fig. 7 is an enlarged vertical longitudinal section of the forward end of the cluster-roll.

In the accompanying drawings, A is the base, upon which is secured the upright standard B, which supports the fixed cores C C of the lower cluster-rolls, D D, and the fixed cores C′ of the lower supplementary roll, D^3, the upper cluster-roll, D′, and its accompanying roll, D^2, being held upon the fixed cores C^2 C^3, which are firmly held in the head E, the said head being tightly secured to a pivot-shaft, F, which is held in the bearing-ears *a a* of the standard B.

Upon the outer end of the pivot-shaft F is secured the arm G, the movement of which, by means of a connected treadle or by hand, will serve to raise the upper rolls, D′ D^2, from the lower rolls, D D D^3, which with the said upper rolls serve to form a complete rolling-pocket for rolling the wrapper onto the cigar-bunch.

To the forward end of the base A is secured the stand U, to which is to be attached a wrapper-smoothing plate, I, of the well-known ordinary construction, said plate being broken away in the elevation, Fig. 1, in order to fully show the forming-rolls of the machine.

To the crank-wheel J is secured the handle K, the said crank-wheel being tightly held upon a hollow shaft, L, upon the inner end of which is firmly secured the driving-gear *d*, which engages with the surrounding gears *d′*, the said gears being loosely held upon the fixed cores C C C′ C^2 C^3 of the several rolls, so that upon turning the crank-wheel J and gear *d* the gears *d′* will be caused to revolve in the same direction with each other.

Through the hollow shaft L, which passes through a bearing, *e*, in the standard B, is placed the loosely-sliding forcer M, which serves to force the inclosed cigar-bunch toward the head end of the cluster-rolls, and to the outer end of the forcer M is secured the arm N, which at its outer end loosely embraces the button *f*, the said button being arranged to slide loosely upon the shank *g* of the handle K.

The fixed cores C C C^2 of the cluster-rolls D D D′ are outwardly deflected from the rolling-pocket in order to be able to employ gears *d′* of considerable size; and in order to properly transmit the driving-power from the loosely-held gears *d′* to each of the several cluster-rolls D D D′, I place upon the said cores C C C^2 the flexible hollow shafts *h h h*, formed of a spiral spring, a^2, to the opposite ends of which

are secured the recessed heads b^2 b^2, one of which is adapted to receive the hub j of the gear d' and the other the end k of the hollow shell-formed section m of the cluster-roll, which section serves to roll the wrapper onto the body of the cigar-bunch. Upon diametrically-opposite sides of the recessed heads b^2 b^2 are placed the screws i i, the inwardly-projecting points of which enter corresponding holes made in the periphery of the hub j of the gear d' and the periphery of the end k of the section m of the roll, so as to form a suitable universal joint to cause the proper rotation of the cluster-roll from the gear d'. In order to prevent the flexible shaft h and the connected roll-section m from slipping off the core I employ a collar, c, which is held upon the core by means of a pin, d^2, the said collar being inclosed in the end recess, e^2, of the roll-attaching head b^2 of the flexible shaft.

Upon the shank m' of the section m of the cluster-roll is loosely placed the sleeve n, at the inner end of which, upon the said shank m', is placed a spiral spring, o, the said spring being preferably concealed from view by means of the cup-formed sleeve P, which is also loosely held upon the shank m' and loosely fits the forward end of the loose sleeve n, as shown in Fig. 7, and between the shoulder q of the section m of the roll and the forward end of the sleeve p are preferably placed the removable and changeable washers r r r, having beveled edges r', by means of which the tuck end of the cigar will be rolled. the said washers being held for rotation with the roll-section m by means of the loose sleeves n and p and the intervening spiral spring o, which serves to press the sleeve n against the forward end of the head b^2 of the flexible shaft h and the sleeve p against the end washer of the series, thus serving to friction the said washers against each other and the shoulder q of the roll-section m. By removing the washers r, or any of them, and changing the same for others of different thicknesses, suitable variation can be made in the shape of the tuck to suit the required change in the style of the cigar; but it is to be understood that I do not limit my claims to a roll having interchangeable parts, which serve to operate upon the tapered tuck end of the cigar, as such rolls are not new, having been described in my former application, Serial No. 181,005, and in case this adjustability is not desired a roll having a continuous flaring end can be advantageously employed, as has heretofore been the common practice in cigar-wrapping machines.

The forward end of the section m of the cluster-roll is reduced in size and made in conoidal form, and over the conoidal head s of the said roll-section is placed the spiral wire coil t, which is operatively connected to the section m of the roll by means of a hook-bend, u, at the end of the spiral coil, and a suitable notch made in the said section m to receive the said hook, as shown in Fig. 1. Into a central perforation, v, at the outer end of the stationary core C is screwed the angularly-deflected core w, the said core w being screwed into the end of the stationary core C after the placing of the section m of the roll upon the said core, and upon the outer end portion of the deflected core w is placed the loose revolving thimble x, having a flange, y, against which the forward end of the spiral wire coil t is firmly held, the body of the said thimble being preferably made in spindle form in order to fit the curvature of the outer side of the deflected spiral wire coil t, as shown in Fig. 6. The forward point, y', of the conoidal end of the roll-section m is conically recessed at f', in order to allow the angular bend a^3 of the core w to rest against the inclined shoulder b^3 so formed, and the revolving thimble x is also provided with a conical recess, c^3, which at one side rests against the periphery of the outer end of the conoidal head s. The thimble x is held firmly against the end of the deflected wire coil t for rotation therewith by means of the head or collar d^3 upon the outer end of the deflected core w, and the said heads or collars of the deflected cores w of the cluster-rolls may be made to form a slight friction-socket at the point g^3 for the extreme point-tip of the cigar.

The wire coil, which is supported and held in the proper curved form by means of the conoidal head s and thimble x, is not rigidly held in its inner side, e^4, and will therefore yield to the irregularity of the head end of an unmolded cigar-bunch and gradually roll the same into proper form without danger of clogging the machine so that the rolls will fail to turn the bunch when first inserted into the cigar-rolling pocket, thus causing the machine to be especially adapted for rolling the wrappers upon unmolded bunches with great advantage and economy.

The supplementary rolls D^2 D^3 are loosely held upon the cores C^3 C', being each provided with a rearwardly-tapered section, g^4, and connected to the gears d', for operation with the cluster-rolls, by means of the connected flexible hollow shaft h', and by the employment of the said flexible shaft the stationary cores of the said supplementary rolls can be deflected outwardly toward the driving-gear to the extent desired. The supplementary rolls may be secured to the flexible hollow shaft h' in any suitable manner, as by solder or otherwise, and the several parts can be securely held to revolve upon the core by means of the head or collar i^2. The supplementary rolls D^2 D^3 are held for revolution upon the stationary cores C^3 C', which are unsupported at their outer ends, and are thus adapted to yield to the inequalities of the unmolded cigar-bunch by the outward springing of the said cores when the said bunch is first inserted into the rolling-chamber.

The conoidal end s of the roll-section m serves to determine the curve of the deflected wire coil to conform to the desired shape of the head of the cigar, and the revolution of the roll-section in either direction will serve

to impart a corresponding movement to the attached wire coil *t* and its holding-thimble *x* upon the inclined or deflected core *w*. The revolving conoidal end of the roll-section also serves to assist in the proper turning of the middle portion of the wire coil of the roll.

With the body portion of the roll made of comparatively rigid construction or material and the point end of the roll made of the spiral wire coil the tendency to twist the filler is avoided, and the flexible-wire coil can be readily made to conform to the desired contour of the head of the cigar, so that the entire cigar may be properly wrapped.

Various devices may be employed to support the spiral wire coil in its deflected position without departing from the spirit of my invention.

Whatever is herein shown and not claimed, but shown and claimed in the application filed by me October 26, 1885, Serial No. 181,005, is disclaimed in this application.

I claim as my invention—

1. A cigar-forming roll having a section provided with a comparatively rigid surface adapted to operate upon the body portion of the cigar, and an attached spiral wire coil, which forms a continuation of the surface of the roll, for operating upon the head portion of the cigar, and means for imparting a deflected form to the wire coil, substantially as described.

2. A cigar-forming roll having a roll-section provided with a conoidal end, a spiral wire coil operatively connected to the said roll-section, and having its forward end supported for revolution upon an axis at an angle with the axis of the said roll-section, substantially as described.

3. A cigar forming roll having a fixed core provided at its outer end with a supplementary deflected core, a roll section adapted to revolve upon the fixed core to form the body portion of the cigar, and having a conoidal end, and a spiral wire coil operatively connected to the said roll-section and supported for revolution upon the conoidal end of the roll-section and the deflected core, substantially as described.

4. A cigar-forming roll having a fixed core provided at its outer end with a supplementary deflected core, a roll-section adapted to revolve upon the fixed core to form the body portion of the cigar, and having a conoidal end, and a spiral wire coil operatively connected to the said roll-section and covering the conoidal end of the same, a revoluble thimble for supporting the forward end of the spiral wire coil upon the supplementary deflected core, and a head or collar at the end of the said core, substantially as described.

5. A cigar-forming roll having a fixed core provided with a loosely-revolving gear, a flexible hollow shaft, and a roll-section which is operatively connected to the said gear by means of the universal joints formed at the opposite ends of the flexible hollow shaft, the fixed collar located between the hollow shaft and the said roll-section, the supplementary deflected core, the spiral wire coil operatively connected to the said roll-section, the revoluble thimble for supporting the forward end of the spiral wire coil upon the deflected core, and the head or collar at the end of the said core, substantially as described.

6. A cigar-forming roll having a fixed core provided at its outer end with the supplementary deflected core, a roll-section adapted to revolve upon the fixed core to form the body portion of the cigar, and having a conoidal end provided with a recess adapted to receive the angle of the deflected core, the thimble recessed to fit at one side against the conoidal end of the roll, the deflected spiral coil operatively connected to the said roll-section and thimble, and the head or collar at the end of the supplementary deflected core, substantially as described.

7. The combination, with the cluster of connectedly-driven hollow rolls having a conically enlarged section adapted for operation upon the tuck end of the bunch, of the supplementary connectedly-driven rolls having a rearwardly-tapered section to fit between the conically-enlarged sections of the cluster-rolls, the stationary cores for supporting the said cluster-rolls, and the stationary yielding cores for the supplementary rolls, substantially as described.

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