

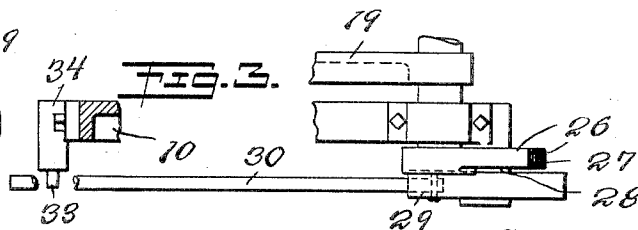
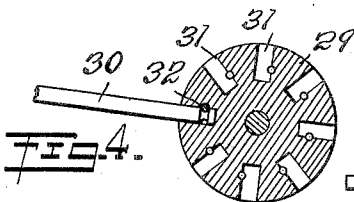
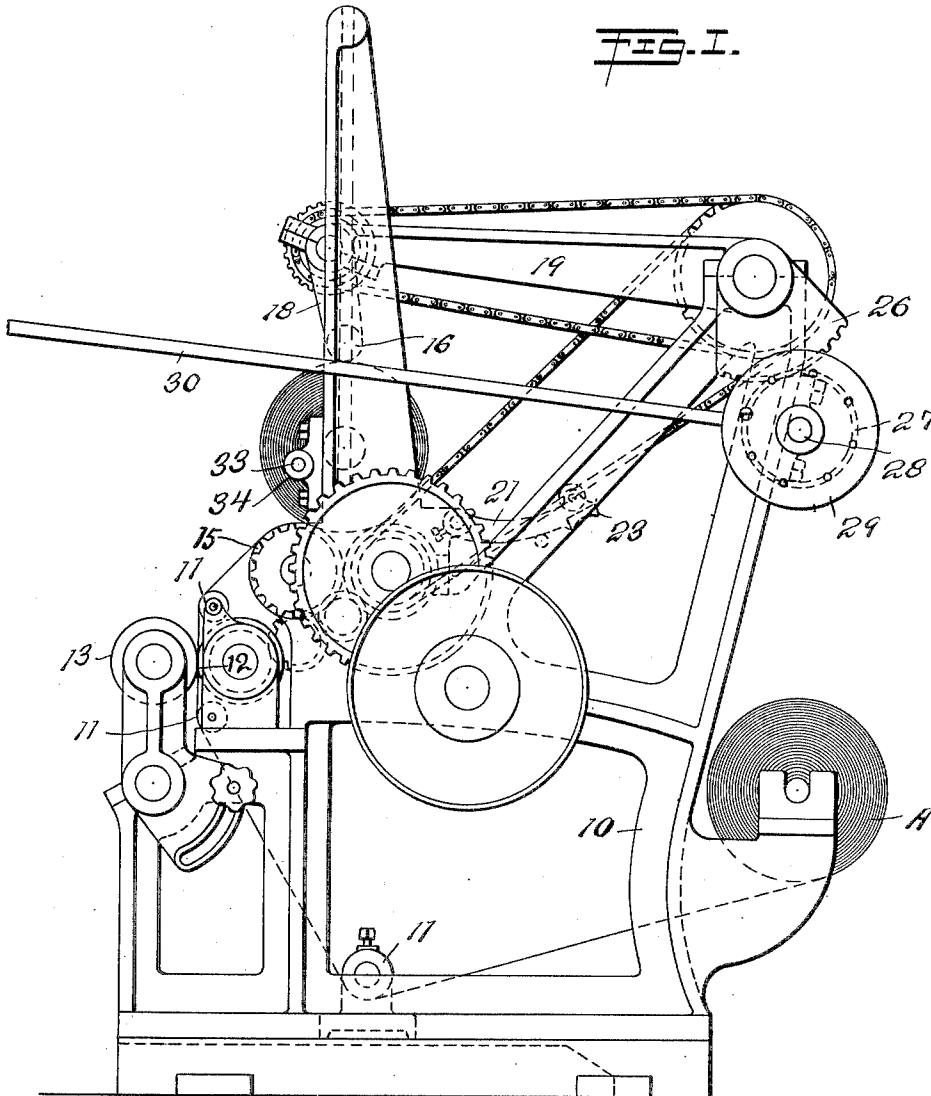
S. M. LANGSTON.
SLITTER AND REWINDER.
APPLICATION FILED JUNE 29, 1911.

1,009,757.

Patented Nov. 28, 1911.

2 SHEETS-SHEET 1.

FIG. I.



Witnesses:
G. Robert Thomas
J. Williams

Inventor
Samuel M. Langston
By his Attorneys
Owens & Fairbank

S. M. LANGSTON.
SLITTER AND REWINDER.
APPLICATION FILED JUNE 29, 1911.

1,009,757.

Patented Nov. 28, 1911.

2 SHEETS—SHEET 2.

FIG. 2.

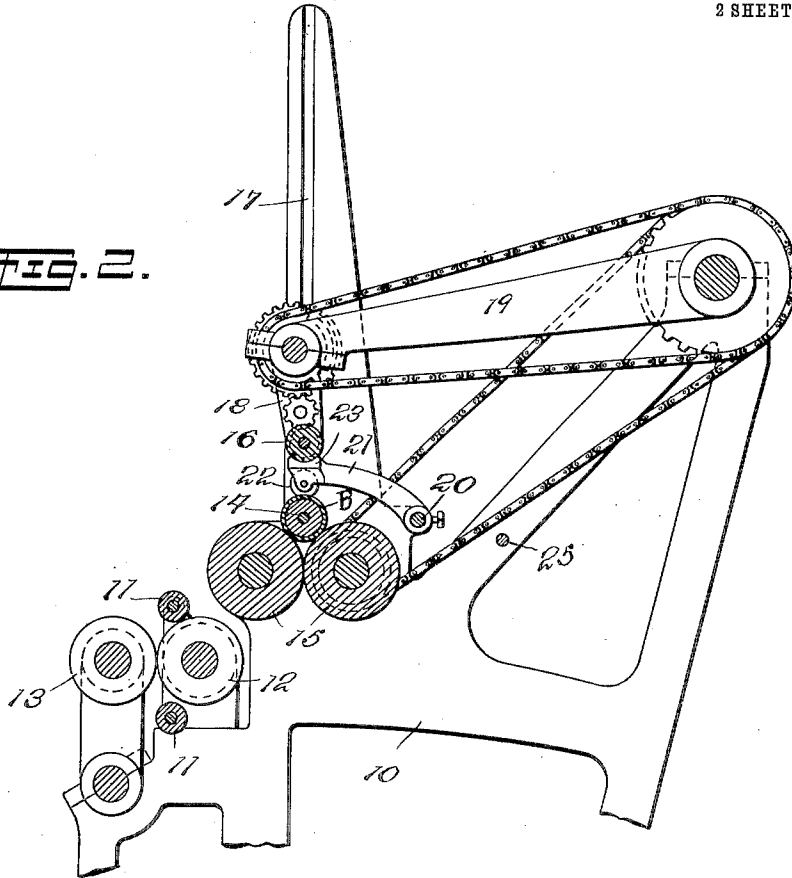


FIG. 5.

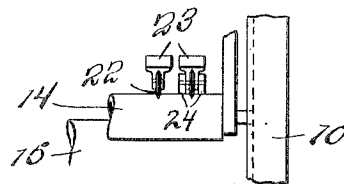
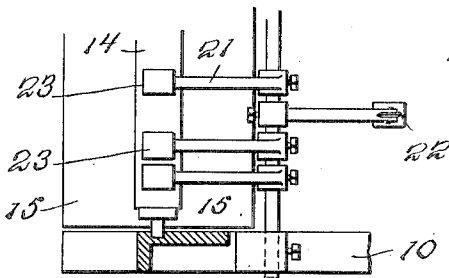


FIG. 6.

Witnesses:
G. Robert Thomas
J. Williams

Inventor
Samuel M. Langston
By his Attorneys
Owens & Fairbank

UNITED STATES PATENT OFFICE.

SAMUEL M. LANGSTON, OF CAMDEN, NEW JERSEY.

SLITTER AND REWINDER.

1,009,757.

Specification of Letters Patent. Patented Nov. 28, 1911.

Application filed June 29, 1911. Serial No. 638,095.

To all whom it may concern:

Be it known that I, SAMUEL M. LANGSTON, a citizen of the United States, and a resident of Camden, county of Camden, and State of New Jersey, have invented certain new and useful Improvements in Slitters and Rewinders, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in slitters and rewinders and more particularly to that type of machine illustrated in my prior application Serial No. 612,566, filed March 6, 1911.

The main features of the machine, as far as the slitting and rewinding operations are concerned, are substantially the same as in the machine illustrated in the application above referred to.

The main object of my present invention is to facilitate the subdivision of a tube upon which the material is rewound, the sections into which the tube is subdivided corresponding in length to the width of the separate strips of rewound material, so that a long tube may be placed in the machine, cut to the proper lengths, and the material rewound, each strip of rewound material being upon a separate section of the tube.

A further object of my invention is to utilize the pressure roller of the machine which normally engages with the material during the rewinding, as a means for forcing the tube cutters into the tube.

A still further object of my invention is to facilitate the raising and lowering of the pressure roller during the placing of the tube cutters or the removal of the completed rolls and to permit the locking of the pressure roller in raised position.

The invention consists in the arrangement and combination or parts hereinafter particularly described and pointed out in the claims.

Reference is to be had to the accompanying drawings, which form a part of this specification and in which similar reference characters indicate corresponding parts in the different views.

Figure 1 is an end view of a machine constructed in accordance with my invention; Fig. 2 is a vertical section through the upper central portion of the machine showing the tube cutters in operative position; Fig. 3

is a top plan view of a portion of the machine, showing the arm raising mechanism; Fig. 4 is a sectional detail of a portion of the arm raising mechanism; Fig. 5 is a top plan view of a portion of the tube cutters; and Fig. 6 is a face view of a portion of the machine showing the tube cutters.

In this machine illustrated, there is employed a main frame 10, serving to support a roll A of paper or other similar material to be unwound, slitted and rewound and also serving to support guide rollers 11, rotary cutters 12 and 13, a reel 14 and friction rollers 15. The paper passes from the roll over certain of the guide rollers, thence between the cutters and eventually on to the reel. The reel is supported by two friction rollers 15, which are rotated in the same direction, and the roll of rewound material on the reel is held down by a pressure roller 16 which is also positively driven. The pressure roller is movable vertically and is carried by the arms 18 pivoted to two pivoted arms 19.

I do not claim in this application any patentable features in the details of the machine so far described. The machine serves to cut the paper into strips of any desired width, and a special feature of my present improvements relates to a separation of the tube upon which the material is rewound, into sections. In carrying out this part of my invention, I place a tube B on to the reel 14, the tube being preferably of paper and constructed in the same manner as an ordinary mailing tube. In the rear portion of the machine I provide a transversely extending rod, and pivoted to this rod, are a plurality of arms 21 adjustable lengthwise of the rod and each adapted to be locked to the rod by a set screw or other similar device. Each arm has journaled upon the under side thereof a rotary cutter 22, which, when the arms are swung forward, will engage with the upper side of the tube upon the reel. The arms 21 are adjusted to such positions along the rod 20 that the cutters 22 will be at the same distance apart as the main pairs of cutters for the paper. The cutters 22 come directly upon the upper side of the tube and beneath the pressure roller 16, and each arm has a seat 23 for the roller. In using my improved machine, a tube

is placed on the reel, and the cutters 22, after having been adjusted to the proper distances apart, are brought into engagement with the tube, and the pressure roller 16 is lowered, as indicated in Fig. 2. The machine is then started and the tube is rotated by its engagement with the friction rollers 15. The tube, in rotating beneath the cutters, is subdivided into sections of lengths corresponding to the widths of the strips of paper to be rewound. For limiting the extent for which the cutters may enter the tube and to prevent them from being dulled on the reel 14, the two end arms 21 may each be provided with small rollers 24, as shown in Fig. 6, so as to engage with the tube upon opposite sides of the cutter and limit the cut of the latter. When the cutting operation is finished, the pressure roller is raised and the arms 21 thrown back to the position shown in dotted lines in Fig. 1. Here they may rest against a small cross bar 25.

To facilitate the raising and lowering of the pressure roller, I provide the arm 19 with a segment 26 and mount a pinion 27 in mesh with this segment. The pinion is mounted on a stub shaft 28, which shaft also carries a wheel 29. The wheel is rotated by means of a handle 30, which extends forwardly to the front part of the machine, so as to be within easy grasp of the operator. The handle may be secured to the wheel at any one of the plurality points by means of sockets 31 in the wheel and it may be locked in any socket by means of suitable screws 32. By pulling down on the front end of the handle, the pressure roller and arm 19 may be readily raised the required distance, inasmuch as the pinion has a smaller radius than the segment, and the handle 30 is of greater length and greater leverage than the arm 19. The handle 30 is, of course, used for raising the pressure roller to permit the removal of the rolls of rewound material. For locking the pressure roller in raised position, I provide a catch 33 mounted in a socket 34 carried by the main frame. The handle may be sprung out and slipped beneath the catch, or the catch may be longitudinally movable within the socket.

Various changes may be made in the details of construction of my improved machine without departing from the spirit of my invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A slitter and rewinder including means for supporting a tube upon which material is to be wound, means for subdividing said tube into separate sections and means for winding separate strips of the material upon said separate sections.

2. A slitter and rewinder having a tube

upon which paper may be wound, cutters 65 for subdividing a sheet of paper or the like into a plurality of strips and means for subdividing said tube into sections corresponding to said strips.

3. A slitter and rewinder including means 70 for subdividing a strip of paper or the like into a plurality of separate strips, means for rewinding said separate strips upon a tube, and means for subdividing said tube into sections corresponding to said separate 75 strips.

4. Winding mechanism including means for supporting a tube upon which paper may be wound and means for subdividing said tube into sections, said means being 80 movable to inoperative position during the winding operation.

5. Winding mechanism including means for supporting a tube adapted to receive the material to be wound, means for rotating the 85 same, means for subdividing said tube into separate annular sections and means for winding separate strips of material upon the separate sections.

6. Winding mechanism including means 90 for supporting a tube adapted to receive the material to be wound, means for rotating the same, rotary cutters for subdividing said tube into separate annular sections and means for winding separate strips of mate- 95 rial upon the separate sections.

7. Winding mechanism including means for supporting a tube adapted to receive the material being wound, an arm and a cutter carried thereby, said cutter serving to en- 100 gage with said tube to subdivide the latter into sections and said arm being movable to bring said cutter out of operative position during the winding of the material.

8. Winding mechanism including means 105 for supporting and rotating a tube upon which the material may be wound, a pivoted arm and a rotary cutter carried thereby, said arm being movable to bring said cutter into engagement with said tube to 110 subdivide the latter into sections, and means for winding separate strips of material upon the separate sections, said arm normally holding said cutter in inoperative position during the winding of the material upon the 115 tube.

9. Winding mechanism including means for supporting a tube upon which the material may be wound, a cutter normally in inoperative position but movable to operative 120 position to subdivide the tube into sections, means for limiting the depth of the cut of the cutter and means for winding separate strips of material upon the separate sections.

10. Winding mechanism including means 125 for supporting a tube upon which the material may be wound, a cutter normally in inoperative position but movable to operative

position to subdivide the tube into sections and a roller movable with said cutter for engaging with the said tube and limiting the depth to which the cutter may penetrate the tube.

11. Winding mechanism including two friction rollers for supporting and rotating a tube upon which material may be wound, a pressure roller for engaging with the material during the winding thereof and a cutter for subdividing the tube into sections, said pressure roller also serving to hold said cutter in operative position.

12. Winding mechanism including friction rollers for supporting a tube upon which material may be wound, a cutter movable to operative position for subdividing the tube into sections and a pressure roller normally engaging with the material being wound, but serving to retain said cutter in place upon the movement of the latter to operative position.

13. Winding mechanism including friction rollers for supporting a tube upon which material may be wound, a cutter movable to operative position for subdividing the tube into sections and a pressure roller normally engaging with the material being wound, but serving to retain said cutter in place upon the movement of the latter to operative position, and means for raising said pressure roller to permit the movement of said cutter to and from operative position.

14. Winding mechanism including friction rollers for supporting a tube upon which material may be wound, a cutter movable to operative position for subdividing the tube into sections and a pressure roller normally engaging with the material being wound, but serving to retain said cutter in place upon the movement of the latter to operative position, means for raising said pressure roller to permit the movement of said cutter to and from operative position and means for locking it in its raised position.

15. Winding mechanism including means for supporting a tube upon which the material may be wound, means for winding material thereon, a rotary cutter, a pivoted arm carrying the same and movable to bring said cutter into or out of operative engagement with said tube and means for applying pressure to said arm when said cutter is in operative position.

16. Winding mechanism including means for supporting a tube upon which the material is to be wound, a cutter, an arm carrying the same and movable to bring said cutter into or out of operative engagement with said tube and a pressure roller serving to engage with said arm to hold the cutter in operative position or to engage with the

rewound material when said cutter is in inoperative position.

17. Winding mechanism including means for supporting a tube upon which the material is to be wound, a cutter, an arm carrying the same and movable to bring said cutter into or out of operative engagement with said tube and a pressure roller serving to engage with said arm to hold the cutter in operative position or to engage with the rewound material when said cutter is in inoperative position and means for raising said pressure roller.

18. Winding mechanism including means for supporting a tube upon which the material is to be wound, a cutter, an arm carrying the same and movable to bring said cutter into or out of operative engagement with said tube and a pressure roller serving to engage with said arm to hold the cutter in operative position or to engage with the rewound material when said cutter is in inoperative position, means for raising said pressure roller, and means for locking said pressure roller in raised position during the movement of said cutter to or from operative position.

19. Winding mechanism having a pressure roller adapted to engage with the material during the rewinding thereof, a pivoted arm carrying said pressure roller, and manually operated means for swinging said arm to raise said roller to inoperative position.

20. Winding mechanism including a pressure roller for engaging with the material being wound, a pivoted arm carrying said pressure roller, gearing operatively connected with said arm and a handle having a longer leverage than said arm to turn said gearing and raise said arm.

21. Winding mechanism including a roller for engagement with the material during the winding thereof, a pivoted arm carrying said roller, a segment connected to said arm concentric with the pivot thereof, a pinion meshing with said segment and a handle of greater length than said arm for rotating said pinion to move said pressure roller into or out of operative position.

22. Winding mechanism including friction rollers for supporting a tube upon which material may be wound, a pressure roller normally engaging with the material being wound, means for raising said pressure roller to permit the removal of the wound material and means for locking it in raised position.

23. A slitter and rewinder including a series of cutters for subdividing a sheet of material into a plurality of strips, said cutters being adjustable to vary the widths of the strips, means for supporting a tube upon which the material may be wound and a

series of cutters for sub-dividing said tube
into sections prior to the winding of the ma-
terial thereon, said last mentioned cutters
being adjustable to vary the lengths of the
5 sections in accordance with the widths of
the strips whereby each strip may be wound
onto a separate tube section of its own
width.

In testimony whereof I have signed my
name to this specification in the presence of 10
two subscribing witnesses.

SAMUEL M. LANGSTON.

Witnesses:

C. W. FAIRBANK,
J. WILLIAMS.