S. M. LANGSTON.

SLITTER AND REWINDER.

APPLICATION FILED MAR. 27, 1913.

1,131,146.

Patented Mar. 9, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

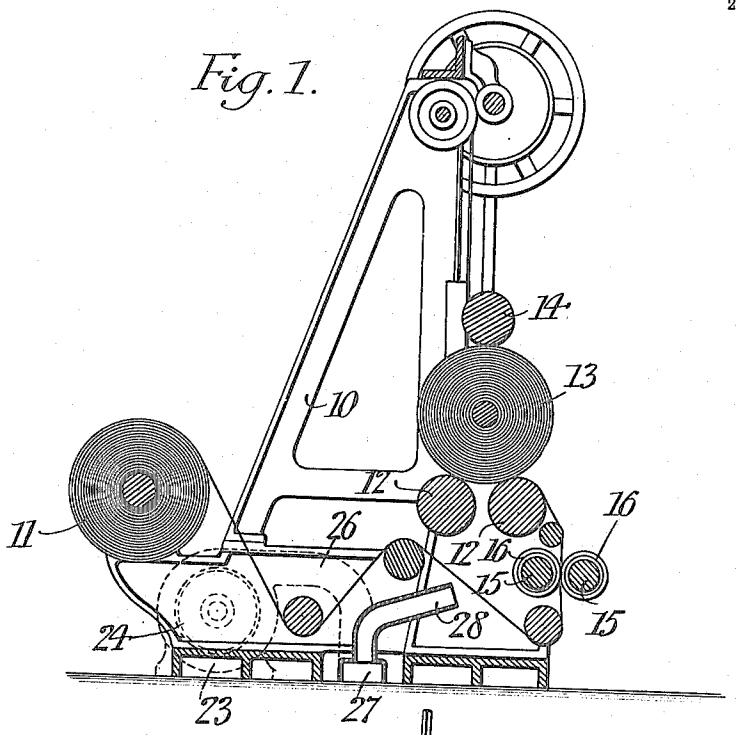
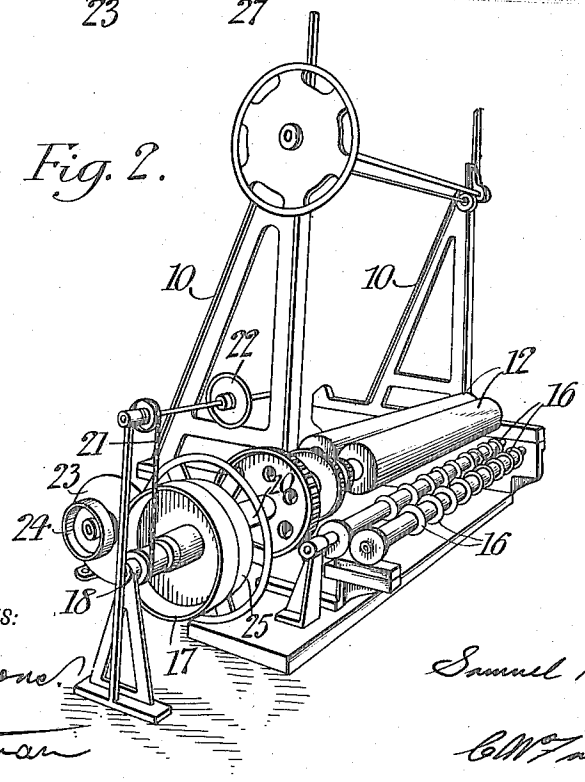


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

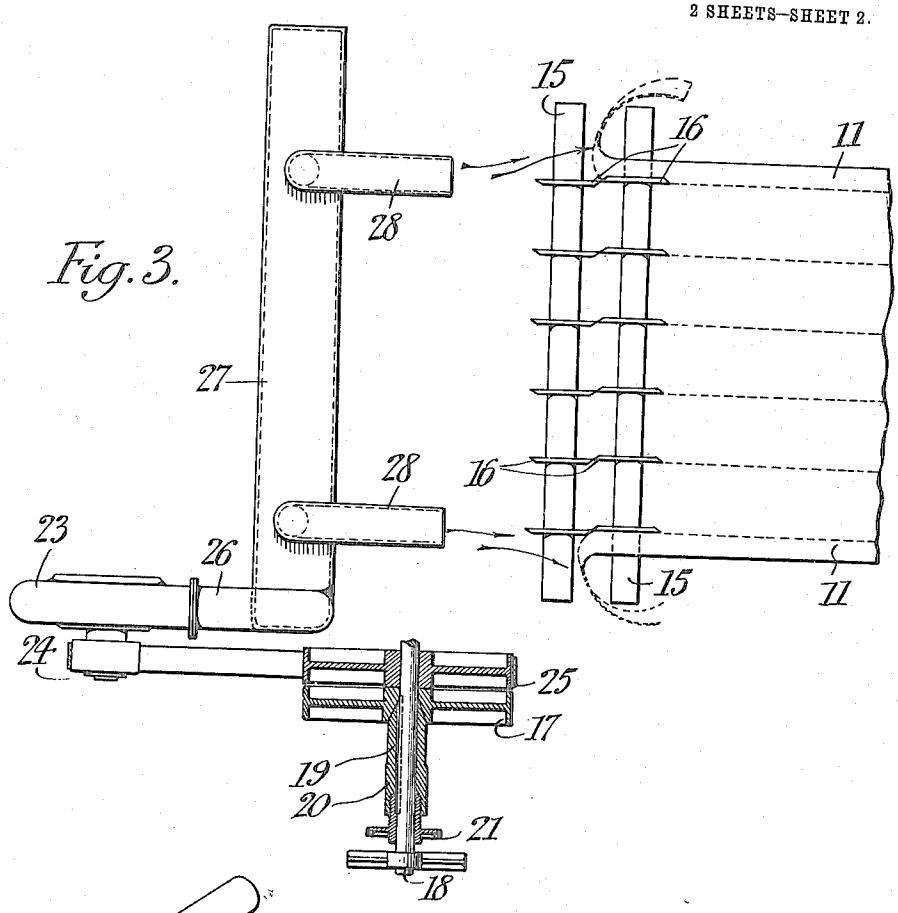
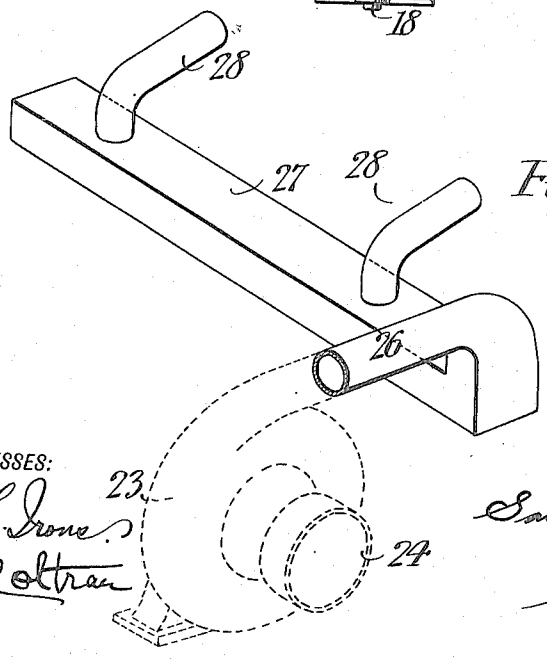


Fig. 4.



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SLITTER AND REWINDER.

1,131,146. Specification of Letters Patent. Patented Mar. 9, 1915.

Application filed March 27, 1913. Serial No. 757,083.

To all whom it may concern:

Be it known that I, SAMUEL M. LANGSTON, a citizen of the United States, and resident of Camden, in the 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 specification.

This invention relates to certain improvements in machines for slitting or trimming paper or like material, and rewinding the same, and involves an improved means for disposing of the strips trimmed from the side edges of the sheet and preventing them from being rewound with the body of the sheet or the strips formed from the latter.

In my improved machine, I employ a blower mechanism which is so designed as to deliver blasts of air toward the sheet intermediate of the cutters and the winding mechanism and adjacent to the strips trimmed from the side edges of the sheet. Among the important features of my blower mechanism is the arrangement whereby the blasts of air may be directed at different points dependent upon the width of the sheet being trimmed or trimmed and slitted, and the arrangement of the driving mechanism whereby the blower is operated only while the machine is in operation.

One embodiment of my invention will be described more in detail hereinafter, and the novel features pointed out in the claims.

I wish it understood that this specific construction constitutes only one form which my invention may assume, and that various changes in construction, design and arrangement of parts may be made within the scope of the appended claims and without departing from the spirit of my invention.

Reference is to be had to the accompanying drawing in which similar characters of reference indicate corresponding parts throughout the several views.

In the drawing:—Figure 1 is a vertical section through a machine of a type manufactured by myself and having my improved blower mechanism applied thereto; Fig. 2 is a perspective view of the machine showing more in detail the preferred positioning of the blower; Fig. 3 is a top plan view of the blower mechanism showing portions of the driving and cutting parts of the machine; and Fig. 4 is a perspective view of the blower mechanism *per se*.

My improved blower mechanism may be applied to various different types of slitters and rewinders and may be applied to machines which merely trim the edges of the sheet rather than slitting the body portion thereof.

I have illustrated my invention as applied to a slitter and rewinder of the same general type as that shown in my prior Patent 1,105,281 issued July 28, 1914. This machine includes a suitable frame 10 having a support for a roll of paper to be trimmed or slitted and trimmed. The winding mechanism includes two supporting rollers 12, 12 for the roll 13 of paper, which has been trimmed or trimmed and slitted. A movable pressure roller 14 rests upon the roll 13 and moves upwardly as the roll increases. The paper passes from the roll 11 over various guiding rollers to two parallel shafts 15, 15 carrying the cutters or slitters 16 thereon. The machine is driven from a belt on a loose pulley 17 on a drive shaft 18. This loose pulley may be locked to the shaft in any suitable manner as for instance, by a cone clutch member 19, moved lengthwise by a threaded sliding collar 20. The latter may be provided with a sprocket driven by a chain 21 from a suitable hand-wheel 22. The machine so far described in detail forms no portion of the invention hereinafter claimed.

Mounted in any suitable position on the machine or adjacent thereto, I provide a blower 23 of any suitable type, for instance, of a common centrifugal form, and this blower has a pulley 24 to which power may be transmitted by a suitable belt leading from a pulley 25 keyed to a shaft of the machine. Preferably the two pulleys 17 and 25 are on the same shaft and mounted adjacent to each other, and the pulley 17 is connected by a clutch while the pulley 25 is fast. Thus the pulley 17 may run continuously but when the clutch is disconnected the machine will remain at rest and the fan blower will operate only when the machine is driven or engaged in the actual operation of cutting the paper. The fan blower delivers the air through a conduit 26 to a distributing duct 27 and from this lead two pivoted nozzles 28. The nozzles are of such size and shape and are so mounted that they may deliver blasts of air toward the paper at a point slightly above the cutters and adjacent to the edge of the paper. The nozzles being pivoted upon vertical axes in the

duct 27, may swing so as to properly deliver the air irrespective of material variations in the width of the paper operated upon. As the body of the sheet of paper or the several strips into which it may be subdivided pass from the cutters upwardly toward the rewinding mechanism the currents of air will blow the narrow strips trimmed from the edges of the sheet, forwardly, and thus prevent them from adhering to the edges of the strips or sheet which is to be rewound. This is of importance as the rewinding of the side strips with a portion of the sheet will not only be objectionable from the mere presence of these trimmings, but will also increase the diameter of the roll of finished paper at its edges and thus prevent the winding of the strips at the center portion with the desired hardness.

Having thus described my invention, what I claim as new and desire to protect by Letters-Patent is:—

1. A slitter and rewinder including cutting mechanism for removing strips from the side edges of a sheet, winding mechanism for the body of the sheet, a blower, a distributing duct connected thereto and two separate nozzles pivoted to said duct and adjustable to deliver air against said sheet adjacent to the side edges of the latter.

2. A slitter and rewinder including cutting mechanism for removing strips from the side edges of a sheet, winding mechanism for the body portion of the sheet, a blower, driven by the machine so as to operate only when the machine is operating and means for delivering air from said blower toward said sheet.

3. A slitter and rewinder including cutting mechanism for slitting a sheet into strips, winding mechanism for said strips, power means for driving said cutting mechanism and said winding mechanism, clutch connections for said power means, and a blower operatively connected to said cutting mechanism for blowing air against said sheet while said cutting mechanism is in operation.

4. A slitter and rewinder including separate cutting mechanisms for removing strips from the side edges of a sheet, said mechanisms being adjustable toward and from each other to leave the body of the sheet of any desired width, winding mechanism for the body portion of the sheet, a blower, a distributing duct connected thereto and two separate nozzles connected to said duct and adjustable toward and from each other in accordance with the width of the body of the sheet and adapted to deliver air against said sheet adjacent to the side edges of the latter.

5. A slitter and rewinder including cutting mechanism for removing strips from the side edges of a sheet, winding mechanism for the body portion of the sheet, a blower, nozzles connected thereto for delivering air from said blower against said sheet adjacent the side edges of the latter and power transmitting mechanism connecting said blower and said machine, whereby the former is automatically stopped and started upon the stopping and starting of the latter.

6. A slitter and rewinder including two pairs of rotary cutters for simultaneously removing strips from the side edges of a sheet of paper, said cutters being adjustable toward and from each other to leave the body of the sheet of any desired width, winding mechanism receiving the body of said sheet from said cutters, a blower, a pair of air delivering ducts connected thereto and terminating in nozzles adjustable toward and from each other in accordance with the width of the body of the sheet, a source of power, detachable connections between said source of power and said winding mechanism, and means for driving said blower from said winding mechanism whereby the former is automatically stopped and started upon the stopping and starting of the latter.

Signed at New York city in the county of New York and State of New York this 26th day of March A. D. 1913.

SAMUEL M. LANGSTON.

Witnesses:
CLAIR W. FAIRBANK,
FLORENCE LEVIEN.