

No. 868,761.

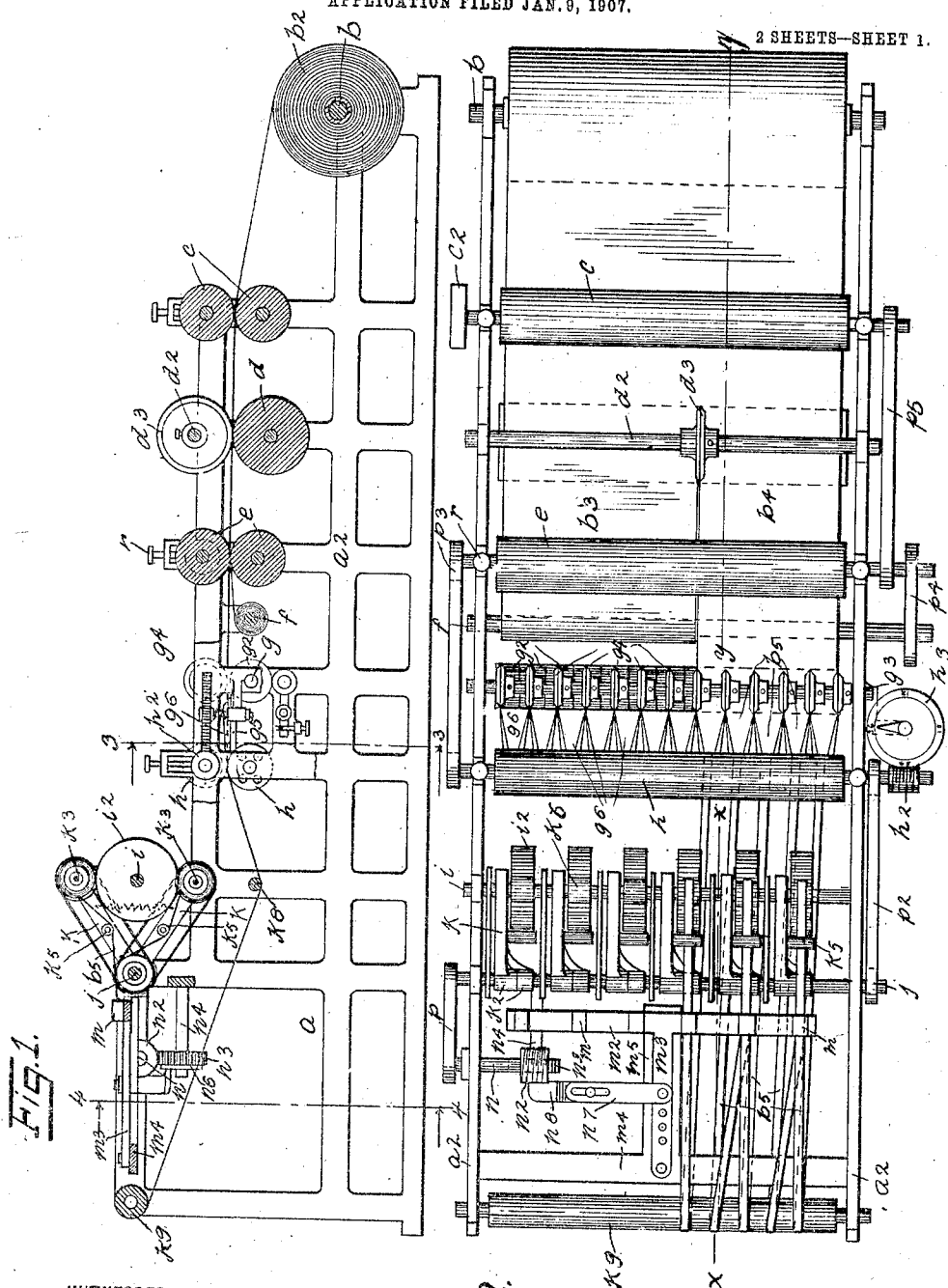
PATENTED OCT. 22, 1907.

S. B. COHEN.

CLOTH SPLITTING AND REWINDING MACHINE.

APPLICATION FILED JAN. 9, 1907.

2 SHEETS--SHEET 1.



WITNESSES
 Albert H. Libb.
 E. E. Milbrany

BY H. Q. 2.

INVENTOR
Samuel B. Cohen

Samuel B. Coher
Edgar Tate & Co
ATTORNEYS

ATTORNEYS

No. 868,761.

PATENTED OCT. 22, 1907.

S. B. COHEN.
CLOTH SPLITTING AND REWINDING MACHINE.

APPLICATION FILED JAN. 9, 1907.

2 SHEETS—SHEET 2.

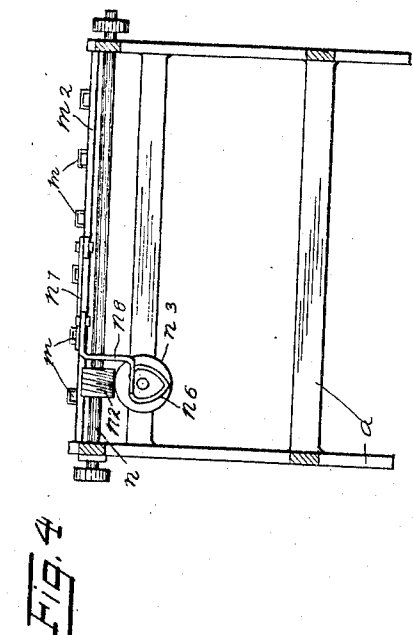


Fig. 3.

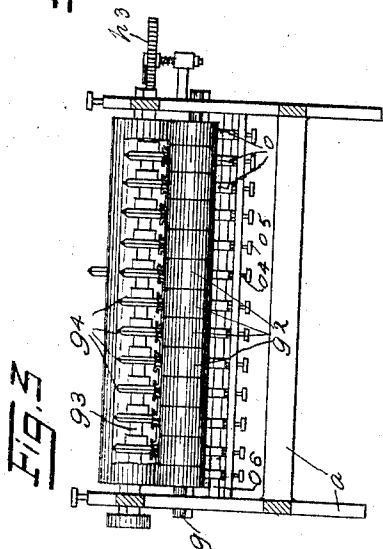


Fig. 4.

WITNESSES
Albert W. Gibbs.
L. E. Mulreany

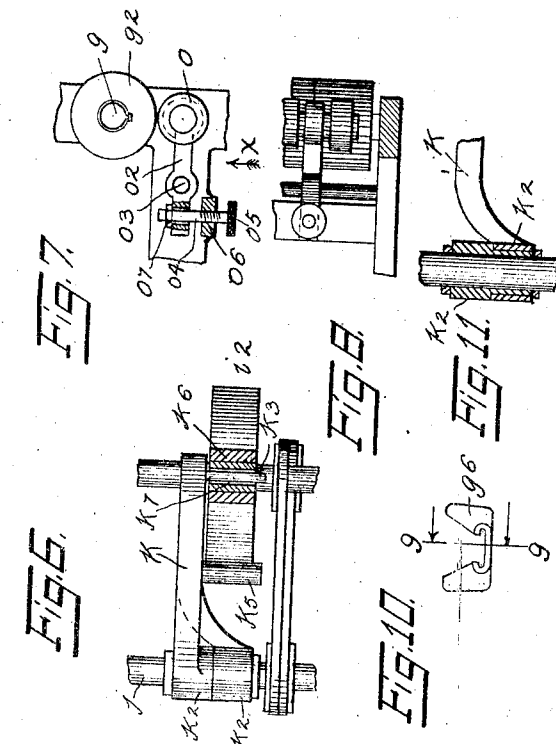


Fig. 5.

BY

Edgar Tate & Co.

ATTORNEYS

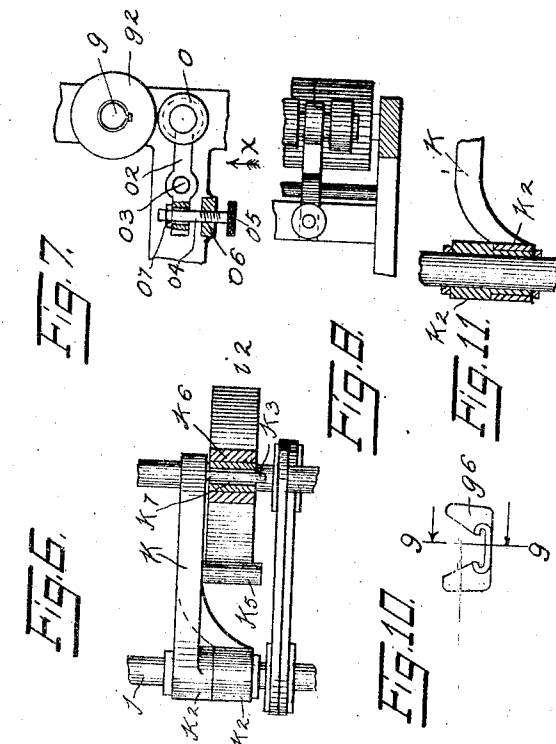


Fig. 6.

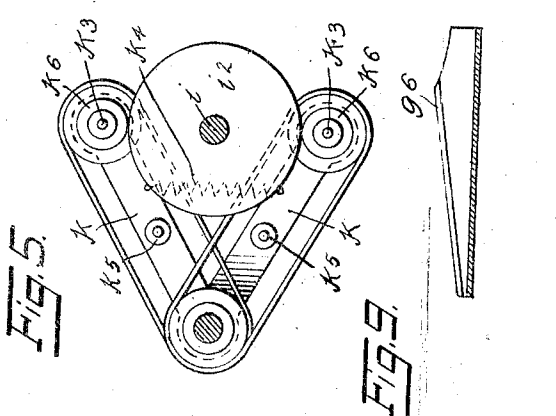


Fig. 7.

BY

Edgar Tate & Co.

ATTORNEYS

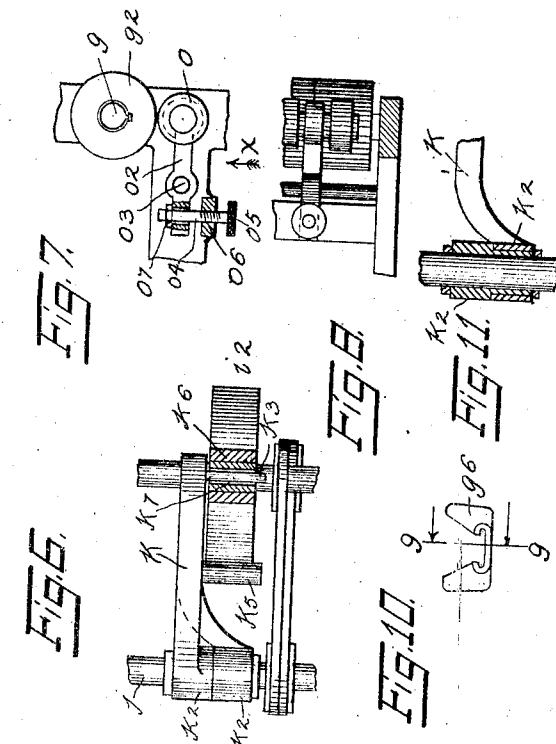


Fig. 8.

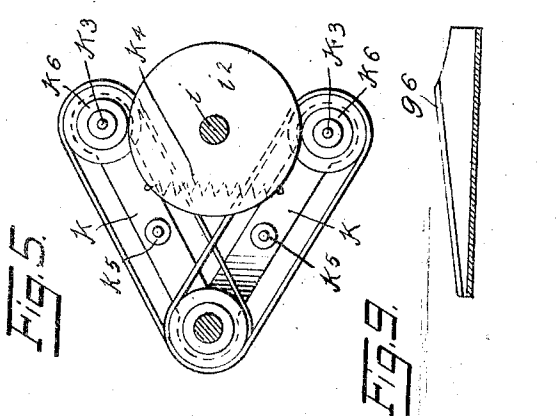


Fig. 9.

BY

Edgar Tate & Co.

ATTORNEYS

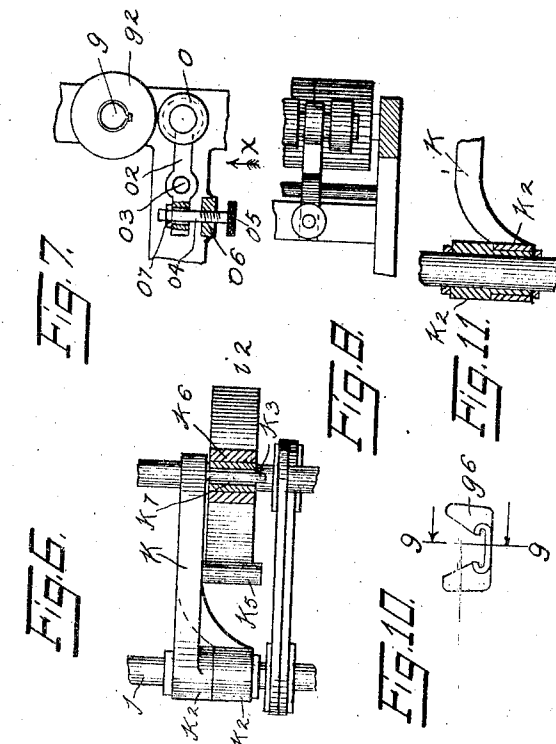


Fig. 10.

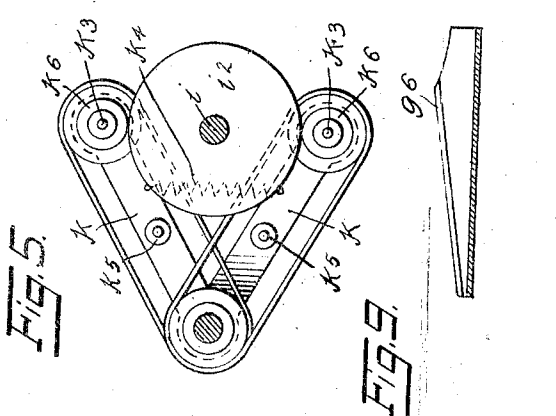


Fig. 11.

BY

Edgar Tate & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

SAMUEL B. COHEN, OF NEW YORK, N. Y.

CLOTH-SPLITTING AND REWINDING MACHINE.

No. 868,761.

Specification of Letters Patent.

Patented Oct. 22, 1907.

Application filed January 9, 1907. Serial No. 351,433.

To all whom it may concern:

Be it known that I, SAMUEL B. COHEN, a citizen of the United States, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cloth Splitting and Rewinding Machines, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

In the marketing of cloths of various sorts, and especially in the case of silks, it frequently happens that orders are received for widths thereof which are not in stock, and the object of this invention is first to provide a machine by means of which a bolt of the fabric of wider width may be split so as to form a cloth of the desired width and the surplus split into ribbons of any desired width, and the edges of which are folded and pressed firmly down so as to prevent the unraveling thereof and to form in effect a selvage; a further object being to provide a machine of the class and for the purpose specified which will also rewind the cloth of reduced width into a roll and rewind the ribbons produced on separate spools or into separate rolls; and with these and other objects in view the invention consists in a machine of the class specified constructed as herein-after described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Figure 1 is a sectional side view of my improved machine, the sections being on the lines $x-x$ and $y-y$ of Fig. 2; Fig. 2 a plan view thereof; Fig. 3 a section on the line 3-3 of Fig. 1; Fig. 4 a section on the line 4-4 of Fig. 1; Fig. 5 a detail on an enlarged scale of the winding mechanism for the ribbons; Fig. 6 a sectional plan view of the construction shown in Fig. 5; Fig. 7 a detail of means for adjusting the cutters; Fig. 8 a bottom plan view of the construction shown in Fig. 7; Fig. 9 a section on the line 9-9 of Fig. 10 of one of the ribbon folders employed; Fig. 10 an end view of said ribbon folder; and, Fig. 11 a sectional view showing the method of supporting spools on which the ribbons are wound.

In the practice of my invention, I provide a suitable frame a which may be constructed in any desired manner and preferably consists of two similar side members a^2 connected in any preferred way, and in one end of said frame, preferably called the front end, for the purposes of this description, is placed a roller support b on which, in practice, a roll b^1 of cloth to be split is placed.

Rearwardly of the roller support b are placed feed rollers c between which, in practice, the cloth to be split is passed and one c^1 of the feed rollers c is provided

with a driving pulley c^2 with which, in practice, a 55 power belt is connected.

Rearwardly of the feed rollers c is placed the means for splitting the fabric to produce a cloth of narrower width, said means consisting of a bottom roller d the top surface of which is preferably in the same plane 60 as the top surface of the bottom roller c , and over which is a shaft d^2 provided with a wheel cutter d^3 which may be adjusted on said shaft to any desired point.

In the accompanying drawing, I have shown the roll b^1 of fabric to be split, and this fabric is passed between 65 the rollers c by which it is drawn from the roll b^1 and then over the roller d , where it is split to form a width b^2 and another, and as shown in the drawing, a still narrower width b^4 , after which the parts or strips b^3 and b^4 of the fabric are passed between rollers e arranged rearwardly 70 of the roller d and shaft d^2 and the strip b^3 of the fabric or cloth is rewound on a shaft or roller f arranged rearwardly of the rollers e .

All the rollers and shafts c , d , d^2 , e and f are placed transversely of the frame, and rearwardly of the shaft 75 f is a shaft g provided with a plurality of rollers g^2 and over the shaft g is a roller g^3 provided with a plurality of circular cutters g^4 , one of which is directly over each of the rollers g^2 , and rearwardly of the shafts g and g^4 , and in a horizontal plane between the same, is a support 80 g^5 on which are placed a plurality of folders and guides g^6 which are placed between the knives or cutters g^4 and are of the form shown in Figs. 9 and 10, one end thereof being larger than the other and the wider ends thereof being directed forwardly so as to receive the strips or 85 ribbons b^3 into which the part b^4 of the fabric or cloth is cut by the circular cutters g^4 . The folders or guides g^6 receive the strips or ribbons b^3 and fold over the edges thereof, after which the said strips or ribbons are passed backwardly between rollers h , which in practice are 90 supported in the usual or any desired manner, and one of the rollers h or the shaft thereof is provided with a worm h^2 which operates a measuring device h^3 of any preferred construction, and which is intended to measure the amount of fabric rolled on the shaft f and cut 95 into strips or ribbons b^3 , and the rollers h press the folded edges of the strips or ribbons b^3 firmly down upon the body portion of said strips or ribbons and prevent the same from fraying or raveling, and one or both of the rollers h preferably the bottom roller is heated in the 100 usual manner, to facilitate the folding and pressing of the edges of the strips or ribbons.

Arranged rearwardly of the rollers h and in a plane above the same is a transverse shaft i provided with a plurality of disks i^2 , and rearwardly of the shaft i and 105 in the same horizontal plane is a shaft j on which are mounted a plurality of pairs of forwardly directed arms k . The arms k are preferably mounted on the

shaft j as shown in Figs. 6 and 11, each of said arms being provided with a separate hub or sleeve k^2 , one of which telescopes the other, so that said arms can be rotated independently on said shaft, and the arms k of each set or pair of arms are provided at their forward ends with spool carriers k^3 , on which are placed spools k^4 having an inner friction bearing k^5 , and the arm k , in the form of construction shown, are connected by a contractile spring k^6 , and the spools k^4 of each set of the arms k bear on the top and bottom of the corresponding disks or wheels i^2 as clearly shown in Figs. 1, 2, 5 and 6. The arms k are also provided on their inner sides with guide rollers k^7 , and in practice the strips or ribbons b^5 after the edges thereof have been folded and pressed as described are carried backwardly beneath a roller k^8 and upwardly and forwardly over a roller k^9 , and then forwardly through keepers m connected with a transverse shifting and guide bar m^2 provided with a central backwardly directed arm m^3 which is pivoted to a stationary transverse bar m^4 having a central forwardly directed member m^5 on which the shifter or guide bar m^2 rests.

Supported at one side of the machine is a shaft n provided with a worm n^2 and beneath the worm n^2 is a worm gear n^3 mounted on a short shaft n^4 which meshes with the worm n^2 , and the worm gear n^3 is provided with a heart-shaped cam n^5 . Connected with the arm m^3 of the shifter and guide bar m^2 is a link n^7 with which is adjustably connected an angular arm n^8 which operates in connection with the cam n^5 to shift the guide and shifter bar m^2 transversely, and strips or ribbons b^5 with the edges folded as hereinbefore described, are passed forwardly through the keepers m on the guide and shifter bar m^2 , and in this operation two of the said strips or ribbons are passed through each of said keepers one over the other. The upper strip or ribbon b^5 is then passed beneath the roller k on the upper arm k and connected with the spool on the carrier k^3 connected therewith, while the lower strip or ribbon b^5 is passed beneath the roller k^8 connected with the lower arm k and connected with the spool on the carrier k^3 connected therewith, the details of this construction being clearly shown in Figs. 1 and 2, and in detail in Figs. 5, 6 and 11.

Beneath each of the rollers g^2 on the shaft g is placed a pressure and friction device consisting of a vertically movable roller o carried by a backwardly directed arm o^2 pivoted at o^3 and through the rear end of which is passed a rod o^4 provided at its lower end with a head o^5 by which it may be turned, and said rod is screw-threaded and passed through a stationary support o^6 and the upper end thereof is passed loosely through the rear end of the arm o^2 and is provided at its upper end with a nut o^7 , and by means of this construction the amount of pressure exerted on the rollers g^2 by the rollers o may be regulated as may be readily understood, and the object of this construction is to regulate the movement of the rollers g^2 and to throw one or more of said rollers into or out of operation providing one of the strips or ribbons b^5 should break, and if desired any suitable tripping device may be provided for throwing the machine out of operation, or stopping said machine in case one or more of the strips or ribbons b^5 is broken.

The short shaft n is geared in connection with the shaft j by a belt p , the shaft j is geared in connection with the shaft of the top roller h by a belt p^2 , the shaft of the top roller h is geared in connection with the shaft of the top roller e by a belt p^3 , while the shaft of the top roller e is geared in connection with the shaft f by a belt p^4 and the shaft of the top roller e is also geared in connection with the shaft of the top roller c by a belt p^5 and the roller d and cutter shaft d^2 with the circular cutter d^3 mounted thereon are operated by friction in drawing the cloth between said rollers.

The top roller e and the top roller h are vertically adjustable and the position thereof and the pressure exerted thereby may be regulated by the usual or any suitable device r as will be readily understood, and by means of this construction, I provide a machine of the class specified which is simple in construction and operation, and my invention is not limited to any particular means of driving the said machine or operating the same, nor to any particular means for gearing the separate parts thereof in connection, and various changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages and within the scope of the appended claims.

It will be seen from the drawing that the rollers g^2 and cutters g^4 extend entirely across the machine as do also the disks or rollers i^2 and the arms k , and if desired the main splitter or cutter d^3 may be taken out and the entire bolt of fabric or cloth may be split into ribbons b^5 and folded on separate spools.

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

1. In a machine of the class described, means for splitting a web of fabric into separate webs of less width, and means for splitting one of said webs into ribbons and for folding the edges of said ribbons and for winding said ribbons into rolls.
2. In a machine of the class described, means for splitting a web of fabric into a web of less width and the remainder of said web into ribbons, means for folding and pressing the edges of said ribbons, and means for rewinding said ribbons onto spools.
3. In a machine of the class described, a frame and means for splitting a web of fabric into strips or ribbons, means for folding the edges of said strips or ribbons, and means for winding said strips or ribbons onto spools.
4. In a machine of the class described, a main splitter or cutter for splitting a bolt of fabric into different widths, means for splitting one of said widths into ribbons, means for folding the edges of said ribbons, and means for winding the separate ribbons thus formed onto spools.
5. In a machine of the class described, means for splitting a fabric into separate parts, means for splitting one of said parts into strips or ribbons, means for folding the edges of said strips or ribbons, means for pressing the folded edges of said strips or ribbons, and means for winding the separate strips or ribbons onto spools.
6. In a machine of the class described, means for splitting a fabric into separate widths, means for splitting one of said widths into strips or ribbons, means for folding the edges of said strips or ribbons, and means for winding the separate strips or ribbons onto spools.
7. In a machine of the class described, means for splitting a fabric into strips or ribbons, means for folding the edges of said strips or ribbons, means for pressing the folded edges of said strips or ribbons, and means for winding the separate strips or ribbons onto spools.
8. In a machine of the class described, a support for a roll of cloth, guide rollers arranged rearwardly of said support, cutting devices arranged rearwardly of the guide

rollers and adapted to split the cloth into different widths, devices arranged rearwardly of said cutting devices for splitting one width of the cloth into strips or ribbons, means arranged rearwardly of said last named devices for folding the edges of said strips or ribbons, means for pressing the folded edges of said strips or ribbons, and devices arranged rearwardly of the last named means for winding the separate strips or ribbons onto spools.

9. In a machine of the class described, means for splitting a fabric into strips or ribbons, means for folding and pressing the edges of said strips or ribbons, and means for forming the said strips or ribbons into spools consisting of a roller over which they are passed, a shaft arranged in front of said roller and provided with movable arms carrying spool holders, and another shaft mounted between said arms and provided with disks or wheels in connection with which the spools on said holders work, said strips or ribbons being adapted to be connected with the spools on said holders.

10. In a machine of the class described, a frame, a support for a roll of fabric, guide rollers mounted rearwardly of said support and between which the fabric is passed, a main cutter device mounted rearwardly of the guide rollers and adapted to split the fabric into separate parts, means for forming one of said parts into a roll, means for splitting the other part into strips or ribbons, means for folding the edges of said strips or ribbons, and means for forming the separate strips or ribbons into rolls.

11. In a machine of the class described means for splitting a web of fabric into ribbons, and for folding and pressing the edges of said ribbons.

12. In a machine of the class described, means for splitting a web of fabric into ribbons, means for folding and

pressing the edges of said ribbons, and means for measuring the amount of fabric split into ribbons.

13. In a machine of the class described, means for splitting a web of fabric into ribbons, and for folding and pressing the edges of said ribbons, and means for measuring the amount of fabric split into ribbons, and means for winding the same into rolls.

14. In a machine of the class described, means for splitting a web of fabric into webs of less width, means for splitting one of said webs into ribbons, means for folding and pressing the edges of said ribbons, means for measuring said ribbons, and means for winding said ribbons into rolls.

15. In a machine of the class described, means for splitting a fabric into ribbons, means for folding the edges of said ribbons, means for measuring the amount of fabric split into ribbons, and means for winding said ribbons into rolls.

16. In a machine of the class described, means for splitting a web of fabric to form a web of less width than the original web, means for winding the web of less width into a roll, means for splitting the remainder of the original web into ribbons, means for folding and pressing the edges of said ribbons, means for winding said ribbons into rolls, and means for measuring the amount of fabric split.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 5th day of January 1907.

SAMUEL B. COHEN.

Witnesses:

C. E. MULREANY,
ALBERT W. GIBBS.