W. H. WAGNER.

FABRIC TRIMMING MACHINE.

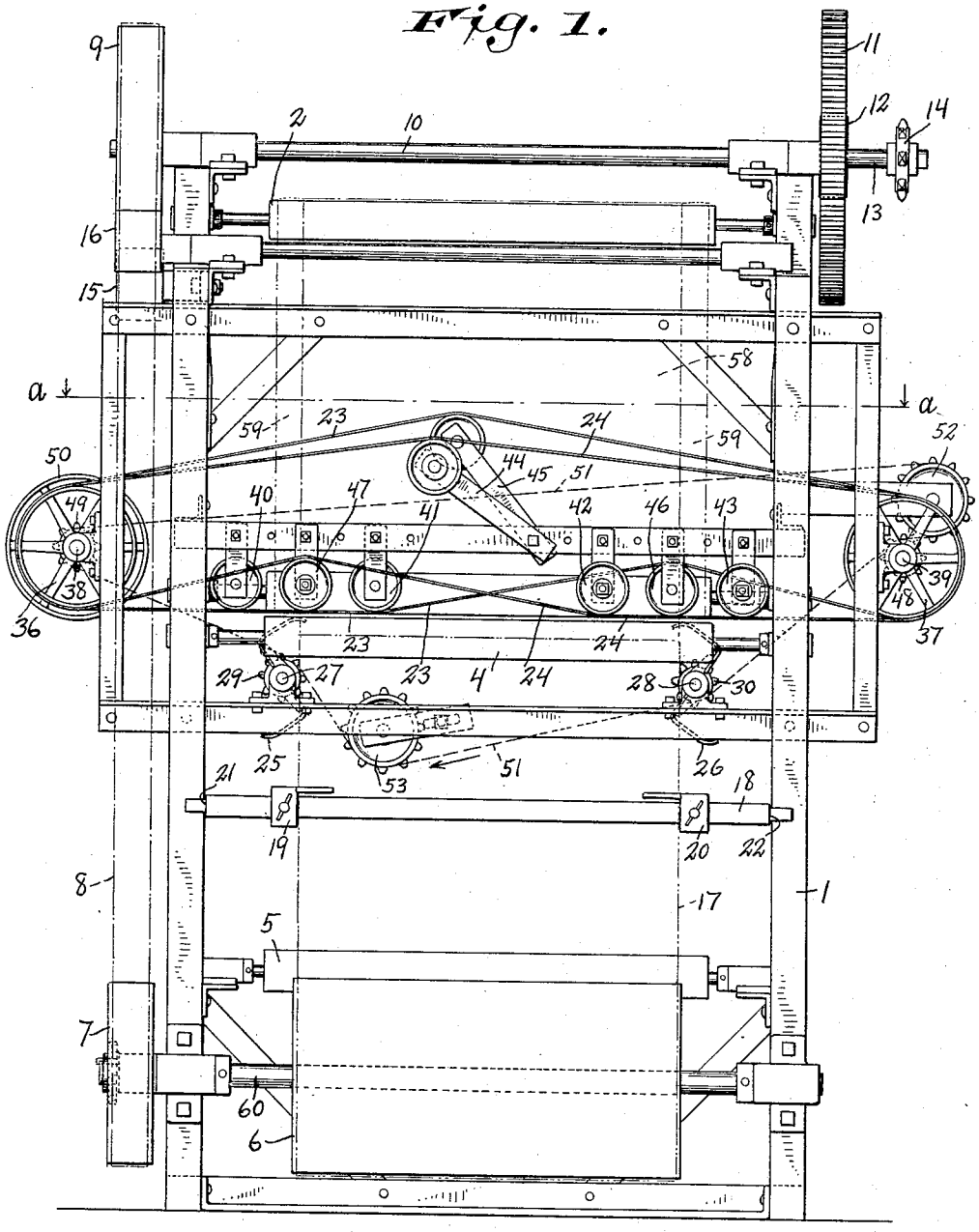
APPLICATION FILED JUNE 1, 1914.

1,186,504.

Patented June 6, 1916.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

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THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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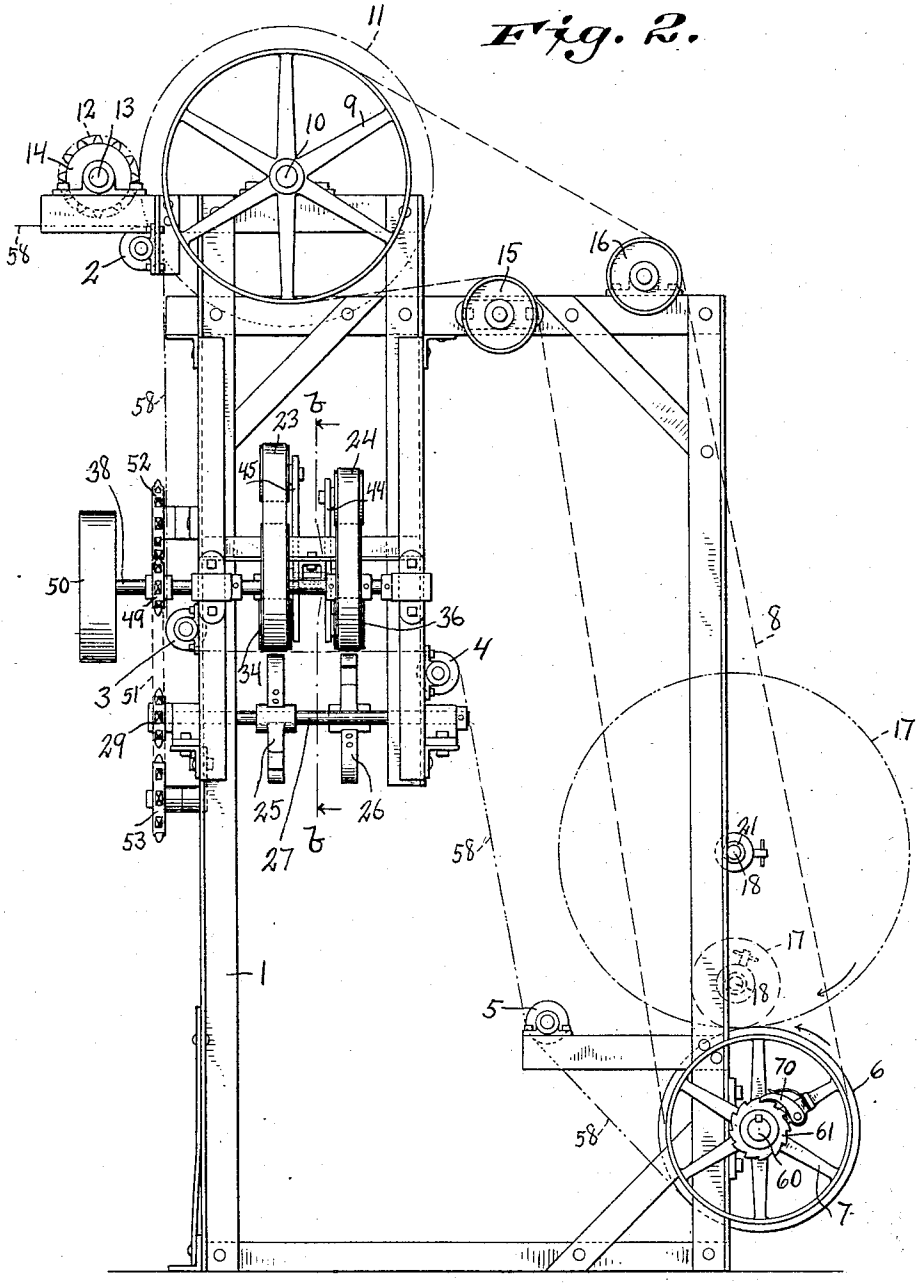
3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 3.

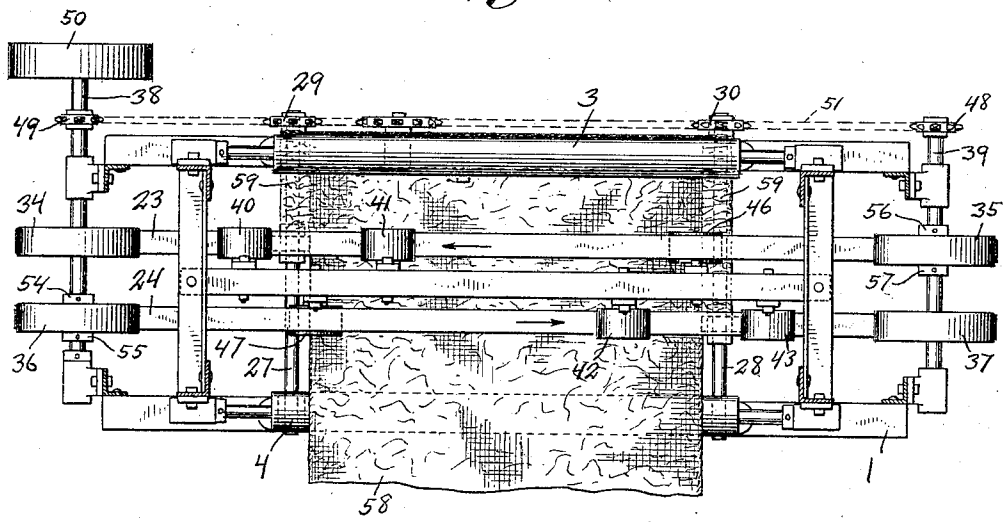
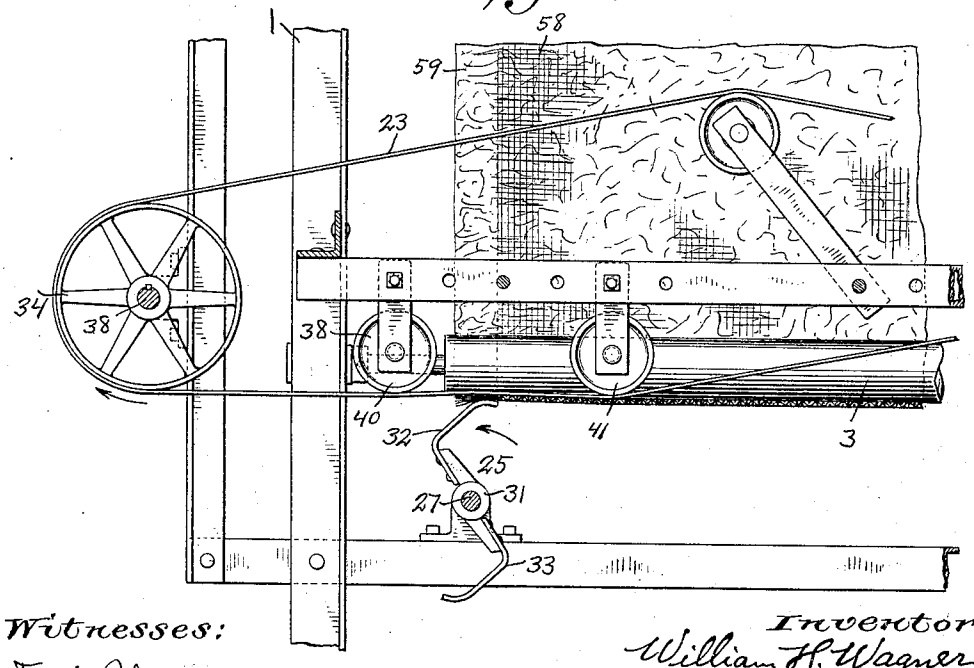


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. WAGNER, OF BURLINGTON, WISCONSIN, ASSIGNOR TO BURLINGTON BLANKET COMPANY, OF BURLINGTON, WISCONSIN, A CORPORATION OF WISCONSIN.

FABRIC-TRIMMING MACHINE.

1,186,504. Specification of Letters Patent. Patented June 6, 1916.

Application filed June 1, 1914. Serial No. 842,060.

To all whom it may concern:

Be it known that I, WILLIAM H. WAGNER, a citizen of the United States, residing at Burlington, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Fabric-Trimming Machines, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention relates to fabric trimming machines and the objects of the invention are to provide a machine for trimming fabrics such, for example, as that patented by United States Letters Patent No. 970,950, granted September 20, 1910, to Gustave C. Rasch and William G. Rasch, of Burlington, Wisconsin.

Fabrics such as that patented in and by the aforesaid Letters Patent consist of a woven stay, such as burlap, for example, with a comparatively loose, felted material secured thereto and the trimming machine to be hereinafter described is intended to trim the projecting loose material away from the edges of the woven stay or burlap.

Referring to the drawings which accompany this specification and form a part hereof, on which drawings the same reference characters are used to designate the same parts wherever they may appear in each of the several views, and which drawings illustrate an embodiment of this invention, Figure 1 is an elevation of the delivery end of the machine, the fabric being indicated by dotted lines; Fig. 2 is a side elevation of the machine, the fabric being designated by a dotted line; Fig. 3 is a section of the machine taken on the line *a*—*a* on Fig. 1, looking in the direction indicated by the arrows; and Fig. 4 is an elevation of a part of the machine taken on the line *b*—*b* on Fig. 2, looking in the direction indicated by the arrows.

Referring to the drawings, the reference numeral 1 designates a frame to support the mechanism. This frame is conveniently constructed with uprights and cross members. The frame supports the guide rollers 2, 3, 4, and 5 for the fabric and the drawing roller 6. The drawing roller 6 is fast to a shaft 60 to which is secured a ratchet wheel 61 and a belt pulley 7, loose on shaft 60, is adapted to revolve the shaft and the drawing roller 6 by means of the pawl 70. Pulley 7 is revolved by means of the belt 8, pulley 9, shaft 10, gear 11, gear 12, shaft 13 and sprocket wheel 14, as will be readily understood from an inspection of the drawings. Sprocket wheel 14 is driven from any suitable source of power.

The reference numerals 15 and 16 designate idlers or guide pulleys for the belt 8, and one or both of them may be adjustable on the frame to put the belt under more or less tension.

When the fabric has passed through the machine it may be cared for in any suitable manner as by being rolled or wound into a stock roll 17 upon a spindle 18 which is provided with adjustable clips 19 and 20 to hold the end of the fabric. The spindle 18 can roll up two upright members of the frame 1, as the stock roll increases in size, and is retained against longitudinal displacement by shoulders 21 and 22 which extend inside the two upright members of the frame, as clearly shown by the drawings. Spindle 18 and the stock roll 17 are revolved because of the frictional engagement of the stock roll 17 with the drawing roller 6 and the spindle is kept in contact with the two upright members of the frame 1 because of the construction in which the shaft 60 is set farther out from these members of the frame than spindle 18, as clearly shown by Fig. 2 of the drawings. This construction and arrangement permits the ready removal of a stock roll with the spindle on which it is wound and the ready replacement of a spindle.

The trimming of the fabric is accomplished by means of gripping and pulling mechanism movable transversely of the length of the fabric. In the construction illustrated by the drawings this mechanism comprises the bearing belts 23 and 24 and the wipers 25 and 26. The wipers are carried by shafts 27 and 28 which are provided with the sprocket wheels 29 and 30 and preferably each wiper consists of a hub 31 and two arms 32 and 33 which are bent slightly at their ends to prevent them from digging into and cutting the fabric when they strike against it. The belts 23 and 24 are carried by pulleys 34 and 35 and 36 and 37, respectively, which are supported by shafts 38 and 39. The wipers 25 and 26 are located at opposite sides of the fabric and each wiper is

located directly under the bearing belt with which it works, as clearly shown by the drawings. Belt 23 is made to provide a suitable bearing for wiper 25 and prevented from yielding too much under the pressure of the wiper by being led under the adjustable idlers 40 and 41 and for the same reasons the belt 24 is led under the adjustable idlers 42 and 43. Belt tighteners 44 and 45 are provided for taking up slack in belts 23 and 24 and for putting them under the requisite tension and, to prevent unnecessary rubbing of the belts on the fabric, the belts are lifted clear of the fabric, except immediately adjacent the wipers, by the idlers 46 and 47.

The adjustable idlers 40 and 41 and 42 and 43 and the belt tighteners 44 and 45 are adjusted in accordance with the thickness of the fabric being trimmed so that the wipers, if they strike the fabric part, can slide under it, but will be sure to pinch the loose material, as they leave the fabric part, tight enough to tear or pull it off. As a short stretch of belt is more unyielding than a longer stretch, the idlers should be spaced farther apart for thick fabric than for thin fabric. These belts and the wipers are operated in unison and at the same speeds by the following arrangement of the machine. Pulley 34 is fast on shaft 38 and pulley 37 is fast on shaft 39. Pulley 36 is loose on shaft 38 and is kept in line with pulley 37 by the collars 54 and 55. Pulley 35 is loose on shaft 39 and is kept in line with pulley 34 by the collars 56 and 57. Shaft 39 has the sprocket wheel 48 fast thereon and shaft 38 has the sprocket wheel 49 and the driving pulley 50 fast thereon. The chain 51 engages sprocket wheel 49, passes around idler 52, engages with the top of sprocket wheel 48, engages with the bottom of sprocket wheel 30, passes under the tightener 53 and then engages with the top of sprocket wheel 29 with the result that rotation of the driving pulley 50 and the shaft 38 in one direction rotates the pulleys 34 and 35 and the wiper 26 in the same direction and rotates the pulleys 36 and 37 and the wiper 25 in the opposite direction. The drive pulley 50 may be driven from any suitable and convenient source of power and its speed will be so proportioned to the speed of sprocket wheel 14 that the belts and wipers will trim the fabric clean without leaving parts untrimmed.

In making fabrics of the kind hereinbefore referred to, the loose, felted material is not of uniform width and to make sure of covering the burlap or stay it is usually made of a little greater width than the burlap or stay. Burlap itself does not run of uniform width and its width is changed when it is subjected to a pull. In feeding the materials through the needle looms which unite the loose, felted material with the burlap or stay, the materials are sometimes not fed evenly and the fabric may, therefore, have a waved edge instead of a straight edge. The function of the machine is to pull or tear off that part of the loose, or felted, material which projects beyond the edges of the stay or burlap without injuring the fabric itself if the wipers contact with the fabric before they grip the loose material extending beyond its edges.

The fabric is designated on the drawings by the reference numeral 58 and the loose, felted material to be trimmed off is designated by the reference numeral 59.

The operation of the machine is as follows: Shafts 13 and 38 are revolved. The revolution of shaft 13 moves belt 8 and revolves belt pulley 7 and the drawing roller 6 thereby drawing the fabric through the machine over roller 2, under roller 3, over roller 4 and under roller 5 and rolling or winding it up on the spindle 18 into a stock roll 17. The revolution of shaft 38 moves the lower part of belt 23 to the left and the upper part of wiper 25 to the left (see Fig. 1) and the lower part of belt 24 to the right and the upper part of wiper 26 to the right. As the wipers revolve, their arms grip the loose material against the belts and, as they move with the belts away from the fabric, tear or pull the loose material from the fabric, that is, away from the edges of the fabric. Should the wipers strike the fabric, the belts will yield sufficiently to allow the wipers to slide under the fabric without injuring the same and when they slide off the edges of the fabric they will grip the loose material strongly enough to tear or pull it free from the edges of the fabric.

The speed of travel of the fabric through the machine should be such that in one-half of a revolution of the wipers the material or fabric is advanced about the width of the contacting faces of the arms of the wipers.

The fabric, after passing partly around the drawing roller, is rolled or wound into a stock roll, for convenience, which becomes larger and larger as the fabric accumulates upon it, and, when desired, the fabric can be cut, the stock roll can be removed and the end of the fabric on the machine can be attached to a spindle 18 which is then placed in position on top of the drawing roller 6 for rolling up more fabric as before.

The pawl and ratchet drive of the pulley 7 enables the drawing roller 6 to be revolved backward to unwind the stock roll 17 to get sufficient slack for cutting the stock roll loose and leaving an end to attach to a spindle 18, for example.

What is claimed is:

1. In a fabric trimming machine, the combination with means for drawing the fabric through the machine, of wipers located ad-

jacent the edges of the fabric and movable away from the edges of the fabric, and means to grip the projecting parts of the fabric against the wipers.

2. In a fabric trimming machine, the combination with means for drawing the fabric through the machine, of wipers located adjacent the edges of the fabric and movable away from the edges of the fabric, and resilient means to grip the projecting parts of the fabric against the wipers.

3. In a fabric trimming machine, the combination with a drawing roller of wipers, backing belts to coöperate therewith, and idlers and tighteners for adjusting the tension of said belts.

4. In a fabric trimming machine, the combination with guide rollers and a drawing roller of rotatable wipers, backing belts to coöperate therewith, and means to move said belts and rotate said wipers at substantially the same speeds.

In witness whereof I hereto affix my signature in presence of two witnesses.

WILLIAM H. WAGNER.

Witnesses:
J. M. SCHROEDER,
LEONARD STANG.