June 25, 1940. L. F. REMINGTON 2,205,630

CLOTH INSPECTING MACHINE

Filed Sept. 12, 1938 2 Sheets-Sheet 1

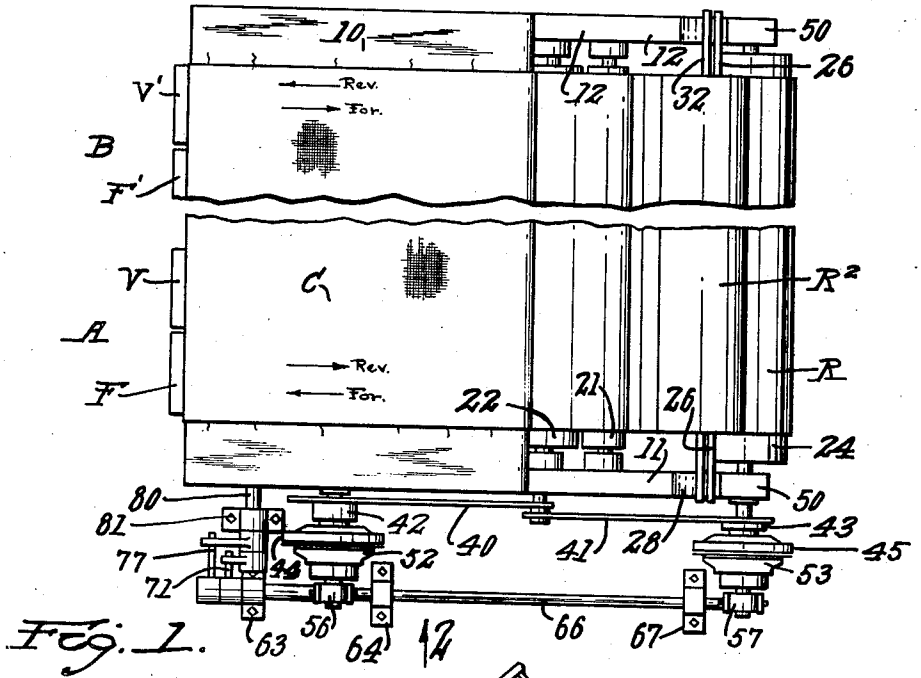


Fig. 1.

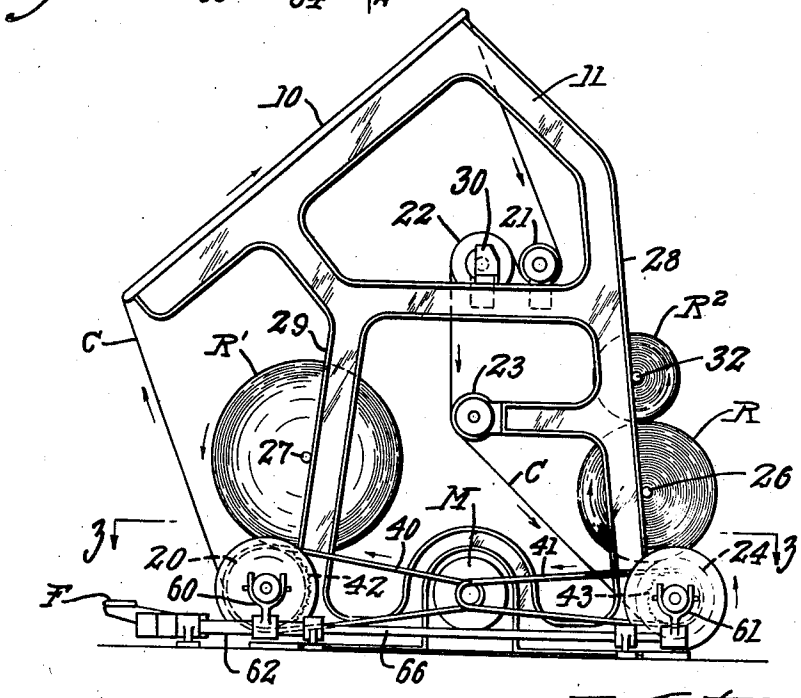


Fig. 2.

Inventor
Leland F. Remington
By Chas. V. Hawley
Attorney

June 25, 1940. L. F. REMINGTON 2,205,630

CLOTH INSPECTING MACHINE

Filed Sept. 12, 1938 2 Sheets-Sheet 2

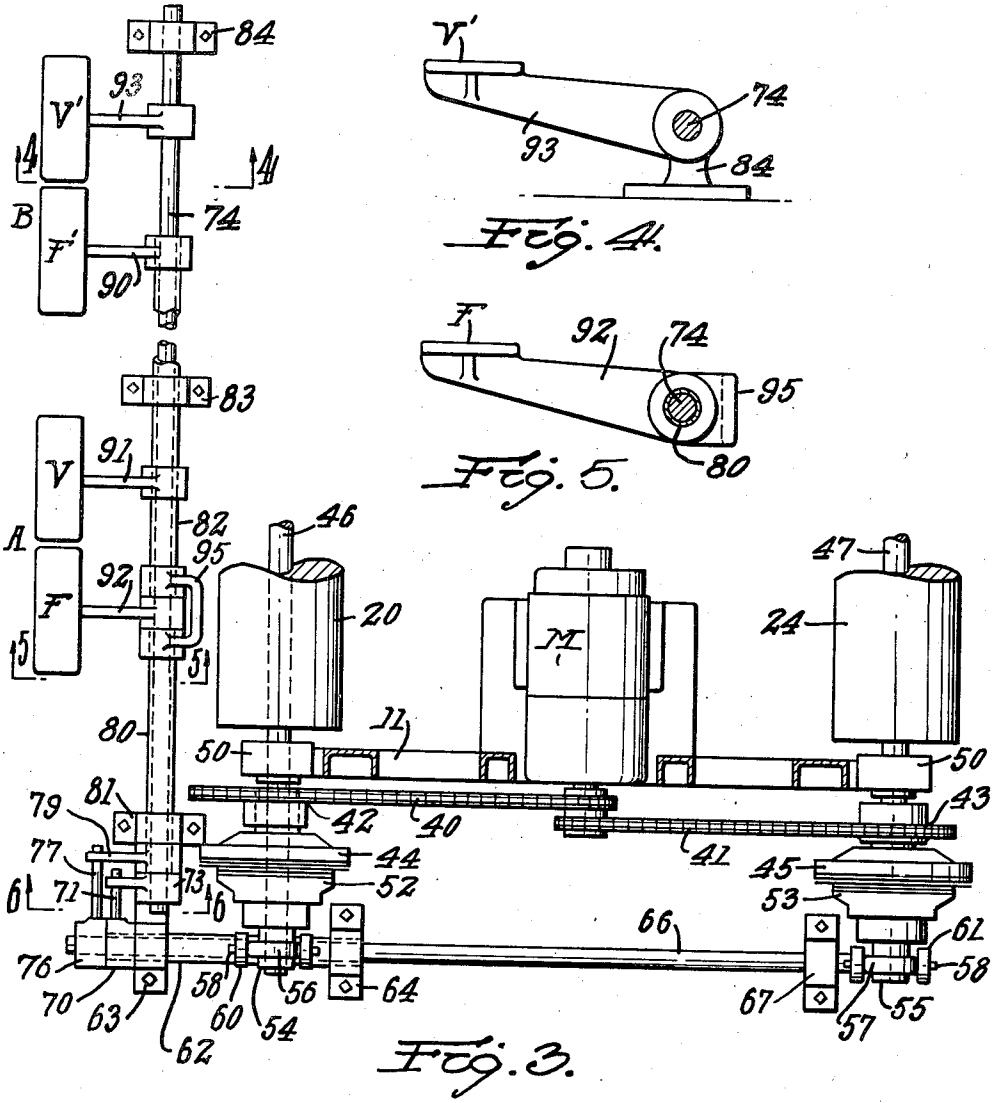


Fig. 3.

Fig. 4.

Fig. 5.

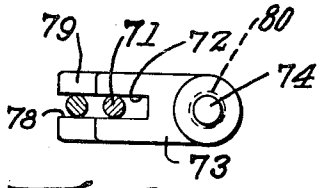


Fig. 6.

Inventor-
Leland F. Remington
By Chas. T. Hawley
Attorney

Patented June 25, 1940 2,205,630

UNITED STATES PATENT OFFICE

2,205,630

CLOTH INSPECTING MACHINE

Leland F. Remington, Worcester, Mass., assignor to Curtis & Marble Machine Company, Worcester, Mass., a corporation of Massachusetts

Application September 12, 1938, Serial No. 229,560

3 Claims. (Cl. 26—70)

This invention relates to machines which are used when an operator is inspecting cloth and trimming the selvage edges thereof. My improved machine is more particularly used with cloth woven in automatic weft replenishing looms.

It is the general object of my invention to provide a machine in which the two edges of a piece of cloth may be successively and conveniently inspected by a single operator from closely adjacent inspection stations and without removal of the cloth from the machine between said inspections.

A further object is to provide means for producing selective feeding movements of the cloth in opposite directions, with convenient temporary reversal, and improved control devices by which these feeding movements may be determined. In the preferred construction of my improved machine, the forward and reverse controls are in the same relative positions at both inspection stations. I also provide means for moving the the cloth at speeds proportionate to the attention required, and for separate disposal of portions of cloth which are below grade.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawings, in which:

Fig. 1 is a plan view of my improved machine;

Fig. 2 is a side elevation thereof, looking in the direction of the arrow 2 in Fig. 1;

Fig. 3 is a partial sectional plan view, taken substantially along the line 3—3 in Fig. 2; and

Figs. 4, 5 and 6 are detail sectional elevations, taken along the lines 4—4, 5—5 and 6—6 in Fig. 3 respectively.

Referring to Figs. 1 and 2, I have shown my improved cloth inspecting machine as comprising an inspection table 10 supported in inclined position on side frame members 11 and 12. The two adjacent inspection stations are indicated at A and B.

The cloth C is supplied to the machine in a roll R and is wound up in a second roll R' as inspection of the right-hand edge thereof is completed. The cloth is then fed through the machine in the reverse direction for inspection of the left-hand edge of the cloth. During this second operation, the cloth is unwound from the roll R' and is rewound at the roll R. The arrows in Fig. 2 indicate the direction of cloth travel during this second or rewind operation.

During the rewind operation, the cloth passes from the roll R' around a drum 20 on which the roll R' is supported and which at this time is free to rotate. The cloth then passes upward over the inspection table 10 and downward around a guide-roll 21, over a measuring roll 22, around a guide-roll 23, and under and around a second winding drum 24 to the roll R which rests upon the winding drum 24 and which is frictionally rotated thereby.

During the first or right-hand inspecting operation, the path of travel of the cloth is the same as above described but in the reverse direction.

A counter 30 may be associated with the measuring roll 22 and is constructed to register during rotation of the measuring roll in one direction only.

The rolls R and R' are provided with axial shafts or gudgeons 26 and 27 which engage inclined surfaces 28 and 29 of the side frames 11 and 12. These surfaces are positioned at such angles that the shafts 26 and 27 are held against the inclined surfaces by the pull of the cloth and will move freely up and down in contact with said surfaces as the cloth rolls increase or decrease in diameter.

The cloth roll R as supplied to the machine commonly comprises a considerable number of pieces of cloth, some of which on inspection may be found to be below grade or of second quality. During the rewind operation, it is desirable to separate the seconds from the regular cloth, and this may be conveniently done by leading the seconds from the guide-roll 23 around the drum 24 and in contact with the roll R to a "seconds" cloth roll R^2, resting on the roll R and having its own shaft 32 engaging the inclined surfaces 28. When a piece of cloth of second quality comes along, it is disconnected from the roll R and wound on the roll R^2 for separate disposal.

I will now describe the improved mechanism which I have provided for driving the winding drums 20 and 24 and for controlling the movements thereof. For this purpose I provide a motor M (Fig. 3) connected by chains 40 and 41 to sprockets 42 and 43 (Fig. 2) associated with clutch members 44 and 45 loosely rotatable on the shafts 46 and 47 on which the winding drums 20 and 24 are mounted.

The shafts 46 and 47 rotate in fixed bearings 50 in the side frames 11 and 12 and are provided with clutch members 52 and 53, keyed thereto and having limited sliding movement

thereon. The clutch members 52 and 53 have circumferentially grooved hub portions 54 and 55 provided with yoke members 56 and 57 having pins 58 extending through vertical slots in yoke arms 60 and 61 (Fig. 2).

The yoke arm 60 is fixed on a tube 62 movably mounted in fixed bearings 63 and 64 (Fig. 3), and the yoke arm 61 is fixed on a shaft 66, one end of which is pivotally supported in a fixed bearing 67 and the other end of which projects through and is supported by the tube 62.

A collar 70 (Fig. 3) on the tube 62 is provided with a stud 71 extending into a slot 72 (Fig. 6) in an arm 73 secured to a cross shaft 74. A collar 76 on the shaft 66 is similarly provided with a stud 77 extending into a slot 78 (Fig. 6) on an arm 79 secured to a cross tube 80. The tube 80 is mounted in a fixed bearing 81 and a second and aligned tube 82 is mounted in a fixed bearing 83. The cross shaft 74 is supported in the tubes 80 and 82 and also in a fixed bearing 84.

Pedals F' and V on arms 90 and 91 are secured to the tube 82, and pedals F and V' on arms 92 and 93 are secured to the cross shaft 74. The hub of the pedal arm 92 is interposed between the adjacent ends of the tubes 80 and 82, which tubes are connected by an offset member 95.

Having described the details of construction of my improved inspecting machine, I will now describe the preferred method of operation thereof.

During the first inspecting operation, the cloth is drawn from the roll R to the roll R' and travels downward over the table 10. The operator occupies inspection station A (Fig. 1) and inspects the right-hand edge of the cloth, at which automatic weft replenishing has commonly occurred.

After this inspection and after the trimming of weft ends has been completed, the operator moves to inspection station B and inspects and trims the left-hand edge of the cloth as it is drawn up over the inspecting table 10 and rewound at the roll R.

As there is usually very little if any weft replenishment at the left-hand edge of the cloth, less time is required for inspection and the cloth may be run through at higher speed. For this reason, the sprocket 43 for the rewind drum 24 is of less diameter than the sprocket 42 for the drum 20, so that the rewind drum will rotate at higher speed and the cloth will travel more rapidly during the inspection of the left-hand edge of the cloth where relatively little attention or trimming is necessary.

When the operator is at station A, depression of the right-hand pedal F will cause the drum 20 to be rotated to wind the cloth downward, and depression of the left-hand pedal V will cause the drum 24 to be rotated to temporarily draw the cloth backward or upward should occasion arise.

When the operator is at station B, depression of the right-hand pedal F' will cause the drum 24 to be rotated to wind the cloth upward, and depression of the left-hand pedal V' will effect a temporary backward movement of the cloth if desired.

It will thus appear that, at either operating station, depression of the right-hand pedal causes forward movement of the cloth and depression of the left-hand pedal causes a temporary backward or reverse movement. The forward movements, however, are in opposite directions at the two stations.

My improved machine is much simplified over previous machines in which widely spaced inspection tables were provided for the two inspecting operations and in which two operators were also required, one of whom was only partly occupied.

In my machine, a single operator only is required and the cloth runs at speeds proportionate to the operation being performed.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A cloth inspecting machine having a single inspection table, and manually-controlled power means to draw a piece of cloth over said table in forward and reverse directions for successive inspection of opposite selvages, said power means comprising spaced winding drums supporting and rotating rolls of cloth which remain in continuous contact therewith, a continuously rotated drive shaft operative to rotate one of said drums in one direction and the other drum in the opposite direction, and manually movable means effective to connect either selected drum to said drive shaft and to simultaneously disconnct the other drum.

2. A cloth inspecting machine having a single inspection table, and manually-controlled power means to draw a piece of cloth over said table in forward and reverse directions for successive inspection of opposite selvages, said machine having two pairs of control pedals each comprising forward and reverse pedals defining an inspection station for a selected selvage, and the forward pedals in said two pairs being in the same relative position to the reverse pedals but causing the cloth to move oppositely over the inspection table.

3. In a machine for inspecting cloth woven in an automatic weft-replenishing loom, a single cloth inspection table, power means to draw a piece of cloth over said table in one direction at a predetermined speed for inspection of the magazine selvage, power means to draw a piece of cloth over said table in the opposite direction and at a substantially higher predetermined speed for inspection of the non-replenishing selvage, and manual means to make said first and second power means selectively operative.

LELAND F. REMINGTON.