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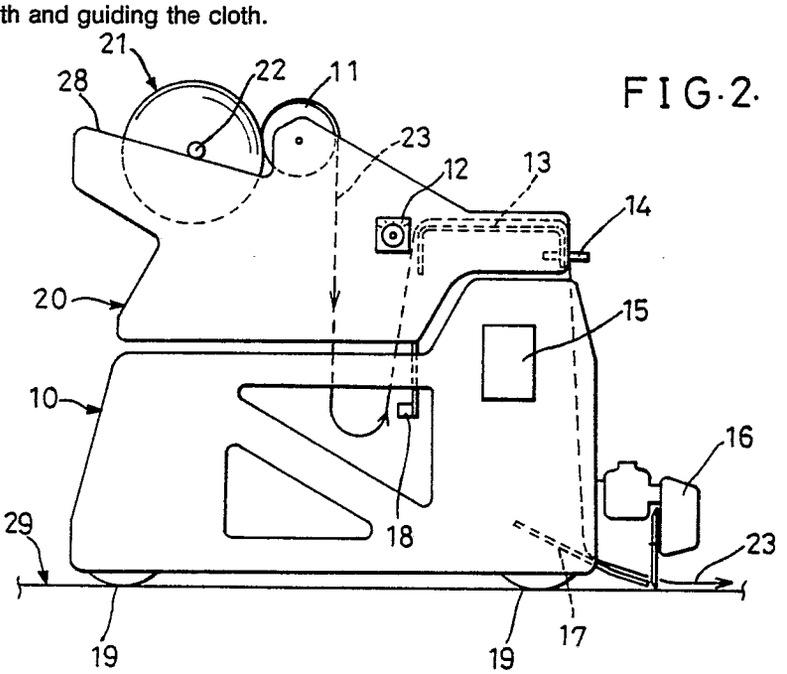
(54) Spreading machine.

(57) A spreading machine for a roll (21) of cloth comprises a body (10) which moves back and forth on a stand (29). The machine contains a control circuit and is provided with a driving source and wheels (19), a cutter (16) for cutting cloth into fixed lengths, a cloth dispenser (20) which supports a thickly rolled roll of cloth and guides cloth onto the cloth-spreading portion while unrolling cloth, and a cloth-guiding plate (13) which is provided on the front end of the cloth dispenser (20) and is used for removing folds of cloth and guiding the cloth.

FIG·2·



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Spreading Machine

The present invention relates to a spreading machine for a roll of cloth. More particularly it relates to a spreading machine which is used for unrolling a rolled or folded roll of cloth, cutting the cloth into a fixed length while running on a stand for spreading a roll of cloth and piling the cut cloth.

The conventional spreading machine comprises a guide roll and a drawing out roller, which are provided on the upper front portion of the spreading machine. The cloth sent out from a unrolling roller on a cloth-supporting stand is supported by the guide roll and led to the drawing out roller, which is rotated to supply the cloth onto a cloth-spreading portion. When the guide roll and drawing out roller are used, however, folds or slack are apt to be produced in the cloth due to disorder of rotation of the guide roll and the drawing out roller. Further, the drawing out roller is required to be rotated synchronously with the running of the spreading machine, which makes the mechanism complicated.

What is desired is a spreading machine which has a simple construction and by which folds on cloth can easily by removed.

The present invention provides spreading machine for unrolling cloth comprising a spreading machine body provided with wheels running and a driving source, a roll-of-cloth-supporting stand for supporting a thickly rolled cloth and unrolling cloth, and a cutter means for guiding cloth to a cloth-spreading stand and cutting cloth into a fixed length, characterised in that a cloth-guiding plate is provided on the front end portion of the roll-of-cloth-supporting stand.

The invention will be described further, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a perspective side view of a spreading machine;

Figure 2 is perspective side view of the machine in an operative condition; and

Figures 3 and 4 are perspective side views of two forms of stands for supporting a roll of cloth.

The spreading machine illustrated in Figures 1 and 2 comprises a machine body 10, a stand 20 for supporting a roll of cloth 21, and a cutter 16.

The machine body 10 is provided, in the interior, with a control circuit (not shown) for controlling operations of various elements and a driving source such as a motor (not shown). The body 10 has wheels 19 so that the body 10 can run on a cloth-spreading stand 29, and over the front lower portion of the body 10 and the lower portion of the cutter 16 there is a cloth-directing plate 17.

On the upper portion of the spreading machine body 10 is arranged the cloth roll supporting stand 20, on the upper portion of which a cloth unrolling or dispensing roller 11 is provided and on the rear of which a core-receiving portion 28 is provided. On the front portion of the cloth roll supporting stand 20, a cloth-guiding plate 13 made of stainless steel and a sensors 14 for making selvages uniform are provided. On the lower portion of the stand 20, is provided a sensor 18 for unrolling a roll of cloth, which is projected inside the body 10. A knob 12 is used for adjusting the rotation speed of the roller 11 for unrolling cloth.

Working of the spreading machine having the above-mentioned construction is explained with reference to Figure 2.

The cloth roll 21 to be subjected to unrolling is placed on the stand 20 with its cores lying on the core-receiving portion 28 and is contacted with the cloth-unrolling roller 11. The roll of cloth is gradually unrolled by rotation of the cloth-unrolling roller 11. The unrolled cloth 23, hanging as a single loop from the cloth-unrolling roller 11, passes to the cloth-guiding plate 13, slides on the plate 13, during which folds in the cloth are removed and selvages of the cloth are made uniform, is sent onto the cloth-directing plate 17 and is spread on the cloth-spreading stand 29. At this time, the wheels 19 of the machine body 10 are rotated by the driving source to run back and forth on the cloth-spreding stand 29. When the spread cloth moves in a fixed distance, it is cut in a fixed length by the cutter 16. The amount of the cloth to be supplied is detected by the sensor 18 for unrolling a roll of cloth, which controls the rotation of the roller 11 for unrolling cloth and regulates the amount of cloth to be unrolled. The sensor 14 for making selvages uniform detects width-wise displacement of cloth. When the width-wise displacement of cloth is detected, the position of the cloth is amended, for example by moving the cloth roll supporting stand 20 in the lateral direction.

When a roll of cloth is to be unrolled without contacting a thickly rolled cloth roll 21 with the roller 11 for unrolling cloth, as shown in Figure 3, the cloth 23 is sent to the cloth-guiding plate 13 in such a manner that the core 22 of the roll of cloth is supported on a core-holding rod 34 provided on the rear end of the cloth roll supporting stand 30, and the cloth drawn out of the thickly rolled cloth roll 21 is passed between the roller 11 for unrolling cloth and a lap member 35 covering over the roller 11 while the cloth 23 is pressed on to the roller 11 by the lap member 35. Alternatively, as shown in Figure 4, the thickly rolled cloth roll 21 is placed,

with free rotation, on the rolls 46 of a bucket ladder 44 provided on the rear end of the cloth roll supporting stand 40. The cloth 23 drawn out of the thickly roller cloth roll 21 is passed between the roller 11 for unrolling cloth and a lap member 45 covering over the roller 11 and sent to the cloth-guiding plate 13 while the cloth is pressed onto the roller 11 with the lap member 45. In case of the cloth roll supporting stand 40 shown in Figure 4, it is not required to get a core through the thickly rolled cloth and, therefore work for rolling cloth around the core can be eliminated. Further even if the core (made of paper, etc.) is broken, working of unrolling cloth can be effected continuously.

Claims

1. A spreading machine for unrolling cloth, comprising a body (10) with wheels (19) and a driving source, a cloth-dispensing means (20,30,40) for supporting thickly rolled cloth and unrolling the cloth, and cutting means (16,17) for guiding the cloth to a cloth-spreading stand (29) and cutting the cloth into lengths, characterised in that a cloth-guiding plate (13) is provided in a downstream end region of the cloth-dispensing means (20,30,40).

2. A spreading machine as claimed in claim 1, in which a sensor (18) for sensing unrolling cloth is provided on a lower portion of the cloth-dispensing means (20,30,40).

3. A spreading machine as claimed in claim 1 or 2, in which a sensor (14) for sensing width-wise displacement of cloth is provided on a downstream end portion of the cloth-dispensing means (20,30,40).

4. A spreading machine as claimed in any of claims 1 to 3, in which the cloth-dispensing means (20) comprises a roller (11) for unrolling cloth provided on an upper portion of a cloth-roll supporting stand and unrolling of cloth is effected while the cloth roll (21) is always in contact with the roller (11) for unrolling cloth.

5. A spreading machine as claimed in any of claims 1 to 3, in which the cloth-dispensing means (30) comprises a roller (11) for unrolling cloth and a lap member (45) covering the said roller (11), provided downstream of means for supporting a core (22) of a roll of cloth.

6. A spreading machine as claimed in any of claims 1 to 3, in which the cloth dispensing means (40) comprises a roller (11) for unrolling cloth and a lap member (45) covering the said roller (11), provided downstream of a bucket ladder (44) for supporting a roll of cloth.

FIG.1.

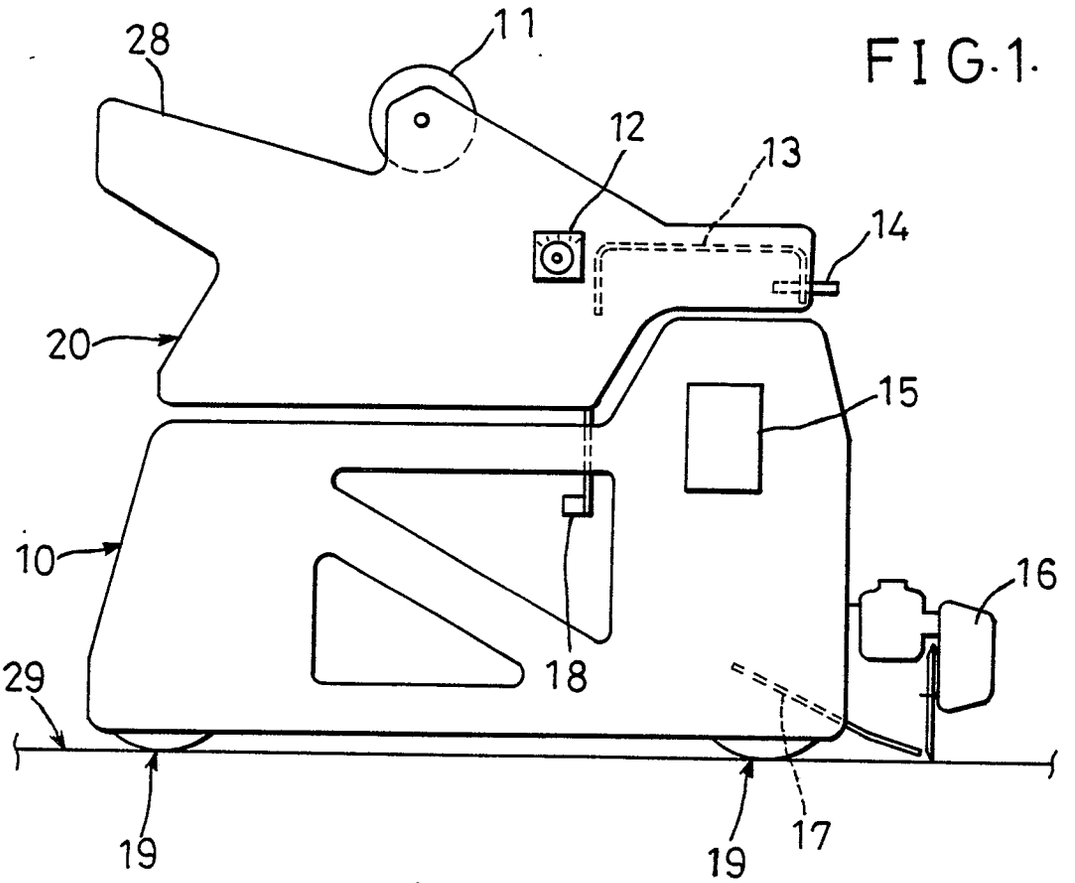
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FIG.2.

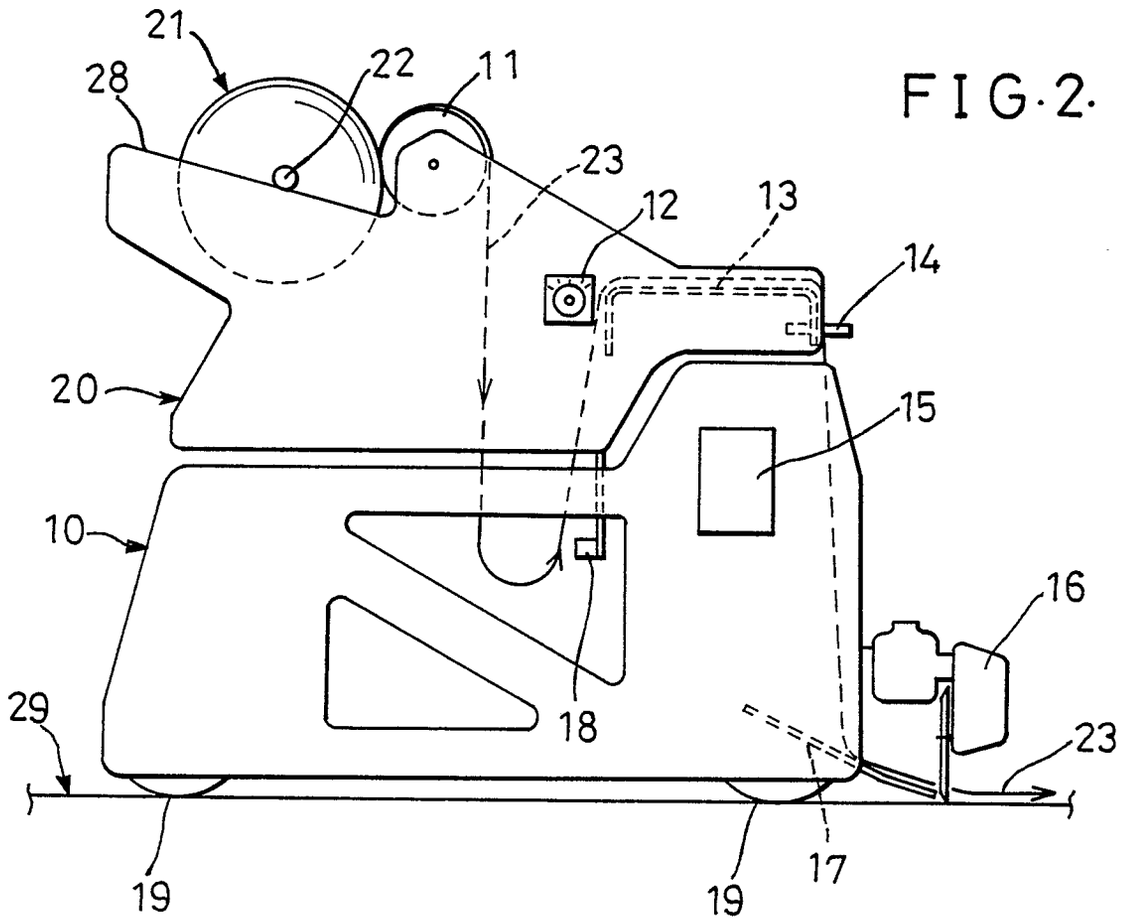
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FIG.3.

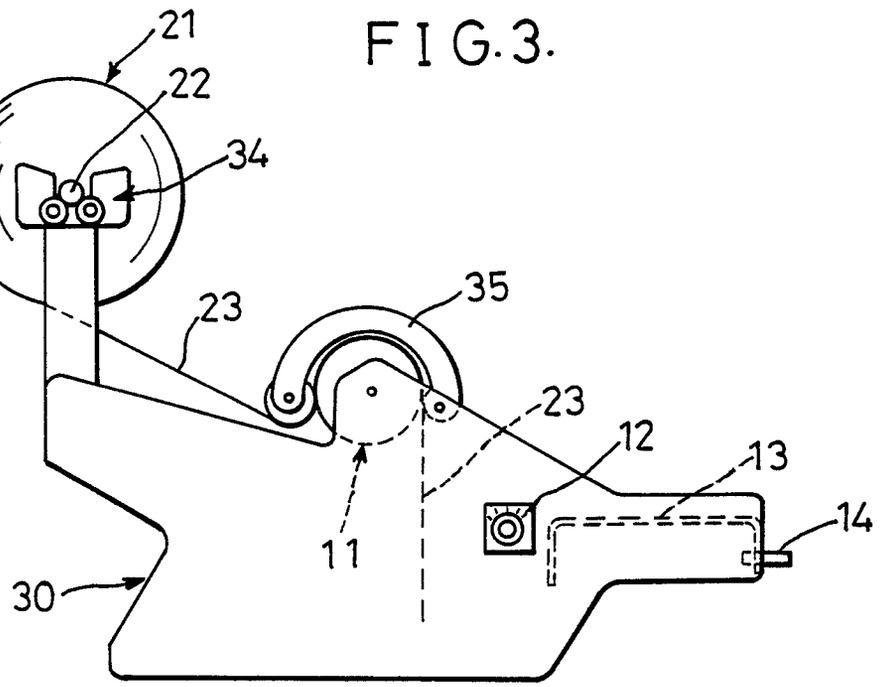
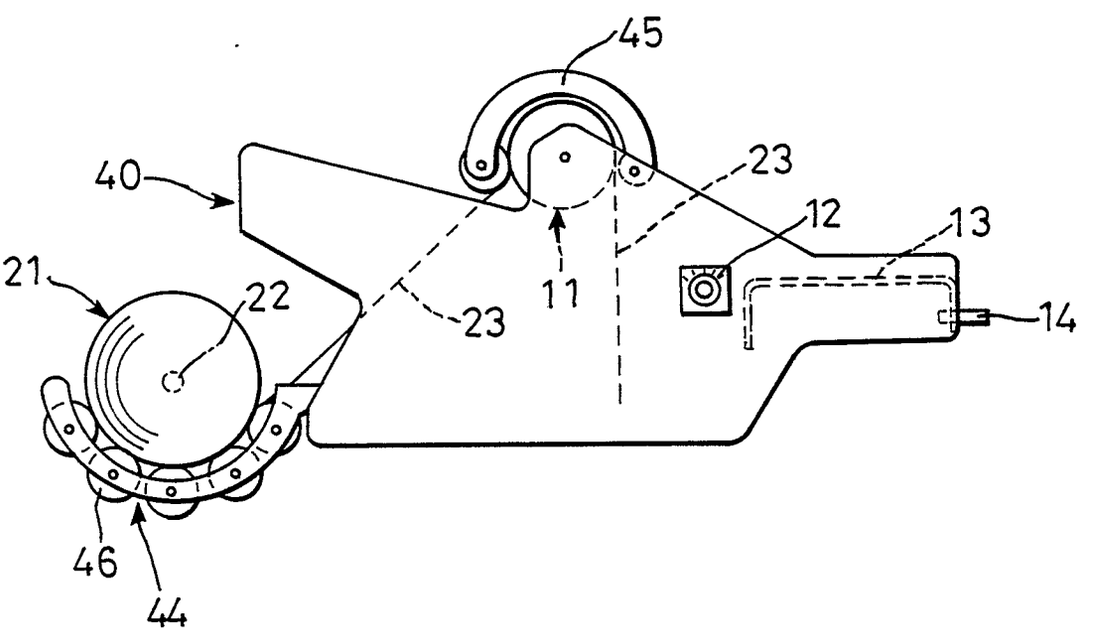


FIG.4.



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EUROPEAN SEARCH REPORT

Application number

EP 86 30 2767

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	US-A-3 782 649 (FREDERICK et al.) * Figure 6; column 3, line 9 - column 4, line 10 *	1-3,6	B 65 H 23/34 B 65 H 45/103
Y		4,5	
X	US-A-4 183 514 (J.W.A. OFF) * Figures 4,5; column 8, line 36 - column 9, line 5; column 9, line 53 - column 10, line 17; column 12, lines 10-16 *	1,2	
X	US-A-3 345 062 (E.M. MERRILL) * Figure 1; column 4, lines 4-13; column 4, line 62 - column 5, line 8 *	1,3	
Y	DE-A-3 426 063 (N.C.A. CO. LTD.) * Page 11, lines 11-19; figures 1,2 *	4	TECHNICAL FIELDS SEARCHED (Int. Cl.4) B 65 H
Y	US-A-4 177 980 (A. MELEGA) * Figures 1,16; column 5, lines 32-47 *	5	

-/-

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	09-12-1986	WEBER P.E.P.

CATEGORY OF CITED DOCUMENTS

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EUROPEAN SEARCH REPORT

Application number

EP 86 30 2767

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	US-E- 28 414 (C.E. KEESLING et al.) * Figures 1,2; column 5, lines 34-53 *	6	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)

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THE HAGUE	09-12-1986	WEBER P.E.F.

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