

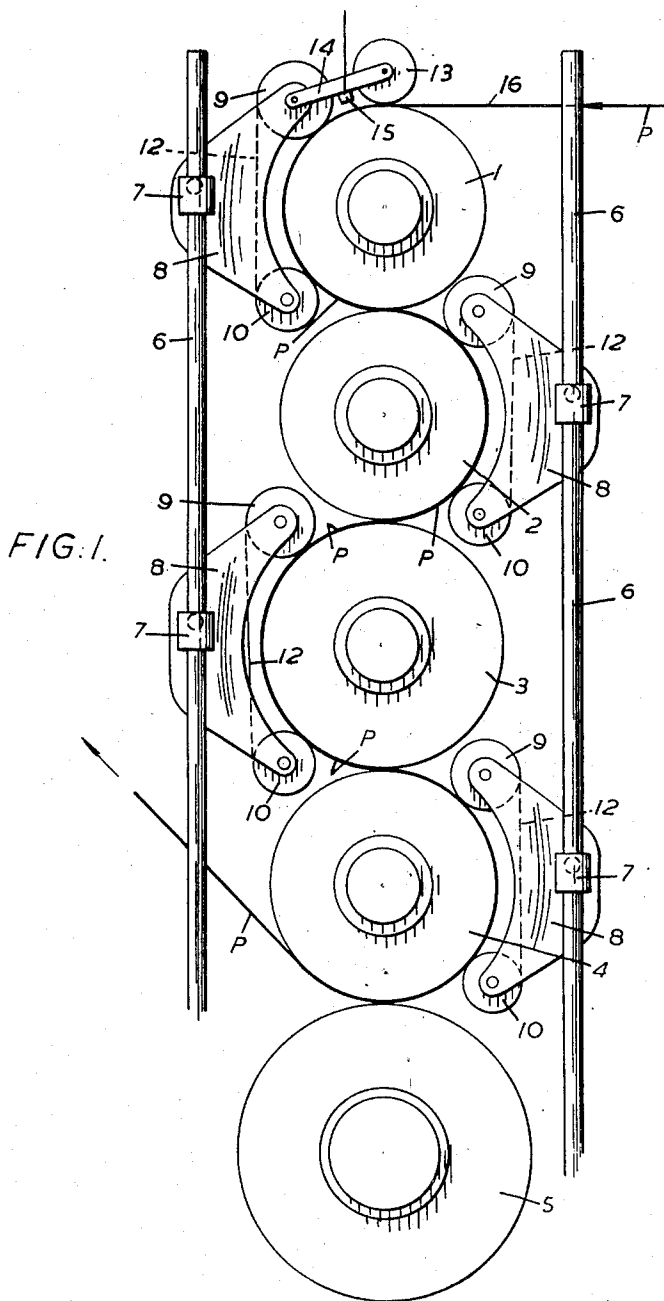
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MEANS FOR FEEDING LENGTHS OF MATERIAL
BETWEEN SERIES OF ROLLERS

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2 SHEETS--SHEET 1



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MEANS FOR FEEDING LENGTHS OF MATERIAL BETWEEN SERIES OF ROLLERS

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This invention relates to means for feeding lengths of material between a series of rollers, for example calender rolls.

Hitherto such feeding has had to be effected by the operator's introducing the end by his fingers between the adjacent rollers throughout the series while the rollers were rotating, with consequent grave risk to his fingers.

The object of the invention is to provide means whereby the feeding may be effected without the necessity of having to guide by hand the ends of the lengths of material between adjacent rollers, so that the danger of crushing the operator's fingers is obviated.

According to the invention an endless feed belt unit is arranged on the intake side of each pair of adjacent rollers, the belt of such unit being arranged about a driving and a tail pulley, the former of which is driven from the leading roller, and both of said pulleys being located between adjacent rolls.

Preferably a small swivel guide roller is arranged in front of the driving pulley of the leading unit for insertion of the ends of the lengths of material. The object of this is that in the event of the operator's fingers being drawn between the two rollers the guide roller will at once give so that no hurt comes to the operator.

The invention will now be described by way of example with reference to the accompanying semi-diagrammatic drawings which show its application to a column of calender rolls on a paper machine.

In the said drawings:

Fig. 1 is an end elevation.

Fig. 2 is a partial front elevation.

Referring more particularly to the drawings, 1, 2, 3, 4, 5 are a number of calender rolls forming a column. Mounted on either side of the column is a rotatably vertical rod 6 having projecting therefrom arms 7 having at their free outer ends brackets 8, each of which has mounted thereon a pair of V-pulleys 9, 10 the axes of which are substantially in the same vertical plane. The upper or driving pulley 9 has rigid therewith a rubber covered driving pulley 11 which is adapted to contact with a calender roll, so that the pulley is driven thereby and so itself drives the pulleys 9, 10. A leather or canvas and rubber V-belt 12 is arranged over the two pulleys 9, 10 with sufficient slack so that when the two pulleys are pressed against the calender roll the belt 12 will contact with the surface of the roll and become taut. There is a pair of such brackets for each calender roll, one bracket being mounted on the one vertical rod and the other

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bracket on the other vertical rod in staggered formation.

The vertical rods 6 are adapted to be swung outwards so that the belt feed may be withdrawn from contact with the calender rolls 1, 2, 3, 4, 5. A swivel guide roller 13 is mounted on an arm 14 which itself is pivotally mounted about the axis of the driving belt pulley 9 of the uppermost feed unit. The roller 13 has its downward movement limited by a stop 15 so that when the rods 6 are swung outwards, the swivel arm 14 will fall for only a relatively small distance so that the roller 13 is kept out of contact with the larger roll 1, but will readily roll up it when swung back into engagement. After assembly, the usual guards (not shown) are arranged around the calender column, and these may remain in position permanently, and need be removed only for cleaning or repairs.

In operation, the operator threads the end of the paper P under the swivel guide roller 13. Thereafter the rotation of the calender rolls 1, 2, 3, 4, 5 carries the ends of the paper to the driving roller 9 of the belt feed unit so that it passes between the calender roll 1 and the belt 12, is conveyed around the lower portion of the calender roll 1 where it is again guided between the first and second calender rolls, 1, 2, after which it emerges on the other side, is brought into engagement between the second calender roll and the belt 12 of the second belt feed which is on the side of the column opposite to the first belt feed, and then brought into engagement by the belt 12 between the second and third rolls 2, 3. This process goes on until the paper emerges from between the penultimate and lowermost rolls, 4, 5.

Hence by the single operation of introducing the paper under the guide roller 13, the feed of the paper through the series of rolls is effected without any danger at all to the operator.

The feeding means according to the invention may also be applied to webs of textile material, rubber latex, and in all cases of feeding a continuous length of material through rollers.

I claim:

1. An improved feed unit for feeding lengths of material between a vertical series of rollers of which adjacent rollers are in contact, the material to be fed passing over the one half of the leading roller of the series, between said roller and the adjacent roller, over the opposite half of said adjacent roller, between said adjacent roller and its next adjacent roller, and so on until it emerges from between the last two rollers of the series, said feed unit comprising a sup-

port on each side of the series of rollers, vertical brackets in staggered formation on said supports, a leading and a tail pulley respectively mounted at the upper and lower ends of each of said brackets, an endless belt passing over each pair of said leading and tail pulleys, and a driving pulley rigid with one of each of said pairs of pulleys, said belts and said driving pulleys being adapted to be pressed respectively against alternate sides of the series of rollers.

2. An improved feed unit according to claim 1, comprising a swivel guide roller arranged in front of the leading pulley of the pair of pulleys pressing against the leading roller of the series of rollers, for insertion of the end of the length of material.

3. An improved feed unit according to claim 1

in which the said supports on each side of the series of rollers are vertical and upon which the vertical brackets are pivotally mounted to swing on a horizontal plane towards and away from said rollers.

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