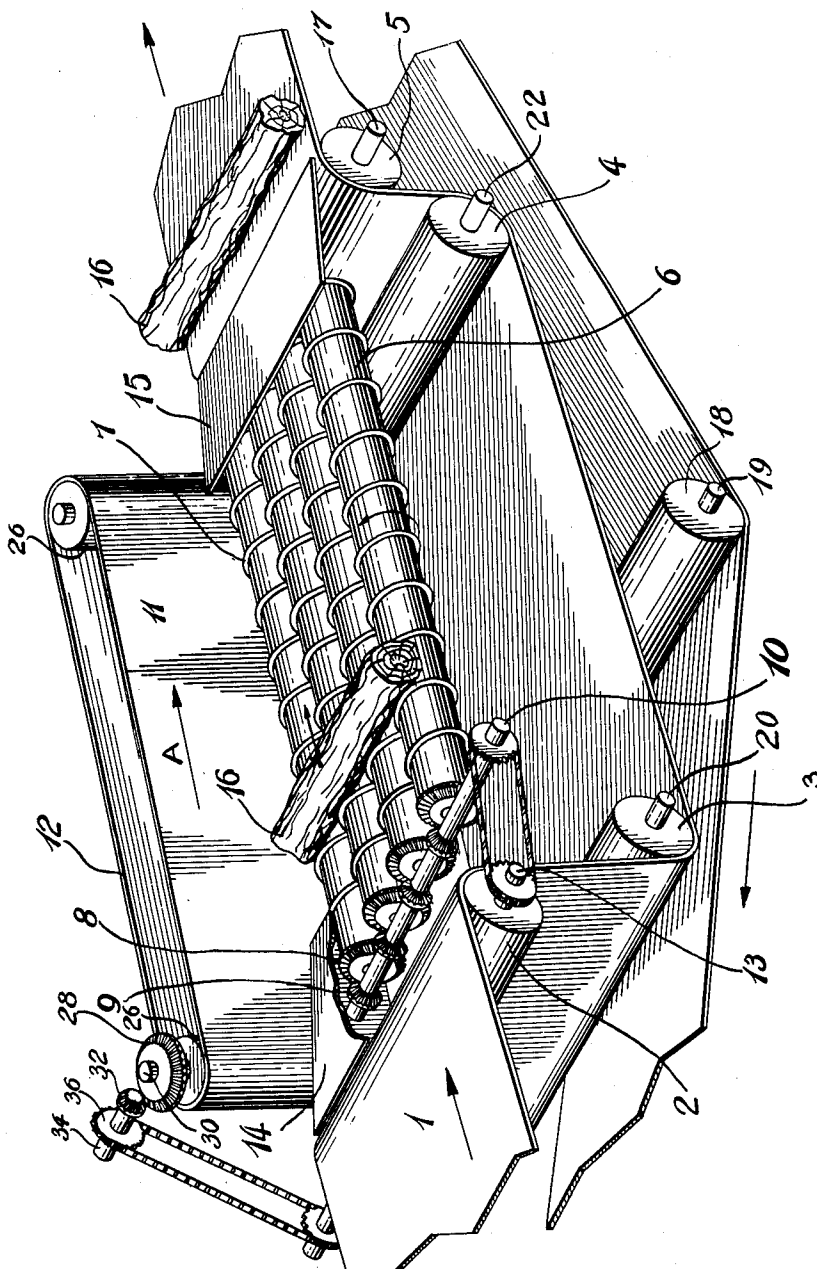


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LOG ALIGNING MECHANISM

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LOG ALIGNING MECHANISM

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1 Claim. (Cl. 198—29)

This invention pertains to a log aligning device, and more particularly to a mechanism for aligning logs which are to be selected for further operations.

In logging work, as the logs are carried to the mills for processing, they must first be selected as to length. For certain operations, a minimum length is required and those logs which do not meet the required length must be discarded. The invention contemplates the use of a machine for aligning the logs so that on a further operation, the undersized logs can be easily spotted.

This mechanism for aligning logs comprises: a bed; lateral parallel ridges on said bed adapted to receive logs therebetween; an upstanding wall in proximity of one lateral edge of said bed, substantially normal to said ridges; means to produce longitudinal and lateral displacement and abutment of said logs against said wall when said logs sit on said bed between said ridges.

A better understanding of the invention will be had, having reference to the accompanying drawings showing the mechanism in perspective elevation.

In the drawing, a conveyor belt 1 is shown trained around cylinders 2, 3, 4 and 5. The axis of cylinders 2 and 5 lie parallel in a plane slightly inclined to the horizontal so that the logs have a tendency to move from one end of the mechanism to the other. The axis of cylinders 3 and 4 lie below the plane of the axis of cylinders 2 and 5, are parallel, but their common plane is not necessarily parallel to the first mentioned plane.

The belt 1 is trained around cylinders 2, 3, 4 and 5 in such a way as to create a dip. Shafts 13, 17, 20 and 22 of cylinders 2, 3, 4, 5 respectively, are rotatably mounted on the frame of the machine (not shown).

The conveyor belt is of the endless type and has a return path below the dip. The belt is held taut by means of a tightening cylinder 18 freely rotating on the frame (not shown) of the machine through a shaft 19. Shaft 19 and cylinder 18 are allowed a limited vertical displacement to adjust to the looseness of conveyor belt 1 and thus take up whatever slack exists.

Within the dip are mounted a series of rolls 6 standing side by side in parallel relationship and in proximity to one another, forming a bed. This bed, similarly to conveyor 1, is inclined to the horizontal. As shown, the axis of these rolls are normal to the axis of cylinders 2 and 5.

The outer surface of each of said rolls is provided with a narrow spiral shoulder or thread 7. One end of each of said rolls 6 is also provided with a bevelled gear 8. All of said gears 8 are facing in the same direction, so that they sit one next to the other and are in a position to mesh, each with a double-bevelled pinion 9 mounted on a shaft 10, rotation of which is accomplished by chain and sprocket means 24 coupled to one of the conveyor cylinders 2.

One side of the aforementioned dip is closed in by a vertical movable wall 11 adjacent the last of the spiral rolls on that side. This movable wall 11 is actually an endless belt 12 trained around two upstanding rollers 26 and is placed into rotation by means similar to those described in conjunction with the spiral rolls 6.

For instance, roller 26 is provided with an end bevelled gear 28 mounted on a shaft 30 and brought into rotation by meshing with a bevelled pinion 32 fixed to a shaft 34.

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Also on shaft 34 is attached a sprocket 36 comprising one end of a chain-and-sprocket arrangement, the other end of which is held onto shaft 13 of cylinder 2.

Power may be connected to shaft 34 or to any other suitable shaft.

The arrangement is such that movable wall 11 has a speed equal to that of the logs 16 so that no relative displacement can take place between the two.

A forward apron 14 bridges the gap between conveyor belt 1 and the surface of the spiral roll table or bed and a similar apron 15 accomplishes the same function at the other end of the roll bed. Aprons 14 and 15 are fixed to the machine frame (not shown). The pitch of spiral shoulders or threads 7 is such as to leave sufficient room for any logs 16 to sit between two adjacent upper portions of the threads. The rotation of rolls 6 should also be arranged so that the upper portions of threads 7 lie in substantial lateral to form a broken ridge having a direction substantially normal to wall 11.

As will be readily understood by inspection of the drawing, logs 16 will arrive on the conveyor belt at 1 and be driven onto inclined forward apron 14, where it will be directed, by virtue of the inclination of the apron, to the surface created by the series of longitudinally extending spiral rolls 6. The rolls being constantly in motion, the shoulders 7 will create, at the surface thereof, a transverse broken ridge, which will constantly be moving forward in the direction of the arrow A in screw fashion. Therefore, a log sitting between two such broken-up ridges or series of shoulders 7 will likewise be moving in the direction of the arrow A. Furthermore, rolls 6 are made to rotate counterclockwise, when facing gear 8, so that the logs are constantly urged towards movable wall 11. The result is that as logs 16 move towards rear apron 15, they are driven against movable wall 11 and consequently the corresponding ends thereof fall into alignment with each other. The object of the invention which was to align one end of such logs has thus been attained.

We claim:

In a conveyor system for aligning elongated articles, travelling in a predetermined direction, and having a feeding conveyor and a discharge conveyor, a mechanism for aligning said articles comprising: a horizontal bed composed of a series of parallel rolls axially disposed along said predetermined direction between said conveyors; each roll being provided with an external spiral thread having a top portion; the rolls being so disposed that said top portions create a series of laterally extending, substantially parallel, broken ridges; the pitch of said threads being sufficiently wide to permit accommodation of said elongated articles; extending transversally of said bed, between any two ridges thereof; an upstanding movable wall adjacent one lateral edge of said bed and substantially normal to said ridges; common means for providing rotation of said rolls all in one direction for driving said articles toward said wall and longitudinally displacing said wall so as to produce longitudinal displacement of said articles and lateral movement thereof towards said wall; said means being proportioned to provide equal speed of said articles and wall; a first fixed apron between said feeding conveyor and said bed and a second fixed apron between said bed and said discharge conveyor.

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