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straight preventing the sheets from jamming in the sheet feeder. The sheet feeder can have manual or electronic height adjustments. The gap between the shafts can be quickly and easily changed for quickly changing production runs with different thickness product. The shafts are three-piece shafts for ease of changing the rollers on the shaft. All the bearings are pregreased and sealed to protect the bearings from dirt and debris. Rods connect the height adjustment on both sides of the shaft so both sides are adjusted by the same amount at the same time.

ABSTRACT

A sheet feeder having parallel opposing shafts with rollers or belts for engaging sheets. The sheet feeder having one control to adjust the height of both sides of one shaft so that the rollers apply the same force to both sides of the sheet to feed the sheet straight preventing the sheets from jamming in the sheet feeder. The sheet feeder can have manual or
5 electronic height adjustments. The gap between the shafts can be quickly and easily changed for quickly changing production runs with different thickness product. The shafts are three-piece shafts for ease of changing the rollers on the shaft. All the bearings are pregreased and sealed to protect the bearings from dirt and debris. Rods connect the height adjustment on both sides of the shaft so both sides are adjusted by the same amount at the same time.

COMPUTER CONTROLLED SHEET FEEDER

BACKGROUND OF THE INVENTION

This invention relates to product thickness adjustments on sheet feeding machines, and particularly to a single knob adjustments with optional computer controls.

5 Description of the Related Art

Presently it is difficult to set the stripper wheel shafts on both sides of a sheet-feeding machine to the same height. If the stripper wheels are not positioned to engage and separate sheets with the same force on both sides of a sheet, the sheet will feed crooked which may damage the sheets and or jam the sheet-feeder. If the shafts are not at the same height a
10 parallel force will be placed on the bearings due to a misalignment which will reduce the life of the bearings and increase the power needed to run the sheet feeder while increasing vibrations, noise and belt and roller wear.

Further, the stripper wheels need to be periodically replaced. Currently it is a difficult job to disassemble the stripper machine and replace the stripper wheels and belts. The down
15 time on the machine and the skill level of the maintenance person make the job unnecessarily expensive.

Since each different product sent though a sheet-feeding machine has a different thickness and since the stripper wheels wear over time frequent adjustments for the settings of the stripper wheels are required.

20 It is also a common problem for the current sheet feeding machines to need maintenance for oiling the gears, cleaning dust and debris from the drive mechanisms and replacing parts, which wear out faster if not properly maintained. A lower maintenance machine with longer life is desired, which can be serviced at longer intervals by lower skill workers.

The disclosed sheet feeder has modular parts for easy assembly and replacement of parts and for ease of maintenance.

The automatic alignment of both the rollers on both sides of the sheet feeder allow for quick and easy setups for running product of different thicknesses through the sheet feeder.

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OBJECTS OF THE INVENTION

It is an object of the invention to provide a single adjustment for accurately positioning the stripper wheels on a sheet-feeding machine.

It is an object of the invention to provide for easier maintenance.

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It is an object of the invention to provide a quick and easy change over between runs when different size product is being fed into the sheet feeder.

It is an object of the invention to provide a more robust sheet feeder.

It is an object of the invention to have encased protected bearings for long life and low maintenance.

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It is an object of the invention to easy replacement stripper wheels.

Other objects, advantages and novel features of the present invention will become apparent from the following description of the preferred embodiments when considered in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a rear view of the sheet feeder.

Fig. 2 is a perspective view of the sheet feeder shafts and bearing assemblies.

Fig. 3 is a perspective view of the left bearing assembly with sliding blocks not yet installed.

Fig. 4 is a perspective view of the drive side of left bearing assembly with sliding blocks installed.

Fig. 5 is a perspective view of the shaft side of left bearing assembly with sliding blocks installed.

Fig. 6 is a perspective view of the drive side of right bearing assembly with sliding blocks installed.

Fig. 7 is a perspective view of the inside of the right side housing.

Fig. 8 is a perspective view of the shaft side of the right side housing.

Fig. 9 is a perspective

Obviously, many modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

19. A device having adjustable position shafts as in claim 14 including,
a discharge tray between the first and second bearing assemblies, the discharge tray having a dimpled discharge tray surface to reduce friction for objects transported over its surface.
20. A device having adjustable position shafts as in claim 19 wherein,
the discharge tray surface has a curved surface to account for the sag of belts traveling over its surface to reduce drag.

