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FEEDER IN PAPER-SHEET FOLDING MACHINE

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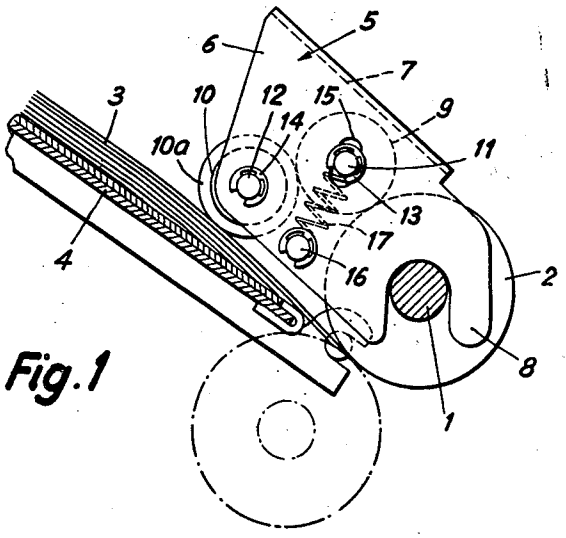


Fig. 1

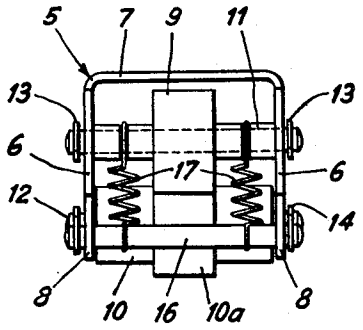


Fig. 2

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FEEDER IN PAPER-SHEET FOLDING MACHINE

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3 Claims. (Cl. 271—36)

The present invention relates to improvements in the feeding mechanism of paper-sheet folding machines. The feeder according to this invention is characterized by a feeding roller adapted to be driven by the feed cylinder.

One form of the present invention is illustrated in the accompanying drawing, in which

Fig. 1 shows a side view with feed cylinder and stack table, and

Fig. 2 shows a rear view.

Numeral 1 denotes the axle of the feed cylinder 2 of a paper-sheet folding machine such as is described and shown, for example in application Ser. No. 385,756. Practice has shown that with some types of paper said cylinder alone does not suffice to ensure the automatic feed of a sheet to be folded from a stack 3 deposited on an inclined table 4. Such disadvantage is avoided by the provision of a feeder.

In the example shown, said feeder comprises a U-shaped frame 5 consisting of two parallel walls 6 and a crosspiece 7 interconnecting same. Each of said walls 6 at its rear end, i. e. at the right-hand end in Fig. 1, comprises a bearing fork 8 destined to be mounted on the axle 1 of a feed cylinder 2. The spacing of the two walls 6 is chosen so that cylinder 2 may enter between the two forks 8. In the walls 6 is mounted a friction roller 9 on the one hand, and, on the other hand, a feed roller 10, which rollers are rotatably mounted on axles 11 and 12 respectively. The latter are axially secured by means of spring rings 13 and 14 respectively. Each of the two rollers 9 and 10 comprises a peripheral layer of rough rubber, the coating 10*a* of feed roller 10 extending only over the central portion of the latter. The axle pin 11 of friction roller 9 passes through the walls 6 in two elongated holes 15 so that friction roller 9 is held movable in the direction of said hole. To axle pin 11 on the one hand and to a rigid pin 16 held in the walls 6, on the other hand, are secured the ends of two helical springs 17 so that friction roller 9 is constantly urged resiliently against feed roller 10. When the feeder 5 to 17 is mounted on the axle 1 of feed cylinder 2, friction roller 9 thus is constantly urged resiliently against feed cylinder 2.

From this construction follows that the rotation of

feed cylinder 2 is transmitted via friction roller 9 on to feed roller 10. Since the feeder 5 to 17 is only loosely mounted on axle 1 of feed cylinder 2, it is free to rock on axle 1 and always rests, irrespective of the height of stack 3, through feed roller 10 on the topmost sheet of stack 3. Since feed roller 10 rotates in the same sense as feed cylinder 2, the topmost sheet of stack 3 is continuously fed to cylinder 2.

In this way I have succeeded, with the aid of a simple mechanism, to ensure the automatic feed also of such types of paper which so far have occasionally caused trouble when the feed means were limited to feed cylinder 2 alone.

I claim:

1. In a paper sheet folding machine including a feed cylinder rotatably mounted on a shaft and a feed table inclined toward the axis of the feed cylinder and arranged adjacent to the feed cylinder; feeder means comprising a frame having a pair of spaced apart, parallel, interconnected bearing plates, feed roller means rotatably mounted in said bearing plates and operatively interposed between the feed cylinder and sheets on the feed table, said plates having forks detachably fitted on the shaft of the feed cylinder so as to position the feed roller means in peripheral frictional operative engagement with the feed cylinder.

2. In a paper sheet folding machine including a feed cylinder rotatably mounted on a shaft and a feed table inclined toward the axis of the feed cylinder and arranged adjacent to the feed cylinder; feeder means comprising a frame having a pair of spaced apart, parallel, interconnected bearing plates, feed roller means rotatably mounted in said bearing plates and operatively interposed between the feed cylinder and sheets on the feed table, said plates having forks detachably fitted on the shaft of the feed cylinder so as to position the feed roller means in peripheral frictional operative engagement with the feed cylinder, said feed roller means including a feed roller rotatably mounted between said bearing plates and adapted to overlie and contact the paper sheets and a friction roller operatively interposed between and disposed parallel with the feed roller and the feed cylinder, said friction roller being rotatably mounted in the bearing plates, and resilient means connected between the bearing plates and the friction roller to urge the friction roller into peripheral contact with the feed cylinder and the feed roller.

3. A feeder means as claimed in claim 2, wherein said forks are inherently resilient and clampingly engage on the feed cylinder shaft.

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