July 6, 1937. G. STRECKER ET AL 2,085,835

SLITTING MACHINE

Filed Sept. 25, 1935

Fig. 1

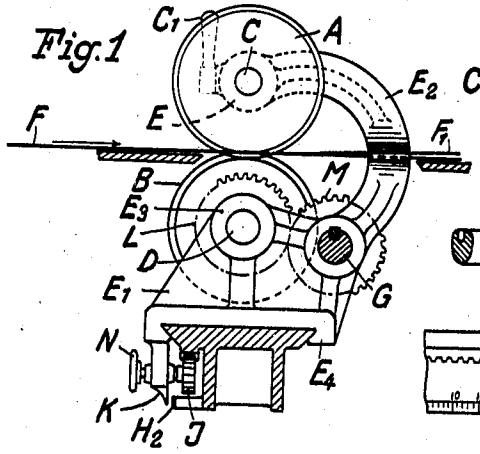


Fig. 2

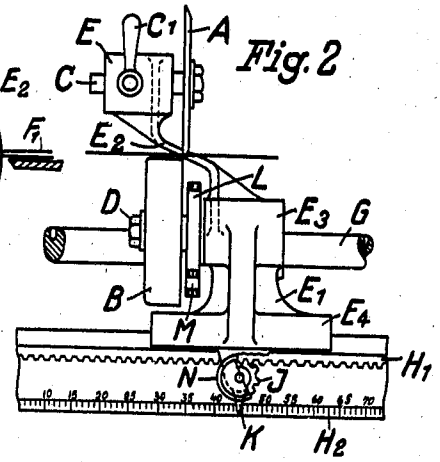
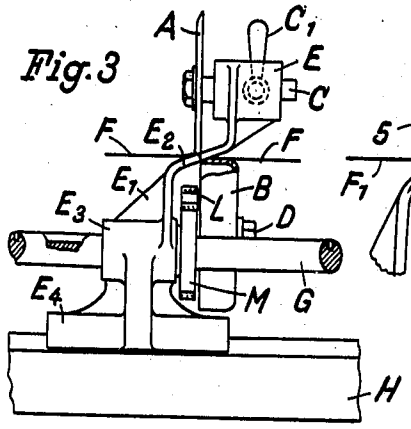


Fig. 3



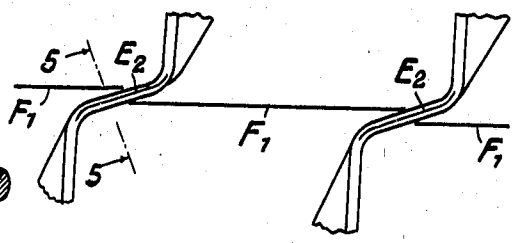


Fig. 4

Fig. 5

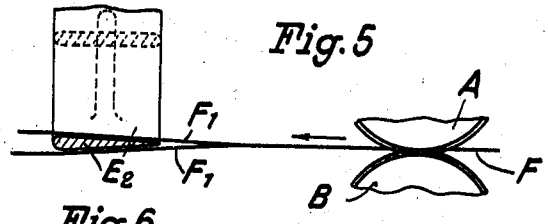


Fig. 6

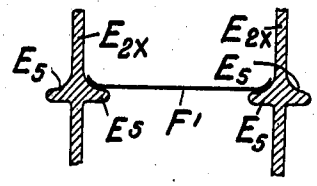
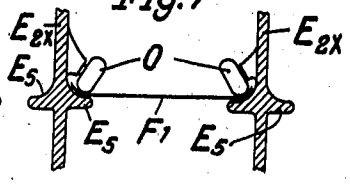


Fig. 7



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Patented July 6, 1937 2,085,835

UNITED STATES PATENT OFFICE

2,085,835

SLITTING MACHINE

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Application September 25, 1935, Serial No. 41,979
In Germany September 27, 1934

4 Claims. (Cl. 164—60)

This invention relates to slitting machines for cutting a web or width of paper, fabric or the like longitudinally into a plurality of strips, of the kind in which the web is fed to a plurality of coacting pairs of rotary circular knives or cutters.

In the usual longitudinal slitting machines of the aforesaid kind, the knives or cutters are located on separate shafts, either the lower knives being mounted on one shaft and the upper knives on another, or one set of knives being mounted on one shaft and the other knives being individually carried by means of separate holders by a second shaft. If the width of the strips into which the knives cut the sheet of paper has to be altered, it is clear that all the coacting lower and upper knives must be adjusted on their shafts which is generally effected by first shifting the lower knives, or the upper knives, into the new positions and fixing them and then pushing the upper, or lower, knives against them and likewise fixing them. In the case of longitudinal slitting machines with numerous cutters, this is an operation which takes considerable time during which the machine is not able to work and must be at rest.

A primary object of the present invention is to reduce this work and therefore also the loss of time associated with it quite considerably and to enable the cutters to be displaced while the longitudinal cutter is running.

According to the present invention, both knives of each coacting pair of cutters are fitted to a common holder which is displaceable transversely to the direction of travel of the web and comprises two parts, on each of which one of the knives of each pair is revolubly mounted and which are connected by or integral with a bent or curved member which is located behind the cutters in the direction of travel of the web and passes through the slit produced by the cutters in the web and is so shaped that the edges of the two adjacent strips which slide along it are bent out of the plane in which the web is fed to the cutters.

One form of construction of the new slitting machine is illustrated by way of example in the accompanying drawing, in which:—

Figure 1 is a side elevation partly in section.

Figures 2 and 3 are elevations viewed from the left- and right-hand side of Figure 1 respectively.

Figure 4 shows on a larger scale part of the members connecting two adjacent knife holders and the form which the strips assume on sliding along them.

Figure 5 is a cross-section on the oblique line 5—5 in Figure 4 seen from the left, and

Figures 6 and 7 show respectively two further cross-sectional forms of the said members and the forms which the strips assume as they slide along them.

Referring to the drawing, the upper knife A and the lower knife B of which, in the construction shown in the drawing, the former is of disc-shape and the latter of cup-shape, are fixed on pins C, D respectively which are mounted in the upper part E and the lower part E^1 respectively of the knife holder. The upper knife A which is driven by friction from the lower knife B can be removed from or applied against the lower knife by turning a lever C^1. The pin C is further fitted in such a manner that it can be adjusted relatively to the pin D in a vertical direction. This adjustment is known and is therefore not illustrated in the drawing.

The upper and lower parts of the knife holder are connected by a cranked bracket or bent piece E^2 which, in the direction of travel of the web F, is situated behind the knives A, B and passes through the slit produced by the knives in the web. The bent piece E^2 is shaped in such a manner (Figures 3 and 4) that, of the two strips F^1 which slide along it, the adjacent edge of one strip is bent upwardly and that of the other downwardly out of the plane in which the web F is fed to the knives A, B. The knife holder can slide on the one hand on the driving shaft G, which is situated transversely to the direction of travel of the web F, by means of a sleeve or jacket E^3 which is provided on its lower part and embraces the driving shaft, and on the other hand with its foot E^4 on a guide bar H which is fixed in the frame of the machine. The under-side of the latter is provided with teeth H^1 in which a toothed wheel J, which is fitted on the foot E^4 of the knife holder and is revoluble by a hand wheel N, engages. The guide rod H also contains a scale H^2 in front of which a pointer K on the foot E^4 of the knife holder moves. The pointer can be adjusted on the foot E^4 in accordance with the wear of the lower knife B.

With the lower knife B, a toothed wheel L is rigidly connected and this meshes with a toothed wheel M which is journalled in the lower part E^1 of the knife holder, and through which the driving shaft G is carried in such a manner that the wheel is displaceable on the shaft but is not revoluble relatively to it.

By rotating the hand wheel N, the knife holder with the two knives A, B can be displaced on

the guide bar H whereby the sleeve E^3 as well as the toothed wheel M slide along the driving shaft G.

In the forms of construction according to Figures 6 and 7, the bent part E^{2x} connecting the upper and lower part of each knife holder is provided on each side with a tapered rib E^5 by which the edges of the two strips F^1 which slide along the ribs are bent upwardly out of the plane in which the web is fed to the knives.

In the form of construction according to Figure 7, loose rollers O are further provided on the bent parts E^{2x} which rollers press the upwardly bent edges of the strips against the parts E^{2x} and guide them along these parts.

We claim:—

1. A machine for slitting a travelling paper web, comprising a plurality of pairs of slitting wheels, a separate support for each pair of wheels and a transverse guide for adjustably carrying said supports, each of the latter consisting of a substantially U-shaped frame supporting said wheels in its forward portion, the closed end of said frame having a longitudinally disposed guiding portion to offset the cut edges of the paper as the said cut edges pass the frame.

2. A machine for slitting a travelling paper web, comprising a plurality of pairs of slitting wheels, a separate support for each pair of wheels and a transverse guide for adjustably carrying said supports, each of the latter consisting of a substantially U-shaped frame supporting said wheels in its forward portion, the closed end of said frame being inclined at an angle to the plane traversed by the paper web, to form longitudinal guide ways to offset the cut edges of the paper, as the said cut edges pass the frame.

3. A machine for slitting a travelling paper web, comprising a plurality of pairs of slitting wheels, a separate support for each pair of wheels and a transverse guide for adjustably carrying said supports, each of the latter consisting of a substantially U-shaped frame supporting said wheels in its forward portion, the closed end of said frame being substantially vertical and having transversely inclined longitudinal tracks to offset the cut edges of the paper, as the said cut edges pass the frame.

4. A machine for slitting a travelling paper web, comprising a plurality of pairs of slitting wheels, a separate support for each pair of wheels and a transverse guide for adjustably carrying said supports, each of the latter consisting of a substantially U-shaped frame supporting said wheels in its forward portion, the closed end of said frame having a longitudinally disposed guiding portion to offset the cut edges of the paper and idlers adapted to press the deflected paper edges against said guiding portion as the said cut edges pass the frame.

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