The invention disclosed herein is concerned with a device for placing cards in aligned position in a card stapler, comprising eccentrically rotating members serving as the vibrating means.

There are devices known for aligning cards of uniform dimension in a staple, wherein a side wall of the staple compartment is arranged for pivotal or swinging motion about a given axis. Such a device usually aligns the cards only with respect to one side or edge thereof, without, however, uniformly affecting all cards, since the cards which are near to the axis are impacted with less force than those which are farther from the axis.

The object of the invention is to provide a card stapler which overcomes this drawback.

Accordingly, the invention is concerned with a device for aligning cards, having uniform dimensions, in one direction thereof, in a staple, comprising one or more eccentrically rotating posts forming respectively limits for a side of the staple, wall means being disposed opposite the respective posts, said wall means forming respectively aligning surfaces and defining the limits for the corresponding sides of the staple. Upon using only one eccentrically rotating post at a side of the staple, the directional force which is to be applied in a direction extending parallel to such side, is effected, by causing the post to exert a sliding motion at the respective staple side, so that the cards are not only pushed in place but can also be shifted in parallel direction. Customary punched cards, for which the invention is primarily intended, have one corner cut off along an angular line, thus forming in the card staple a fifth side plane. Upon disposing an eccentrically rotating post at such fifth side plane, and providing aligning surfaces oppositely thereto, the cards will be aligned along mutually perpendicularly oriented sides.

According to another feature of the invention, there are provided, for the handling of substantially rectangular card with uniform dimensions, two eccentrically rotating posts forming lateral limits for the staple along two sides thereof which extend at right angle to one another. The corresponding arrangement is particularly well adapted for the staple of a card dispensing or card discharging device.

According to a further feature of the invention, the eccentrically rotating posts are respectively provided with cone-shaped tapering extensions. The superlateral lines of the conical parts of these extensions form as it were a funnel for guiding dropping cards into place on the staple.

According to still another feature of the invention, the eccentrically rotating posts are resiliently journaled, there by reducing requirements as to the accuracy of the cards and as to the arrangement of the posts and at the same time increasing the frictional force parallel to the edges of the cards.

Further details of the invention will appear from the description which is rendered below with reference to the accompanying drawing.

The drawing shows a card stapler combined with a card separator.

Numerals 1 indicates cards, numeral 2 the staple, numeral 3 the eccentrically rotating posts, numeral 4 the side walls of the compartment containing the staple, and numeral 5 a pair of rollers forming parts of the card separator. The eccentrically rotating posts 3 are provided with cone-shaped tapering extensions 3a, such extensions acting in a sense to form a funnel for guiding cards dropped onto the staple. Each card dropped onto the staple is by the rotating eccentric posts 3 pushed inwardly in the direction of the arrows 5 and 7. The cards are thereby aligned at the side walls 4 to form the staple 2.

The journals or bearings 9 of the eccentric posts 3 are constructed resiliently, so that no gap can form as a tolerance space between the circumference of the posts and the staple 2.

The rotation of the eccentric posts 3 in the direction of the arrows 13 and 14 produces strong friction with respect to the card staple 2, resulting in forces acting on the card staple, which are oriented in the directions indicated by the arrows 11 and 12, such forces facilitating the alignment of the cards 1. It is accordingly possible to provide an arrangement operating with only one of the eccentric posts 3. This is of advantage, particularly in case of processing cards which are in one direction of different length.

Changes may be made within the scope and spirit of the appended claims which define what is believed to be new and desired to have protected by Letters Patent.

We claim:

A device for aligning cards of uniform dimensions comprising an upwardly open compartment having a side wall and an end wall for receiving cards inserted therein from above, to form a staple in said compartment, a first eccentrically rotating post disposed oppositely to said end wall and spaced therefrom substantially by the length of said cards, and a second eccentrically rotating post disposed oppositely to said side wall and spaced therefrom substantially by the width of said cards, said posts being disposed for rotation about respective axes extending transverse to the cards forming the staple, means for resiliently journaling said posts for blasing the same in a direction toward adjacent card edges whereby said posts exert pressure against the adjoining edges of the staple to be formed, the upper end of each post being provided with conically tapering extension forming funnel-like guide means for guiding cards, inserted from the top thereof, into the device, said first mentioned post having a direction of rotation such that the peripheral portion thereof exerting pressure on the card edges urges the cards toward said side wall, and that of the second mentioned post such that it urges the cards toward said end wall.

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M. HENSON WOOD, JR., Primary Examiner.

RAPHAEL M. LUPO, ROBERT B. REEVES, Examiners.

R. YOST, W. F. McCARTHY, Assistant Examiners.