

June 4, 1963

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SORTING APPARATUS

3,092,255

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2 Sheets-Sheet 1

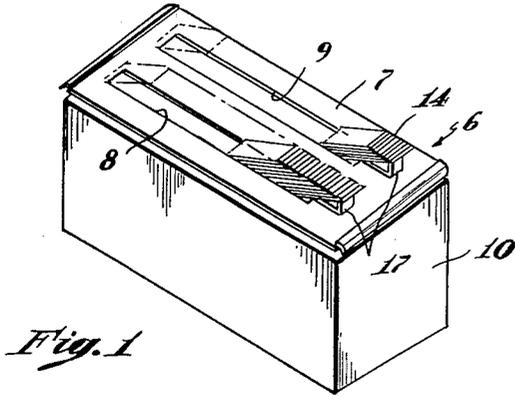


Fig. 1

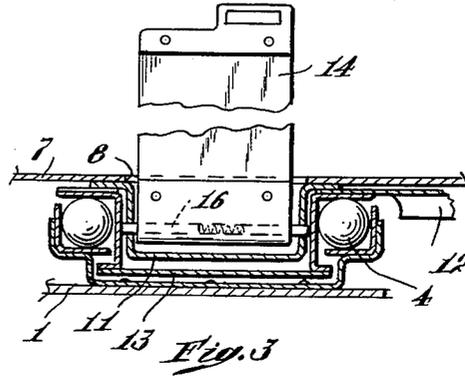


Fig. 3

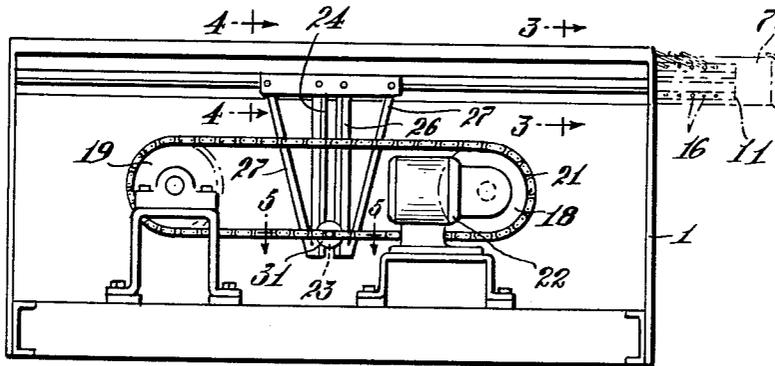


Fig. 2

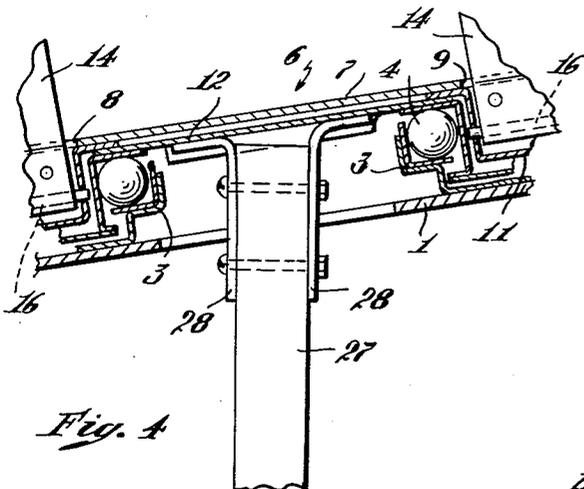


Fig. 4

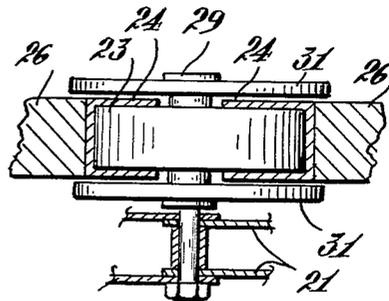


Fig. 5

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2 Sheets-Sheet 2

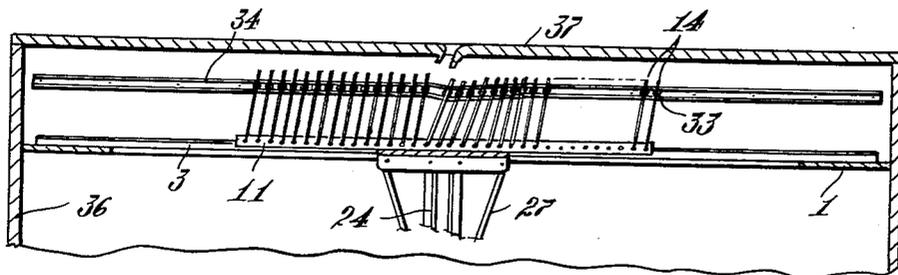


Fig. 6

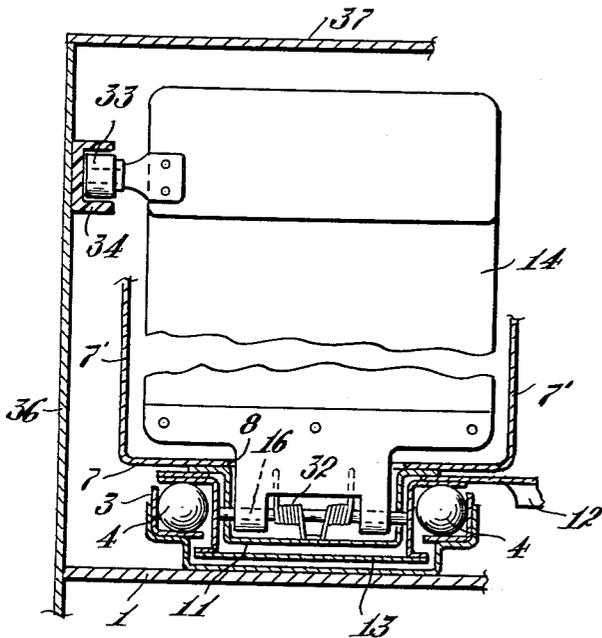


Fig. 7

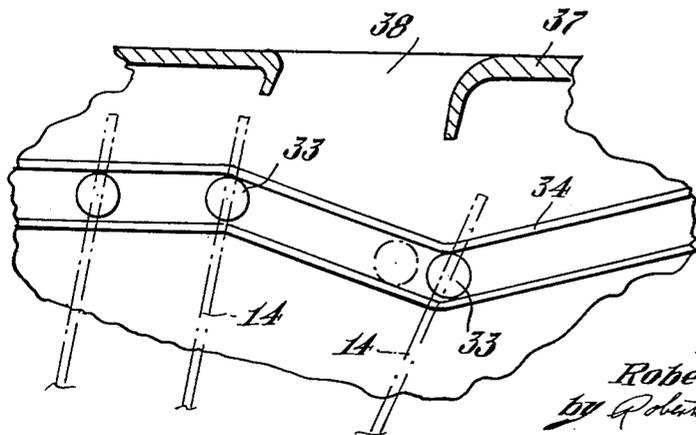


Fig. 8

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3,092,255

SORTING APPARATUS

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2 Claims. (Cl. 211-10)

While the subject matter of this invention may be used for sorting any kind of sheet material it is particularly adapted for sorting letters, checks and other records.

Objects of the invention are to produce a device which is simple and economical in construction, which can be operated with a minimum of effort, with which papers may be sorted quickly and easily and which is durable and reliable in use.

In one aspect of this invention the apparatus comprises a carrier having a series of pockets to receive the material, a guideway to guide the carrier past an operator's station to bring selected pockets to the station and means adjacent the guideway for driving the carrier back and forth. Preferably the driving means comprises a motor having unidirectional motion only and, interconnecting the carrier and motor, means for converting the aforesaid motion into back and forth motion. In the preferred embodiment the apparatus has two wheels disposed in alignment adjacent opposite ends of the guideway respectively, together with a sprocket chain or other endless belt trained over the wheels and means interconnecting the carrier with the belt for moving the carrier back and forth on its guideway in response to continuous movement of the belt around the wheel. The means interconnecting the carrier and belt preferably comprises a cam extending from the carrier substantially parallel to the plane of the belt loop, with a cam follower on one edge of the belt to bear on the aforesaid cam. In the illustration the guideway is mounted on a table and the aforesaid cam depends from the carrier to the belt under the table.

In another aspect the apparatus comprises a carrier movable along a predetermined path, a series of upstanding dividers having their lower ends pivotally mounted on the carrier to swing about axes extending transversely of said path to form therebetween pockets which open at their upper ends, a table top over the pockets, the top having therein a slot extending transversely of said path through which material may be inserted into the pocket beneath the slot, carrier followers mounted on the dividers respectively at one side thereof, and a track extending along said side of the dividers to guide the followers, the track having an offset portion at said slot to cause the divider on one side of the slot to swing away from the divider on the other side of the slot, thereby to open the pocket beneath the slot.

For the purpose of illustration a typical embodiment of the invention is shown in the accompanying drawings in which:

FIG. 1 is an isometric view of one embodiment;

FIG. 2 is a longitudinal vertical section of the same embodiment;

FIG. 3 is a section on line 3-3 of FIG. 2;

FIG. 4 is a section on line 4-4 of FIG. 2;

FIG. 5 is a view on line 5-5 of FIG. 2;

FIG. 6 is a longitudinal vertical section of another embodiment;

FIG. 7 is a vertical transverse section of the section embodiment, like FIG. 4; and

FIG. 8 is an enlarged detail view like FIG. 6.

The particular embodiment of the invention illustrated in FIGS. 1 to 5 comprises a table 10 having a slanted top 1. Mounted on the top 1 of the table are tracks 3 for ball bearings 4 and riding on the bearings is a carrier 6 comprising a top 7 having therein two slots 8

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and 9. Fast to the bottom of the top 7 under each of the slots 8 and 9 is a channel member 11. Bridging the space between the two slots is a crosspiece 12 which is fast to the flanges of the channels 11. Under each of the channels 11 is another channel 13 having its flanges fast to the top 7 and bearing on the balls 4. Thus the top 7 and parts fast thereto may be freely moved back and forth lengthwise of the table.

Mounted in each of the channels 11 is a series of dividers 14 forming therebetween pockets to receive the material to be sorted, the dividers being pivotally mounted in the channels by means of spring pressed pins 16. Mounted on the upper side of the top 7 are stops 17 to limit the swinging movement of the dividers. As shown in FIGS. 1 and 4 the top of the table is preferably sloped toward the operator station at one side of the table to facilitate access to the aforesaid pockets.

Mounted below the table top are two sprocket wheels 18 and 19 over which is trained a sprocket chain 21, one wheel being driven by a motor 22. Mounted on one side of the chain is a cam follower 23 cooperating with cam channels 24 depending from the carriage through the aforesaid slot 2 in the table top. The channels are mounted on the carriage through the medium of uprights 26, braces 27 and angles 28. The cam follower 23 is mounted on one of the pivot pins of the chain through the medium of a bushing 29. Also mounted on the bushing outside the channels 24 are two discs 31 to resist twisting movement of the cam follower when the motor is started or stopped suddenly.

From the foregoing it will be understood that in operation the belt 21 always travels in the same direction. Thus the follower 23 travels around its orbit always in the same direction, thereby moving the carriage back and forth lengthwise of the table. Thus by stopping the motor at the right time any desired pocket may be brought to the operator's station at the side of the table.

The modification shown in FIGS. 6 to 8 is similar to the embodiment shown in FIGS. 1 to 5 and corresponding parts are correspondingly designated. However the modification differs in the following respects.

As shown in FIG. 7 the top 7 of the carrier is turned up at 7' on each side of the series of dividers 14 so that the papers between the dividers cannot slip out of the pockets edgewise. Also coil springs 32 are provided on the pivot pins 16 with their ends bearing on one side of the dividers and their central portions bearing on the bottom 11 of the carrier. Thus the dividers are yieldingly urged toward upright position to counteract the weight of the dividers and the papers leaning thereon.

Fast to the dividers on one side thereof are cam followers 33 which ride in a track 34 mounted on the inside of the casing 36. The top 37 of the casing has a slot 38 over the row of dividers through which papers may be inserted into the pocket disposed beneath the slot.

As shown in FIGS. 6 and 8 the track 34 has an offset portion adjacent the slot 38 to cause the divider on one side of the slot to swing away from the divider on the other side of the slot, thereby to open the pocket beneath the slot.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims.

I claim:

1. For sorting letters, checks and other material, apparatus comprising a carrier movable along a predetermined path, a series of upstanding dividers having their lower ends pivotally mounted on the carrier to swing about axes extending transversely of said path to form therebetween pockets which open at their upper ends, a table top over the pockets, the top having therein a slot extending

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transversely of said path through which material may be inserted into the pocket beneath the slot, carrier followers mounted on the dividers respectively at one side thereof, and a track extending along said side of the dividers to guide the followers, the track having an offset portion at said slot to cause the divider on one side of the slot to swing away from the divider on the other side of the slot, thereby to open the pocket beneath the slot.

2. For sorting letters, checks and other material, apparatus comprising a carrier movable along a predetermined path, a series of upstanding dividers having their lower ends pivotally mounted on the carrier to swing about axes extending transversely of said path to form therebetween pockets which open at their upper ends, a table top over the pockets, the top having therein a slot extending transversely of said path through which ma-

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terial may be inserted into the pocket beneath the slot, carrier followers mounted on the dividers respectively at one side thereof, a track extending along said side of the dividers to guide the followers, the track having an offset portion at said slot to cause the divider on one side of the slot to swing away from the divider on the other side of the slot, thereby to open the pocket beneath the slot, and springs yieldingly urging the dividers toward upright position.

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