J. T. COWLEY.

TABLE FOR MAIL AND THE LIKE.

APPLICATION FILED SEPT. 9, 1912.

1,154,562. Patented Sept. 21, 1915.

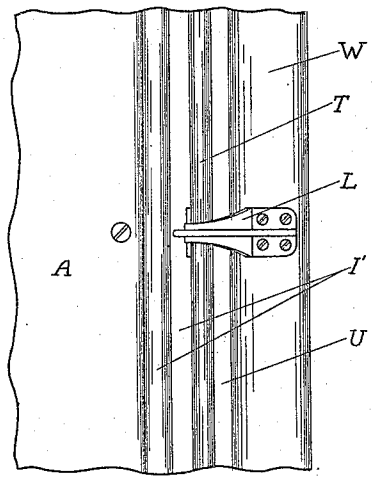



Fig. 5

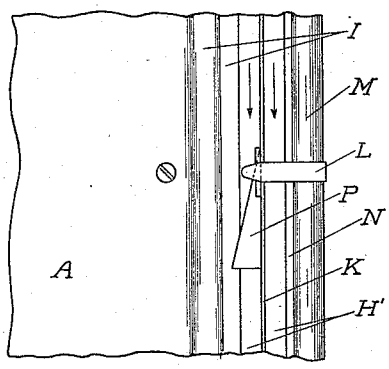



Fig. 2

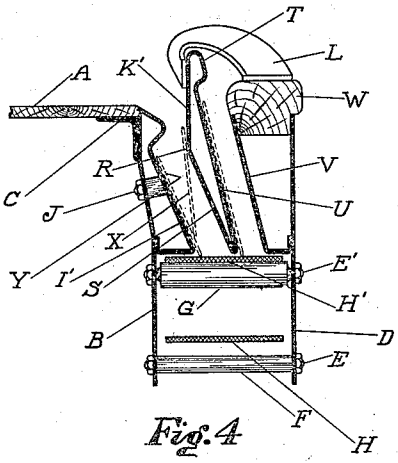



Fig. 4

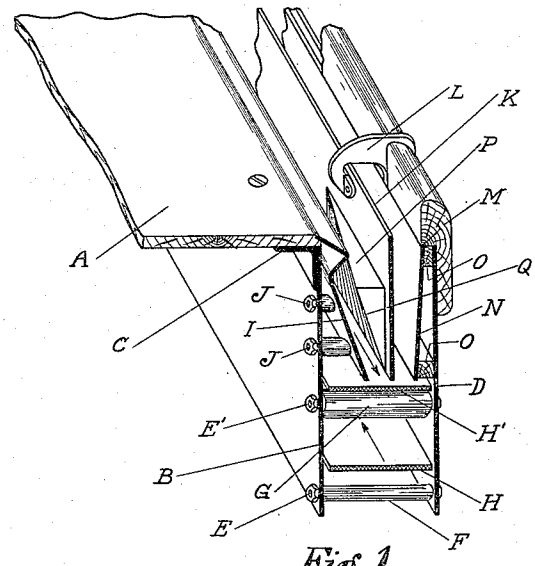



Fig. 1

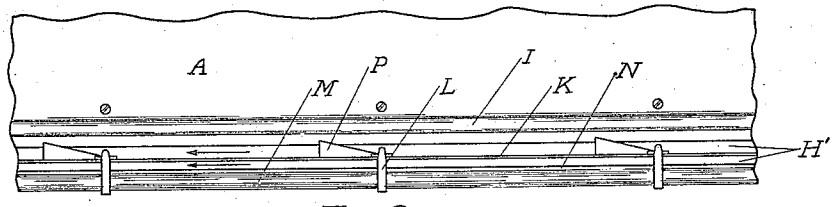



Fig. 3

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## TABLE FOR MAIL AND THE LIKE.

1,154,562. Specification of Letters Patent. Patented Sept. 21, 1915.

Application filed September 9, 1912. Serial No. 719,357.

*To all whom it may concern:*

Be it known that I, JAMES T. COWLEY, of Scituate, in the county of Plymouth and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Tables for Mail and the like, of which the following is a specification.

This invention relates to pick-up or facing tables used in sorting or otherwise handling mail matter and the like and has for one of its objects the provision of an improved construction in devices of this character whereby interference between or with the mail pieces, while in transit to the stacker, may be avoided.

Another object is to obviate clogging of said matter by inducing each piece to promptly assume a substantially determined position with respect to the conveying channel, which position shall be such as to permit of additional matter being subsequently introduced at practically any desired point along the length of said channel except when the latter is temporarily filled at such point, or nearly so.

Still another object of my invention is to provide means for overcoming the tendency for mail pieces, particularly when substantially square or in short envelops. to up-end themselves or rotate around one of their corners upon encountering the impelling or conveying medium disposed at the bottom of the channel.

These, and other objects of my invention, will be hereinafter referred to and the novel elements and combinations of elements whereby they may be attained will be more particularly set forth in the claims appended hereto.

In the accompanying drawings, which form a part hereof, and in which like reference characters designate like parts throughout the several views, I have exemplified two preferred constructions, but I am aware that various changes and modifications may be made therein without departing from the spirit of my invention. I hence desire to be limited only by the scope of said claims.

Referring to the drawings: Figure 1 is a perspective view of a fragment of a facing table; the table and its conveyer being transversely sectioned. Fig. 2 is a plan of said fragment. Fig. 3 is a plan of a more extended fragment of said table, drawn to a somewhat smaller scale. Fig. 4 is a transverse section of a table embodying a modification of said conveyer. Fig. 5 is a plan of the structure shown in Fig. 4.

The stationary portion, or platform A of the table is preferably of the usual width of about five feet, and may be of any length desired. Depending from one edge thereof is a plate B of metal, or the like, which may be secured thereto by an angle iron C. Parallel to plate B is a plate D which, in the form of device shown in Figs. 1, 2 and 3, may be of substantially the same width as plate B. These plates are connected together by bolts E; spacers F being provided upon the latter to hold said plates the proper distance apart. At suitable intervals are provided bolts E′ upon which are mounted rolls G which carry the belt H—H′ which serves as the medium for advancing the mail matter, or the like, longitudinally of the plates B.

A run-way plate, or guide, I, of somewhat peculiar conformation, is fastened to the plate B by means of bolts J, or the like, the latter extending through lugs or bosses which project laterally from the plate I and which serve to hold the latter rigidly in position so that its lower edge substantially just clears the upper side H′ of the belt. This plate I, as best shown in Fig. 1, has a somewhat V-shaped corrugation, or rib, formed therein which extends longitudinally thereof along its upper edge and the said edge of the plate abuts against the edge of the platform A, with the plate, as a whole, somewhat angularly disposed with respect to a vertical plane. The body of the plate I, which is disposed below this V-shaped ledge portion of the same, hence, slopes downwardly at a rather abrupt angle toward the belt, the reason for which will be hereinafter set forth. Between the plate I and the plate D is a partition plate K which, in the form of device shown in Fig. 1, is perpendicular to the plane of the platform A; the partition K being carried by suitable brackets L, the bases of which may be secured in any desired manner to an edging or strip M of wood or other suitable material which is preferably in engagement with the upper edge of the plate D aforesaid. Finally, a substantially vertically

disposed run-way plate or side-board N is fastened to the strip M in such manner as to provide a guide-wall above the belt surface H′ which is in substantial parallelism with the partition K; the plate or wall N being separated from plate D by spacers O. The plates N and K, together with the belt surface H′, form the run-way for large mail pieces, such as envelops of the larger size and the like; while the plate K also co-acts with the ribbed plate I and said belt surface to provide a run-way for the smaller sizes of mail matter.

At intervals along the partition plate, as best shown in Fig. 3, are secured tapered or wedge shaped deflecting blocks P, which taper both downwardly and rearwardly so that the lower edge thereof has substantially no width, while the rear edge, or that first encountered by the advancing pieces of mail is sharp enough to offer no ledge or projection which would impede the progress of the mail matter. In practice, the outer surface, or surface adjacent to the plate I, is somewhat warped but this feature is not absolutely essential. I desire to call attention, however, to the fact that the forward, upper corner of each of these blocks is preferably spaced from the partition plate K, to which said blocks are attached, a distance greater than that between the lower edge of the bent plate I and said partition so that a portion of each deflecting or mail tilting block overhangs the bottom of the inclined plate I. As shown in Fig. 1, the forward edge Q of the block P extends substantially parallel to the body of the plate I, or in other words, this edge has practically the same slope or inclination with respect to the horizontal as does plate I.

The parts above described are designed to operate as follows: The person who is sorting the mail upon the platform A arranges the pieces thereof in the usual manner and as the smaller mail pieces are properly faced they are pushed over the rear edge of the platform, whereupon they slide down the sloping surface provided by the upper side of the V-shaped rib in the plate I, whence they drop into engagement with the surface H′ of the belt and are carried along thereby toward the stacker. Such pieces of mail, however, can go but a very short distance, preferably at most but a few feet, before they encounter one of the deflectors P which gently tilt them over toward the sloping body of the plate I if they have not already been so disposed. By reason of the slope in this plate they continue to repose thereagainst as they are carried along by the belt and hence do not tend to fall back toward the partition K as would frequently be the case were the body of the plate I vertically disposed. It may be here observed also that when the mail pieces are first dropped into the conveying trough or run-way some of them may fall, naturally, toward the plate I, while others will fall toward the partition K; but, as stated, almost immediately after being introduced into the run-way, all such pieces will be tilted or inclined toward the left. This action is advantageous for several reasons. In the first place, owing to the overhanging lip formed by the under side of the V-shaped rib, short envelops, or envelops which are nearly square, do not tend, so readily, to up-end or pivot around on one of their corners, since the said overhanging portion of the plate I will be encountered by the forward upper corner of such an envelop when such action occurs and, by limiting the upward movement thereof, will prevent its being up-ended. Furthermore, even in the case of envelops of smaller dimensions than usual, there will be but little tendency for them to up-end when being placed, or immediately after being placed, in the conveying trough, owing to the fact that the mail pieces already therein contained, by reason of the substantially determined slope which has been given to them, have worked their lower edges over toward the partition and form therewith a V-shaped receptacle one side of which is moving, and when the additional mail piece drops down thereinto, its corner is pinched more or less or, at any rate, it is caused to frictionally engage the mail piece already in the trough, which friction tends to prevent the up-ending action above described.

In Figs. 4 and 5 I have shown another construction which, while similar in many respects to that just considered, differs therefrom in some particulars and in certain cases is to be preferred. Herein, the plate B has been bent slightly to permit a belt of relatively narrow width being used, although it is obvious, of course, that such bending is not essential. The plate I′ is, in this exemplification very similar to that already considered and the same notable slope to the main or lower portion thereof is present. The partition K′ is, in this case, somewhat differently formed than in the preceding, being bent longitudinally thereof, as at R, and the lower portion S of this plate extending in substantially parallelism, if desired, with the body of the plate I′. To provide a similar trough or runway for larger pieces of mail, the partition may be bent around to form a bead or rib T, similar to the corresponding part of the plate I, and thereafter may be bent down at an angle or sloped with respect to the belt surface, as at U. The surface U forms one side wall of the trough for large mail pieces and the opposite wall of the same may be formed by the bent run-way plate or guide V, the upper edge of which may be fastened to a beam W, while the lower edge thereof

may be bent around and bolted to the plate D. The rest of the construction may be substantially the same as in the preceding case. In this form of the device, the mail pieces, immediately after they are introduced into the trough, naturally fall toward the left, as viewed in Fig. 4, so as either to drop directly into engagement with the walls I′ or U, according to which run-way they may have been placed in, or into engagement with mail pieces which already bear against these walls. It should be borne in mind that the slope of said walls in no case should be such as to materially impede the free advance of the mail matter through the troughs. The amount of slope which may be given will depend largely upon the roughness of the belt surface; but the frictional engagement between the latter and the pieces to be carried along thereby must exceed that between said pieces and the wall against which they lean. It will be observed, also, that the bending line R of the partition plate K′ is so disposed with respect to the effective lower edge of the plate I′, that mail pieces, upon being dropped into the run-way corresponding thereto, will invariably be forced to drop into engagement with said plate I′. This marked leaning or tilting of all the mail pieces in a given run-way in a common direction practically assures a proper space for the introduction of additional matter into the trough so long as the latter is not completely filled, or nearly so, at any given point. It also tends to oblige the mail pieces which are already in the trough, to co-act with the table parts to prevent up-ending of additional pieces either in the manner described in connection with the form of device shown in Fig. 1, or by causing the newly introduced pieces, of which one is indicated by dotted lines X in Fig. 4, to encounter a previously introduced piece Y and again, by reason of the frictional engagement between the mail pieces, to thereby prevent the up-ending action.

In both forms of device and especially in that shown in Fig. 4, there is also practically no opportunity for a mail piece of substantially the size intended to be carried by a given trough to up-end, owing to the overhanging lip which encounters the upper corner thereof upon any up-ending tendency occurring; this positive opposition to such upsetting or up-ending action being somewhat more pronounced in the form of device last discussed than in the former, owing to the decided slope which is imparted to the mail piece almost immediately upon its introduction into the trough. The form of device shown in Fig. 4 is also preferable for the reason that no projections whatever are encountered by the advancing mail matter, the mail tilting means being unbroken and continuous along the length of the run-way. This construction also permits unobstructed inspection of the entire length of the trough or run-way from either end thereof; no intervening projections being present.

In order to define the relationship between the plates I′ or I and the respective means for tilting the letters or the like theretoward, I have, in at least one of the appended claims, defined the tilting means as having a surface, such for example as that designated S in Fig. 4 or that shown in Fig. 1 which terminates in the edge Q and corresponds in function to said surface S, which surface, in either case, is sloped up at an angle to a vertical plane, which plane may conveniently be located by specifying that it passes through the edge of the belt which is adjacent the plate (I′ or I), and that this surface at an upper portion thereof, in for example the line Q in Fig. 1, is nearer to this assumed vertical plane than is a lower portion of said surface, located, of course, nearer to said belt.

Having thus described my invention, what I claim is:

1. In a mail handling table, in combination, a platform and mechanism for moving sorted mail pieces in a determined path operatively disposed with respect to said platform, means for normally tilting said mail pieces toward one definite and determined side of said path, and means adapted to co-act with gravity for thereafter maintaining said pieces inclined with respect to the horizontal, said last mentioned means co-acting with said first mentioned means, when the latter is tilting a mail piece, to prevent a flat-wise disposition of said piece even at such time.

2. In a mail handling table, in combination, a platform and mechanism, including a movable part, for advancing mail pieces along a determined path operatively disposed with respect to said platform, said mechanism having a guide for normally tilting said mail pieces toward one definite and determined side of said path, and substantially stationary means adapted to co-act with gravity for immediately thereupon supporting, and maintaining so supported, said mail pieces inclined to said movable part.

3. In a mail handling table, in combination, a platform and mechanism for moving mail pieces in a determined path operatively disposed with respect to said platform, said mechanism including a support against which said mail pieces may lean at an angle to the horizontal, means for inclining said pieces toward said support, and means for substantially preventing up-ending of said mail pieces.

4. In a facing or sorting table, in combination, a platform and mechanism for mov-

ing articles in a determined path operatively disposed with respect to said platform, said mechanism including a plate inclined to the horizontal against which said articles may lean, a belt for conveying said articles and article tilting means overhanging a portion, at least, of said belt, for directing said articles over toward said plate, said tilting means having a surface thereof sloped up at an angle to a vertical plane passing through the edge of the belt which is adjacent said plate, an upper portion of said surface being nearer to said plane than is a lower portion of said surface.

5. In a facing or sorting table, in combination, a platform and mechanism for moving articles in a determined path operatively disposed with respect to said platform, said mechanism including a plate inclined to the horizontal against which said articles may lean, a belt for conveying said articles, and article tilting means overhanging a portion at least of said belt, for directing said articles over toward said plate, said plate having a ledge overhanging a portion of the articles leaning theretoward.

6. In a facing or sorting table, in combination, a platform and mechanism for moving faced articles in a determined path operatively disposed with respect to said platform, said mechanism including a plate inclined to the horizontal against which said articles may lean, a belt for conveying said articles, article tilting means overhanging a portion at least of said belt, for directing said articles over toward said plate, and means for normally preventing the insertion of articles subsequently displaced from said platform into said mechanism, beneath previously displaced and tilted articles.

7. In a facing or sorting table, in combination, a platform and mechanism for moving articles in a determined path operatively disposed with respect to said platform, said mechanism including a support against which said articles normally must lean in an inclined position with respect to the horizontal, when in contact therewith, a conveying member, and tilting means having a laterally and upwardly sloping surface overhanging a portion at least of said member, for directing said articles toward said support.

8. In a facing or sorting table, in combination, a platform and mechanism for moving articles in a determined path operatively disposed with respect to said platform, said mechanism including guiding means generally inclined to the horizontal against parts of which said articles may lean, a belt for conveying said articles, and article tilting means overhanging a portion at least of said belt, for directing said articles over toward said parts of said guiding means, said guiding means also having portions thereof disposed to overhang articles leaning toward said parts.

In testimony whereof I have affixed my signature, in the presence of two witnesses.

JAMES T. COWLEY.

Witnesses:
TERESA M. LEES,
W. O. HILDRETH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."