Nov. 23, 1926. 1,607,995

E. MARCUSON

COMBINED PORTABLE TYPEWRITER CASE AND PAPER STORING AND COLLATING MEANS

Filed March 17, 1922 4 Sheets-Sheet 1

Fig. 1

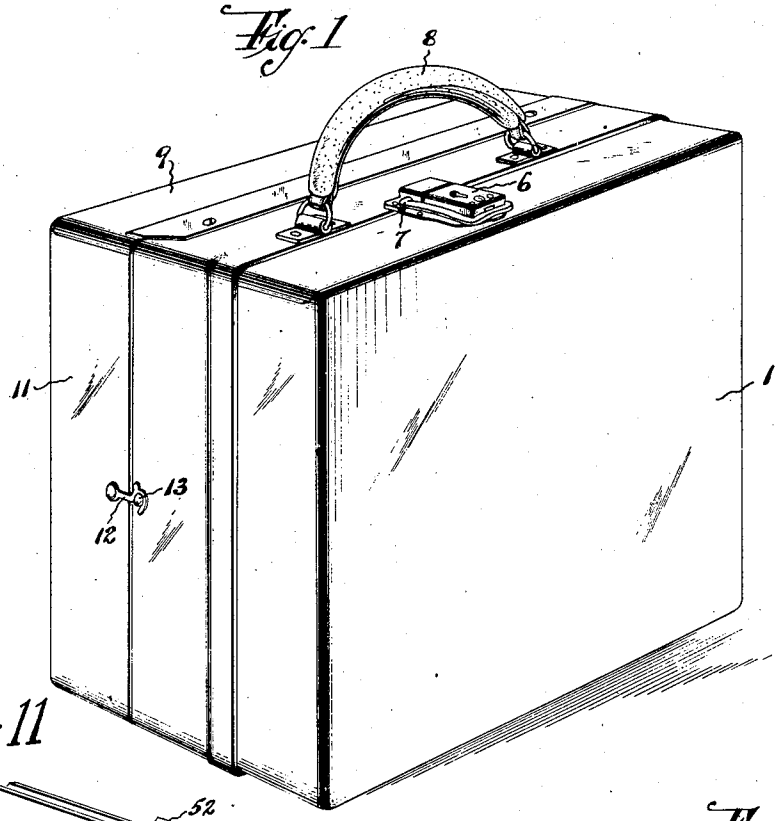


Fig. 11

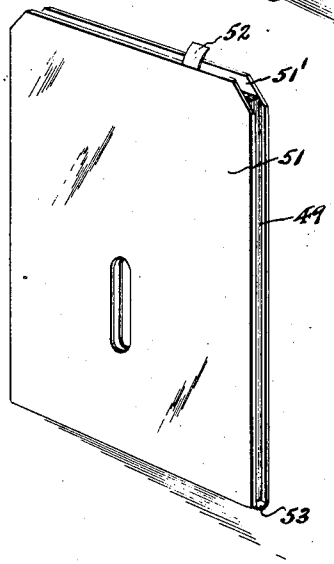


Fig. 9

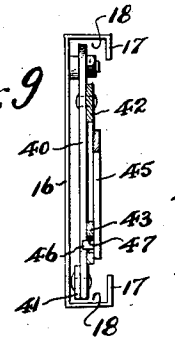
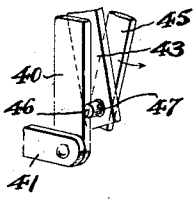


Fig. 10



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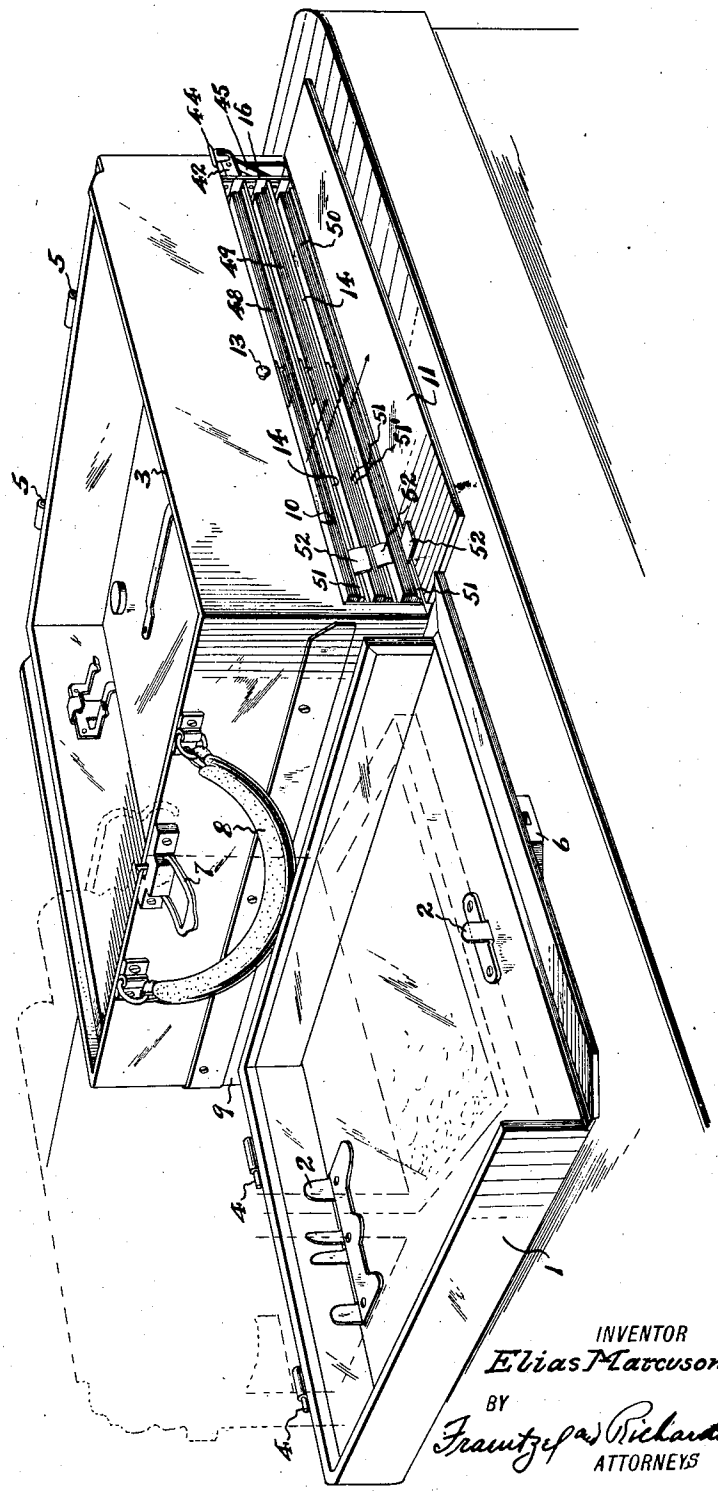
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COMBINED PORTABLE TYPEWRITER CASE AND PAPER STORING AND COLLATING MEANS

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Fig. 2.



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Fig. 3

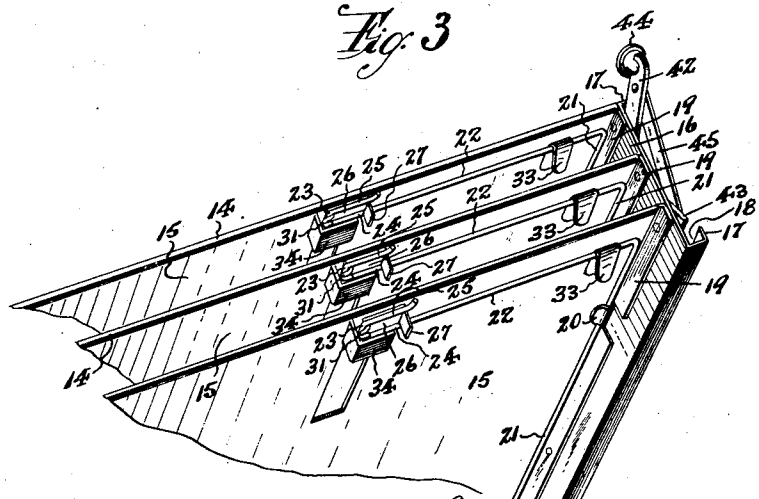


Fig. 5

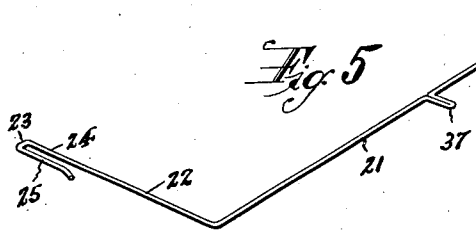
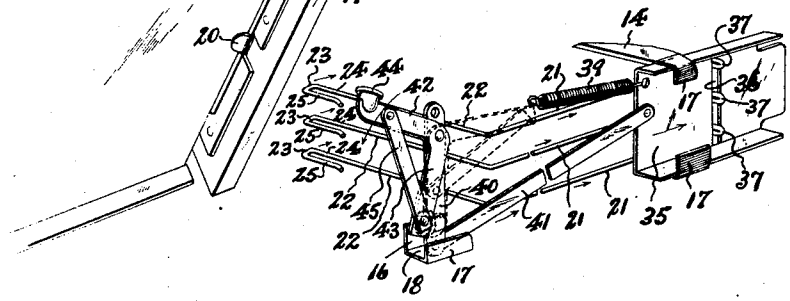


Fig. 4



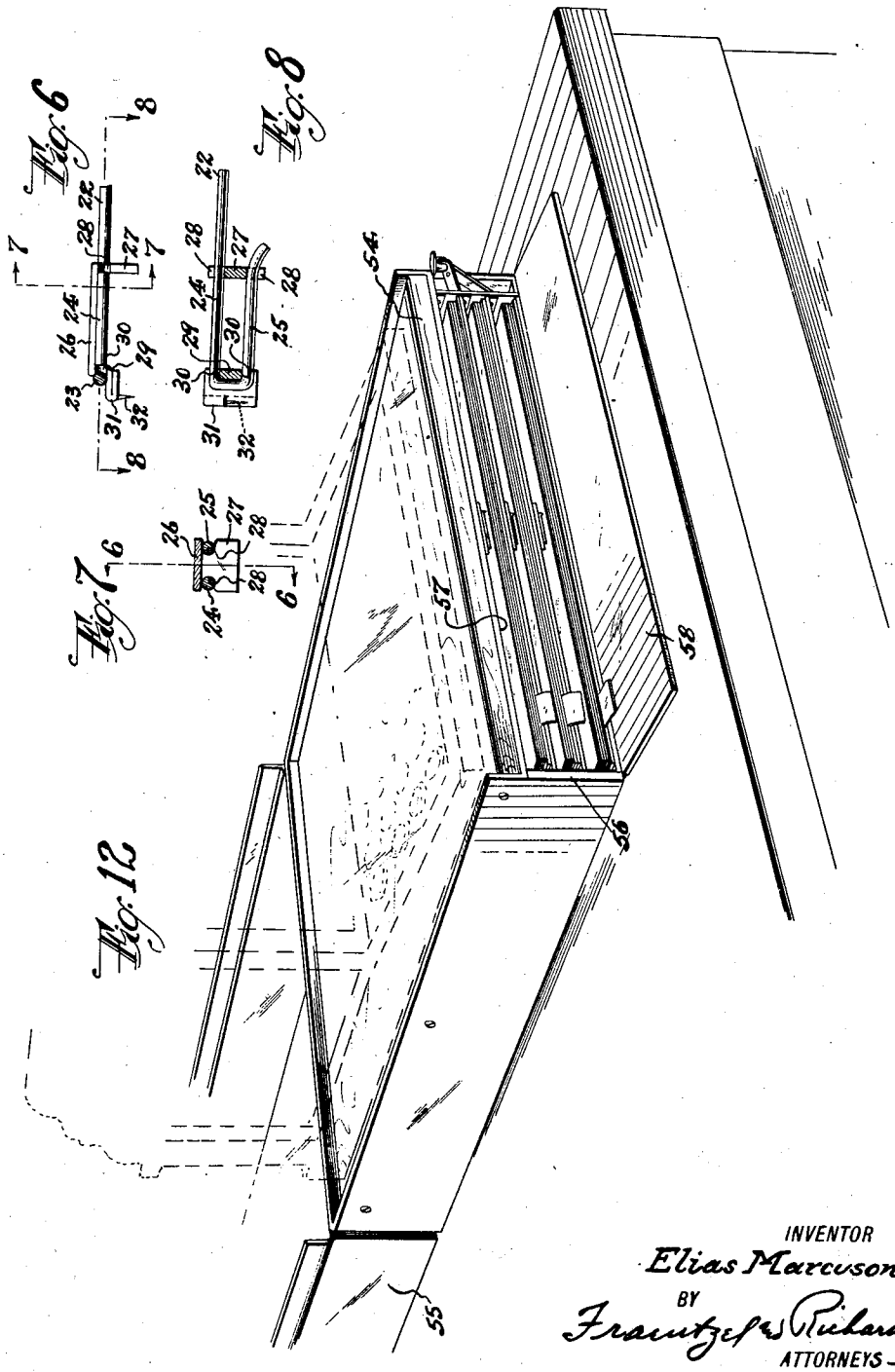
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COMBINED PORTABLE TYPEWRITER CASE AND PAPER STORING AND COLLATING MEANS

Filed March 17, 1922 4 Sheets-Sheet 4



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Patented Nov. 23, 1926. 1,607,995

UNITED STATES PATENT OFFICE.

ELIAS MARCUSON, OF NEW YORK, N. Y.

COMBINED PORTABLE TYPEWRITER CASE AND PAPER STORING AND COLLATING MEANS.

Application filed March 17, 1922. Serial No. 544,578.

This invention relates, generally, to paper storing and collating means; and the invention has for its principal object to provide a novel means for storing typewriter paper and carbon sheets, together with a means for ejecting a plurality of said sheets from the storage compartments in predetermined assembled or collated relation one to another, ready for insertion in the typewriter machine.

Other objects of this invention, not at this time more particularly enumerated, will be clearly understood from the following detailed description of the same.

With the objects of this invention in view, the same consists, primarily, in the novel paper storage and collating means hereinafter more fully set forth; and the invention consists, furthermore, in the novel arrangements and combinations of the various devices and parts, as well as in the details of the construction of the same, all of which will be hereinafter more fully described, and then embodied in the appended claims.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a perspective view of the novel paper storage and collating means made according to and embodying the principles of this invention, the same being shown in connection with a portable typewriter carrying case and in closed condition; Figure 2 is another perspective view of the same showing the carrying case in open condition and the paper storage and collating means open and arranged for use; Figure 3 is a detailed fragmentary perspective view of the paper storage and collating mechanism; Figure 4 is a detail fragmentary perspective of the actuating means for ejector elements of said paper storage and collating mechanism; Figure 5 is a perspective view of an ejector arm; Figure 6 is a detail longitudinal section of a portion of an ejector arm showing a detachable ejector point holder operatively connected therewith, said view being taken on line 6—6 in said Figure 7; Figure 7 is a transverse section of said ejector arm and ejector point holder, taken on line 7—7 in said Figure 6; Figure 8 is a horizontal section of said ejector arm and ejector point holder, taken on line 8—8 in said Figure 6; Figure 9 is a detail vertical cross section showing portions of a collapsible finger piece for operating said actuating means for the ejector mechanism, and Figure 10 is a perspective view of portions of the same; Figure 11 is a perspective view of a carbon paper folder or carrier; and Figure 12 is a perspective view of a modified construction of portable typewriter carrying case with the novel paper storage and collating means attached thereto, which also embodies the general principles of this invention.

Similar characters of reference are employed in all of the hereinabove described views, to indicate corresponding parts.

Referring now to said drawings, the reference character 1 indicates the main body of a carrying case for portable typewriters, within which is supported a typewriter machine, as indicated by the dotted representation of the same shown in Figure 2, said typewriter machine being firmly attached to said main body by the holding brackets or clips 2 (see Figure 2). The reference character 3 indicates the cover section of said carrying case. Preferably said cover section 3 is detachably hinged to said main body 1, and to this end said main body 1 is provided, at its rear side, with the male hinge portions 4, and said cover section 3 is provided, at its rear side with the female hinge portions 5. By a lateral movement of the cover section 3, in a proper direction, after the same is swung to opened position relative to the main body 1, the cover section may be detached from said main body by sliding the female hinge portions 5 off of the male hinge portions 4. Said main body 1 is provided at its front portion or side with a suitable lock means 6, and the cover section 3 is provided at its front portion or side with a suitable hasp means 7, which may be moved into cooperative engagement with said lock means 6, when the cover section 3 occupies its closed relation to the main body 1, thereby securing the former to the latter in such closed relation. A suitable hand grip or carrying handle 8 is provided, preferably in attached relation to the front portion of said cover section 3, for carrying the case thus constructed.

Arranged in the upper portion of said cover section 3 is a paper storage compartment 9 which is provided with an opening or

mouth 10 at one end of said cover section 3. Hinged to said cover section 3, so as to normally occupy a closed relation to the opening or mouth 10 of said paper storage compartment 9, is a door section 11. Said door section is normally maintained in its closed relation to said paper storage compartment by means of suitable fastening devices, such, e. g., as the hook 12 pivotally connected to said door section 11 to engage the stud 13 which projects from the end of said cover section 3.

In making use of the paper storage compartment 9, and the ejector mechanism incorporated therewith, when it is desired to eject paper sheets therefrom in predetermined collated relation ready for insertion in the typewriter machine, the cover section 3 is detached from the main body 1 of the carrying case, and turned upside down, so that the paper storage compartment is at the bottom, in which position the top side of the cover section 3 becomes the bottom side of the paper storage compartment, as shown more particularly in Figure 2 of the drawings. It therefore follows that the arrangement of the paper ejecting and collating mechanism, with which the compartment 9 is equipped, is preferably mounted for service when the cover section occupies such above described detached position relative to said main body 1. While this arrangement of said compartment relative to the cover section is preferable, it is not absolutely essential, and any other convenient arrangement thereof may be employed without departing from the scope and principles of this invention.

Arranged within the interior of said compartment 9 is a frame work comprising a plurality of horizontal shelves 14 which divide the interior of said compartment into a plurality of paper storage spaces 15, disposed one above another. Arranged at one side (preferably the right hand side) of said shelves 14 and the paper storage spaces 15 determined thereby, is a longitudinally extending vertical side plate 16, having a channeled outer side formed by the L-shaped flanges 17 at the top and bottom edges of said side plate, which channeled outer side provides a longitudinal slideway or guideway 18. Said shelves 14 are provided, at the longitudinal edges thereof adjoining said side plate 16, with downwardly turned flanges 19, which are riveted or otherwise suitably secured to the said side plate 16. Mounted within the upper portion of each storage space 15 at one side thereof, and so as to be both longitudinally slidable and rotatable axially in bearing portions 20 formed by lugs struck out of said flanges 19, is a slide-bar 21. Each slide-bar 21 is provided at its outer end with a laterally extending ejector arm 22, of a length equaling approximately about one-half of the width of the storage space 15. The free end of said ejector arm is doubled back upon itself to provide a U-shaped receiving socket member 23, the arms 24 and 25 of which are spaced apart in substantial parallel relation one to the other. Supported by said receiving socket member 23 is an ejector holder, comprising a flat horizontal body 26 having at its rear end a downwardly turned tail-lug 27 provided in its opposite sides with notches 28, which are adapted to respectively engage the respective arms 24 and 25 of said receiving socket member 23. Integrally formed in connection with the forward end of said body 26 is a downwardly turned head-lug 29, which is likewise provided in its opposite sides with notches 30, which are adapted to respectively engage the respective arms 24 and 25 of said receiving socket member 23. The lower end of said head-lug 29 is turned outwardly and then doubled back upon itself to provide a projecting portion or lip 31, in which is provided an oblique cross cut to receive and firmly hold a downwardly projected and forwardly inclined ejector needle point 32. To attach the above described ejector point holder in operative relation to the ejector arm 22, the same is engaged with the receiving socket member 23, so that its head-lug 29 and tail-lug 27 will pass between the arms 24 and 25 with the notches of the former engaging the latter, all as shown more particularly in Figures 6, 7 and 8 of the drawings. It will be clearly evident that the ejector point holder may be readily detached, should the ejector point 22 become damaged, and as readily replaced by another holder with a properly conditioned ejector point. While the construction of ejector point holder above described is very simple, both with respect to its structure, and with respect to the ease with which the same may be manipulated in applying the same to and in removing the same from the ejector arms 22, it will be understood that I do not limit myself to the use of such specific structure, since the ejector point holder may be made in other and various ways.

When in normal position said slide-bars 21 occupy a forwardly disposed location, with the ejector arms 22 lying just within the mouths or open forward ends of the storage spaces 15, and in a normally raised position as sustained or supported by their engagement with downwardly and rearwardly inclined lift cams or tongues 23 which are preferably struck out of the shelf 14 above each storage space 15 at points adjacent to the junctures of said ejector arms with said slide-bars. In such normal positions the ejector points 32 are disposed above a guard lug 34, which is also preferably struck out of the shelf 14 above each

storage space 15 so as to be spaced downwardly from the under side of said shelf. Said guard lugs 34 protect the ejector points 32 against injurious contact with the piles of paper sheets, when the latter are inserted through the open ends of the storage spaces 15 to be stowed within the latter.

The means for producing operative movement of said slide-bars 21 and their ejector arms 22, comprises a slide-plate or member 35 which is longitudinally movable in the slideway or guideway 18 provided in connection with said side plate 16. Said slide plate or member 35 is provided in its body with a vertical slot 36, and formed in connection with each slide bar 21 is a laterally and outwardly projecting coupling lug 37, which projects into and through said slot 36 of the slide plate or member 35 to operatively connect said slide bars with the latter. Said side plate 16 is cut away as at 38 to provide an opening through which said coupling lugs 37 may extend and move in connection with said slide plate or member 35. Anchored to said side plate 16 at a convenient point forward of said slide plate or member 35 is a pull spring 39, the opposite end of which is connected with said slide plate or member 35, whereby the latter will be returned to normal initial position after completion of its operative rearward movement. The means for imparting operative movement to said slide plate or member 35, consists of a vertically depending lever 40, pivoted by its upper end to the side plate 16, adjacent to the forward end of the latter. Pivotally interconnected between the lower free end of said lever 40 and the forward end of said slide plate or member 35 is a link or connecting rod 41, by means of which oscillatory movements of said lever are translated into reciprocatory movements of said slide plate or member 35. The means for actuating said lever 40 comprises a foldable finger piece consisting of a normally forwardly and outwardly projecting arm 42 which is pivotally connected by its inner end with said lever 40, and from which inner end extends a downwardly directed leg-portion 43. The free outer end of said arm 42 is provided with a push-button or similar device 44. Riveted or otherwise rigidly secured to said arm 42 is a leaf spring 45, upon the lower free end of which is fixed an inwardly and laterally projecting push pin or impulsion lug 46, which extends through an opening 47 provided in the lower end of said leg portion 43 so as to project beyond the inner side of the latter. When said finger-piece, thus constructed, occupies an operative or unfolded relation to the mechanism with which it is connected said push pin or impulsion lug 46 bears against the outer edge of the lever 40, toward the lower end of the latter (as shown in Figures 9 and 10 more particularly), and consequently when a downward swinging pressure is applied to said arm 42, it is transmitted through the push pin or impulsion lug 46 to the lever 40 to thereby swing the same inwardly, to in turn transmit through the link 41 a rearward movement to said slide plate or member 35. As will be apparent from an inspection of Figures 2 and 3, when the finger piece is unfolded to occupy its operative relation to the lever 40, the same will project exteriorly from the open end of the paper storage compartment 9, so as to be readily accessible for manipulation by the operator. When, however, it is desired to close the paper storage compartment 9, by lifting the door section 11 to closed relation to the opening or mouth 10 of the paper storage compartment 9, the said finger-piece may be folded into the interior of the compartment 9 by pressing the leaf spring 45 to withdraw the push-pin or impulsion lug 46 from its engaged relation to the forward edge of the lever 40, and thereupon swing the arm 42 with its leg portion 43 upon its pivotal connection with the lever 40 to cause the same to swing into the interior of said compartment, and to occupy the position shown by the dotted lines in Figure 4. By reversing the above movements after the spring 45 is pressed outward to position the push-pin or impulsion lug 46 to pass the lever 40, the finger-piece may be withdrawn from the compartment 9 to again occupy its normal operative relation to the lever 40.

Each storage space 15 is adapted to hold a pile of sheets differing in character of purpose from the sheets in the other storage spaces. The slide bars 21 and the ejector devices carried thereby are adapted, when operated simultaneously, to eject one sheet from each space 15, so that the several ejected sheets are brought together for complete withdrawal in a desired predetermined collated relation. For example, as shown in the drawings, there are three storage spaces; the upper space contains a pile of letter heads or original sheets 48, the middle space contains a pile of carbon sheets 49, and the lower space contains a pile of copy or manifold sheets 50. When the ejector devices are simultaneously operated, one sheet from each space is moved forwardly out of the open end thereof, so that the several sheets are caused to project from their respective spaces whereby the ends thereof may be grasped by the operator to withdraw the sheets entirely so that the same will meet together in the desired collated relation to each other, i. e. with the letter head or original sheet on top, the copy or manifold sheet on the bottom, and the carbon sheet properly interposed between the former sheets ready for insertion into the typewriter machine.

In order to facilitate the handling of the piles of sheets, particularly when inserting the same into the storage spaces 15, it is of advantage to have the sheets supported upon a substantially rigid or non-flexible carrier, such as a stiff card or other tray 51, which may be provided with outwardly projecting flexible tabs or finger-pieces 52 at their forward ends to aid in withdrawing the same from the storage spaces 15, when it is desired so to do. The tray 51 provided for use in connection with the carbon sheets may be provided with a cover portion or flap 51', secured to the rear end of the tray by means of a flexible or hinge-like connection 53. Owing to the thin flimsy character of the carbon sheets, the same would tend to crumple and wrinkle when the compartment is turned up edgewise in the position normally occupied by the same when the carrying case is closed and suspended by its handle. To guard against such occurrence the tray of carbon sheets may be withdrawn from its storage space, and the cover portion or flap 51' may be turned up and over the pile of carbon sheets, to hold the latter flat between said tray and the cover portion or flap (see Figure 11), and then the tray may be placed back in the storage space, after which the compartment 9 may be closed, the cover section restored to closing relation to the main body, so that the case is ready to be carried, and so that when so carried, the carbon sheets are securely held between the tray and cover portion against crumpling or wrinkling.

In making use of the ejector mechanism which cooperates with the storage compartment and the sheet enclosing spaces thereof, the cover section 3 is opened and removed from the main body of the case, and conveniently placed beside the latter, as already above mentioned, and as shown in Figure 2 of the drawings. The compartment 9 is thereupon opened by unlatching the door section 11, and dropping down the same to opened position. The finger piece for actuating the lever 40 is unfolded and moved into operative relation to said lever 40, being at the same time projected exteriorly from the mouth of the compartment 9 ready and accessible for use, as already described. The operator now thrusts downwardly on said fingerpiece, thereby swinging rearwardly said lever 40 and thus transmitting to said slide plate or member 35, through the link 41, a rearward movement. This rearward movement of the slide plate or member 35 is communicated to the slide bars 21, which are thereupon caused to slide rearwardly in their bearing portions 20. As said slide bars 21 move rearwardly, the ejector arms 22 are carried away from the lift cams or tongues 33, and as they slide down the inclined surfaces of the latter, they swing downward (the slide bars 21 rocking in their bearing portions to permit such action), thus dropping the ejector points 32, supported at their free ends respectively into contact with the top sheet in each storage space. A completion of the rearward movement trails the forwardly and downwardly inclined ejector points backward for a short distance. The operator now releases the pressure upon the finger-piece, whereupon the pull spring 39, which has been placed under increased tension by the rearward movement of the slide plate or member 35, is free to exert a forward pull upon the latter, thus reversing the stroke of the slide-bars 21, and thereby causing the ejector arms to move forward. The downwardly and forwardly inclined ejector points 32 now positively engage the surface of the top sheet of each pile, and simultaneously cause said top sheets to be propelled forward, to thereby carry their forward ends out of their respective storage spaces. The above described movements may be repeated several times, until, by the series of step by step or progressive impulses thus imparted to the top sheets, the same are projected for a sufficient distance out of the storage spaces to be readily accessible to the grasp of the operator so that the same may be entirely withdrawn in the desired collated relation one to the other. When the finger-piece is fully released, the slide plate or member 35 returns to its normal initial position, and the slide-bars 21 likewise are returned to their normal positions carrying the ejector arms 22 therewith. When in the course of this forward return movement, the ejector arms 22 reach the lift cams or tongues 33, they are engaged thereby and are caused to ride up the inclined surfaces thereof, thus swinging upwardly the ejector arms to raise the ejector points 32 to their normally lifted positions spaced above the respective piles of sheets. From the above description it will be quite clear that the ejector mechanism provides a very effective and easily manipulated means for simultaneously ejecting from each storage space a single sheet, and that the sheets as thus simutaneously ejected will move together so that the same may be withdrawn in the desired predetermined relation ready for insertion in the typewriter supported by the main body of the carrying case.

It will also be quite apparent, that the paper storage compartment, with the ejector mechanism cooperating therewith, provides a very desirable improvement in the carrying cases for portable typewriters, not only by reason of its paper collating functions, but also for the reason that it assures a convenient and handy means for carrying a supply of paper for use in the typewriter, which is always present in that the paper

cannot be mislaid, and which also operates to provide a complete protection to the papers, in that the same are protected against soiling, wrinkling or other injury.

Referring now to Figure 12 of the drawings, I have shown therein a modified arrangement of the novel combined portable typewriter carrying case and paper storage and collating means. In this construction, the reference character 54 indicates the main body of the carrying case, to which is affixed the typewriter, as indicated by the dotted outline of the latter shown in said Figure 12. The reference character 55 indicates the cover section of the carrying case, which may be hinged or otherwise attached to said main body 54. Arranged in the lower portion of said main body 54 is a paper storage compartment 56, which is provided with an open end or mouth 57. Hinged to the bottom of said compartment 56, so as to normally occupy a closed relation to the opening or mouth 57 thereof, is a door section 58, which may be swung down to disclose the paper storage spaces of the compartment and the ejector mechanism actuating means arranged therewith. Said paper storage compartment 56 is provided with interior paper storing spaces equipped with ejector mechanism, and with actuating means for simultaneously operating the latter, all of the same general construction and functioning in the same manner as already set forth in connection with the first described construction of combined portable typewriter carrying case and paper storage and collating means, and consequently a repetition of the detailed description of such parts will be unnecessary. As indicated by the forms of the present invention, both described above, it will be understood, that the paper storage compartment and the ejector mechanism thereof may be arranged in connection with either the main body or the cover section of the case without departing from the scope and principles of said invention; and in fact other changes, both as to the locational relation of the parts of the case one to another, as well as to the detail construction of the various mechanisms associated therewith, may be made without departing from the scope of this invention. While I have shown and described my novel paper storage and collating means in connection with typewriter carrying cases, it will be understood that I do not limit my use of the same to such connection, since the storage means with the paper ejecting and collating mechanism may also be manufactured as a separate unit independent of typewriter carrying cases or the like. Hence, I do not limit my invention to the exact arrangements and combinations of the devices and parts as described in said specification, nor do I confine myself to the exact details of the construction of said parts as illustrated in the accompanying drawings.

I claim:—

1. A paper storage case having an open end, a plurality of horizontal partitions to subdivide the interior of said case into a plurality of storage spaces, a longitudinal guide means at one side of said case, a slide plate longitudinally reciprocable in said guide means, sheet ejector means movable in each storage space, each ejector means comprising a longitudinally disposed slide-bar mounted on the interior side of the storage space served thereby and capable of both longitudinal and rotative movement, an ejector arm extending laterally into said storage space from the outer end of said slide-bar, an ejector point carried by the free end of said ejector arm, downwardly and rearwardly inclined lift tongues connected with the under side of said partitions to project into the underlying compartment and positioned to engage and upwardly swing said lateral ejector arms to normally raise the ejector points from paper engaging position, means connected with each slide-bar for coupling the same with said slide-plate so as to participate in its reciprocable movements, and means for reciprocating said slide plate to produce simultaneous operative movements of said slide bars and their ejector arms.

2. A paper storage case having an open end, a plurality of horizontal partitions to subdivide the interior of said case into a plurality of storage spaces, a longitudinal guide means at one side of said case, a slide plate longitudinally reciprocable in said guide means, sheet ejector means movable in each storage space, each ejector means comprising a longitudinally disposed slide-bar mounted on the interior side of the storage space served thereby and capable of both longitudinal and rotative movement, an ejector arm extending laterally into said storage space from the outer end of said slide-bar, an ejector point carried by the free end of said ejector arm, downwardly and rearwardly inclined lift tongues connected with the under side of said partitions to project into the underlying compartment and positioned to engage and upwardly swing said lateral ejector arms to normally raise the ejector points from paper engaging position, means connected with each slide-bar for coupling the same with said slide-plate so as to participate in its reciprocable movements, a lever means for rearwardly moving said slide plate to in turn retract said slide bars and their ejector arms whereby the latter are removed from said lift tongues and dropped with their

ejector points engaging the paper to be ejected while at the same time being retracted to the initial position of their operative stroke, and spring means for retracting said slide-bar and thereby both producing the forward ejecting stroke of said ejector arms and at the same time returning said arms to normally raised position by engagement with said lift tongues at the end of their operative strokes.

In testimony that I claim the invention set forth above I have hereunto set my hand this 15th day of March, 1922.

ELIAS MARCUSON.