April 18, 1961 S. M. RADZYNER 2,980,444

MEMORANDUM DEVICE

Filed Jan. 23, 1958

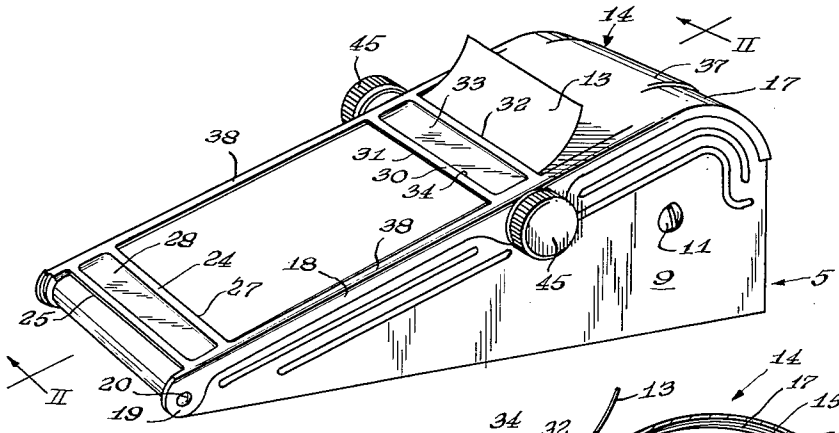


FIG. 1

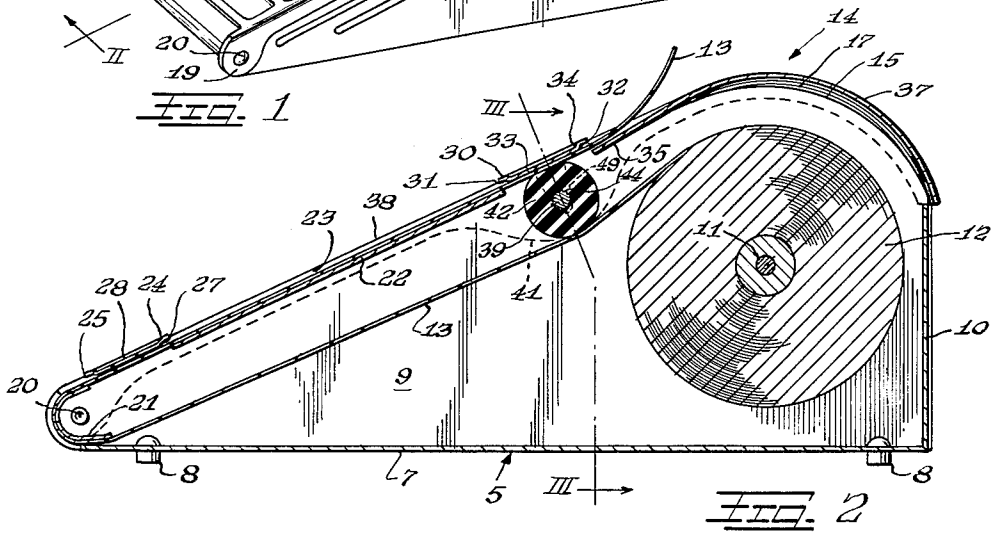


FIG. 2

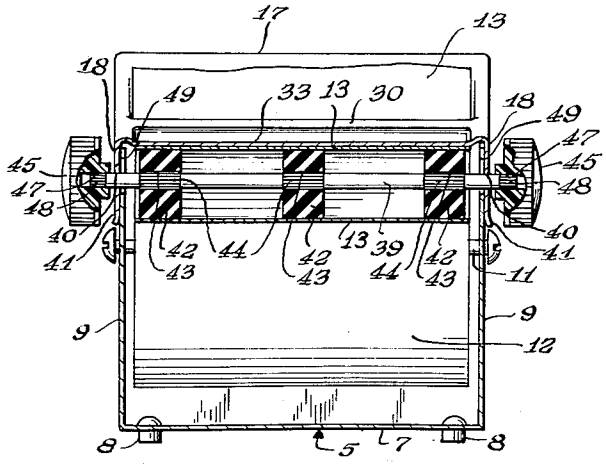


FIG. 3

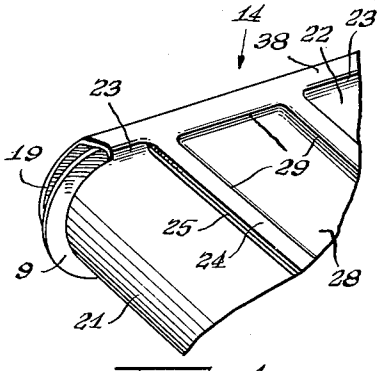


FIG. 4

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MEMORANDUM DEVICE

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1 Claim. (Cl. 281—11)

The present invention relates to improvements in memorandum devices or holders of the kind disclosed in my Patent 2,223,225 dated November 26, 1940, providing for the selective intermittent feeding of memorandum paper from a roll onto and over a writing desk or table.

An important object of the present invention is to improve the operating characteristics of the device.

Another object of the invention is to provide an improved feed mechanism in memorandum devices of the kind contemplated.

A further object of the invention is to provide an improved combination feed roller and writing desk or table structure for memorandum devices of this kind.

Still another object of the invention is to provide a substantially improved combination cover and writing table or desk structure for this kind of memorandum devices.

It is also an object of the invention to effect economies in structure and improvements in function of various related elements in the combination of memorandum devices of the self-contained unit type contemplated herein.

Other objects, features and advantages of the present invention will be readily apparent from the following detailed description of a preferred embodiment thereof taken in conjunction with the accompanying drawing, in which:

Figure 1 is a perspective view of a memorandum device embodying features of the invention;

Figure 2 is a slightly enlarged longitudinal vertical sectional view through the device taken substantially on the line II—II of Figure 1;

Figure 3 is a fragmentary sectional elevational detail view taken substantially on the line III—III of Figure 2; and

Figure 4 is an enlarged fragmentary elevational view looking down at the lower left-hand portion of the device to bring out certain details of structure.

In the preferred embodiment of the invention illustrated, a compact, portable desk type of unit is provided which is self-contained with respect to a generally upwardly opening housing shell 5 readily adapted to be made from stamped sheet metal including a bottom wall 7 carrying suitable preferably rubber legs 8, a pair of upstanding identical, coextensive side walls 9 and an upstanding rear wall 10. Economically, all of the walls of the housing or casing shell are formed integrally from one piece of sheet material, with the rear wall 10 secured permanently to the rear margins of the side walls 9 and thereby holding the rear portions of the side walls against spreading apart or collapsing toward one another.

Between the rear portions of the side walls 9, forwardly from the rear wall 10, the side walls 9 support a removable shaft 11 upon which is rotatably supported a roll 12 of writing paper 13 in strip form.

Within the container chamber provided by the housing shell, the paper roll 12 is normally concealingly enclosed by a combination cover and writing table or desk member 14 which is economically and efficiently constructed entirely from a single piece of sheet material, thin sheet metal being especially suitable for the purpose. To this

end, the cover-desk member 14 comprises a plate dimensioned to lie in supported, container closing supported relation upon the upper edges of the side walls 9 which, to provide a convenient writing angle for the member 14 slope at an oblique angle to the horizontal from a maximum rear portion height to a minimum front end height in a plane convergent to the plane of the bottom wall 7. Throughout their sloping extent, the top edges of the side walls 9 are straight and in their respective uppermost rear portions the top edges are preferably rounded as shown at 15 more or less on a radius from the axis of the paper roll supporting shaft 11. It will be observed that the cover-desk plate 14 conforms in its major extent straight with the straight sloping edges of the side walls 9 and has a curved rear portion 17 complementary to and engageable in closing relation with the rear upper rounded edge portions 15 of the container housing side walls.

Substantial reinforcement for the cover-desk member 14 is provided by similar down turned longitudinal side marginal flanges 18 extending throughout the length of the member and spaced apart at least equal to the distance between the outside faces of the upper margins of the housing side walls 9. In at least the portions of the flanges 18 carried by the curved rear portion 17 of the cover-desk member a frictional sliding fit with the margins of the housing side walls adjoining the rounded edge portions 15 is afforded for at least lightly frictionally holding the cover in closed relation to the housing 5.

At their front end portions, the side flanges 18 are provided with respective journal portions 19 by which the cover-desk member 14 is pivotally connected as by means of journal bearing rivet members 20 to the respective forward minor height extremity portions of the housing side walls 9, as best seen in Figures 1 and 2. Thereby, the cover-desk member 14 is adapted to be swung between open and closed positions relative to the housing member 5 for access into the container chamber for replacement of the paper roll 12.

For receiving and guiding the writing paper strip 13, the cover-desk member 14 is provided on its forward hinged extremity with a curved underturned guide flange 21 about which the web of the paper strip 13 is adapted to be trained slidably as reeled preferably from the top of the paper roll 12 in a reverse bend onto the top of the cover-desk 14. By having the radius of curvature of the guide lip flange 21 substantially smaller than the radius of curvature of the paper roll 12, at least until the paper strip reaches the minimum core radius, and training the paper strip over the guide flange lip 21 in reverse curvature, a substantial straightening effect is had upon the paper strip.

For guiding the web of the writing paper strip 13 rearwardly over the top of the cover-desk 14, and holding the strip down thereon, the cover-desk member is provided with a sunken or depressed writing table or desk area 22 affording a flat writing surface in the straight sloping portion of the member and define at the longitudinal side margins by longitudinal parallel insetting flange guide shoulders 23 between which the paper web strip 13 is maintained against any substantial lateral deviation in its plane from the depressed writing table area 22. As best seen in Figures 2 and 4, the upper rearwardly directed portion of the guide lip flange is located in a plane with the writing table area 22 and the guide shoulders 23 lead rearwardly from such upper extremity of the guide lip flange 21.

For hold-down purposes, a transverse integral hold-down strap-like narrow portion 24 is provided between the forward end of the writing table portion or area 22 and the upper side of the reverse bend guide lip flange 21, with the front and rear margins of the hold-down strap 24 disposed in substantially the normal, undepressed

plane of the cover-desk plate 14. This provides a forwardly opening slot 25 through which the paper strip is threaded under the hold-down strip 24 to emerge through a rearwardly opening slot 27 onto the table area 22. For reinforcement and to hold the paper strip down reasonably close to the supporting surface of the table area 22, the hold-down strip 24 is provided within its margins with a debossed pad area 28 affording at juncture with the marginal areas of the strip 24, reinforcing bends 29.

At the rear extremity of the writing table area 22 a second hold-down transverse strip 30 integral with the cover-desk member 14 in one piece therewith and of similar structure and function as the forward hold-down strip 24, is provided. Along its forward edge, the hold-down strip 30 provides an entry slot 31 through which the paper strip 13 is threaded to emerge through a rear exit slot 32 along the rear edge of the strip 30. Within its margins, the hold-down strip 30 is provided with a depressed hold-down area 33 affording at juncture with the margins of the hold-down strip 30, reinforcing rib-like bends 34. It will be observed in Figures 1 and 2 that rearwardly beyond the exit slot 32, the cover-desk 14 is depressed to provide a ramp 35 leading to and merging with the rounded rear portion 17 of the cover-desk member which is provided in its crown portion with a central generally longitudinally extending reinforcing embossment 37.

It will be appreciated that the structure of the cover-desk member 14 as described affords a one-piece construction which is substantially rigid and thus quite durable and resistant to bending deformations. Especially satisfactory is the depressed writing table area 22 which affords a writing base that is adequately stiff to resist writing pressures thereagainst, being thoroughly reinforced along its longitudinal margins by the rib-like juncture with the reinforcing side flanges 18 as afforded by the insetting shoulder bends 23 so that there are actually provided longitudinally along the sides of the writing table area 22 reinforcing ribs 38.

Paper strip feed means are carried by the cover-desk member 14. To this end, a rotary shaft 39 is journalled through respective aligned bearing holes 40 in depending respective enlargements 41 of those portions of the respective side flanges 18 aligned with the rear hold-down strip 30. Carried by the shaft 39 are soft rubber feed rollers 42. These rollers are made from natural or synthetic rubber of a soft durometer and the material is possessed of a high coefficient of friction. As best seen in Figure 3, there are three of the rollers 42, each only a small fraction as wide as the paper strip 13, and this arrangement of three rollers has been found to be especially suitable for the present purpose. Two of the rollers 42 are located for feed engagement with respective opposite marginal portions of the paper strip 13 and the third of the rollers 42 is located to engage the longitudinal center portion of the paper strip. The radius of the rollers is predetermined to be slightly greater than the spacing between the axis of the shaft 39 and the underside of the depressed area 33 of the hold-down strip 30. The shaft 39, of course, is disposed on an axis normal to the path of movement of the paper strip 13. Through this arrangement, the paper strip 13 is frictionally engaged and pressed by the rollers 42 against the undersurface of the depressed area 33 with sufficient pressure to resist longitudinal movement of the paper strip 13 except as impelled by turning of the rollers 42 with the shaft 39. It has been found that with this arrangement of the feed rollers 42, even though the paper strip 13 may be initially fed into the nip of the rollers somewhat askew, in a few turns of the rollers 42 feeding the web rearwardly, straightening of the strip in its longitudinal feed path occurs.

Quite positive corotation of the rollers 42 with the shaft 39 is attained by having the rollers in a preformed condition assembled upon the shaft 39 by relative axial assembly of the shaft through respective central shaft bores 43 in the respective rollers dimensioned for tensioned gripping fit about the shaft, that is the shaft receiving bores 43 of the respective rollers are slightly undersized in diameter with respect to the outside diameter of the shaft.

Not only indexing for location of the respective rollers 42, but also corotational interlocking is accomplished by having the roller-carrying portions of the shaft 39 provided at respective longitudinally spaced predetermined locations therealong with longitudinally elongated closely circumferentially spaced interlock teeth 44 in the form of serration-like flutes or knurls which project beyond the normal diameter of the shaft and are interlockingly gripped by yielding of the material within the respective roller bores 43 and tensioned displacement of material into the valleys between the interlock teeth. An effective corotational interlock of the rollers 42 on the shaft 39 is thus attained without need for any adhesive or other binding or bonding medium. Stretching of the elastic material of the rollers 42 enables forceable relative axial assembly of the rollers 42 onto the shaft 39.

Turning of the shaft 39 is accomplished through the medium of respective knobs 45 attached to the respective opposite ends of the shaft, such ends projecting laterally beyond the journal ears 41. In the present instance, the knobs 45 are shown as made of a synthetic plastic material and provided with respective shaft sockets 47 provided with longitudinal interlock knurls 47 engageable with positive press fit corotational interlock engagement with complementary knurls 48 on the shaft ends.

In order to clear the outer end portions of the shaft 39, the housing side walls 9 are provided with upwardly opening clearance notches 49.

In the use of the memorandum device of the present invention, the cover-desk member 14 is swung open and the roll of paper 12 is inserted into the container chamber. The free end of the paper strip 13 is then threaded under the flange lip 21 and the cover-desk member 14 closed down. After the free end of the paper strip 13 has been threaded under the hold-down strip 24 and over the writing table area 22, it is inserted into the entry slot 31 under the hold-down strip 30 into the nip of the rollers 42 which, on being turned by manipulation of the shaft 39 through either of the knobs 45, advance the paper strip and project the free end thereof through the exit slot 32. After the portion of the paper strip 13 exposed upon the writing table area 22 has been used, the strip is advanced to project the used length of the paper strip beyond the rear edge of the hold-down strip 30 which rear edge serves as a tear-off guide against which the projecting portion of the paper strip is tearingly pulled manually for severing it from the strip web.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

In a memorandum device including a housing shell provided with upstanding parallel side walls having the upper edges thereof sloping from a maximum rear portion height to a minimum forward portion height and defining between the maximum portion height an upwardly opening chamber space for accommodating a roll of writing paper in strip form, a one-piece combination cover and desk member hingedly connected in a forward portion thereof to the forward ends of said side walls and constructed and arranged to lie in closing relation to said chamber upon said side wall upper edges and being swingable into open position for access to said roll, said cover-desk member having on the forward end thereof an underturned rounded paper straightening lip flange over which the paper strip is trained onto the upper side

of the cover-desk member and the cover-desk member rearwardly from said lip flange being provided with a depressed flat writing table area defined along its longitudinal sides by longitudinal guide shoulders, said writing table area having adjacent to said lip flange a hold-down strip severed therefrom and at a higher elevation than the plane of the table area, said table area having adjacent to the rear end thereof a second hold-down strip severed therefrom and at a higher elevation and extending integrally between said shoulders, both of said hold-down strips providing respective entry and exit slots through which the paper strip is threaded onto and over said writing table area, each of said hold-down strips having within the margins thereof depressed smooth hold-down area portions engageable with the upper side of the paper strip to hold it against the writing table area, each of said hold-down strips having front and rear margins disposed in substantially the normal undepressed plane of the cover-desk member and above respectively the associated entry and exit slots, and feed roller means mounted under the second of said hold-down strips and comprising a rotary shaft, having thereon a plurality of soft resilient rollers of high coefficient of friction pressing in paper feed relation toward the underside of the

depressed hold-down area of said second hold-down strip for feedingly advancing the paper strip across said writing table area by withdrawing the strip from the roll in said chamber space and over said lip flange and under said hold-down strip adjacent the lip flange and thence over the writing table area and under said second hold-down strip to be ejected through the rear slot defined by said second hold-down strip, said shaft having knurling thereon engaging inner peripheries on said rollers and thereby holding the rollers corotative with the shaft.

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