

Jan. 15, 1957

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2,777,690

ADJUSTABLE PACK HOLDER

Filed Nov. 10, 1950

3 Sheets-Sheet 1

Fig. 1

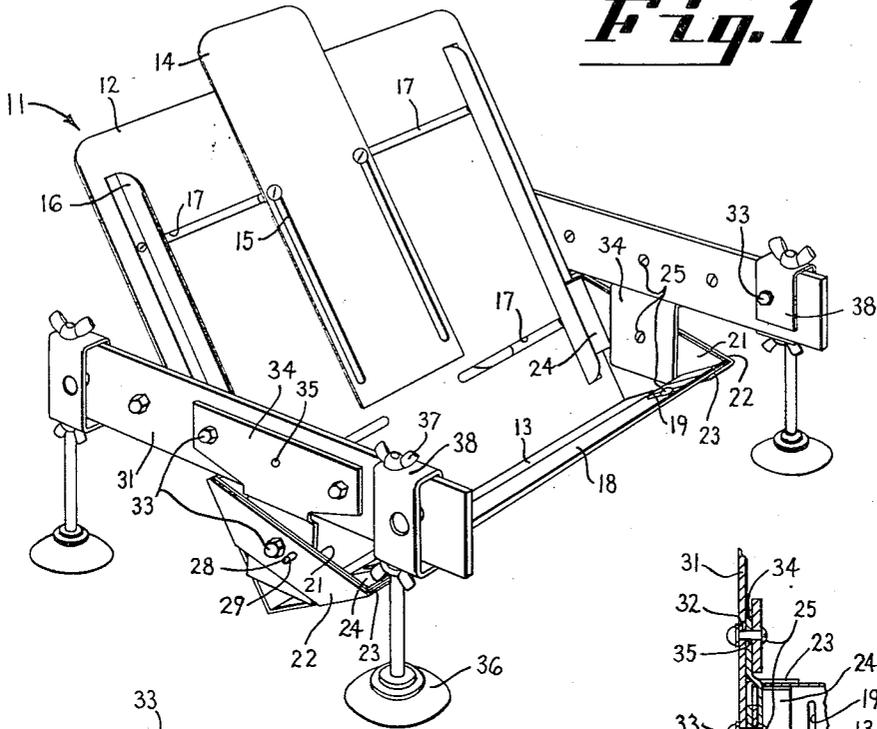
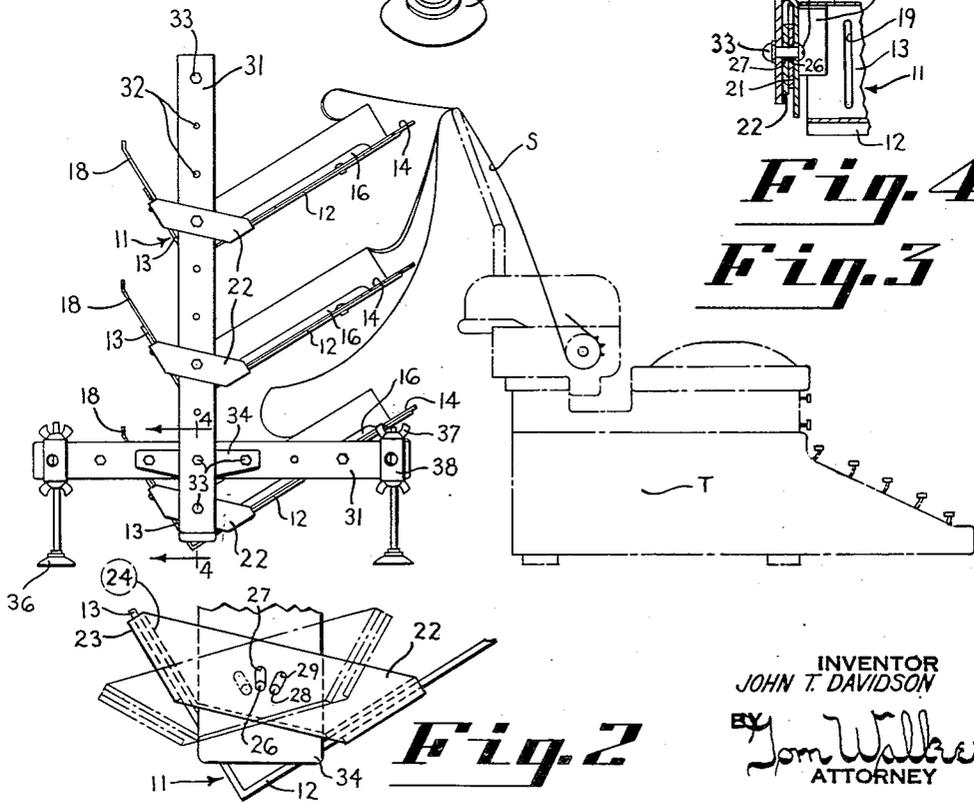


Fig. 4

Fig. 3



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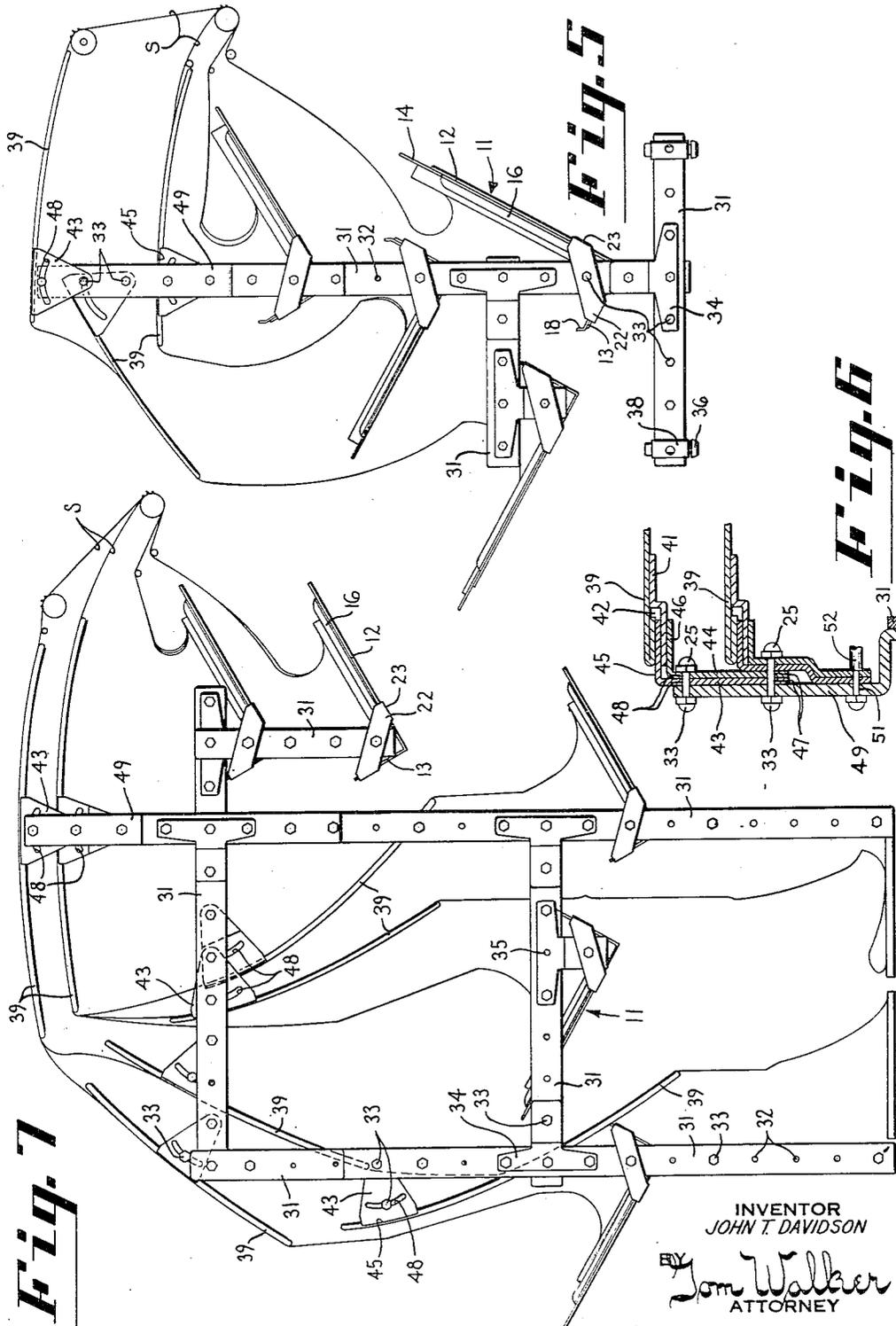
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3 Sheets-Sheet 2



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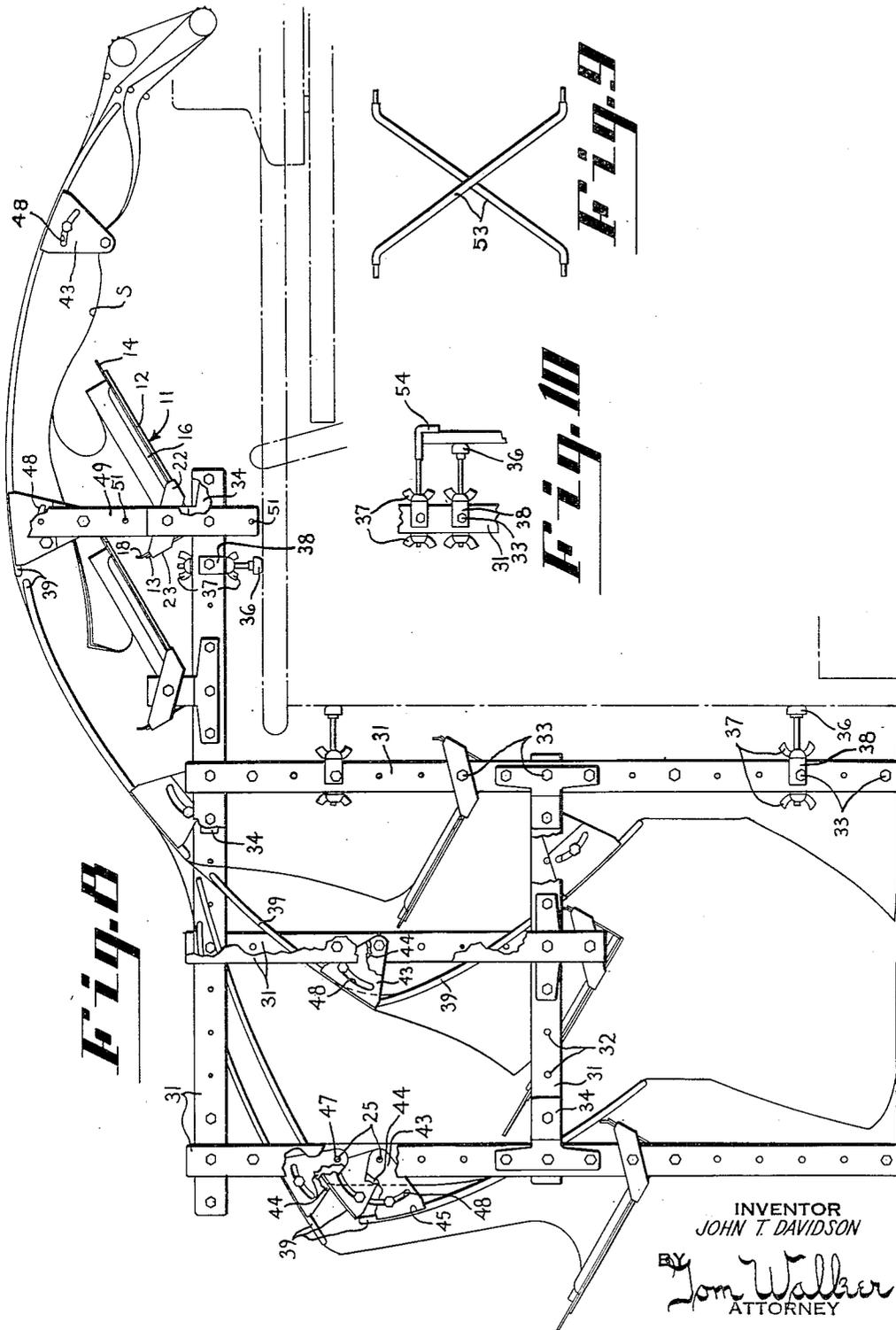
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3 Sheets-Sheet 3



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ADJUSTABLE PACK HOLDER

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Application November 10, 1950, Serial No. 195,120

1 Claim. (Cl. 271—2.1)

This invention relates to pack holders used in conjunction with recording apparatus to supply to and to receive from such apparatus an assembly of superposed continuous record strips, and more particularly to an adjustable pack holder.

In certain types of business machine work the continuous record strips consist of detachable series connected forms, the forms being separated by transverse weakened lines. For convenience of handling, the strip is folded on such transverse lines and becomes a pack from which the strip is fed to the business machine. Having been acted upon by the machine, the forms will in some instances be detached along the weakened lines and in other instances will be fed from the machine and refolded in pack form.

This basic problem of pack storage, supply and refold is complicated by the fact that the record strip ordinarily comprises multiple superposed copies, including original, copy strips and interleaved carbon strips. All these strips, in superposed relation, are combined to make up the strip unit or assembly acted upon in the machine which may embody pin wheel devices engageable with marginal perforations in the strip to compel accurate registration of each set of forms.

Depending upon the objectives and requirements of the work being done, the strip handling problems may be more or less complicated. Thus, it might be necessary to supply only one tray to hold a pre-combined and folded strip to be fed to the machine, and a second tray into which the strip is automatically refolded as it leaves the machine. If, however, the component parts of the strip are in individual packs, then separate trays must be provided for each pack with the trays being suitably arranged so that the strip elements are brought into superposed, registering relation as they enter the machine. Also, if it is desired to separate the strip after it leaves the machine and to refold the component parts still other trays and guides, suitably arranged, must be provided.

It has heretofore been the practice to design and build a pack holder apparatus to meet the requirements of each particular user. Universal or standard constructions have not been possible since it is seldom that two installations will be identical either as to the work to be performed or as to the equipment with which the pack holder is to be used. Pack holding devices, therefore, are relatively expensive since they must be custom built. Further, the strip handling problems of the individual user will not always be the same. If, however, he wishes to vary his mode of supply, separation and refold to achieve different system results he must substitute an entirely new, suitably designed, pack holder.

Thus, the object of the present invention is to simplify the construction as well as the means and mode of operation of pack holding equipment, whereby such apparatus may not only be economically manufactured, but will be more efficient in use, adaptable to a wide variety of applications under varying conditions of use,

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having relatively few parts and being unlikely to get out of repair.

A further object of this invention is to obviate excessive cost, delay and other disadvantages in the change-over from one pack holder to another.

Another object of the invention is to provide more flexible and practicable equipment for the supplying, separating and refolding of continuous record strips than has been known heretofore.

A further object of the invention is to supply pack holding equipment which may be altered quickly and without the exercise of special skill to suit the requirements of any system of operation.

Still another object of the invention is to provide for the construction, and reconstruction, of a pack holder structure in an infinite number of forms, utilizing relatively few parts of interchangeable and adjustable character.

A further object of the invention is to provide an adjustable pack holder possessing the advantageous structural features, the inherent meritorious characteristics and mode of operation herein mentioned.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention intended to be protected by Letters Patent consists of the features of construction, the parts and combinations thereof, and the mode of operation, as hereinafter described or illustrated in the accompanying drawings, or their equivalents.

In carrying out the above objects there has been evolved a new means for fabricating pack holding, refolding and separating equipment, the equipment being manufactured for sale and shipment as a "knock-down" kit and comprising a greater or lesser number of standard parts capable of assembly in various ways at the actual scene of use. The kit supplied will ordinarily comprise parts for a specific installation. Should the requirements change, however, the basic structure may be easily and quickly revised. Additional parts, if needed, can be requisitioned and supplied from stock. All parts are adaptable and flexible in their use so that they may be variously and detachably interconnected simply by means of screws and nuts. Anyone can assemble, disassemble and reassemble the equipment, the only tools required being a screw driver and a wrench.

Referring to the accompanying drawings, wherein is found the preferred but obviously not necessarily the only form of embodiment of the invention,

Fig. 1 is a perspective view of a table model pack holder;

Fig. 2 is a portion of the pack holder equipment illustrating a feature of adjustability;

Fig. 3 is a side view of the basic pack holder of Fig. 1, modified to provide multiple pack holders for use with typewriters;

Fig. 4 is a sectional view taken on lines 4—4 of Fig. 3;

Fig. 5 is a side view of a floor model built up from that shown in Fig. 1 and Fig. 3 to provide refolding means for a table or desk mounted recording machine;

Fig. 6 is a cross sectional view of the continuous strip carrying means and the adjustable mounting therefor;

Fig. 7 is a side view of a structure fabricated from the interchangeable parts to provide a floor model for pack holding, refolding, and carbon separation;

Fig. 8 is a side view of an application similar to that of Fig. 7 but fabricated for use with a center well desk;

Fig. 9 is a fragmentary view of brace means; and

Fig. 10 is a fragmentary view of a support for the pack holder.

Like parts are indicated by similar characters of reference throughout the several views.

Referring to the drawings, the object of the pack holding apparatus is to properly dispose one or more

trays 11 to hold or to receive portions of a multi-copy continuous record strip S fed to and from a business machine, as the typewriter T shown in Fig. 3. Each tray 11 is constructed with a relatively long back portion 12, and, at right angles thereto, a foot portion 13. To extend the length of the back portion 12, an extension member 14 is slidably mounted thereon by pin and slot connections 15. For accurate aligning of the form pack in a lateral sense, guide members 16 are mounted on the back portion 12 by pin and slot connections 17 for relative adjustment in a transverse sense. The length of foot portion 13 may be increased by pulling out an extension 18 mounted thereon by pin and slot connections 19.

The tray 11 is accordingly constructed and arranged to receive a continuous record strip, folded in pack form, and is adjustable in various ways to accommodate strips of varying form lengths and widths as well as packs of varying height.

The tray 11 is directly engaged and supported by clamp devices each made up of an inner and outer bracket 21 and 22. With particular reference to Figs. 1, 2 and 4 the brackets 21 and 22 are similarly constructed, having oppositely disposed turned over ends 23 and 24, with the inner bracket 21 embraced by or received in the bracket 22. As so arranged, in conjunction with a tray 11, a pair of brackets 21 and 22 extends across the right angle corner defined at the junction of back portion 12 and foot portion 13, with the corresponding side edges of such portions being received between the turned over ends 23 and 24 of the brackets. It will be understood that one clamping device including a pair of brackets 21 and 22 will ordinarily be provided on each side of a tray 11.

The brackets 21 and 22 of each pair are held in clamping engagement with the tray by a screw 25 passed through registering openings 26 and 27 in the respective brackets 21 and 22, the opening 27 being formed as a slot in order that bracket 22 may be adjusted relatively to the bracket 21 to compensate for irregularities in the formed tray 11, variation of metal thickness and the like.

In the brackets 21 and 22 alongside the registering openings 26 and 27, and inclined with respect thereto, is a second pair of openings 28 and 29 having the same formation as the first pair. The set of openings 26 and 27 and the set of openings 28 and 29 are used alternatively, in accordance with the desired position of angularity it is desired to achieve in the tray 11. Additional sets of similar mounting holes may be provided in the brackets 21 and 22 but two will ordinarily suffice, particularly when it is considered that by reversing the tray, as suggested in Fig. 2, two additional positions for the tray may be had, giving four in all.

The clamping devices are supported, either directly or indirectly, by frame members or stanchions 31, these members being cut or formed in varying lengths and having a longitudinal series of regularly spaced openings 32. In the direct installation of a clamping device upon a stanchion 31, a round head screw 25 is passed through a selected opening 32 in the stanchion 31 and then caused to project through a set of openings 26 and 27 or 28 and 29 in the clamping device, following which an acorn nut 33 is turned down upon the projecting end of the screw into clamping engagement with the outer bracket 22.

In the indirect installation of the clamping devices, a T-shaped mounting member 34 is used, formed in both portions thereof with openings 35 corresponding in size and spacing to the openings 32. In this instance, therefore, one portion of the T-member 34 is fastened to a stanchion 31 while the other projects at right angles to the stanchion and mounts a clamping device and tray 11, screws 25 and acorn nuts 33 being used to accomplish such installation, the same as in the previously described instance.

Also through use of the T-members 34, and by direct

connection to one another, the stanchions 31 may be variably interconnected to form a supporting framework for the trays. To locate such framework with respect to a desk or the like, and to protect the desk, there may be used cushioned feet 36 detachably connected, as by wing nuts 37, to C-clamps 38 fastened by the screws 25 and nuts 33 to selected locations on the stanchions 31 (see Fig. 10).

In some instances, as to assist in separating the strip into its component carbon and copy elements, strip guiding and supporting members in the form of chutes 39 may be provided. The chutes 39 are constructed as thin, slightly arcuate plates and are supplied in several lengths. As shown in Fig. 6, each chute is a fabricated element having attached to its underside, at each side edge, a lamination 41 longitudinally offset to define a marginal recess 42. In the installation of the chutes 39, a clamping device is associated with each side edge of the chute, such device comprising triangular brackets 43 and 44. Outer bracket 43 has a turned over flange 45 to be received in the recess 42 and inner bracket 44 has a similar flange 46 to engage the underside of the lamination 41. Opposite their flanged ends the brackets 43 and 44 have mounting holes 47 (Fig. 6) and intermediate their ends the brackets are formed with arcuate slots 48. Arranged with their holes 47 and slots 48 in registry, the brackets assume the positions shown in Fig. 6, with the flanges 45 and 46 thereof embracing the offset portion of lamination 41. To compensate for manufacturing and fabricating irregularities, the mounting hole 47 and slot 48 in the bracket 44 are made oversize with respect to the corresponding holes in the bracket 43. Thus, the brackets 43 and 44 are relatively adjustable for proper clamping engagement with the chute 39.

The mounting of the brackets 43 and 45 is accomplished through the screws 25 and acorn nuts 33, and they may be supported either directly by the stanchions 31 or by stanchion extensions 49 which are offset to accommodate chutes 39 of greater width, these being used adjacent the typewriter where lateral motions of the strip, resulting from lateral movements of the typewriter carriage, are manifested. The extension 49 has openings 51 corresponding in size and spacing to the openings 32 in the stanchions 31. In installing the brackets 43 and 44 thereon, a screw 25 is passed through an opening 51 and through the bracket holes 47. When the brackets have been adjusted about the pivot so provided to the desired position of angularity, an acorn nut 33 is turned down upon the projecting end of the screw. The next adjacent opening 51 in extension 49 registers with bracket slots 48 and a screw and nut connection similarly is made through this opening and these slots, the acorn nut being tightened down after the brackets have been angularly adjusted. It will be understood that the slots 48 provide for a two-point attachment of the brackets 43 and 44 to the extension 49 while at the same time permitting relative angular adjustment of the brackets so that the chutes may be made to assume a variety of inclined positions.

The brackets 43 and 44 are attachable in similar manner directly to the stanchions 31. In either instance, the desired arrangement of chutes 39 may be such as to require use of successive installation holes 32 or 51. In this event, as shown in Figs. 5, 6 and 7, one of the installation holes, and screw 25 therein, is made common to the mounting holes 47 of one set of brackets and the slots 48 of the other set of brackets. Also, as shown in Fig. 5, adjacent sets of chute brackets may be mounted from opposite sides of the stanchion or stanchion extension.

The chute brackets may also be mounted in laterally projecting relation to the stanchion or stanchion extension, as shown in Fig. 7. In this instance, there is but a single point of attachment, that is, at the mounting holes 47. A screw and nut may be installed in the slots 48 to assist in holding the brackets in their relative

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longitudinally adjusted position. Due to the single point of attachment, the brackets and chute 39 carried thereby tend to rock about the pivot established by the screw 25 in the mounting holes 47. As indicated in Fig. 7, however, some part of the assembly is allowed to abut the framework or an especially installed screw 25 to achieve and maintain the desired angular position of adjustment of the chute.

The pack holder framework may be strengthened through the use of tie rods 52 (see Fig. 6) or sway braces 53 (see Fig. 9) or both. Further, in the place of or in connection with the cushioned feet 36 there may be used hooks 54 (Fig. 10) detachably engageable with a ledge or like portion of the typewriter desk, the hooks 54 being associated with C clamps the same as the feet 36.

The several views, Figs. 1, 3, 5, 7 and 8 illustrate a few of the ways in which the described parts can be assembled, these being some of the more commonly used arrangements for strip supplying, separating and refolding functions. In view of the preceding discussion of the parts and of the manner in which they are interconnected, a detailed description of the illustrated pack holder arrangements is thought to be unnecessary.

Briefly, however, Fig. 1 shows a basic arrangement wherein the framework consists of a pair of stanchions 31 horizontally disposed as braces and resting on corner feet 36. T-members 34 are fastened to the braces in dependent direction and mount brackets 21 and 22 which in turn engage and support a tray 11. Used either for supply or refolding, the tray 11 is positioned to hold the record strip.

In Fig. 3, the basic assembly of Fig. 1 is retained but there is added to the structure vertical stanchions 31 directly supporting a plurality of trays 11 in such manner that the packholder presents a vertical series of trays, one over the other. As here indicated, this arrangement lends itself to an operation in which each tray 11 holds a component part of the strip, with the parts being brought together and fed as a single strip to the pin wheel platen on the typewriter.

Figs. 5, 7 and 8 are less easily described since they depict relatively complex arrangements wherein the parts of the strip are separated and refolded according to various work objectives and in conjunction with different space and typewriter position requirements. In all instances, however, it is to be seen that the framework is selectively and flexibly constructed, using the stanchions 31, T-members 34, extensions 49, tie rods 52 and braces 53, and that trays 11 and chutes 39 are carried by the framework by the means and through the connections previously described.

Fig. 8 may benefit by some explanation since it shows a somewhat different use for a set of brackets 43-44, and illustrates the pack holding equipment as constructed for use in connection with a center well type typewriter desk. Thus, a clamping device 43-44 is mounted on a stanchion extension 49 with a screw 25 through the slots 48 but not through a hole 51 in the extension. A relatively long chute 39 projects forwardly from the clamping device toward the typewriter, the chute and clamping device thus tending to rock by force of gravity in a clockwise direction. The screw 25, however, in the slots 48, engages the edge of the extension 49 and holds the chute in the position indicated. Prior to closing

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the desk, this overhanging chute is lifted counter-clockwise out of the path of the automatically rising top desk panel.

As also illustrated in Fig. 8 a clamping device 43-44 may be suspended from a chute 39 by the flanges 45 and 46 with the mounting holes 47 of opposed, companion, devices supporting a tie rod 52 over which the strip S or part thereof may be guided. Clamping devices so arranged are shown attached to the overhanging chute 39 above described, thus providing a guideway parallel to the chute and in similarly projecting relation to the main framework.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise but one of several modes of putting the invention into effect.

Having thus described my invention, I claim:

Apparatus for the building of record strip holding and receiving tray stations and guides to and from such stations, including stanchion elements each presenting regularly spaced apart mounting holes over its full length, first and second sets of clamp devices for installation in said mounting holes, trays gripped and held by said first devices, and guides gripped and held by said second devices, said stanchions being selectively interconnected to define a desired framework and said clamp devices being selectively installed along the stanchions of said framework to locate and to receive said trays and said guides, said apparatus comprising a universal kit of interchangeable parts for the selective construction of adjustable pack holders.

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