June 6, 1967 R. G. CLOUTHIER 3,323,847

FILE FOR REMOVABLY SUPPORTING A PLURALITY OF REELED TAPES

Filed March 5, 1965 2 Sheets-Sheet 1

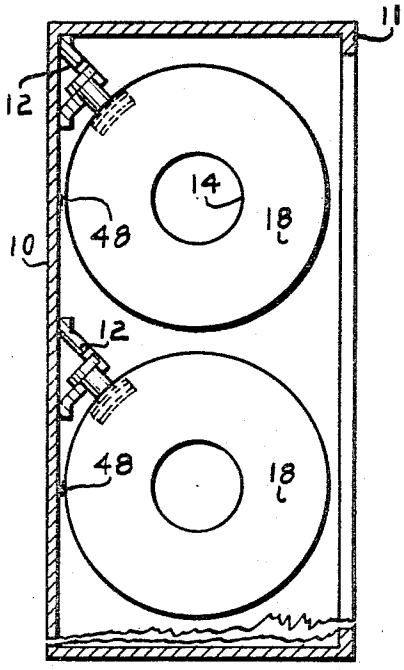


Fig. 1.

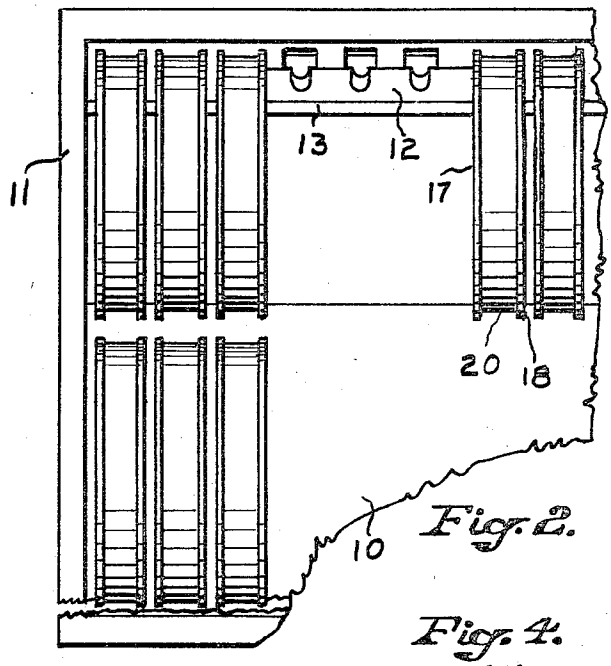


Fig. 2.

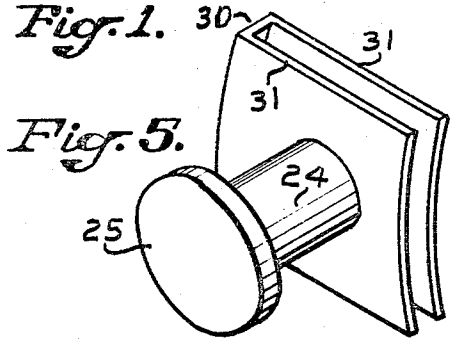


Fig. 5.

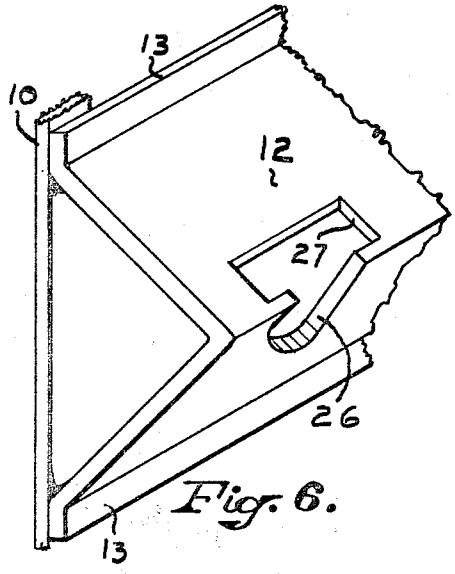


Fig. 6.

Fig. 4.

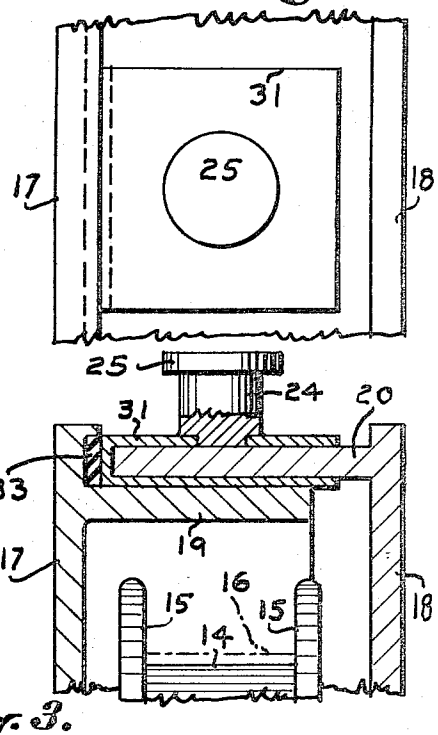


Fig. 3.

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FILE FOR REMOVABLY SUPPORTING A PLURALITY OF REELED TAPES

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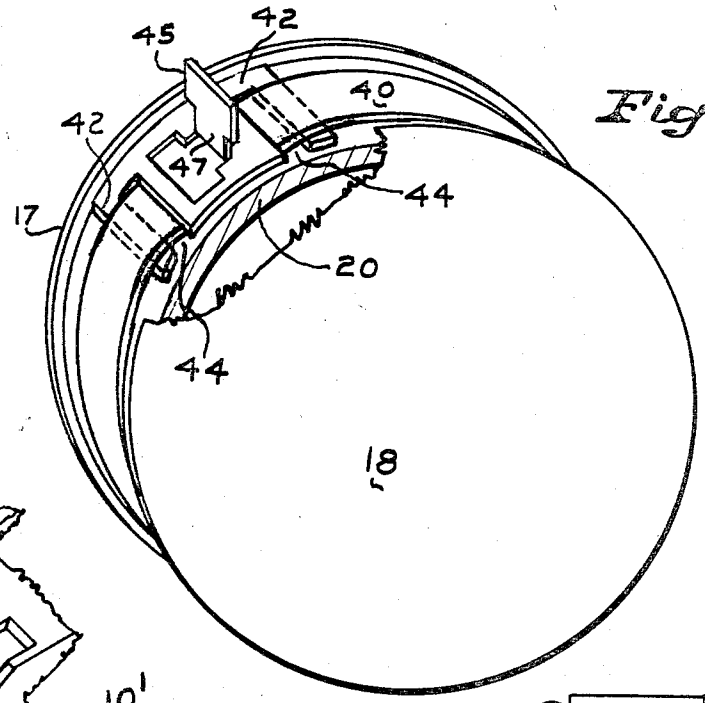


Fig. 8.

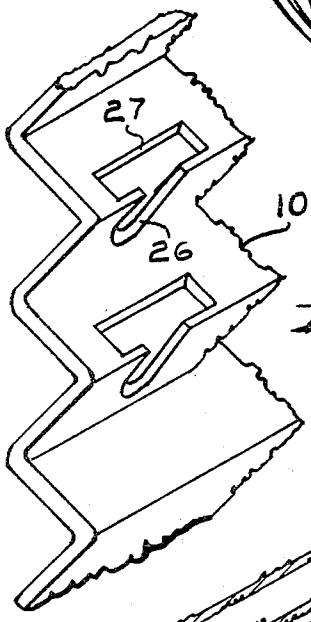


Fig. 7.

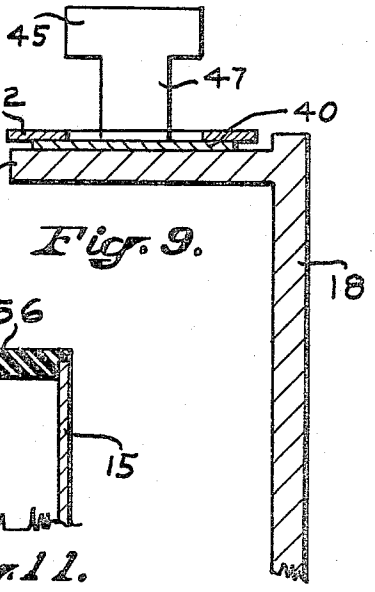


Fig. 9.

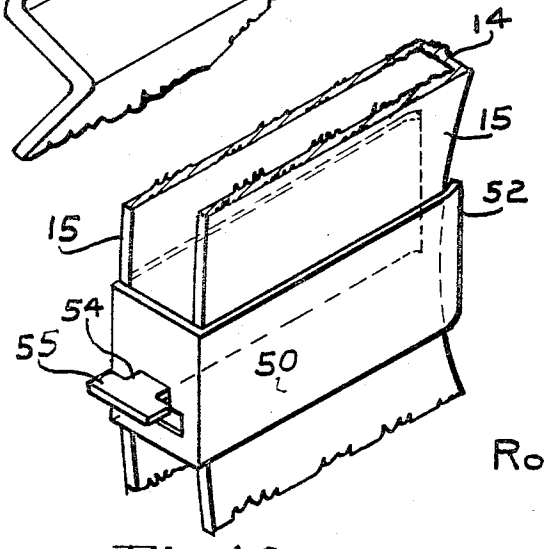


Fig. 10.

Fig. 11.

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FILE FOR REMOVABLY SUPPORTING A PLURALITY OF REELED TAPES

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Filed Mar. 5, 1965, Ser. No. 437,501
8 Claims. (Cl. 312—20)

This invention relates to a file for securely but removably supporting a plurality of reeled tapes vertically.

Electromagnetic tapes used for data processing, as well as photographic and micro-films, herein designated tapes, are each usually reeled on a carrier comprising an inner cylindrical core between spaced parallel flanges. Large numbers of such tapes on their carriers need to be stored in cabinets or rooms in a readily accessible and indexed arrangement; but many problems are involved in the storage and selective removal of a desired tape for required processing purposes. Tape reels have been stored on shelves between vertical wire spacers, but space is wasted and the reels are not secured in place and may be accidentally dislodged. The space requirements and the security of storage in a carefully indexed arrangement are critical, where it is required to store thousands of tapes in position for ready selective removal.

A primary object of this invention is to provide apparatus for suspending tape carriers vertically on a wall in a readily accessible and removable condition, and wherein the carriers are removably interlocked with and suspended from supports on the wall in a close lateral arrangement.

Another object of the invention is to provide a vertical wall with spaced supports, each of which has a plurality of hangers, and to provide an associated reeled tape carrier with a hanger cooperatively interlocking with the wall hanger and so arranged that the tape carriers may be suspended vertically on said supports in a close horizontal and vertical spacing and removed by a slight upward lifting motion. Other objects will be made apparent in the following disclosure.

A reeled tape may be wound on a spool-like core between side flanges forming a carrier which may be further mounted in a supplemental carrier of a generally disk shape. The latter usually comprises a two-part casing formed of two side plates, each of which is attached to a peripheral flange and so arranged that the flanges may be telescopically interfitted to enclose and protect the tape.

According to one aspect of this invention, I propose to suspend the reeled tape carrier from a vertical wall by means of a two-part hanger, one of which parts is selected from a multiplicity of spaced and symmetrically arranged hanger members on the wall, and the other part comprises a hanger member interlocking with the wall hanger member which is adjacent to and preferably projects from the periphery of the tape carrier. In the preferred construction, the wall hanger member comprises a slot in the wall and preferably in a strengthening support carried by and spaced in front of the wall. The hanger member on the carrier preferably comprises a part projecting radially from a peripheral wall of the carrier which is shaped to interlock with a selected wall slot and be suspended from the wall support and which is removable by a slight upward lifting motion.

One preferred form of the hanger element on the carrier comprises a clip adapted to interfit with a peripheral member on the carrier, such as the outer flange of the supplemental carrier casing which supports the reeled tape. This clip is provided with a laterally projecting lug and the lug and slot on the wall support are so arranged that the lug may interlock with the sides of the slot. Various other constructions will satisfy the required purposes as shown herein.

Referring to the drawings illustrating preferred embodiments of the invention:

FIG. 1 is a fragmentary vertical sectional view of the rear wall of a cabinet or compartment, showing a plurality of reeled tape carriers removably mounted on hanger members on that wall;

FIG. 2 is a fragmentary vertical front elevation of the cabinet of FIG. 1 with the door omitted;

FIG. 3 is a fragmentary sectional view of two telescoping casing members forming a carrier and showing the hanger member of FIG. 5 mounted on the outer flange of the carrier casing;

FIG. 4 is a fragmentary top plan view of the casing and hanger member of FIG. 3;

FIG. 5 is an enlarged perspective view of a clip provided with a hanger member;

FIG. 6 is a perspective view of a portion of a horizontal wall support plate having a slot shaped to interlock with the hanger member of FIG. 5;

FIG. 7 is a modification showing a corrugated wall provided with hanger slots;

FIG. 8 is a perspective view, partly broken away of an outer tape carrier having a hanger member carried by a band surrounding the carrier;

FIG. 9 is a fragmentary section showing the hanger and band of FIG. 8;

FIG. 10 is a fragmentary perspective view of a further modification having a U-shaped hanger clip movably attached to the inner carrier; and

FIG. 11 is a fragmentary sectional view of the reel flanges of FIG. 10 and a dust protector closure therefor.

In accordance with this invention, I have provided a reeled tape file (FIGS. 1–6) comprising a vertical wall **10**, which may be a back wall of a room or a file cabinet **11**. This wall **10** is suitably strengthened to withstand the weight of a large number of reeled tape carriers, which may be accomplished by corrugating the wall either vertically or horizontally, as shown in FIG. 7; but this is preferably accomplished by welding or otherwise securing thereto a plurality of supports mounted horizontally. These supports are shown as horizontal angle irons or bars **12** which may be provided with aligned flanges **13**. These flanges **13** are welded horizontally to the rear wall **10** of the cabinet in a spacing slightly greater than the vertical height of a carrier to be suspended therefrom. The supports may be arranged vertically if desired.

A reeled tape carrier, as shown in FIG. 3, may comprise a molded plastic body having a cylindrical core **14** secured to side flanges **15** between which the tape **16** is wound. This spool or reel **14**, **15** may be enclosed in a supplemental carrier formed of a molded plastic body having two disk shaped plates **17** and **18** which carry laterally projecting cylindrical flanges **19** and **20** shaped to telescope slidably and thereby form a casing around the reeled tape that has been wound on the core **14**. These standard casing parts are suitably locked together. The outer flange is a peripheral strip surrounding the inner tape reel and which, in the construction of FIG. 3, carries a hanger member projecting therefrom as will be explained.

In accordance with this invention, I provide the carrier with a hanger member adjacent to or projecting outwardly or radially from the periphery of the reeled tape carrier, which is arranged to interlock with a hanger member on the wall **10** or one of the supports **12** These hanger members preferably comprise a hook-like member or lug interlocking with an eyelet or the sides of an opening, which are respectively located on either the wall supports **12** or the tape carrier. The preferred construction is one where the eyelet is formed in the casing wall and so located and shaped that a hook-like

member on the carrier may be inserted and interlocked therewith.

The construction of FIG. 3 comprises a hanger member on the carrier formed of a lug **24** having an enlarged head **25**, and the eyelet or eyehole is located in the wall **10**, which is shown as a somewhat T-shaped opening or slot in the angle iron support **12**. This slot has a narrow lower portion **26** (FIG. 6) slightly larger than the thickness or diameter of the cylindrical lug **24**. This slot portion **26** is in the lower depending portion of the V-shaped angle iron **12** that has been mounted as shown in FIG. 6. The upper portion **27** of the T-shaped slot is located in the top part of the angle iron **12** and is so sized that the head **25** of the carrier hanger member (FIG. 5) may be inserted into the slot, whereupon the weight of the carrier will cause the parts **24** and **25** to interlock with the sides of the lower potrion **26** of the T-slot. The lug **24** is arranged to project substantially radially from the periphery of the carrier (FIGS. 1 and 2) in such a manner as to hold the carrier in a substantially vertical position.

Of the various constructions which will serve to hold the hanger member of the carrier in that peripheral arrangement, I prefer the construction illustrated primarily in FIGS. 3 and 5 wherein the lug **24** is secured laterally to a U-shaped clip **30** having two flanges **31** which are spaced and shaped to slidably interfit with the outer peripheral flange **20** of the carrier as shown in FIG. 3, and thus secure the hanger to the carrier, so that when the enlarged head **25** has been properly inserted into the slot of the wall support **12** the carrier will be held firmly in a vertical position. As shown at the top of FIG. 2, the T-slots are preferably arranged horizontally in the angle iron **12** which provides for a close spacing of the reeled tape carriers. The slots may be located in the front portions of the corrugations of the wall **10**[1] shown in FIG. 7. As shown, a plurality of these horizontal supports **12** are so mounted on the cabinet wall **10** that the carriers are held in a close vertical and horizontal spacing. The cabniet is, of course, so sized that the carriers may be fully enclosed therein. This construction is such that the angle iron **12** may be suitably mounted in a standard file casing which is sized and shaped to hold and protect the reeled tapes and their carriers. Also, it will be appreciated that each outwardly projecting horizontal corrugation of the FIG. 7 structure is a support which provides space for the hanger head to lie at the rear of the wall. If the corrugation is vertical, the forwardly projecting curved portions will be made with slots **26**, **27** in a required vertical spacing, and this provides space for the hanger heads **25** at the rear of the wall **10**[1]. In the carrier of FIG. 3, a sealing strip **33** is located on the inside of plate **17** of the outer carrier to keep out dust, and the flange **20** may be slightly recessed to accommodate the clip **30**, if necessary.

In the construction of FIGURES 8 and 9, I have shown another manner of attaching a hanger peripherally to the carrier. That is, the hanger is carried by a separate band or strip encircling the carrier. The band **40** may be an endless strip of suitable plastic which may have two ends removably connected, if desired, but is here shown as an endless circular strip **42** which may be slid snugly onto the flange **20** (FIG. 9). The hanger of FIG. 5 may be attached to that strip, but I have shown a modified form of hanger which comprises a plastic or metal strip slightly arcuate in shape to fit on the outer periphery of the carrier. This member has two slots **44** near its ends which may open on the same side of the strip or on opposite sides. These slots are so shaped and arranged that the strip **40** may be interwoven therewith, as shown in FIG. 8, and thus will hold the strip tightly in position when mounted on the periphery of the carrier. The member **42** has an upstanding locking head **45**, corresponding with the head **25** of FIG. 5, which connects by a reduced

section **47** with the main strip **42**. If the part **42** is made of metal, this may be readily accomplished by stamping out the hanger portion **46**, **47** and bending the narrower portion **47** to a position radial of the carrier as shown.

It will be appreciated that the hanger portion **45**, **47** may be inserted into the slot **26**, **27** of the V-shaped bar of FIG. 6 or the corrugated wall of FIG. 7 and that the head **46** will interlock with the sides of the narrow portion of that slot. It will also be observed, by reference to FIG. 1, that the carrier has what may be called a two-point support, in that it is suspended from the slotted wall **10** and hangs in contact with the wall, hence the carrier is held immovable and secure in its required position. The carrier and the cabinet may be marked with similar identifying numbers to insure that each carrier is filed according to a desired index location.

The inner carrier comprising the core **14** and reel flanges **15** may be suspended from the wall hanger independently of any outer casing by the construction shown in FIGS. 10 and 11. A standard tape reel has a central recess or hole therethrough. The hanger member comprises a U-shaped clip **50** of suitable resilient material, such as metal or a plastic, which is so shaped that the clip may be sprung into position over the flanges **15** of the reel where its two inturned ends **52** interlock with the central hole or a recess in the reel. If the reel flanges are provided with an annular groove or recess adjacent to the core, then the arms of the clip **50** may be of suitable length to interfit into that groove or the inside hole of the reel. This clip **50** may be provided with an upturned stamped out portion comprising the inner narrow lug **54** and the head **55**, as shown, which are shaped to interfit, as above explained, with any of the slots **26**, **27**. This hanger clip may be thus readily assembled on a reel for supporting it on the cabinet wall, and when the tape reel is to be used in a processing step the clip may be removed. To keep dust out of the reel and otherwise protect the tape, a flexible band **56** (FIG. 11) made of rubber or other suitable material may be sprung into place on and between the plates **15** of the reel. This band **56** as shown may have a somewhat T-shape so that it will both ride on the outer peripheries of the plates **15** and lie between the same to provide a satisfactory seal.

Each of the constructions above described has a hanger element projecting from the periphery of the carrier, and the wall or a support thereon has a hanger element shaped to cooperate with the carrier element whereby the carrier may be mounted on the wall in a close side by side arrangement. Also horizontal rows of such carriers may be mounted in a close vertical spacing within the cabinet.

It will now be appreciated that various modifications may be made in this construction within the above specified requirements. Hence, the above disclosure is to be interpreted as setting forth preferred embodiments of the invention and not as imposing limitations on the appended claims.

I claim:

1. A reeled tape file comprising a cabinet having vertical walls, hanger members carried by said walls, a set of disk shaped reeled tape carriers, each having a hanger part adjacent to its periphery, means on said part for interlocking with said hanger member so as to suspend the carrier vertically therefrom, said members being in such arrangement that a plurality of carriers may be removably mounted side by side in a close spacing on the various supports and removed by a lifting motion.

2. A reeled tape file comprising a cabinet having vertical walls, a set of vertically spaced, horizontal hanger bars mounted on said walls, each bar being provided with a set of hanger slots in a horizontal spacing, a set of substantially disk shaped reeled tape carriers, each of which has a peripherally projecting hanger lug provided with an end part arranged to be inserted into and re-

movably interlock with the sides of one of said slots, said hanger lug and the slots on said bars being so arranged that the carriers may be suspended vertically on the bars in a close lateral spacing and each removable by a slight lifting motion.

3. A reeled tape file according to claim 2 in which said bars and their slots are so arranged that the carriers are suspended from the bars and have a lateral bearing contact with a cabinet wall.

4. A reeled tape file according to claim 2 in which the tape carriers are reels on which tape is wound and each of which has a central recess on each side and in which the carrier hanger member is a substantially U-shaped clip having its arms grippingly engaging said recesses and positioning the clip, said clip having said lug projecting radially of the reel which interlocks removably with a hanger slot.

5. A reeled tape file according to claim 1 in which each hanger part includes a strip surrounding the carrier periphery, said hanger part being secured to and projecting radially from said strip.

6. A reeled tape file according to claim 1 in which the carrier is a two-part casing having side disks and peripherally telescoping flanges, one of which serves as a peripheral strip and wherein the hanger part extends radially outwardly from the casing.

7. A reeled tape file according to claim 6 in which the hanger part is a substantially U-shaped clip having a lug projecting laterally therefrom, said clip being shaped for interlocking with the outer one of said telescoping flanges with the lug projecting radially of the carrier when operatively mounted thereon.

8. A reeled tape file according to claim 5 in which the peripheral strip is separate from the carrier and the hanger part is an arcuate strip having a laterally projecting locking lug and slots through which the peripheral strip is threaded.

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