

Sept. 2, 1969

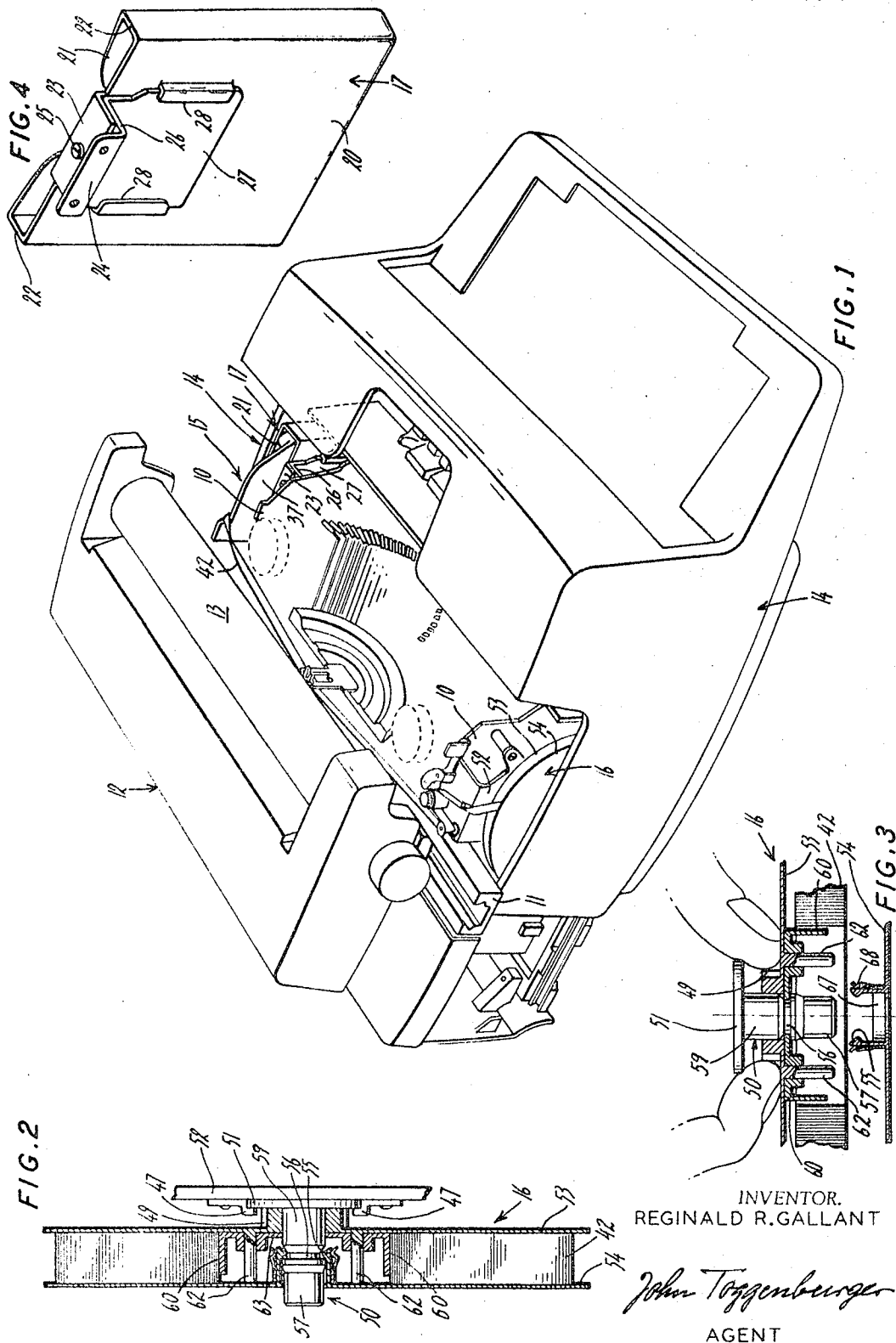
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3,464,533

CARBON RIBBON SUPPLY HANDLING FEATURES IN A TYPEWRITER

Filed Oct. 14, 1966

2 Sheets-Sheet 1



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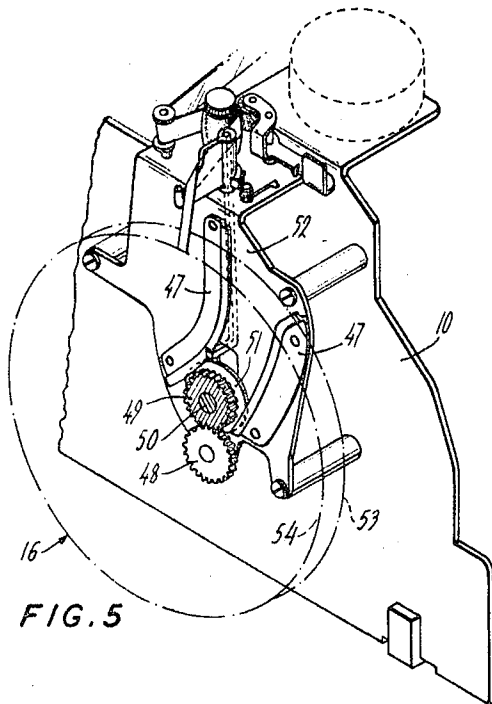


FIG. 5

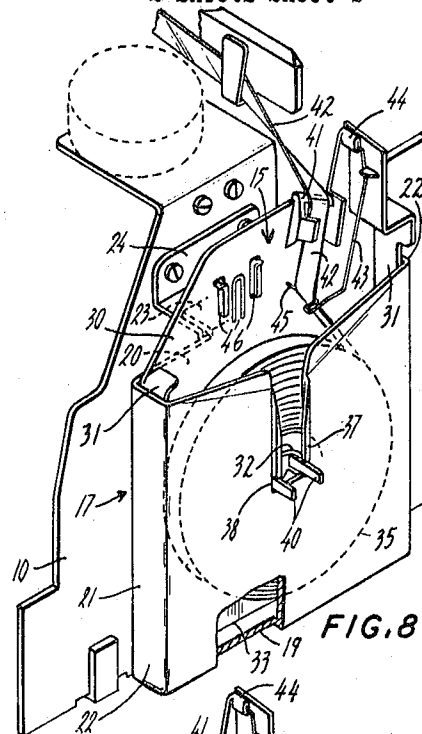


FIG. 8

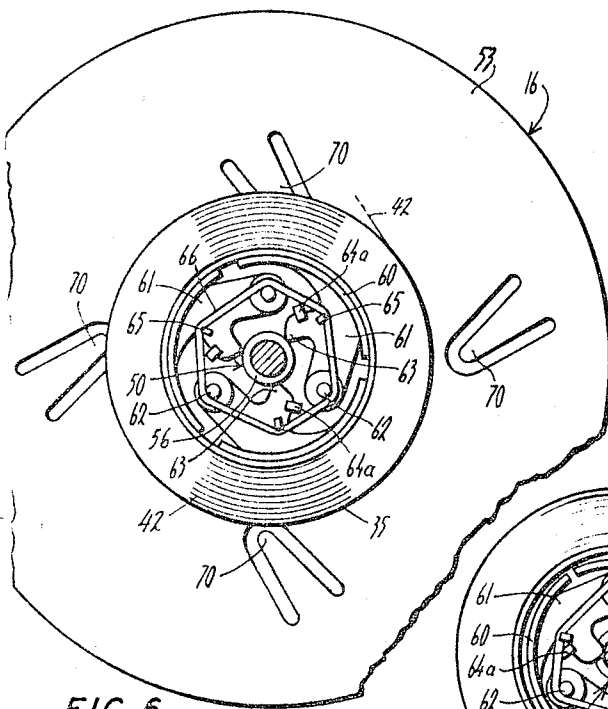


FIG. 6

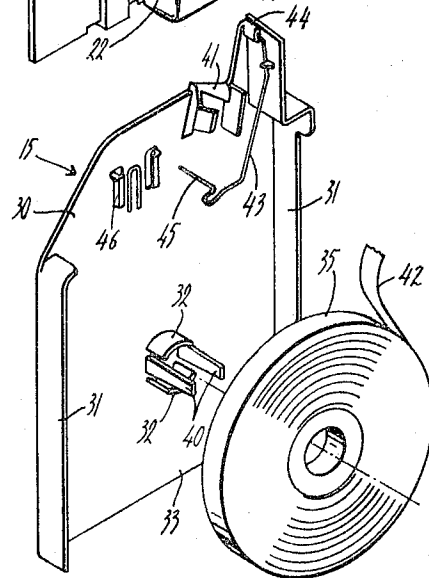


FIG. 9

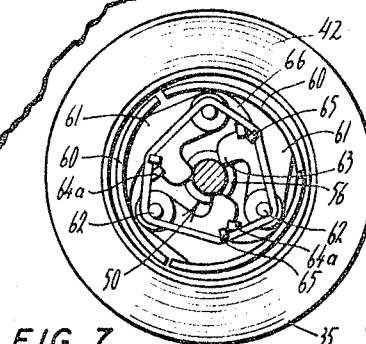


FIG. 7

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CARBON RIBBON SUPPLY HANDLING FEATURES IN A TYPEWRITER

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3 Claims

ABSTRACT OF THE DISCLOSURE

A carbon tape roll holder comprises a panel which has an arbor projecting from one of its flat sides to receive thereon a carbon tape roll. Such holder with a carbon tape roll placed thereon is graspable by an upper portion of said panel to lower it down into a socket structure which is provided at one of the outer sides of an inner framework of the machine. The holder incorporates a carbon tape guiding saddle and also an element which is yieldably displaceable and over which the carbon tape passes to avoid subjecting the tape to excessive sudden stresses.

This invention relates to typewriters which include facilities to effect imprints through the medium of carbon ribbon and more particularly to facilities in such machines for the convenient and efficient installation of carbon ribbon rolls later herein referred to as carbon rolls. Furthermore, the invention relates to a carbon ribbon take-up reel construction and facilities for its installation and removal. Certain aspects of the invention involve also a masking structure for concealing the inner works of a typewriter and which can be moved to a forward position to uncover an area of the typewriter immediately in front of the carriage, facilitating the installation of a carbon ribbon roll in a vertical plane to one side of the inner mechanism frame in a location which is normally covered by the masking structure. Similarly, a ribbon take-up reel is installable in a vertical plane adjacent to the other side of the mechanism supporting frame when the said masking structure is moved forward.

The facility for installing a carbon ribbon supply roll comprises a holder on which a carbon roll is adapted to be placed and which holder with carbon roll is insertable into a socket structure. Convenient facilities to place a carbon ribbon take-up reel into the machine and to remove it for disposal of carbon ribbon wound thereon are also provided.

Referring now to the drawing:

FIG. 1 is a left-hand perspective view showing a machine masking structure in a forward displaced position to uncover areas in front of a platen for the stated carbon roll and reel handling purposes;

FIG. 2 is a schematic part-sectional plan view showing a carbon ribbon take-up reel assembly and supporting structure therefor;

FIG. 3 is a sectional view of the take-up reel in the process of being handled to discharge wound carbon ribbon therefrom;

FIG. 4 is a left-hand perspective view of a receiving socket structure for a carbon roll holder;

FIG. 5 is a left-hand front perspective view showing details for reception at the left side of the inner machine works of a take-up reel assembly;

FIG. 6 is a sectional view of the ribbon take-up reel showing therein an expandable core in expanded condition and having one reel flange omitted;

FIG. 7 illustrates the reel core of FIGURE 6 in a contracted condition;

FIG. 8 is a right-hand perspective view illustrating a

machine supported socket structure with a carbon roll bearing holder received therein; and

Finally, FIG. 9 is a right-hand perspective view of the carbon roll holder and a carbon roll receivable thereon.

Referring now more particularly to FIG. 1, the typewriter shown therein includes an inner frame structure including two spaced vertical walls 10 and a rail structure 11 which supports a carriage 12 having a platen 13 thereon. A mechanism masking structure fully disclosed in copending application Ser. No. 586,813, filed Oct. 14, 1966, now abandoned, is identified by the numeral 14 and is shown forwardly moved from a normal rearward position to a mechanism uncovering position wherein a portion of the mechanism in front of the platen 13 becomes freely accessible for various purposes as for rendering a carbon roll holder 15 or a carbon ribbon take-up reel 16 accessible for removal or installation. It will be noted that the holder 15 and said reel 16 flank the side walls 10 and that the sides of the masking structure 14 are outside of said holder 15 and said reel 16.

Now referring to FIG. 8, a socket structure 17 is shown whereinto the stated carbon roll holder 15 has been lowered. Said socket structure 17 embodies two large-area parallel walls 20 and 21 and such walls are connected by a front and a rear wall 22. A tab 23 reaching leftwardly from the socket wall 20, see also FIG. 4, overlies a horizontal shelf 26 of a bracket 24 and is secured thereupon by a screw 25. The bracket 24 includes a vertical rectangular flange 27 and said socket structure 17 has two spaced channel members 28 whereby it is adapted to be slid onto said flange 27 before it is secured in position on said shelf 26 by said screw 25. Said flange 27 lends stability to the installed socket structure 17.

The carbon roll holder 15, see FIGS. 8 and 9, comprises a flat panel 30 having parallel front and rear extremities with projecting narrow walls 31. Midways of said extremities there projects an arbor constituted of two vertically spaced and oppositely part circular elements 32.

Said holder 15, after a carbon supply roll 35, is placed on its arbor 32, is lowered into said socket structure 17 to a position in which a lower edge 33 of the holder 15 contacts a bottom wall 19 of the socket structure 17. An upper portion of the holder panel 30 extends above the socket structure 17 to afford an accessible finger hold for lowering or removing the holder 15 from the socket structure 17. The stated walls 31 project from the panel 30 to an extent slightly in excess of the width of the carbon supply roll 35, so that the holder 15 with such roll 35 thereon can be easily inserted between the walls 20 and 21 of the socket structure 17, and then can turn freely.

The outer wall 21 of said socket structure 17 has midways thereof a vertical slot 37 which is wide at the top and tapers to a narrower dimension near its bottom and at the extreme bottom has opposite detent notches 38. On the holder 15 two flexible fingers 40 within the periphery of the part circular elements 32 reach beyond the latter outwardly from the panel 30. The said fingers 40 have a natural spread wider than the slot 37 has just above the notches 38. Therefore when said holder 15 reaches its lowermost position the fingers 40 will snap into the notches 38 to detain the holder 15 thereat impositively. On the inside of the upper portion of the holder panel 30 there is provided preferably integral therewith a guiding saddle 41 to lead carbon supply ribbon 42 drawn from the carbon roll 35 leftwardly toward the front of the platen 13. Also on said upper portion of said holder 15 there is provided a yieldably displaceable or flexible member 43 in the form of a wire element anchored at 44 to the holder 15. A portion 45 of the wire element 43 extends squarely to the panel 30 and is

so situated that the carbon ribbon 42 will have an angular path thereover as shown in FIGURE 8, and by flexibly yielding will avoid subjecting the ribbon 42 to detrimental sudden stresses when being drawn off the carbon supply roll 35. The holder 15 may embody a clasp indicated at 46 for idly storing a detachable vibrator element either for a carbon ribbon or a fabric ribbon.

Both the socket structure 17 and said holder 15 are preferably of molded plastic material.

It will be seen that a new carbon tape supply roll 35 is efficiently and conveniently installable into the machine by first sliding or moving the masking structure 14 forwardly, then lifting the holder 15 from the socket 17, then substituting a new carbon supply roll 35 on the arbor formation 32 on the holder and, finally restoring the holder 15 into the socket structure 17.

Now more particularly referring to FIG. 2 the carbon ribbon take-up reel 16, together with a stud 50 embodying a large-diameter end-disk 51, comprises a unit which by its disk 51 is mountable on a bracket 52 that is fastened to the left wall 10, said bracket 52 having two rearwardly curving channel flanges 47, see FIG. 5, to receive said unit by the disk 51 in the machine within the left side wall of the mask 14 while such mask is in forwardly displaced position shown in FIG. 1. As seen in FIG. 2, the said reel or unit 16 comprises an inner reel flange 53 as well as an outer one 54, normally held together by detent fingers 55 on the flange 54 which have detenting ends for entering a circumferential groove 56 in the stud 50. The stated take-up reel unit 16 is lowered into position by grasping it across flanges 53, 54 at a peripheral point thereof. When so in position, a gear 49 being preferably integral with the flange 53, meshes with a gear 48 which is turnably provided in the machine, see FIG. 5, and is impositively driven during use of the typewriter, thereby to drive the gear 49 and thus the reel 16 in a ribbon take-up direction.

Now referring to FIG. 6, it will be seen that the reel flange 53 carries on its inner side a collapsible core comprised of several curved sectors 60. These sectors 60 are integral with arms 61 which are pivotally carried on individual pins 62 which project from said flange 53 and preferably are an integral plastic molding therewith. Said arms 61 embody fingers 63 which reach toward the stud 50 and bear normally on the larger diameter portion 59 of said stud 50, see FIGS. 2 and 6.

From the inner side of the flange 53 there extends for each said fingers 63 a lug 64a having a portion overreaching the respective finger 63 to thus retain the sector-bearing arms 61 flatly against the disk flange 53. Each arm 61 has a protuberance 65 and over these protuberances 65 and the said pivot pins 62 a garter spring 66 is stretched so that the arms 61 along with the sectors 60 are constantly urged inwardly. If thus the fingers 63 through axial movement of the flange 53 on the stud 50 are moved off the large-diameter portion 59 of the stud 50 into the stud groove 56, the ribbon take-up core comprised of the sectors 60 will collapse as shown in FIG. 7.

When the reeled carbon ribbon 42 fills the take-up reel 16, it needs to be disposed of. This is most advantageously done by first taking a hold of the reel 16 across its flanges 53, 54 and lifting the reel assembly 16 so that the end-disk 51 moves upwardly out of the channel flanges 47. Then, as illustrated in FIG. 3, the typist preferably presses finger tips between the reel flange 53 and the stated end-disk 51 and this will force the flange 53 axially away from the end-disk 51 so that the fingers 63 move into the stud groove 56. This will cause the core sectors 60 to collapse inwardly as shown in FIG. 7. Furthermore, while the flange 53 is initially being pushed away from the disk 51 the pivot pins 62 push the other reel flange 54 axially so that the detent fingers 55 glide out of the groove 56 and the flange 54 will then fall off the end of the stud 50. Since the core has collapsed, the rolled up, spent carbon ribbon 42 will freely fall off the core and can be disposed of

readily. Inasmuch as the fingers 63 on the reel flange 53 are then residing in the groove 56, said flange 53 will not fall off. To reconstitute the reel assembly 16 for placement into the machine, it is then only necessary to place and press the other reel flange 54 onto the reduced diameter end 57 of the stud 50 and to force it on the stud 50 to its detented position shown in FIG. 2. Meanwhile in doing so said reel flange 54 will move into contact with the ends of the pivot pins 62 to force the reel flange 53 to its normal FIG. 2 position on the stud 50. Concomitantly the fingers 63 are cammed out of the groove 56, onto the large diameter portion 59, and consequently the core sectors 60 will spread to assume their expanded core state. It will be noted that the portion of the groove 56 facing the end of the dish 51, tapers toward the large size diameter portion 59.

The reconstituted, empty reel assembly 16 is then grasped by its flanges 53, 54, and is lowered into the machine so that the end of the disk 51 will become situated in said channel flanges 47 and the gear 49 will mesh the gear 48, see FIG. 5.

The spool flanges 53 and 54 are preferably of molded plastic material and in order to make certain that the detent fingers 55 on the flange 54 will not lose their effectiveness a ring 67 of spring steel having back-up spring fingers 68 for bearing resiliently inwardly on the fingers 55 is provided.

The reel flange 53 embodies a series of springy leaves 70 at graded distances from the center and extending substantially tangential toward the collapsible core. These leaves 70 serve to move and self-attach the leading end of the carbon ribbon 42 between the flanges 53, 54 when such leading end is presented or directed inwardly toward the core of the reconstituted reel assembly 16 while the latter is impositively power rotated by the gear 48.

What I claim is:

1. In a typewriter wherein imprints are to be effected through the medium of a carbon tape, and which typewriter embodies an inner framework, a carriage and a platen on said carriage;

means to facilitate the convenient installation of a carbon tape supply roll turnably in a fore-and-aft situated plane adjacent to one of the outer sides of said inner framework, comprising,

a holder for a roll of carbon tape embodying a generally flat panel and an arbor projecting from one side of said panel for receipt of a roll of carbon tape thereon,

means to afford a receiving socket for said holder adjacent to one of said outer sides of said inner framework,

means to limit downward movement of said holder into said receiving socket,

said holder having an upper portion of said panel above the roll of carbon tape receivable on said arbor and when moved to said downward limit in said receiving socket having said upper portion of said panel reaching out of said receiving socket, said upper portion of said panel being capable of being grasped so that said holder can be conveniently lowered into and removed from said receiving socket.

and a ribbon guiding saddle on said upper panel portion over which saddle carbon tape drawn off said roll of carbon tape placed on said arbor can be led in a direction toward the front of the platen.

2. The invention set forth in claim 1, and a yieldably displaceable element supported on said holder for the carbon tape to pass to said saddle in an angular path to avoid subjecting the carbon tape to sudden stresses.

3. In a typewriter wherein imprints are to be effected by the medium of a carbon tape, and which typewriter enables an inner framework, a carriage and a platen on the carriage;

means to facilitate convenient installation of a carbon tape supply roll turnably in a fore-and-aft situated

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plane adjacent to one of the outer sides of said inner framework, comprising,
 a socket structure having two parallel walls in fore-and-aft extending planes and a front and a rear wall connecting said parallel walls,
 a holder for a roll of carbon tape receivable in and conversely removable from said socket structure and embodying a generally flat panel having two parallel extremities glidable freely down between said front and rear wall of said socket structure and having an arbor projecting from said panel for receipt of a roll of carbon tape thereon,
 said roll holder having an upper portion extending above said socket structure and extending also generally above the carbon tape roll receivable thereon, whereby said roll holder is adapted to be grasped at its said extending upper portion to be conveniently lowered into and removed from said socket structure, and means cooperative between said socket structure and said roll holder to retain said roll holder detented in its lowered position in said socket structure, comprising in one of said parallel walls a down-reaching slot being slightly widened at the bottom to afford detent notches and having at the top a

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tapered throat, and comprising further within the outer periphery of said arbor two flexible fingers which first upon introduction of said roll holder in said socket structure glide down into said slot and in doing so are first flexed toward each other and then become oppositely spread into said detent notches.

References Cited

UNITED STATES PATENTS

2,565,985	8/1951	Norton et al.	197—151 X
2,930,470	3/1960	Roller et al.	197—151
3,048,254	8/1962	Morris	197—151
3,104,750	9/1963	Canny et al.	197—175 X
3,123,196	3/1964	Paone et al.	197—186
3,180,572	4/1965	Gallant.	
3,191,742	6/1965	Harmon	197—186
3,294,228	12/1966	Urso et al.	197—172 X

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U.S. Cl. X.R.

197—175, 186