

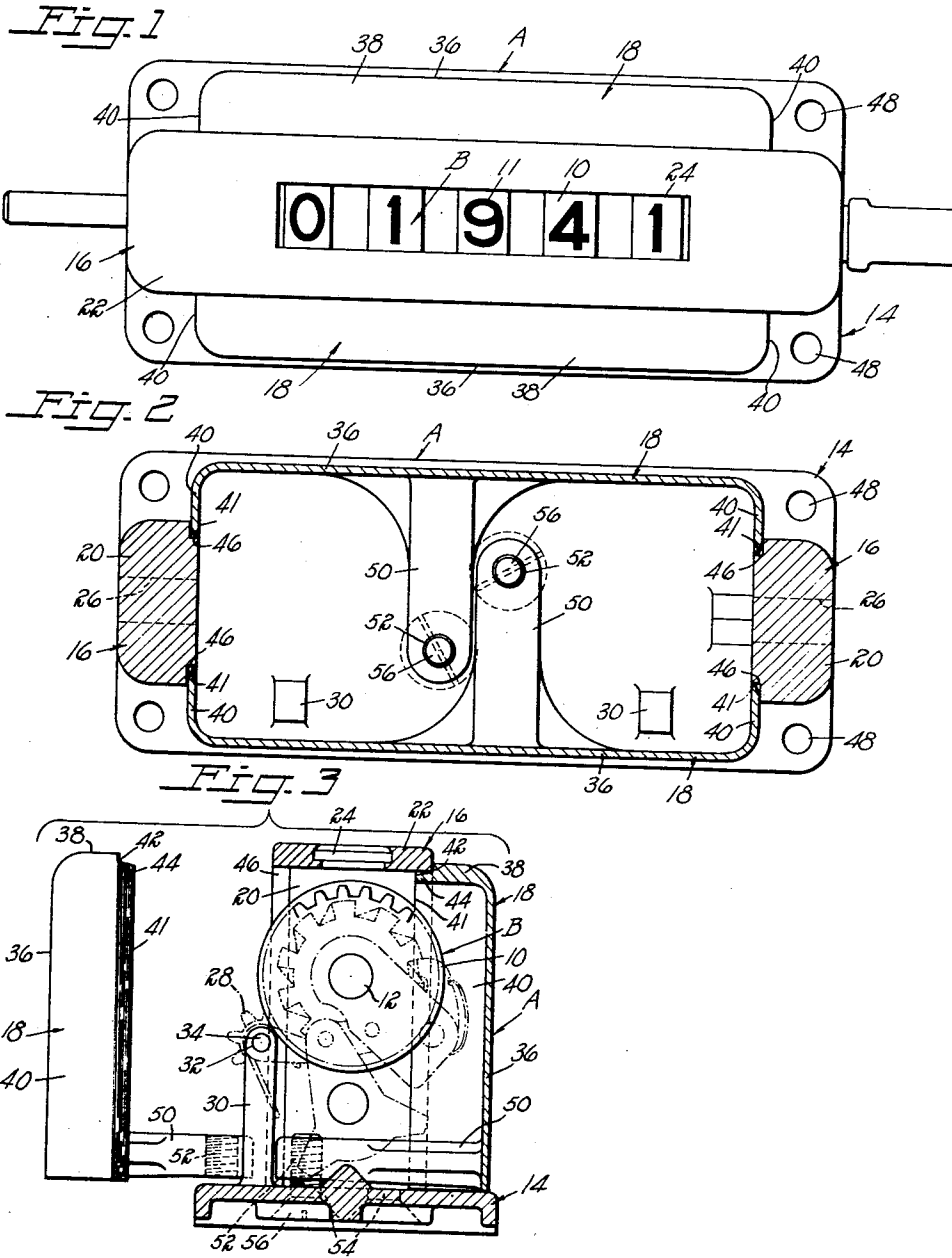
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COUNTER MECHANISM

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COUNTER MECHANISM

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The present invention relates to counter mechanisms of the type including a plurality of progressively operated numeral wheels.

It is customary to enclose such counters to protect the mechanism from dirt, unauthorized tampering, and to permit ready reading of the wheels through a sight opening or window which exposes only the numerals in alignment with the starting or zero position.

The object of the present invention is to provide a counter mechanism having a casing which serves the afore-indicated purposes and additionally permits ready mounting of the counter mechanism in the casing, enables alignment of the numerical indicia on the wheels with the sight opening to assure accurate indications, and so exposes the counter mechanism when certain parts of the casing are removed as to permit ready adjustment or repair without removing the mechanism from the casing.

Another object is to provide an improved arrangement having a casing which can be readily made of stamped metal parts or of moldable materials, but does not require great accuracy in the manufacture of the parts, is of sturdy construction, and can be economically manufactured in large quantities.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements, and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claims.

In the accompanying drawing:

Figure 1 is a plan view of the casing incorporating the invention herein;

Fig. 2 is a plan view with the casing in section to show the details of construction thereof; and

Figure 3 is an end view of the casing partly in section to show the details of construction.

Referring to the drawing, A designates a casing in which there is mounted a counter mechanism B having a plurality of wheels 10 having numerical indicia 11 on their peripheries, said wheels being rotatably mounted on a shaft 12. The counter B illustrated in the present application is similar to that shown and fully described in the copending application to the same inventor, Serial No. 376,501, filed January 29, 1941, and, except when necessary for an understanding of the present invention, no further description will be made.

More specifically, the casing A comprises a

substantially rectangular base plate 14 having an integral, inverted U-shaped supporting frame 16 and removable side closures 18. As indicated, the supporting frame 16 includes vertical legs 20 arising from the ends of the base plate and, by preference, centrally of the side edges thereof and a top cross member 22 interconnecting the upper ends of the legs 20. The supporting frame, including the legs and the cross member, is of less width than the base plate. The top cross member 22 is further provided with a longitudinally extending sight opening or window 24 of such length and width as to expose one numerical space on each of the numeral wheels 10.

In addition, each of the vertical legs 20 is provided with a longitudinally extending opening or bearing 26 for rotatably supporting the shaft 12. The openings 26 are arranged in horizontal alignment with each other, and their centers preferably lie in a vertical plane extending through the center of the sight opening 24. Thus when shaft 12 is supported therein, it will be centrally disposed relative to the window 24.

Also supported on the base plate 14 are a pair of longitudinally spaced, upwardly extending columns 30 having aligned openings 32 for supporting a shaft 34. The shaft 34 in turn supports the transfer pinions 28 which are positioned between each pair of successively higher order wheels.

Considering the construction to this point, it will be seen that the counter mechanism can be readily assembled within the casing by inserting one end of the shaft 12 through one of the openings 26 and then successively mounting the parts of the counter mechanism B thereon. Obviously when the wheels have all been mounted onto the shaft they will be properly located relative to the frame member 16 and disposed beneath the sight opening 24. Because the wheels and opening 24 will be in relatively fixed position and the wheels also available for manual manipulation, the latter can be adjusted to accurately align the proper numerals at the zero or start position. With the numerals properly aligned at zero or start position, the shaft 34 may then be inserted through one of the openings in its supporting columns and the transfer pinions successively mounted thereon. When this has been accomplished, the counting mechanism will be ready for operation, and inasmuch as accurate alignment of the wheels has been accomplished, the subsequent reading through the sight opening will also be accurate.

The casing further includes side closures 18

which are in the form of rectangular blocks or plates corresponding in configuration to the openings presented by the opposite sides of the base and U-shaped supporting frame, but being slightly larger than said openings so that the margins of the inner faces of the plates slightly overlie the opposing edges of the U-shaped frame and the under surfaces of the plates rest upon the base to opposite sides of the U-shaped member. In the present illustrative disclosure, these closures are shown for purposes of illustration as being in the form of shell-like structures each having an outer wall 36, a top wall 38, and end walls 40.

To accurately align and position the side closures on the base, the top inner edge of each closure is rabbeted or recessed as at 42 so as to provide a vertical face 43 engaging against the side surface of the top cross portion member 22 and the lip 44 receivable beneath said cross member. In addition, the vertical legs 20 of the U frame are rabbeted or recessed as at 46 and the inner edges of the end walls 40 of the closures extend into these rabbets. It will be seen that in accordance with this arrangement the counter mechanism is completely enclosed within a substantially dust-proof casing.

Inasmuch as the closure members 18 cooperate with the inner peripheral edge of the U-shaped member 16, the four corners of the base plate 14 are left uncovered and are provided with an opening 48 permitting the insertion of suitable securing screws to mount the casing onto any desired mechanism. Because of this it is not necessary to provide additional projecting lugs for securing the casing in place, and, likewise, inasmuch as the base plate 14 is directly secured, a more rigid mounting is assured.

The closure members 18 may be secured in position in any suitable way; in the embodiment illustrated this being accomplished by providing an arm 50 which extends inwardly from and at right angles to the outer wall and is provided at its inner end with a threaded opening 52. When the closure is positioned with its inner edge in proper abutting relationship with the U frame, the opening 52 will be in line with an opening 54 provided in the base plate to permit the insertion of a proper securing screw 56.

With the closure members so secured, it will be seen that when the counter is mounted with its base plate secured to an underlying plate, it is impossible to remove the side closure members without initially removing the entire casing from its mounting. If, however, it should be desired to make any adjustment or to clean or repair the counter, it is apparent that by removing the side closure members, or at least one of them, substantially the entire counting mechanism is exposed in such a manner as to permit free access thereto.

From the foregoing it will also be seen that the casing comprises relatively few parts which can be conveniently manufactured, and due to the fact that the side closures are so made as to have their inner peripheral edges telescoped within the U frame, no accurate machining of the parts is required. As a result, it is possible to manufacture this type of casing at extremely low cost and out of various types of widely different materials.

As many changes could be made in the above

construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim as my invention:

1. In a counter mechanism, a casing comprising a rectangular base plate, an inverted U-shaped frame formed integrally with and of lesser width than said base plate and having vertical legs arising centrally from the ends of said base plate and a top member interconnecting said legs and having a longitudinally extending sight opening therein, and a pair of identical closure members disposed to opposite sides of said frame and each comprising a hollow shell having an outer wall, a top flange and end flanges, the bottom edges of said closure members resting on said base plate and the inner edges of the flanges of said closure members being in abutting engagement with said U-shaped frame adjacent the inner margins thereof; means for securing said closures in position, a shaft supported in the casing, said shaft being parallel to said top member and being disposed beneath said sight opening therein, and a plurality of counter wheels carried by said shaft below said sight opening, said counter wheels having a diameter greater than the width of said U-shaped frame and extending into said shell-like closure members.
2. In a counter mechanism, a casing comprising a rectangular base plate, an inverted U-shaped frame formed integrally with and of lesser width than said base plate and having vertical legs arising centrally from the ends of said base plate and a top member interconnecting said legs and having a longitudinally extending sight opening therein, and a pair of identical closure members disposed to opposite sides of said frame and each comprising a hollow shell having an outer wall, a top flange and end flanges, the bottom edges of said closure members resting on said base plate and the inner edges of said end flanges of said closure members being in abutting engagement with said vertical legs adjacent the inner margins thereof, the inner edges of said top flanges being rabbeted and receiving the inner edges of said top member of said frame; means for securing said closures in position and comprising an arm carried by and extending inwardly from each outer wall of each closure member and provided with a threaded opening adjacent its inner end, and screws extending through said base plate and threaded into said openings; a shaft supported in the casing, said shaft being parallel to said top member and being disposed beneath said sight opening therein, and a plurality of counter wheels carried by said shaft below said sight opening, said counter wheels having a diameter greater than the width of said U-shaped frame and extending into said shell-like closure members.

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