Feb. 6, 1951 F. N. SCHWEND ET AL 2,540,296

OFFICE MACHINE

Filed Oct. 4, 1949

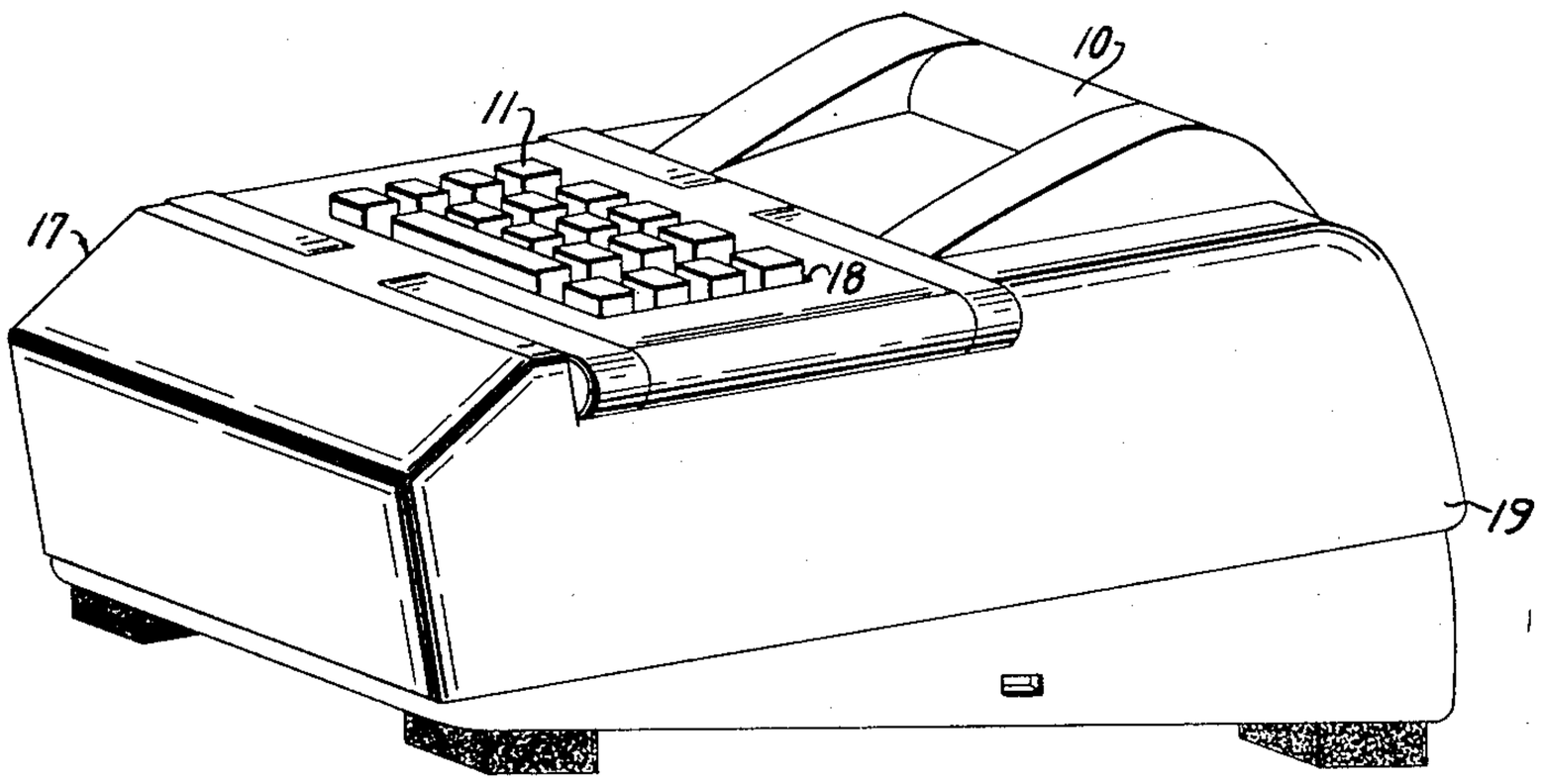

FIG. 1.

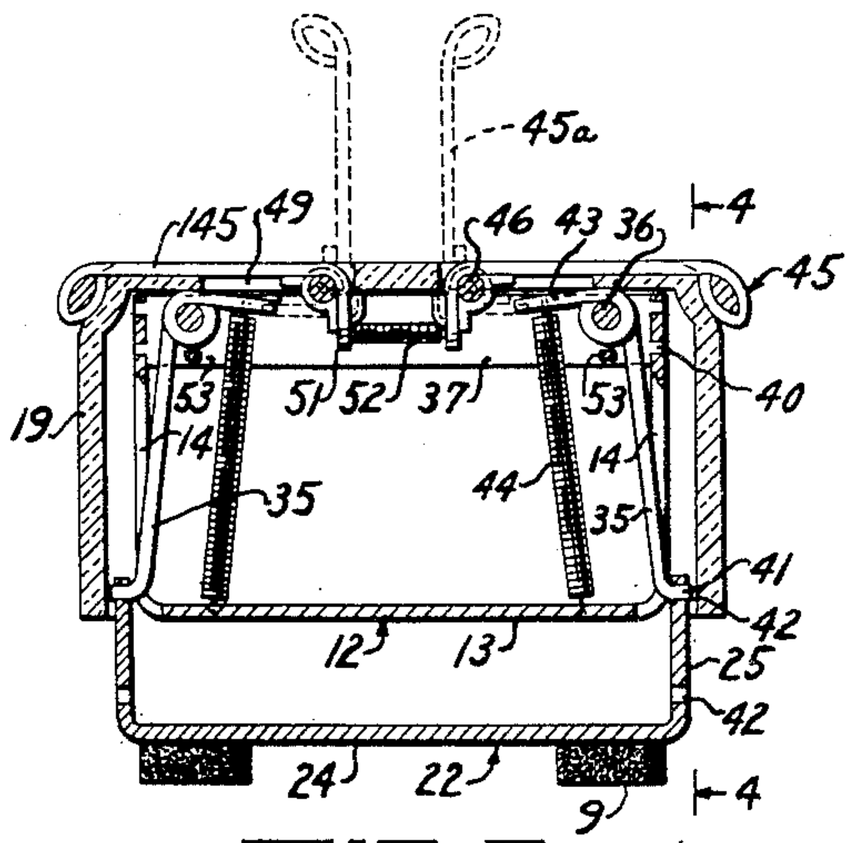

FIG. 2.

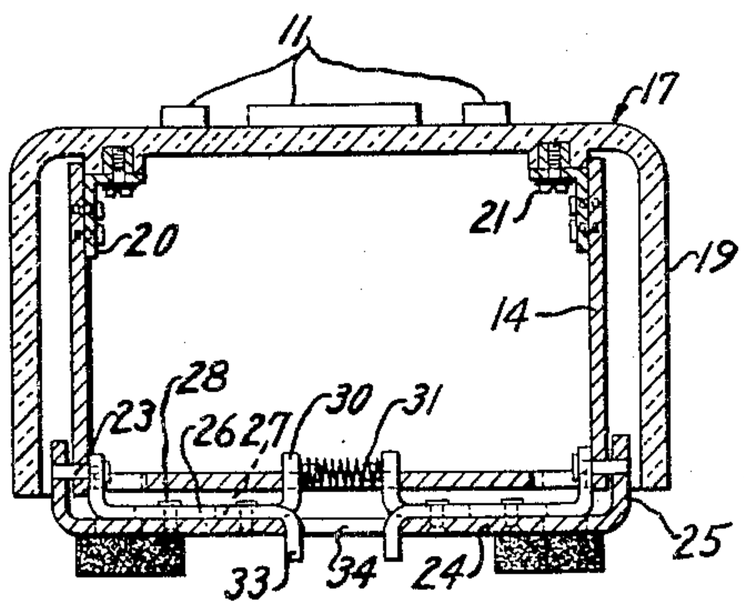

FIG. 3.

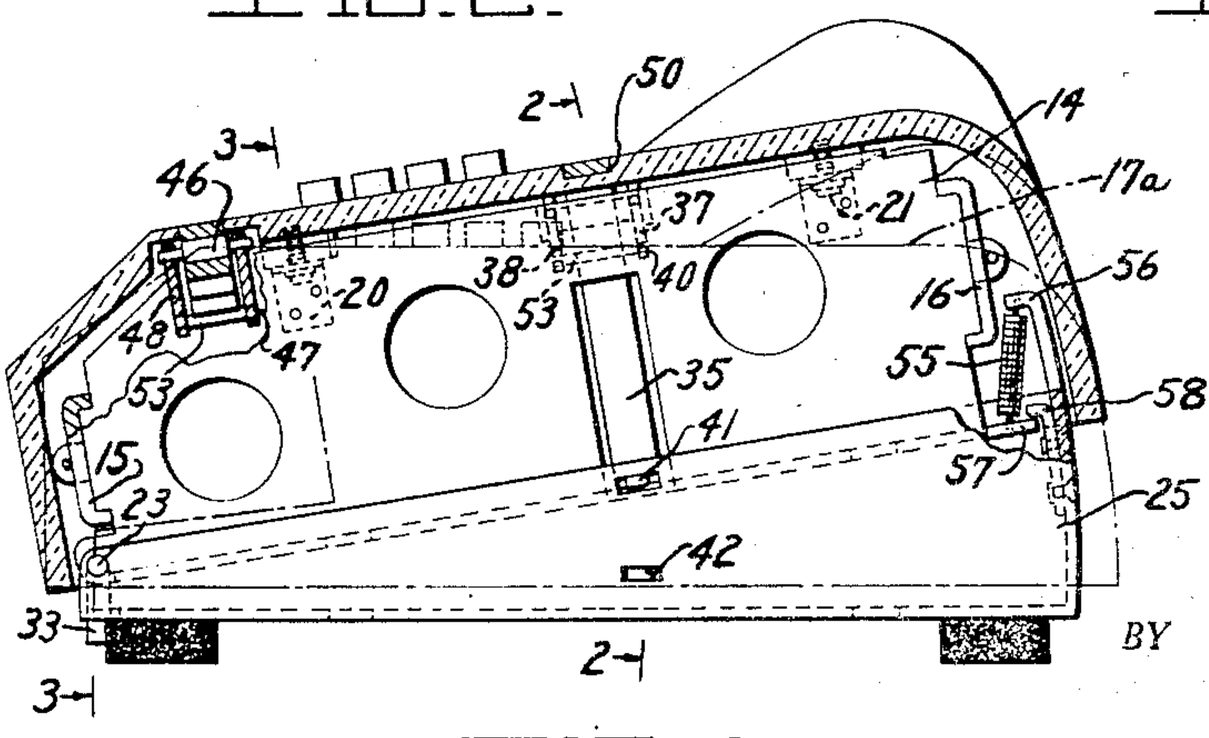

FIG. 4.

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OFFICE MACHINE

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Application October 4, 1949, Serial No. 119,518

5 Claims. (Cl. 235—1)

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This invention relates to office machines, such as adding, calculating, check writing, stenographic and the like machines which utilize a keyboard for entering values and factors into the machine, and has particular reference to an arrangement for facilitating transporting and storing such machines.

In machines of the above type it is normally desirable, for convenience in operating and viewing the keyboard, that the latter be inclined at an angle to the horizontal. Consequently, adding and the like machines are generally designed with the keyboard permanently inclined. However, by so inclining the keyboard, the machine is made higher and more bulky than would otherwise be necessary. This increase in heighth is often a decided disadvantage when attempting to store the machine in a desk drawer or other relatively small storage space and in order to overcome these disadvantages, a telescoping or collapsing machine arrangement has been developed as disclosed and claimed in the copending application of Nadine Freeman et al., Serial No. 119,519, filed Oct. 4, 1949.

Also, in the copending application of Robert E. Boyden, Serial No. 119,517, filed Oct. 4, 1949, retractable carrying handles which are permanently mounted on the machine are disclosed and claimed. Such handles facilitate carrying of the machine and when in retracted position are out of the way of the operator and rendered inconspicuous.

The present invention has for its principal object to facilitate control of the above noted telescoping or collapsing feature.

Another object is to utilize carrying handles of the foregoing type to control the above noted collapsing feature.

The above objects are accomplished by the present invention by providing a locking device for selectively locking the machine in different tilted positions, which lock is controlled by the carrying handles. Movement of the handles from retracted to extended carrying positions releases the locking device permitting the base and chassis of the machine to be relatively positioned.

As an example of the use of the present invention, let it be assumed that the machine is in its extended normal operating position and that it is desired to place the same in a desk drawer or other storage compartment of limited space. The handles are first raised to carrying position, thereby releasing the locking device, and the machine is carried to its storage place. As the machine is placed in its storage compartment and

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while the handles are still in their extended carrying positions (thus holding the lock released) the upper portion of the machine is pressed down into collapsed condition. Thereafter, the handles are allowed to drop into their retracted positions which enables the locking device to again function to lock the machine into such collapsed condition.

When it is desired to later use the machine, the handles are raised to lift the machine, thereby releasing the locking device so that the machine may assume its extended operating condition. After carrying the machine to the place where it is to be operated, the handles are merely released to their retracted positions thus locking the machine in such extended or raised operating condition.

The drawings illustrate a preferred embodiment of the invention which is intended for the purpose of explaining the nature of the invention and the manner of its use without intending that the invention should be considered as limited to the details of the construction herein disclosed.

Fig. 1 is a perspective view of an adding machine embodying the present invention.

Fig. 2 is a transverse sectional view taken substantially along the line 2—2 of Fig. 4, illustrating the locking device and controls therefor, for locking the machine in different tilted positions.

Fig. 3 is a transverse sectional view taken substantially along the line 3—3 of Fig. 4, illustrating the pivotal support for the machine chassis.

Fig. 4 is a longitudinal sectional view taken substantially along the line 4—4 of Fig. 2.

The machine is illustrated as an adding machine embodying a keyboard comprising a series of keys 11 for the purpose of entering selected amounts and for conditioning and controlling the computing mechanisms of the machine as desired. A rotatable platen 10 is provided adjacent the rear of the machine to carry a paper strip past a printing mechanism (not shown) for the purpose of recording various factors and amounts on the strip.

It is to be understood, however, that the machine may be of the ten key type (as shown) or the full key keyboard type, either hand driven or motor driven, and may alternatively be a calculating machine, check writer or the like since the present invention is not limited to any particular type of keyboard equipped office machine but can be applied to any of the above and other types with equal advantage.

Generally, in all such machines, however, the computing and operating mechanisms thereof are carried by a frame or chassis. In the present instance, a chassis, generally indicated at 12, is provided to carry the various mechanisms (not shown) of the machine and comprises a floor plate 13 having sides 14 integral therewith. End braces 15 and 16 (Fig. 4) extend across and are suitably secured to the ends of the side frames 14, thus forming a rigid boxlike frame unit for containing and supporting the operating mechanisms.

A housing 17 of plastic or the like extends over the machine proper having an opening 18 in the top thereof through which the keys 11 extend. The housing includes a skirt 19 extending downwardly therearound to cover the sides 14 and end braces 15 and 16 of the machine frame.

The housing 17 is removably secured to the frame 12 through brackets 20 (Figs. 3 and 4) suitably attached to the frame sides 14. Screws 21 removably secure the housing to the brackets 20 from the under side of the machine so as to be invisible from the exterior.

The chassis unit, including the housing 17, is mounted on a supporting base generally indicated at 22 for movement into either of two positions about coaxial pivot pins 23 located adjacent the front end of the machine. The base 22 comprises a floor plate 24 mounted on machine supporting feet 9. An integral skirt 25 extends upwardly from the base 22 and is located between the sides 14 of the machine frame 12 and the skirt 19 of the housing 17, thus forming a substantially soundproof and dustproof enclosure for the operating parts of the machine in either tilted position of the chassis unit about the pins 23.

The pins 23 extend through the forward portion of the frame sides 14 and the skirt 25 of the base, thus forming trunnion bearings, and are attached to slides 26. The latter are provided with slots 27 guided over pins 28 attached to the floor plate 24, permitting the pins 23 to be retracted so as to enable the chassis to be removed from the base for repair or inspection purposes. Ears 30 extend upwardly from the adjacent ends of the slides 26 and a compression spring 31 is inserted therebetween to normally hold the slides and pivot pins 23 in their outer illustrated positions. Tabs 33 extend downwardly from the adjacent ends of the slides 26, through an opening 34 in the floor plate 24, whereby the latter may be grasped and moved inwardly to release the pins 23 from pivotal engagement with the skirt of base 22.

Means are provided for selectively locking the machine chassis and housing 17 in either their normal tilted operating position, as shown in the full lines in the drawings, or in collapsed position, illustrated by dot-and-dash lines 17*a* (Fig. 4), for storage or the like purposes wherein the upper surface of the housing 17 and the general plane of the keyboard extends substantially horizontally or parallel with the supporting surface for the machine.

Referring to Figs. 2 and 4, in particular, lock pieces 35 are provided on opposite sides of the machine chassis and each is pivoted on a pin 36 extending between two transverse plates 37 and 38. The latter are formed with tenons 40 fitting snugly within holes in the sides 14 whereby to hold the plates in rigid relation to the machine chassis. Each lock piece 35 has a locking ear 41 on the lower end thereof adapted to

lock within either of two spaced openings or detents 42 formed in the adjacent side portion of the skirt 25 of the base 22. The upper end of each lock piece 35 is provided with an extension 43 and a spring 44 is tensioned between this extension and the chassis floor plate 13 so as to normally hold the lock piece in locking engagement with one or the other of the openings 42.

Carrying handles generally indicated at 45 are provided for carrying the machine from place to place. These handles are U-shaped and the legs 145 of each thereof are pivoted on two spaced frame pins 46. One of said pins extends between the aforementioned transverse plates 37 and 38 and the other pin extends between a second pair of similar frame plates 47 and 48.

The legs of the handles 45 extend through openings 49 in the top of the housing 17 and, when in retracted position, fit in wells 50 so that the upper surfaces of such handle legs will lie flush with the upper surface of the housing. This arrangement places the handles out of the way of the operator's fingers and obviates the possibility of his fingers or fingernails catching on the same when manipulating the keys 11.

The rearmost leg of each handle is provided with a foot 51 extending at right angles thereto and a spring 52 is extended between such feet to normally hold the handles in their retracted positions. However, when the handles are raised to their carrying positions shown by the dotted lines 45*a* in Fig. 2 for the purpose of carrying the machine, the feet 51 will engage the extensions 43 of the lock pieces 35, thereby rocking such lock pieces to retract the locking ears 41 thereof from engagement with the base so that the chassis may be lowered into its collapsed position. By releasing the handles 45 to their retracted positions while the chassis is held in its collapsed position, the ears 41 of the locking pieces will be inserted by their springs 44 into the lower openings 42 to lock the chassis in this position.

Likewise, if it is desired to locate the machine in extended operating condition, the handles are raised to carrying position, permitting the chassis to be moved to its upper, extended position wherein it can be locked by releasing the handles to their retracted positions.

A spring 55 is tensioned between an extension 56 of the rear of the base skirt 25 and an extension 57 of the chassis frame 12 to normally urge the chassis into its upper position when released by the locking pieces 35. A stop 58 is mounted on the skirt 25 to arrest the chassis when it reaches its upper extended position.

The handles 45 are so arranged that when in carrying position they will act as an integral part or rigid extension of the machine so as to eliminate any free swinging action or pendulum swinging of the machine while being carried. For this purpose, it will be noted that the handles straddle the keyboard, and the inner pivoted ends of the legs thereof are located on opposite sides of the longitudinal center of the machine but in spaced apart relation from each other. As the handles 45 are moved to their carrying positions 45*a* wherein they rock the locking pieces 35 to released positions, the latter engage pins 53 extending between the adjacent side plates 37, 38, 47 and 48, thereby limiting movement by the handles beyond their spaced apart carrying positions 45*a*. Thus, when the operator grasps the handles in order to carry the machine, the latter will form a rigid unit and a rigid extension of the machine.

Having thus described the invention, what we desire to secure by United States Letters Patent is:

1. In an office machine, the combination of a machine chassis, a base, means on said base supporting said chassis for movement relative to said base, means for selectively locking said chassis in any of a plurality of positions relative to said base, a handle for carrying said machine, means supporting said handle on said chassis for movement between a retracted position and a carrying position, and means controlled by said handle upon movement thereof between said retracted position and said carrying position for releasing said locking means.

2. In an office machine, the combination of a machine chassis, a base, means on said base supporting said chassis for tilting movement in a substantially vertical direction, means for selectively locking said chassis in any of a plurality of tilted positions, a handle for carrying said machine, means supporting said handle on said chassis for movement between a retracted position and a carrying position, and means controlled by said handle upon movement thereof from said retracted position to said carrying position for releasing said locking means.

3. In an office machine, the combination of a machine chassis, a base, means pivotally supporting said chassis on said base for tilting movement about a horizontal axis, means for selectively locking said chassis in any of a plurality of positions relative to said base, a handle for carrying said machine, means pivotally supporting said handle on said chassis for movement between a retracted position and a carrying position, and means operable by said handle upon movement

thereof from said retracted position to said carrying position for releasing said locking means.

4. In an office machine, the combination of a machine chassis, a base, means pivotally supporting said chassis on said base for tilting movement about a horizontal axis, detent means on said base, a locking element carried by said chassis and engageable with said detent means for locking said chassis in any of a plurality of positions relative to said base, a handle for carrying said machine, means on said chassis pivotally supporting said handle for movement between a retracted position and a carrying position, and means operable by said handle upon movement thereof from retracted position to carrying position for releasing said locking element from engagement with said detent means.

5. In an office machine, the combination of a machine chassis, a base, means pivotally supporting said chassis on said base for tilting movement about a horizontal axis, a locking element carried by said chassis and engageable with said base for locking said chassis in any of a plurality of positions relative to said base, spring means for normally engaging said locking element with said base, a handle for carrying said machine, means on said chassis pivotally supporting said handle for movement between a retracted position and a carrying position, and means on said handle adapted upon movement thereof from said retracted position to said carrying position to release said locking element from engagement with said base.

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No references cited.