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Sebastiani

[11] **3,885,762**

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[54] **ADJUSTABLE STAND FOR ELECTRONIC CALCULATORS OR THE LIKE**

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[52] **U.S. Cl.** **248/13;** 248/346

[51] **Int. Cl.** **F16f 15/02**

[58] **Field of Search** ..... 248/13, 19, 23, 346, 174, 248/176, 172; 235/61 A; 312/263; 220/222; 217/13; 211/72

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[57] **ABSTRACT**

The present invention provides a stand which can be adjusted for use with electronic calculators or similar devices, having a wide range of sizes. The stand supports the electronic calculator at an inclined angle for easy use and improved visibility. For shipment, the stand can be knocked down into four pieces which may be assembled very easily. In the process of assembly, the stand can be adjusted to the desired size. Illustrated stand comprises left and right side panels, together with front and rear panels which are adapted to be connected to the side panels by means of fastening elements which are preferably formed integrally with the panels. The front and rear panels comprise modular elements with score marks or the like therebetween. Fastening elements are formed on the various modular elements so that each modular element is complete in itself. Thus, the front and rear panels can be adjusted to the desired width by cutting off one or more of the modular elements along the score marks. The panels can be made of a suitable plastic material which is easy to cut with ordinary scissors. After the front and rear panels have been cut to the desired size, the fastening elements on the front and rear panels are engaged with the mating elements on the side panels. In the illustrated construction, the fastening elements comprise pins on the front and rear panels adapted to be received in openings formed in flanges on the side panels. Other flexible flanges are formed on the side panels to retain the front and rear panels against accidental disconnection therefrom.

10 Claims, 8 Drawing Figures

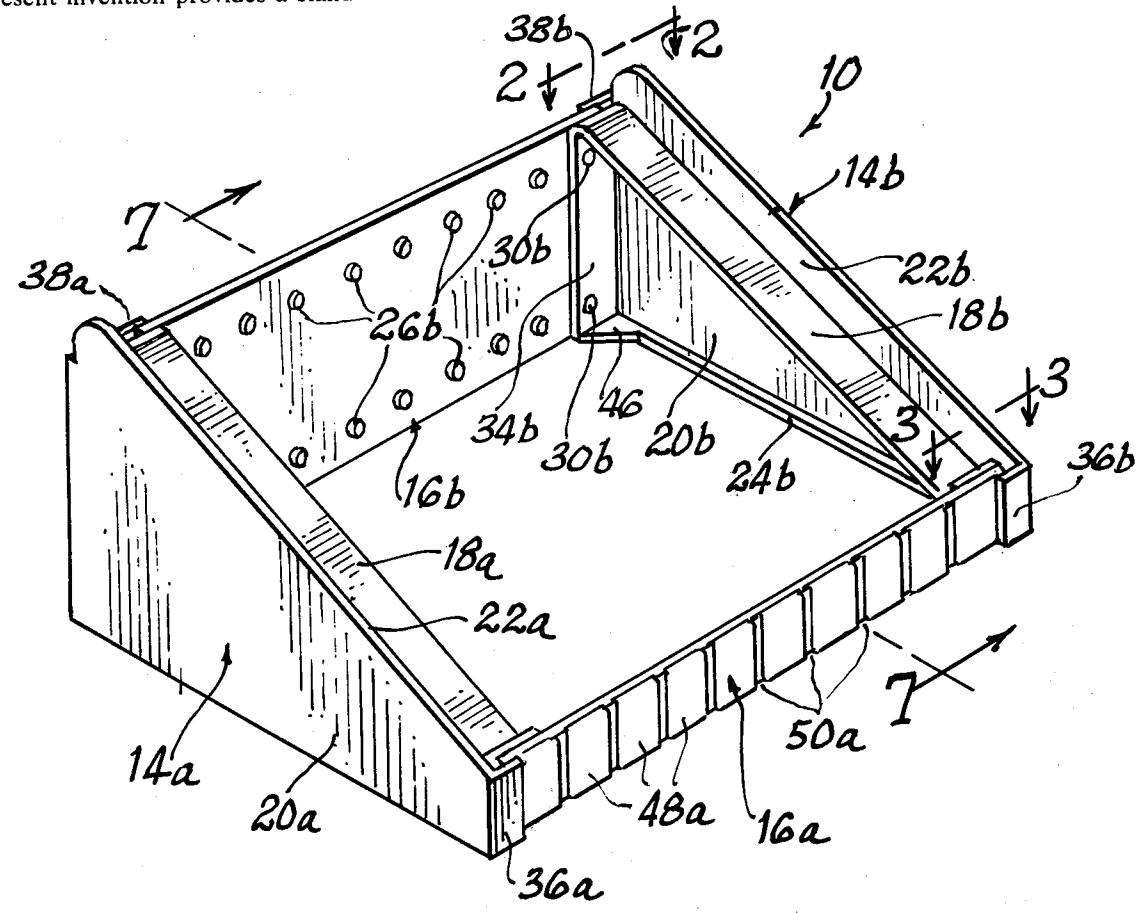


FIG. 1

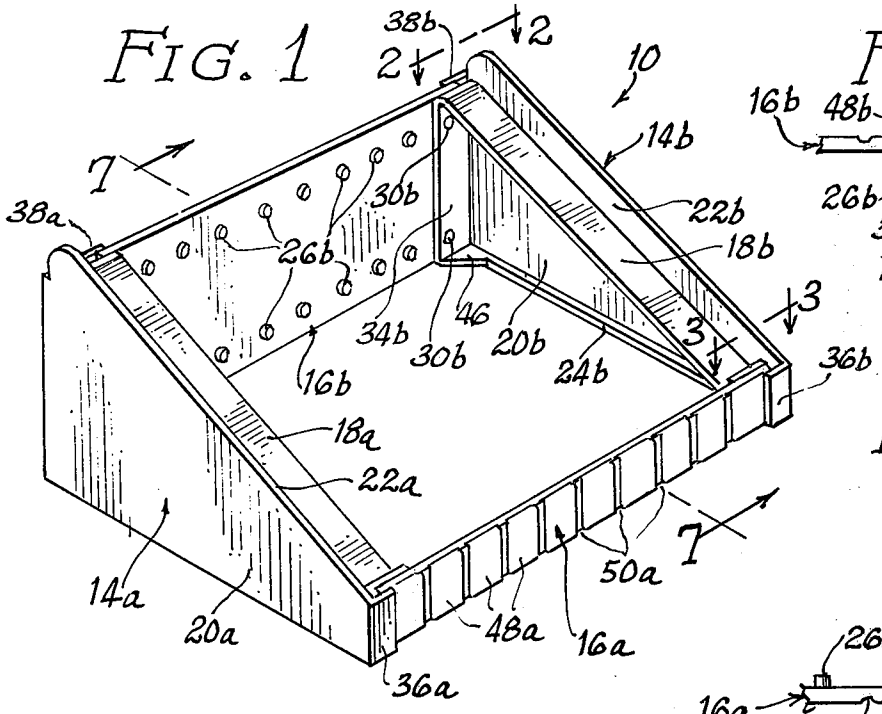


FIG. 2

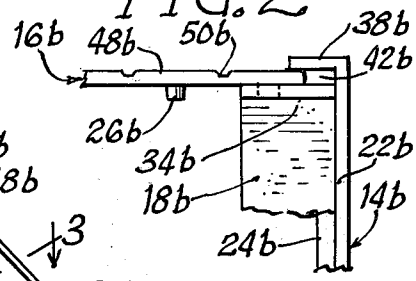


FIG. 3

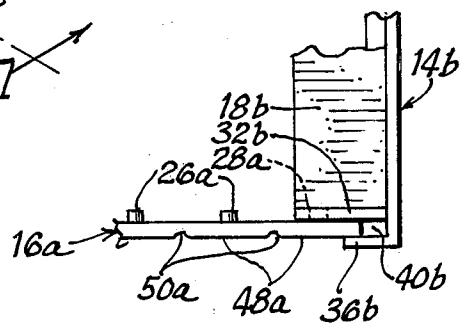


FIG. 4

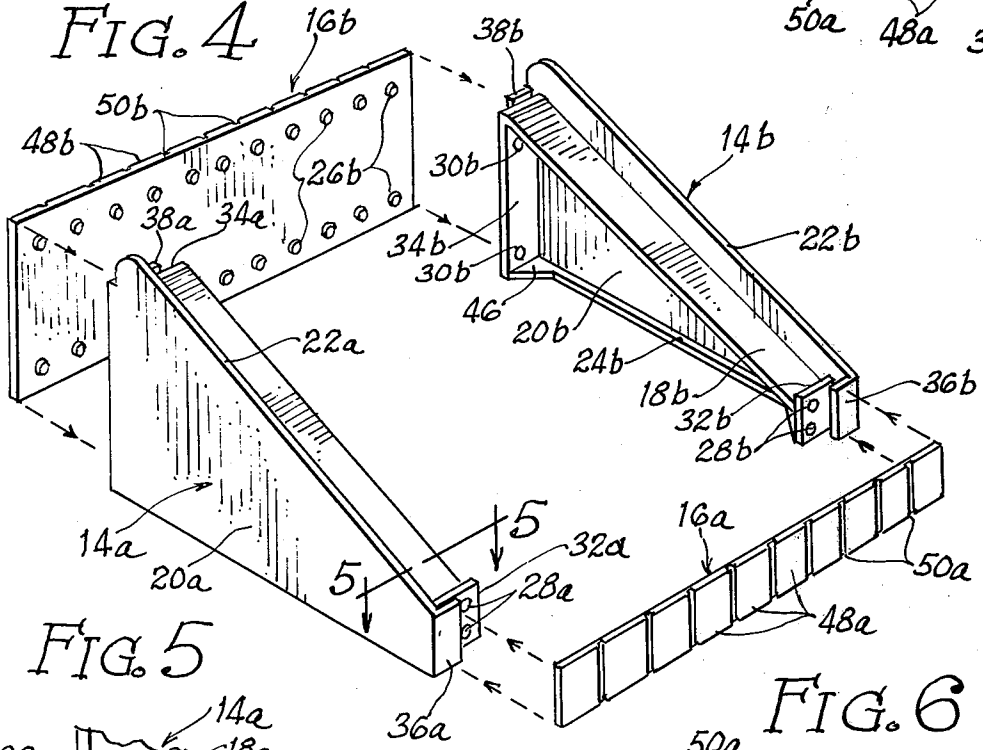


FIG. 5

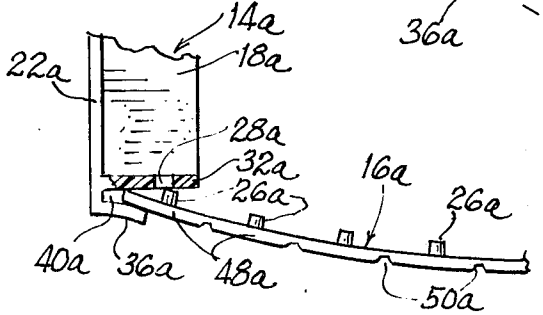


FIG. 6

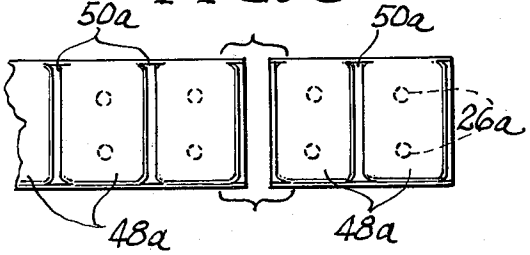


FIG. 7

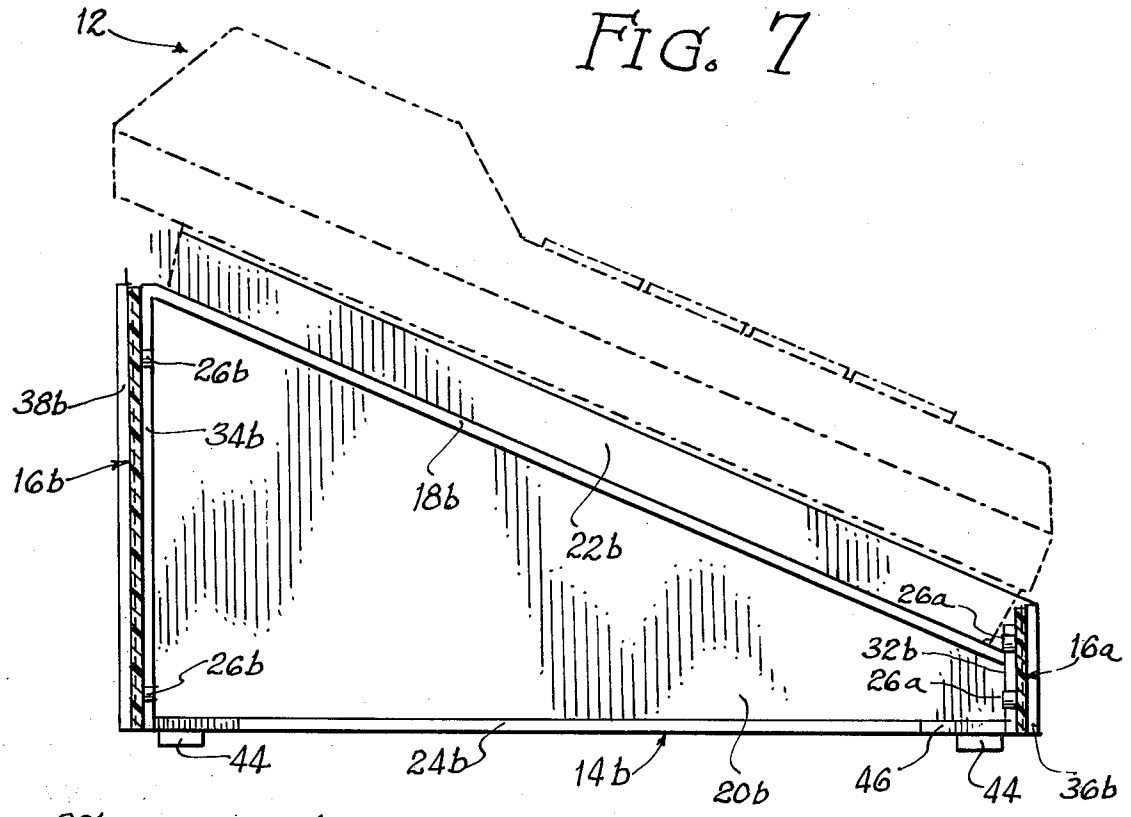
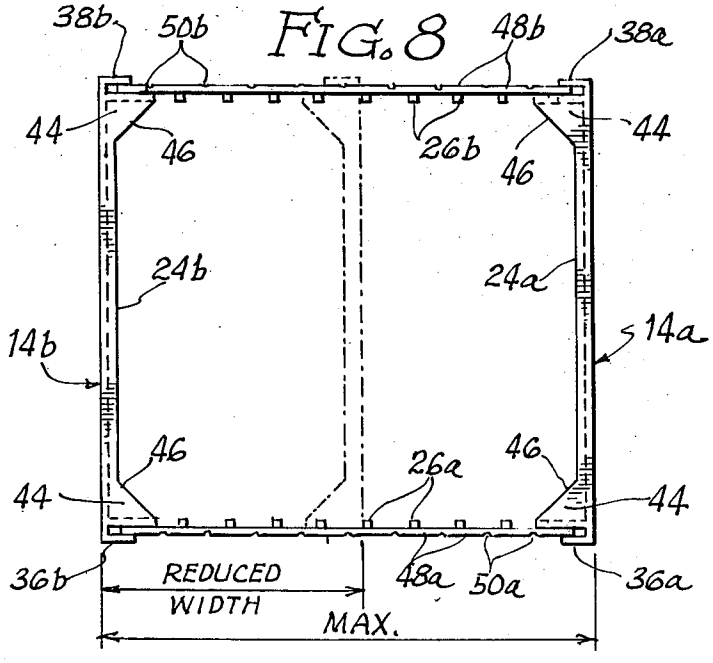

12
26b
38b
34b
16b
18b
22b
26a
32b
16a
26a
26b
44
24b
14b
20b
46
44
36b

FIG. 8


38b
50b
48b
38a
44
46
26b
46
44
24b
24a
14b
14a
46
26a
46
44
44
36b
REDUCED WIDTH
48a
50a
36a
MAX.

ADJUSTABLE STAND FOR ELECTRONIC CALCULATORS OR THE LIKE

This invention relates to a new and improved adjustable stand for holding an electronic calculator or any other suitable device, such as an adding machine or some other type of office machine.

One object of the present invention is to provide a new and improved stand which will hold an electronic calculator or the like at an inclined angle, so that the calculator can be used more easily, and so that the display of the electronic calculator can be read much more easily than would otherwise be the case.

A furter object is to provide a new and improved stand which comprises a plurality of easily assembled pieces, so that the stand can be knocked down for shipment.

Another object is to provide such a new and improved stand which can be adjusted to the desired size during the process of assembly.

A further object is to provide such a new and improved adjustable stand which can be manufactured very economically, so that the stand can be sold at a low price.

Generally, the illustrated stand of the present invention comprises four easily assembled panels or members so that the stand can be shipped in a disassembled or knocked down condition. Thus, the stand comprises left and right side panels, together with front and rear panels. Disengageable fasteneing elements are provided to connect the front and rear panels to the side panels. The upper edges of the side panels are preferably inclined and may be provided with flanges or ledges for supporting an electronic calculator or the like at an inclined angle. Fastening elements are provided on the front and rear panels for engagement with mating elements on the side panels. For example, the fastening elements on the front and rear panels may take the form of pins adapted to be received in openings formed in flanges on the side panels. The front and rear panels preferably comprise a plurality of modules separated by score marks or the like. Fastening elements are formed on the various modules so that each module is complete in itself. Thus, the front and rear panels can be adjusted to the desired width by cutting off one or more of the modules along the score marks. The pins or other fastening elements on the front and rear panels may then be engaged with the openings or other mating elements on the side panels. Flexible flanges are preferably provided on the side panels to retain the front and rear panels against accidental disconnection from the side panels. The panels are preferably made of an economical resinous plastic material which can be easily be cut with ordinary scissors.

Further objects, advantages and features of the present invention will appear from the following description, taken with the accompanying drawings, in which:

FIG. **1** is a perspective view showing an adjustable stand to be described as an illustrative embodiment of the present invention.

FIGS. **2** and **3** are fragmentary plan views, taken generally as indicated by the lines **2—2** and **3—3** in FIG. **1.**

FIG. **4** is a view similar to FIG. **1,** but with the stand disassembled.

FIG. **5** is a fragmentary plan view illustrating the manner in which the front and rear panels are assembled with the side panels, the view being taken generally as indicated by the line **5—5** in FIG. **4.**

FIG. **6** is a fragmentary elevation showing the manner in which one or more of the modules may be severed from the front and rear panels.

FIG. **7** is a vertical section, taken generally along the line **7—7** in FIG. **1.**

FIG. **8** is a bottom view of the stand, showing the manner in which it can be adjusted to various widths.

As just indicated, the drawings illustrate an adjustable stand **10** which will find many applications, but is particularly well adapted for holding an electronic calculator **12,** shown in broken lines in FIG. **7.** The stand **10** may also be used with various other machines or devices, such as adding machines or other office equipment.

It will be seen that the stand **10** holds the calculator **12** in a raised, inclined position, in which it may be used much more conveniently than when the calculator is lying flat on a desk top or other supporting surface. Moreover, the readout or display on the calculator **12** is rendered much more visible when the calculator is mounted on the adjustable stand **10.** As will be described in detail presently, the stand **10** may be adjusted to accomodate electronic calculators or the like of a wide range of sizes.

It will be seen from FIGS. **1** and **4** that the illustrated stand **10** comprises left and right side panels or members **14***a* and *b*, together with front and rear panels or members **16***a* and *b*, removably connected between the side panels. The illustrated side panels **14***a* and *b* have inclined flanges or ledges **18***a* and *b*, adapted to support the electronic calculator **12** or some other similar device. The ledges **18***a* and *b* project inwardly from vertical side walls **20***a* and *b*, which may be generally trapezoidal in shape, as will be evident from FIGS. **1** and **4.** Preferably, portions of the side walls **20***a* and *b* project upwardly from the ledges **18***a* and *b* as upwardly projecting flanges **22***a* and *b*, adapted to confine the electronic calculator **12** so that it will be retained on the ledges **18***a* and *b* against accidental displacement. Reinforcing flanges **24***a* and *b* may be arranged to project inwardly from the side walls **20***a* and *b* along their lower edge portions.

It will be understood that each of the side panels **14***a* and *b* may be molded in one piece from any suitable resinous plastic material, such as polyethylene, polypropylene, polystyrene or the like.

The illustrated front and rear panels or members **16***a* and *b* are in the form of plates or sheet members, each of which may be molded in one piece from any suitable resinous plastic material, such as those just mentioned. Of course, the panels **14***a* and *b* and **16***a* and *b* may also be made of any other suitable materials. The front panel **16***a* is preferably lower in height than the rear panel **16***b*, because of the trapezoidal shape of the side panels **14***a* and *b*.

Disengageable fastening elements are preferably provided to connect the front and rear panels **16***a* and *b* to the side panels **14***a* and *b*. These fastening elements are preferably formed integrally with the various panels. As shown, such fastening elements preferably comprise pins **26***a* and *b* projecting from the front and rear panels **16***a* and *b*. The pins **26***a* are arranged in a series of pairs, projecting rearwardly from the front panel **16***a*. Similarly, the pins **26***b* preferably are arranged in a series of pairs, projecting forwardly from the rear panel

16*b*. The pins **26***a* and *b* are spaced at intervals along the front and rear panels **16***a* and *b*.

The pins **26***a* and *b* on the front and rear panels **16***a* and *b* are adapted to mate with fastening elements on the side panels **14***a* and *b*. Such fastening elements may take the form of openings **28***a* and *b* and **30***a* and *b*, formed in front and rear flanges **32***a* and *b* and **34***a* and *b*, projecting laterally on the side members **14***a* and *b*. Two of the openings **28***a* and *b* are formed in the vertical front flanges **32***a* and *b*. Similarly, two of the openings **30***a* and *b* are formed in the rear vertical flanges **34***a* and *b*.

It will be evident that the endmost pairs of pins **26***a* plug into the front openings **28***a* and *b*. Similarly, the endmost pairs of pins **26***b* on the rear panel **16***b* plug into the openings **30***a* and *b* in the rear vertical flanges **34***a* and *b*.

Retaining elements are preferably provided to retain the front and rear panels **16***a* and *b* on the side panels **14***a* and *b* against accidental disconnection. As shown, such retaining elements are provided on the side panels **14***a* and *b*, in the form of front retaining flanges **36***a* and *b* and rear retaining flanges **38***a* and *b*. As shown to best advantage in FIGS. **1** and **3**, the front retaining flanges **36***a* and *b* are adapted to overlap the lateral edge portions of the front panel **16***a*. Similarly, as shown in FIGS. **1** and **2**, the rear retaining flanges **38***a* and *b* are adapted to overlap the lateral edges of the rear panel **16***a* and *b*. In this way, the front and rear panels **16***a* and *b* are held captive on the side panels **14***a* and *b* against accidental disconnection.

The front and rear panels **16***a* and *b*, as well as the front retaining flanges **36***a* and *b* and the rear retaining flanges **38***a* and *b*, are sufficiently flexible to permit easy assembly of the stand **10**, despite the overlapping of the front and rear panels by the retaining flanges. FIG. **5** illustrates the manner in which the front panel **16***a* and the left-hand front retaining flange **36***a* can be flexed to permit the insertion of the endmost pins **26***a* into the openings **28***a* in the flange **32***a*, while the end of the front panel **16***a* is simultaneously inserted behind the retaining flange **36***a*. It will be seen that vertical channels **40***a* and *b* are formed between the vertical flanges **32***a* and *b* and the retaining flanges **36***a* and *b*. The ends of the front panel **16***a* are adapted to be inserted into the channels **40***a* and *b*. Similarly, the vertical channels **42***a* and *b* are formed between the vertical flanges **34***a* and *b* and the retaining flanges **38***a* and *b*. The ends of the rear panel **16***b* are adapted to be inserted into the channels **42***a* and *b*. The rear panel **16***b* and the rear retaining flanges **38***a* and *b* are sufficiently flexible to permit the insertion of the rear panel **16***b*, in a manner similar to that illustrated in FIG. **5**.

It will be seen that the front vertical flanges **32***a* and *b* and the front panel **16***a* extend substantially above the inclined ledges **18***a* and *b*, and thus are effective to act as stops to retain the electronic calculator **12** on the ledges, so that the calculator cannot slide forwardly off the ledges **18***a* and *b*. This retaining action is clearly illustrated in FIG. **7**.

If desired, the side panels or members **14***a* and *b* may be fitted with non-skid feet **44**, made of natural or synthetic rubber, or some other suitable material, cemented or otherwise secured to the side members **14***a* and *b*. As shown, the feet **44** are secured to corner reinforcing flanges **46**, formed on the bottom edge portions of the side panels or members **14***a* and *b*.

As already indicated, the stand **10** is adjustable to accomodate electronic calculators **12** or other devices of various sizes. In the illustrated construction, such adjustability is achieved by constructing the front and rear panels **16***a* and *b* so that they comprise a plurality of modules **48***a* and *b*. The vertical boundaries between the individual modules are preferably defined by providing vertical score marks or grooves **50***a* and *b* between the modules **48***a* and *b*. Each module **48***a* is complete in itself, in that it comprises its own pair of the fastening pins **26***a*, as will be evident from FIGS. **3, 5** and **6**. Similarly, each of the rear modules **48***b* comprises its own pair of the fastening pins **26***b* and thus is complete in itself.

To adjust the width of the stand **10**, one or more of the front modules **48***a* may be severed or otherwise removed from the front panel **16***a*. A corresponding number of the rear modules **48***b* may be severed or otherwise removed from the rear panel **16***b*. An ordinary pair of scissors may be employed to cut off the unneeded modules **48***a* and *b*. Preferably, the front and rear panels **16***a* and *b* are made of a relatively soft resinous plastic material which can easily be cut with ordinary scissors.

It will be seen that the score marks or grooves **50***a* and *b* are positioned midway between the adjacent pairs of the fastening pins **26***a* and *b*. The provision of the score marks or grooves **50***a* and *b* makes it easy to cut off the modules **48***a* and *b* along the correct boundary lines. However, the score marks or grooves **50***a* and *b* may be omitted, if for any reason they are not desired.

The adjustable stand **10** can be shipped in a disassembled or knocked down condition. In this way, the stand can be packaged compactly for shipment.

Before the stand is assembled for use, it can be adjusted to the desired width, to accomodate any particular electronic calculator or other device. FIG. **8** shows the maximum width of the stand in full lines, and reduced width in broken lines. As already indicated, the width of the stand can be reduced by cutting off one or more of the modules **48***a* and *b* from the front and rear panels **16***a* and *b*. An ordinary pair of scissors can be used to cut off the unneeded modules along the score lines **50***a* and *b*. The length of the front and rear panels **16***a* and *b* is made slightly greater than the width of the electronic calculator.

The stand is assembled by mounting the front and rear panels **16***a* and *b* between the side panels **14***a* and *b*. For example, the rear panel **16***b* can be connected first between the side panels **14***a* and *b*. The rear panel **16***b* and the rear retaining flanges **38***a* and *b* can be flexed sufficiently to permit the insertion of the pins **26***b* into the openings **30***a* and *b*, while the ends of the rear panel **16***b* are inserted into the channels **40***a* and *b* between the vertical flanges **28***a* and *b* and the retaining flanges **36***a* and *b*. The front panel **16***a* is then connected between the side panels **14***a* and *b* by flexing the front panel and the retaining flanges **36***a* and *b*, in the general manner illustrated in FIG. **5**, so that the pins **26***a* can be inserted into the openings **28***a* and *b*, while the ends of the front panel **16***a* are inserted into the channels **40***a*.

The electronic calculator **12** is mounted on the stand in the manner shown in FIG. **7**, so that the electronic calculator rests upon the inclined ledges or flanges **18***a* and *b*. The inclined position of the calculator makes it much easier to operate. Moreover, the visibility of the

display on the calculator is greatly increased by mounting the calculator in an inclined position on the stand.

The stand can be made at very low cost by molding or otherwise forming the various components of the stand from a suitable resinous plastic material, such as polyethylene, polypropylene, polystyrene or the like. Nevertheless, the stand is sturdy and highly serviceable. Thus, the stand will find widespread acceptance among users of electronic calculators and other similar devices.

I claim:

1. An adjustable stand for an electronic calculator or other device,

comprising left and right side members,

front and rear members for extending between said side members,

first fastening elements on said front and rear members,

and second fastening elements on said side members for mating with said first fastening elements to secure said front and rear members between said members,

said front and rear members having modules which can be removed from said front and rear members to adjust the size of said stand,

said front and rear members having a series of said fastening elements on said modules whereby new sets of said first fastening elements become operative as said modules are removed from said front and rear members.

2. A stand according to claim **1,**

in which said front and rear members include boundary line markings between said modules to serve as guides along which said modules may be severed from said front and rear members.

3. A stand according to claim **1,**

in which said front and rear panels include score marks between said modules to serve as guides along which said modules can be severed from said front and rear panels.

4. A stand according to claim **1,**

in which said first fastening elements comprise pins projecting from said modules,

said second fastening elements comprising openings in said side members for disengageably receiving said pins.

5. A stand according to claim **1,**

including flexible retaining elements on said members for preventing accidental disengagement of said first and second fastening elements.

6. A stand according to claim **1,**

including flexible retaining flanges on said side members for retaining said front and rear members to prevent accidental disengagement of said first and second fastening elements.

7. A stand according to claim **6,**

in which said first fastening elements comprise pins on said modules,

said side members having openings for receiving said pins.

8. A stand according to claim **7,**

in which said retaining elements include flanges on said side members for overlapping portions of said front and rear members.

9. A stand according to claim **1,**

including inclined supporting elements on said side members for supporting an electronic calculator or other device in an inclined position.

10. A stand according to claim **1,**

in which said front and rear panels include vertical boundary line grooves between said modules to serve as guides along which said modules can be severed from said front and rear panels,

said first fastening elements comprising pins projecting from said modules,

said second fastening elements comprising openings in said side members for disengageably receiving said pins,

said side members having flexible flanges for overlapping said front and rear members to prevent accidental disconnection of said pins from said openings.

* * * * *