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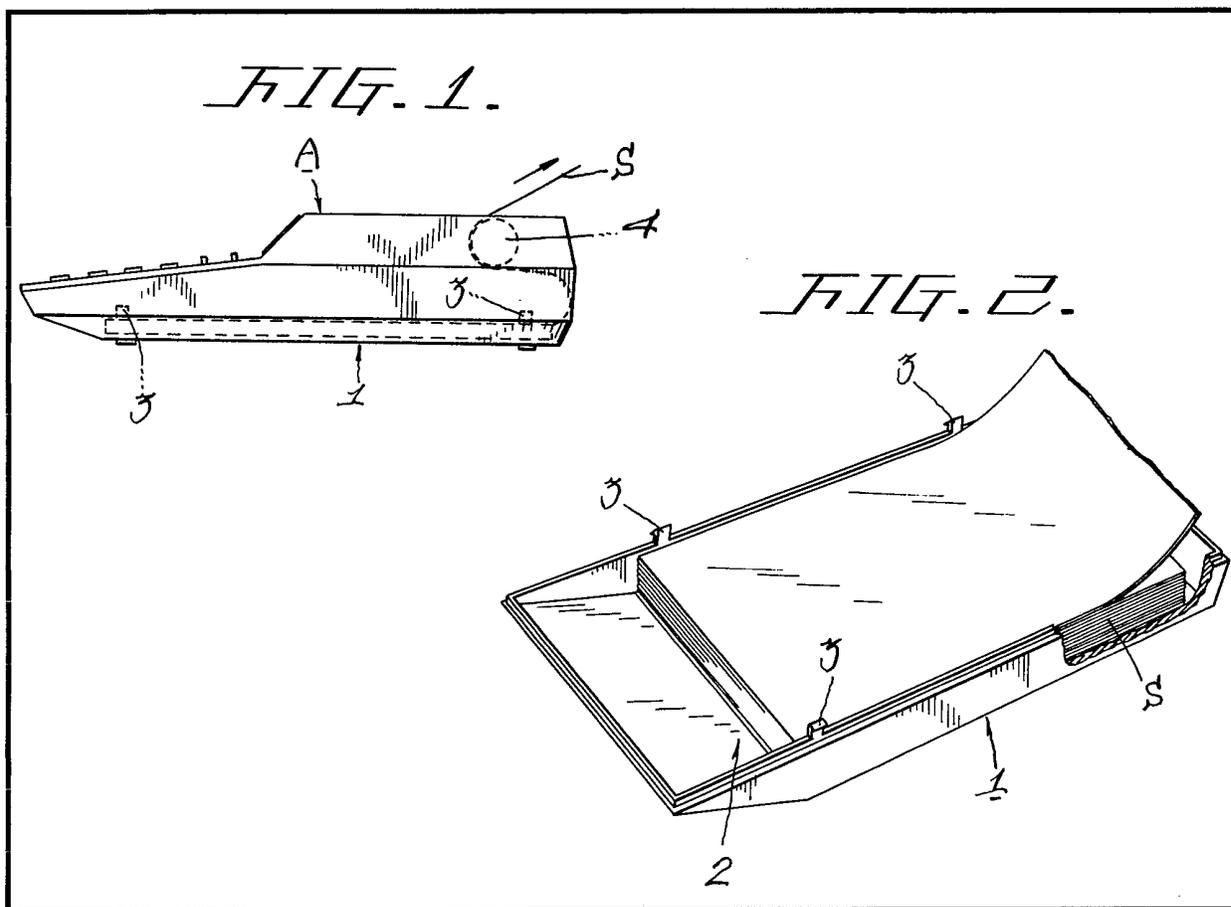
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(54) A recording paper holder for use with an appliance such as an electronic calculator

(57) A recording paper holder, e.g. for zig-zag folded webs for use with an appliance such as an electronic calculator is disclosed. In one embodiment the device comprises a rectangular recording paper receiving framework 1 in which a recording paper receiving chamber 2 is defined for receiving a continuous length of recording paper web S in a folded condition with the leading end of the web extending out of the chamber 2 to a paper feed means 4

along which the paper is guided. The device is attached to the calculator A by cam pieces 3. The device may be pivoted at one of its ends, to the calculator.



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FIG. 1.

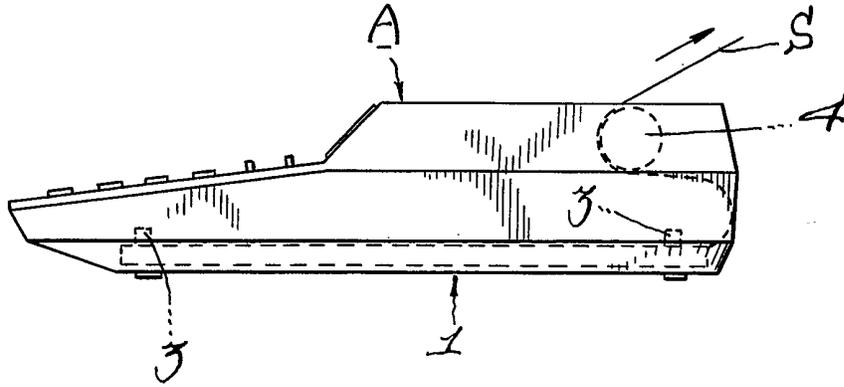


FIG. 2.

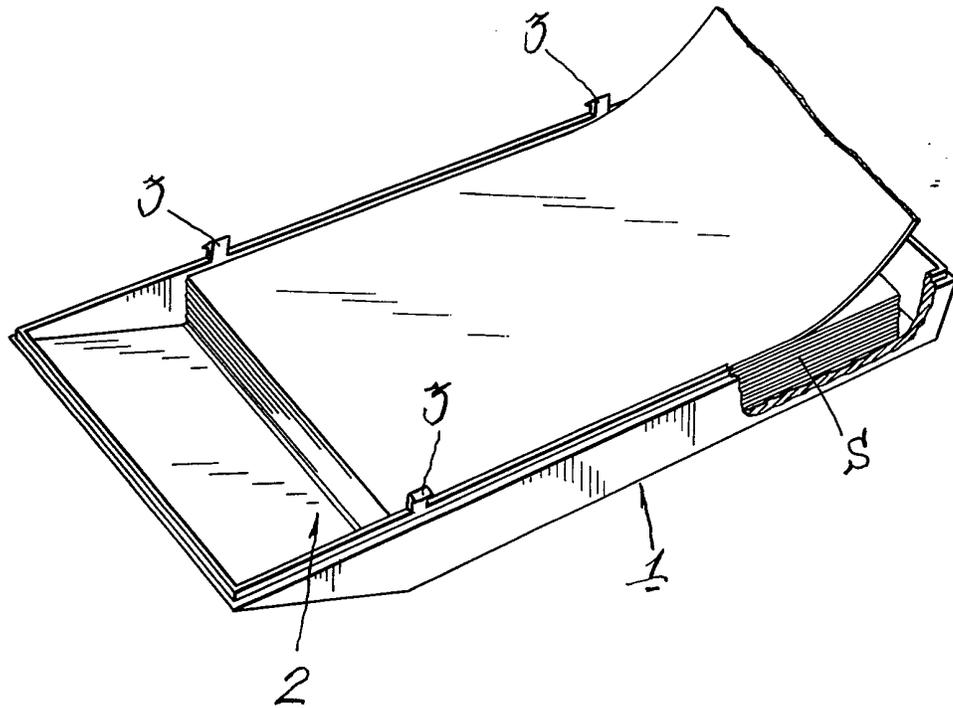


FIG. 3.

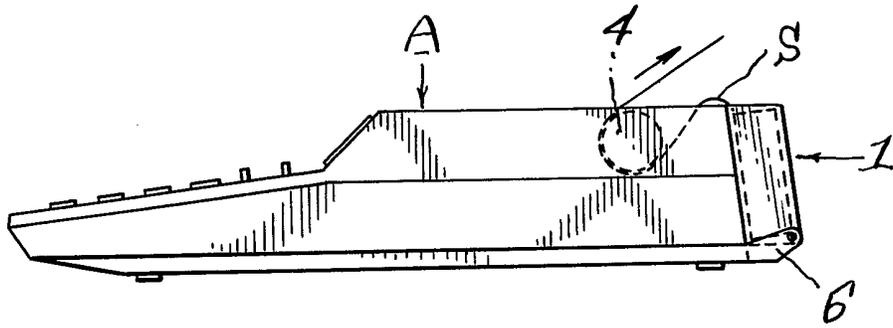


FIG. 4.

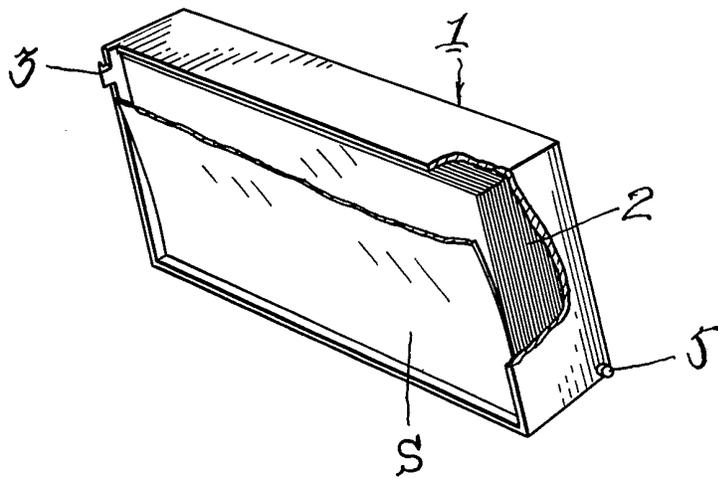


FIG. 6.

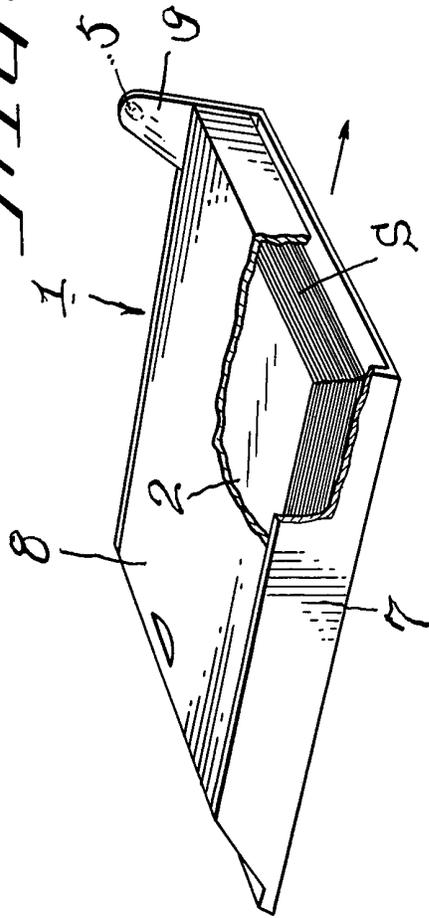
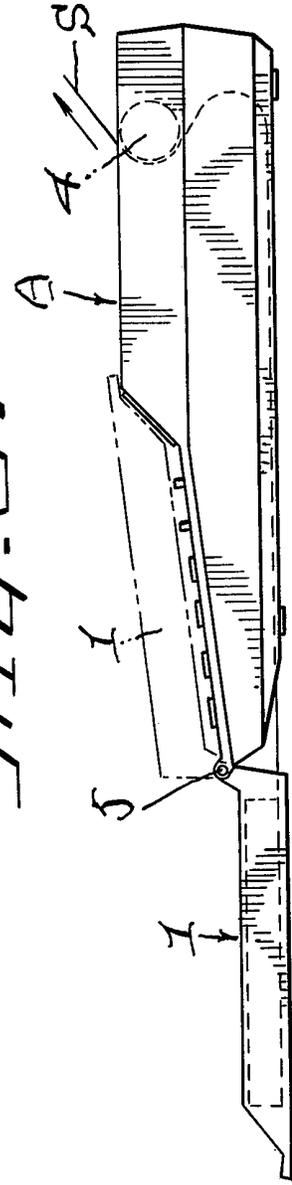


FIG. 5.



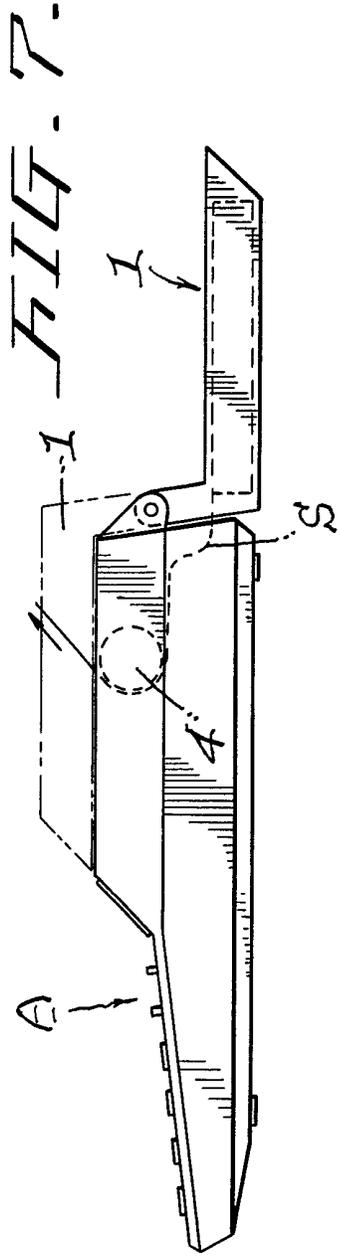


FIG. 8.

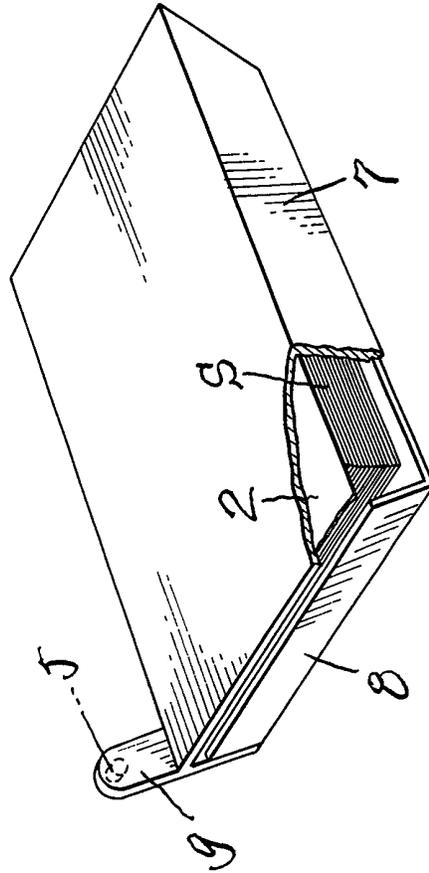


FIG. 9.

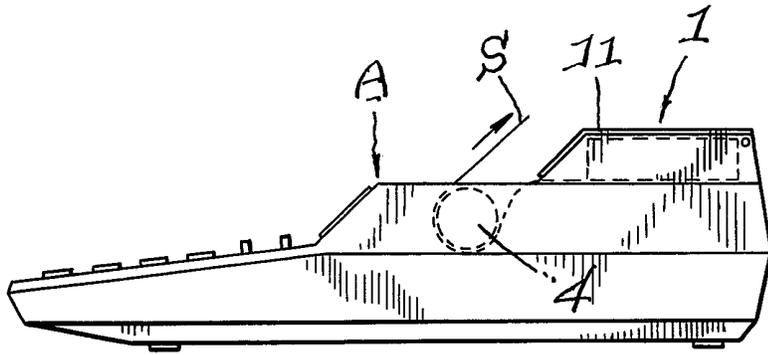


FIG. 10.

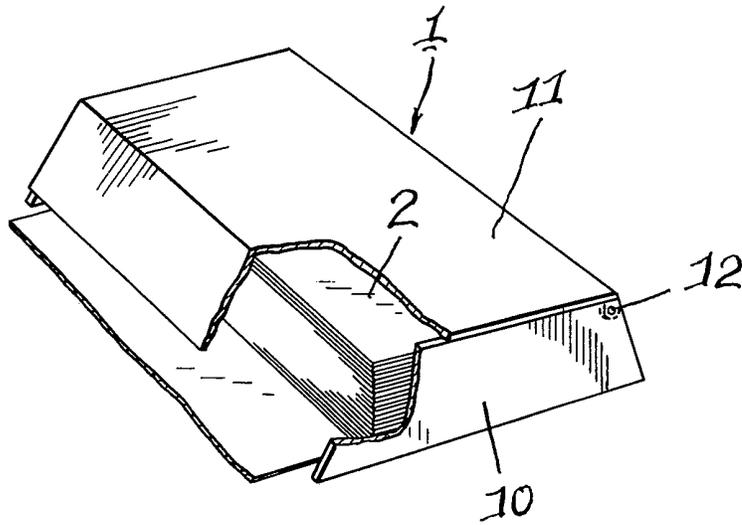


FIG. 11.

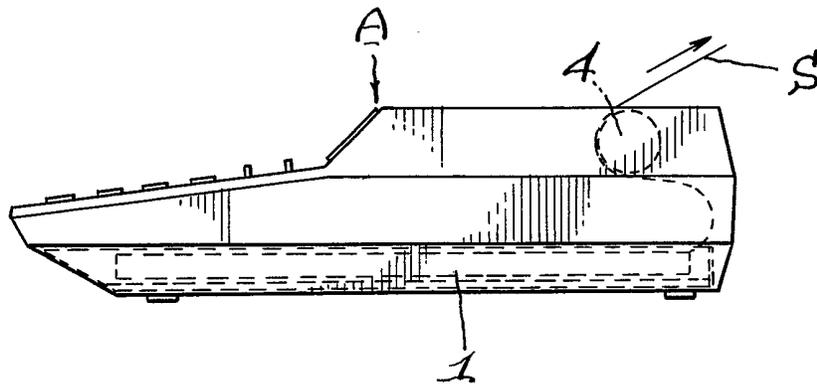


FIG. 12.

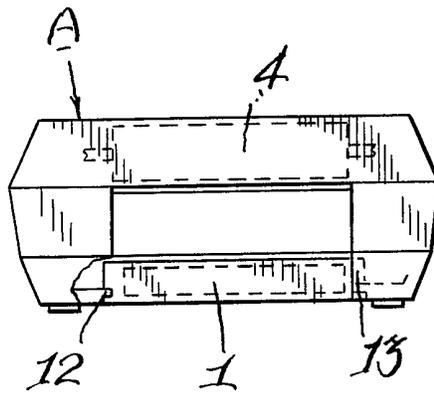


FIG. 13.

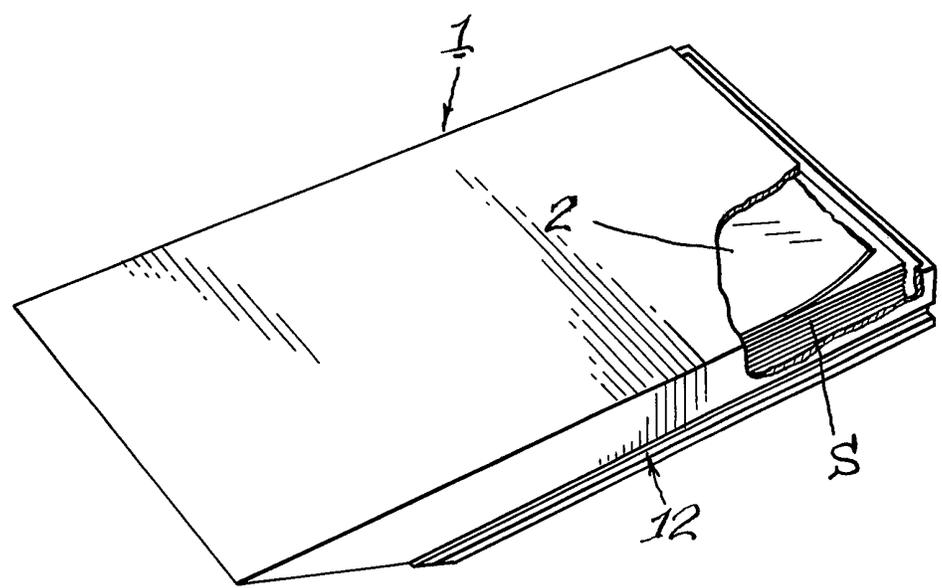
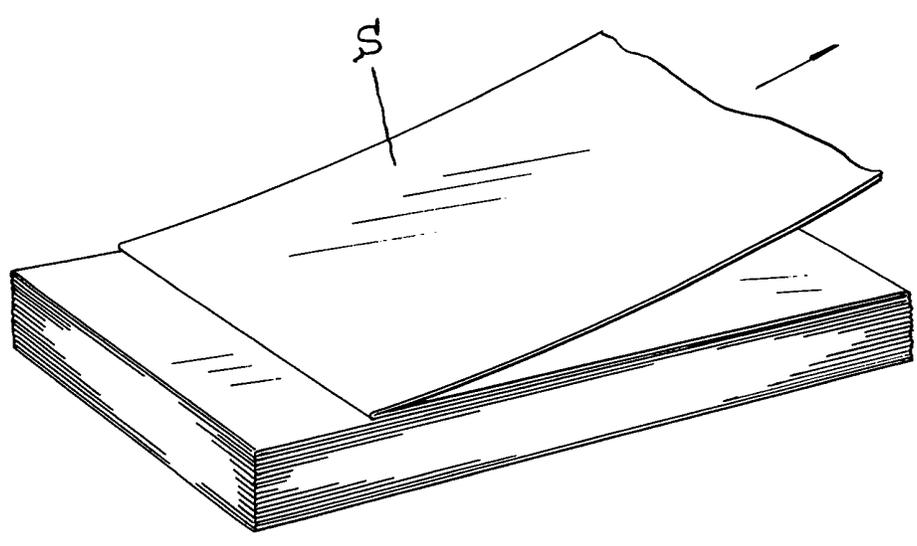


FIG. 14.



SPECIFICATION

A recording paper arrangement device for use with an appliance such as an electronic calculator

This invention relates to a recording paper arrangement device for use with an appliance such as an electronic calculator for receiving a continuous length of recording paper web in a folded condition with the leading end of the paper web extending out of a recording paper receiving chamber to be guided along a paper feed means.

As one of the prior art recording paper arrangement devices, there has been proposed a recording paper arrangement device in which a continuous length of recording paper web is arranged within an appliance such as an electronic calculator in a condition wound about a cylindrical core. However, this prior art recording paper arrangement device tends to present protrusions on the appliance when mounted on the appliance and is inconvenient for carrying the device about.

Therefore, the present invention is to provide a recording paper arrangement device for use with an appliance such as an electronic calculator which is convenient for being carried about and which presents no protrusions on the calculator when attached to the calculator.

The above and other objects and attendant advantages of the present invention will be more readily apparent to those skilled in the art from a reading of the following detailed description in conjunction with the accompanying drawings which show preferred embodiments of the invention for illustration purpose only, but not for limiting the scope of the same in any way.

The accompanying drawings show several embodiments of the recording paper arrangement device in an appliance such as an electronic calculator constructed in accordance with the present invention in which;

Figure 1 is a side elevational view of a first embodiment of the recording paper arrangement as being attached to said electronic calculator;

Figure 2 is a perspective view on an enlarged scale of the recording paper receiving framework of said recording paper arrangement device of Fig. 1 with a portion thereof broken away;

Figure 3 is a side elevational view of a second embodiment of the recording paper arrangement device as being attached to the electronic calculator;

Figure 4 is a perspective view of the recording paper receiving framework of said recording paper arrangement device of Fig. 3 with a portion thereof broken away;

Figure 5 is a side elevational view of a third embodiment of the recording paper arrange-

ment device as being attached to the electronic calculator;

Figure 6 is a perspective view of the recording paper receiving framework of said recording paper arrangement device of Fig. 5 with a portion thereof broken away;

Figure 7 is a side elevational view of a fourth embodiment of the recording paper arrangement device as being attached to the electronic calculator;

Figure 8 is a perspective view of the recording paper receiving framework of said recording paper arrangement device of Fig. 7 with a portion thereof broken away;

Figure 9 is a side elevational view of a fifth embodiment of the recording paper arrangement device as being attached to the electronic calculator;

Figure 10 is a perspective view of the recording paper receiving framework of said recording paper arrangement device of Fig. 9 with a portion thereof broken away;

Figure 11 is a side elevational view of a sixth embodiment of the recording paper arrangement device as being attached to the electronic calculator;

Figure 12 is a rear end elevational view of the recording paper arrangement device of Fig. 11;

Figure 13 is a perspective view of the recording paper receiving framework of the recording paper arrangement device of Fig. 11 with a portion thereof broken away; and

Figure 14 is a perspective view on an enlarged scale of a recording paper to be employed in the recording paper arrangement device of the present invention.

The accompanying drawings show several embodiments of the recording paper arrangement device of the present invention as being applied to an appliance such as an electronic calculator and in these Figures, the same numerals denote the identical or similar parts.

First referring to Figs. 1 and 2 in which the first embodiment of the recording paper arrangement device is shown, a recording paper receiving framework 1 is detachably attached to the bottom of an electronic calculator A.

The recording paper receiving framework 1 is in the form of a rectangular box defining a recording paper receiving chamber 2 the top of which is open and a pair of spaced resilient attachment ears or pieces 3 are formed integrally with and extend uprightly from the upper edge of each of the side walls of the framework to detachably attach the device to the calculator A by snapping action. The recording paper receiving chamber 2 receives a continuous length of recording paper web S in

a folded condition so as to form a plurality of layers laid one upon another with the leading end of the top layer extending out of the paper receiving chamber 2 and the leading end of the top layer of the recording paper web S is guided to and along a recording

paper feed means 4 in the form of a feed roller to be payed out of the recording paper arrangement device.

Now turning to Figs. 3 and 4 in which the second embodiment of the recording paper arrangement device of the invention is shown and the device is substantially similar to the first embodiment except for the attachment means by which the recording paper arrangement device is attached to the calculator A. In the second embodiment, the attachment means comprises a pair of pivot pins 5, 5 extending outwardly from the opposite side walls of the framework 1 at one end thereof and a pair of resilient attachment ears or pieces 3 extending upwardly from the upper edges of the side walls of the framework at the ends remote from the pivot pins 5. The attachment means further includes a pair of support brackets 6, 6 provided at the end adjacent to the end of the framework 1 where the pivot pins 5 are provided and the brackets have holes for rotatably receiving the pivot pins 5 so that the arrangement device is pivotable relative to the calculator A.

Turning now to Figs. 5 and 6 in which the third embodiment of the recording paper arrangement device of the invention is shown, in this embodiment, the rectangular recording paper receiving framework 1 comprises a rectangular outer frame member 7 and a rectangular inner frame member 8 slidably received in the outer frame member to provide a substantially closed recording paper receiving chamber 2 having a paper discharge opening at one end therebetween for receiving the recording paper S in the same manner as that described in connection with the first embodiment. A pair of attachment ears or pieces 9 are formed integrally with and project uprightly from the upper edges of the side walls of the outer frame member 7 at one ends thereof and pivot pins 5 are formed integrally with and extend inwardly from the respectively associated ears to be rotatably received in the corresponding holes (not shown) formed at one or the front end of the calculator A so that the recording paper receiving framework 1 can be pivotally attached to the calculator A. Thus, when the calculator A is not used, the recording paper receiving framework 1 is pivoted back onto the calculator A.

Referring now to Figs. 7 and 8 in which the fourth embodiment of the recording paper arrangement device of the invention is shown and this device is substantially similar to the third embodiment except for the positions of the attachment means and adapted to be pivotally attached to the calculator A.

Figs. 9 and 10 show the fifth embodiment of the recording paper arrangement device of the present invention. In this embodiment of the recording paper arrangement device, the recording paper receiving framework 1 comprises a U-shaped base frame member 10 and

a rectangular cover frame member 11 pivoted to the upper edges of the opposite legs of the base frame member to define the recording paper receiving chamber 2 having the paper discharge opening therebetween. For this purpose, a pair of pivot pins (not shown) are integrally formed with and extend outwardly from the opposite ends of the base frame member 10 adjacent to the upper edges thereof and a pair of brackets 12, 12 are formed integrally with and extend downwardly from the opposite ends of the cover frame member 11 at the rear thereof and have holes for rotatably receiving the pivot pins. The base cover member 10 is suitably secured on the bottom to the top of the calculator A.

In the foregoing embodiments, although the recording paper web S is removably received in the recording paper receiving chamber 2 for replacement, the present invention is also contemplated that the recording paper replacement is effected by so-called cartridge fashion by removing the entire recording paper receiving framework 1 from the calculator A and attaching a new recording paper receiving framework 1 having the recording paper web S received therein to the calculator. One of the cartridge type recording paper arrangement device is shown in Figs. 11 through 13 inclusive, for example. Referring to Figs. 11 through 13 inclusive, the rectangular recording paper receiving framework as shown in these Figures is in the form of a cartridge and the cartridge is provided on the outer surfaces of the opposite side walls thereof with longitudinally extending grooves 12, 12 by means of which the cartridge-type recording paper receiving framework 1 is slidably inserted into and removed out of the calculator A. A stop 13 is provided at the rear end of the calculator A and engaged by the framework 1 as the recording paper S is pulled out of the framework 1.

With the above-mentioned construction and arrangement of the components of the recording paper arrangement device of the present invention, even when the device is mounted on the electronic calculator, the arrangement device presents no protruding portion on the calculator and the recording paper web can be received in the recording paper receiving chamber of limited space. Thus, the recording paper arrangement device is a device suitable and convenient for carrying it about.

While several embodiments of the invention have been shown and described in detail, it will be understood that the same are for illustration purpose only and not to be taken as a definition of the invention, reference being had for this purpose to the appended claims.

CLAIMS

1. A recording paper arrangement device for use with an appliance such as an elec-

tronic calculator which comprises a recording paper receiving section in which a continuous length of recording paper web is received in a folded condition with the leading end of the paper extending out of the recording paper receiving section to be fed to and along a paper feed means.

2. A recording paper arrangement device for use with an appliance such as an electronic calculator which comprises a rectangular recording paper receiving framework removably attached to said appliance and defining a recording paper receiving chamber therein for receiving a continuous length of recording paper web in a folded condition with the leading end of the paper extending out of the chamber and a paper feed means for guiding said leading end of the recording paper web along the paper feed means.

3. The recording paper arrangement device as set forth in Claim 2, in which said recording paper receiving framework includes a pair of opposite side walls, a pair of end walls and a bottom to provide an open-top box-shaped structure and said side walls are provided at the upper edges with resilient upright ears to be snapped into said appliance.

4. The recording paper arrangement device as set forth in Claim 2, in which said recording paper receiving framework is in the form of a rectangular cartridge including a pair of opposite side walls and a pair of opposite end walls and said side walls are formed on the outer surfaces with guide grooves which slidably engage said appliance.

5. A recording paper arrangement device for use with an appliance such as an electronic calculator comprising a rectangular recording paper receiving framework which is pivoted to said appliance and includes a pair of opposite side walls, a pair of opposite end walls and a bottom to provide an open-top recording paper receiving chamber for receiving a recording paper web in a folded condition with the leading end of the paper web extending out of said chamber; and a paper feed means for feeding said recording paper, said side walls having resilient ears at the upper edges to be snapped in said appliance and pivot pins extending outwardly from said side walls and said appliance being formed with holes for rotatably receiving said pivot pins.

6. A recording paper arrangement device for use with an appliance such as an electronic calculator comprising a rectangular recording paper receiving framework which includes an outer rectangular frame member having a pair of opposite side walls, a pair of opposite end walls and a top and an inner rectangular frame member slidably received in said outer frame member and having a pair of opposite side walls, a pair of opposite end walls and a bottom to define a recording

paper receiving chamber in cooperation with said outer frame member with the leading end of the paper extending out of said chamber; and a paper guide means for guiding said leading end of the paper, said side walls of the outer frame member having brackets extending upwardly from the upper edges of the side walls and being provided with pivot pins extending inwardly from said brackets and said appliance having holes for receiving said pivot pins.

7. A recording paper arrangement device for use with an appliance such as an electronic calculator comprising a rectangular recording paper receiving framework which is adapted to be removably secured to said appliance and includes a U-shaped base frame member having a pair of opposite legs and an intermediate portion and a cover frame member pivoted to said base frame member, said cover frame member having brackets at the opposite sides adjacent to the rear ends of said legs and pivot pins extending inwardly from said brackets and said base frame member having holes in said opposite legs for receiving said pivot pins.

8. A recording paper arrangement device substantially as described herein and with reference to and as illustrated in Figs. 1 and 2 of the accompanying drawings.

9. A recording paper arrangement device substantially as described herein and with reference to and as illustrated in Figs. 3 and 4 of the accompanying drawings.

10. A recording paper arrangement device substantially as described herein and with reference to and as illustrated in Figs. 5 and 6 of the accompanying drawings.

11. A recording paper arrangement device substantially as described herein and with reference to and as illustrated in Figs. 7 and 8 of the accompanying drawings.

12. A recording paper arrangement device substantially as described herein and with reference to and as illustrated in Figs. 9 and 10 of the accompanying drawings.

13. A recording paper arrangement device substantially as described herein and with reference to and as illustrated in Figs. 11 to 13 of the accompanying drawings.

14. A recording paper arrangement device as claimed in any of Claims 8 to 13, incorporating recording paper substantially as described herein and with reference to and as illustrated in Fig. 14 of the accompanying drawings.