July 25, 1967 V. G. BELL, JR 3,332,707

FORM MOUNTING BOARDS

Filed July 6, 1966

FIG. 1.

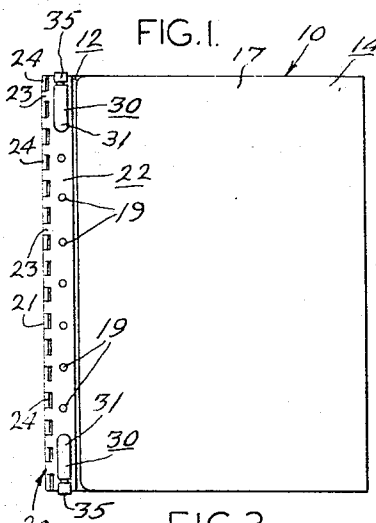


FIG. 2.

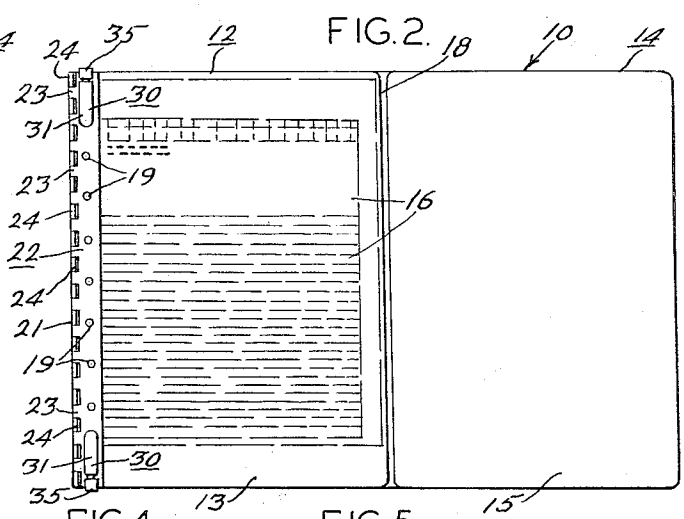


FIG. 3

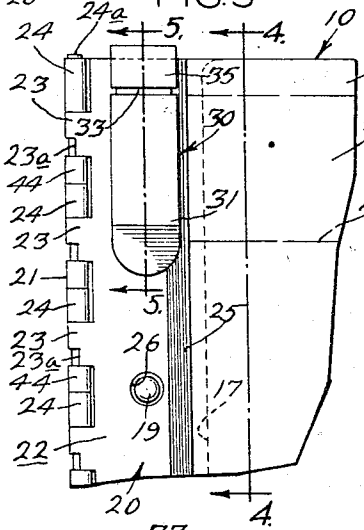


FIG. 4.

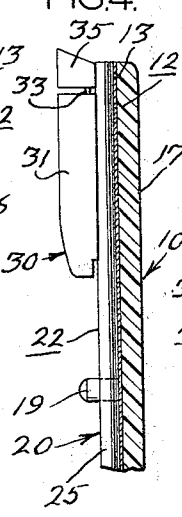


FIG. 5.

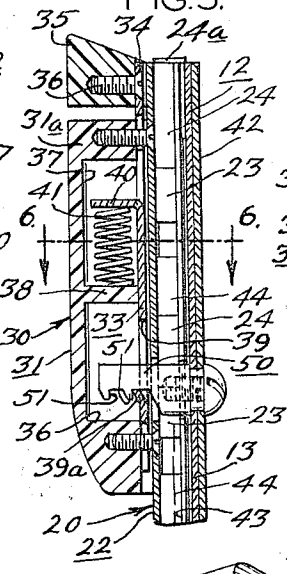


FIG. 6

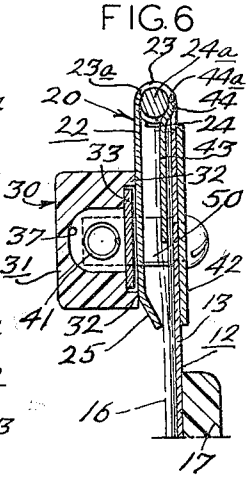


FIG. 7

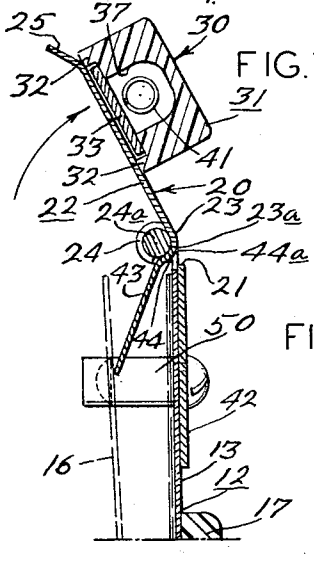
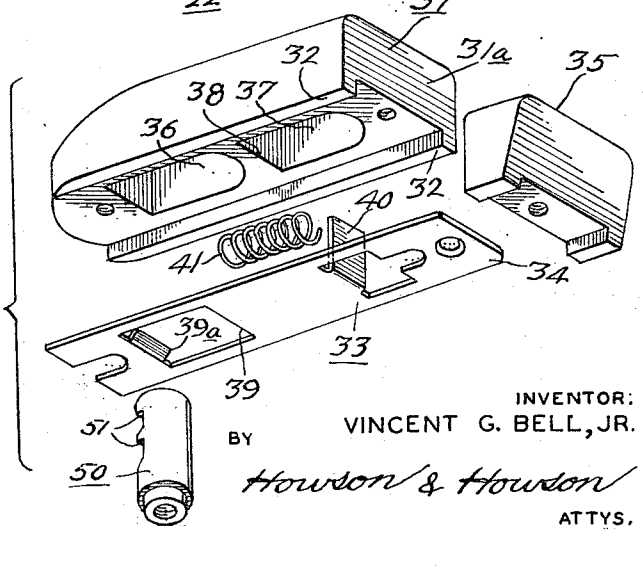


FIG. 8.



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FORM MOUNTING BOARDS

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ABSTRACT OF THE DISCLOSURE

A form mounting board having an integral clamping assembly for forms on the board and including a hingable element mounting a clamping assembly including a slide which is engageable with a ratchet pin projecting upwardly from the board.

Summary of the invention

The present invention relates to mounting boards for forms and the like, and more particularly relates to a mounting board construction for accounting type forms wherein novel clamping means are utilized for holding and accommodating automatically varying thicknesses of forms placed therein.

Generally the mounting board utilized by the present invention includes a plate element adjacent at least one edge of the board, the board comprising a clamp assembly mounted along the one afore-mentioned edge thereof. The novel clamp assembly of the invention comprises a rigid element hingedly secured to the afore-said one edge of the board, extending longitudinally thereof and adapted to overlie a portion of the afore-mentioned plate element. Mounted on one of the elements is a latch mechanism and mounted on the other of the elements is a ratchet pin, the ratchet pin being aligned with and adapted to be held and engaged by the latch mechanism, the latch comprising a casing and including means to accommodate a slide. In the preferred embodiment of the invention, the slide contains a projection which extends exteriorly of the latch casing, the slide including a catch engagable with the ratchet pin so as to prevent relative movement between the elements upon engagement of the catch with the pin. In order to permit the latch mechanism to be in the normally closed or engaging position relative to the pin, biasing means are provided cooperating with the slide and casing and urging the catch into its normal engagement position against the pin.

State of the prior art

Mounting boards for accounting forms, sometimes referred to as "forms collating boards," are extensively used in connection with accounting systems, for example payroll and disbursement records including shingled checks or voucher stubs. In the exemplified type system, the voucher stubs normally overlie a journal sheet to provide an automatic recording on the journal, of entries made on the shingled stubs. The shingled sheets, stubs or checks, as well as the journal sheets, are typically mounted on the board by a plurality of aligned and spaced studs projecting from and mounted along one edge of the mounting board, and adapted to engage a plurality of correspondingly spaced holes along one marginal portion of the sheets, stubs, etc. Generally some form of clamping means is provided to secure the forms onto the studs.

One of the principal problems associated with the mounting boards as above described lies in the clamping means used to secure the forms on the studs. The problem is that the clamps are not adjustable and consequently are unable to accommodate different thicknesses of forms placed beneath them without an excessive or undue pressure as the compilation of forms increases in thickness. In addition, for the most part, existing clamps are difficult to set requiring excessive care and attention when inserting or removing forms from a mounting board. The latter deficiency is generally due to the fact that existing clamps are somewhat clumsy and difficult to operate.

Description of the invention

In view of the above it is a principal object of the present invention to provide a novel clamp assembly for use on a mounting board, particularly a board of the type adapted to receive accounting forms.

Another object of the present invention is to provide a novel clamp assembly for a mounting board of the aforementioned type, where the clamp assembly is adjustable so as to accommodate different thicknesses of forms placed on the mounting board.

Still another object of the present invention is to provide a clamp assembly which is easy to release and secure to facilitate adding and removing forms from a mounting board of the instant type.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims taken in conjunction with the accompanying drawings in which:

FIG. 1 is a plan view of a typical mounting board for accounting forms and including the novel clamp assembly of the present invention;

FIG. 2 is a plan view of the mounting board shown in FIG. 1, with the board open to illustrate the forms held therein;

FIG. 3 is an enlarged fragmentary plan view of a portion of the mounting board and novel clamp assembly shown in FIGS. 1 and 2;

FIG. 4 is a sectional view taken along line **4—4** of FIG. 3;

FIG. 5 is an enlarged sectional view taken along line **5—5** of FIG. 3;

FIG. 6 is a sectional view taken along line **6—6** of FIG. 5, and as if FIG. 5 were not in section;

FIG. 7 is a view similar to that of FIG. 6 except showing the clamp assembly in another position; and

FIG. 8 is an exploded fragmentary perspective view of the clamp assembly illustrates in FIGS. 1–7.

Referring now to the drawings, and especially FIGS. 1 and 2 thereof, a mounting board **10** comprises a main board element **12** and a hinged board element **14** hingedly connected along the right hand edge of the main board element **12**. A novel clamp assembly **20** extends, in the present instance, along the left edge of the main board element for securing and aligning a plurality of ledger sheets, forms, and the like **16** therein. As illustrated in FIG. 1, in the closed position, the hinged board element **14** overlies the working surface of the main board element **12**, and thus the ledger sheets **16**, to protect the forms from damage or accidental marking during transport or storage of the board.

In order to provide a smooth writing surface, both the main board element **12** and the hinged board element **14** include a thin metal plate element **13** and **15** respectively having a vinyl backing **17**, which backing extends beneath the plates and is of a reduced thickness in the portion intermediate the plates so as to form a flexible hinge **18** therebetween.

In accordance with the invention, the clamp assembly **20** is hingedly mounted along one edge of the board, in the present instance the left hand edge **21** of the main board element **12**, in order to effect a clamping action upon the ledger sheets or forms **16**. To this end the clamp assembly **20** comprises a rigid plate like element **22** which extends longitudinally along the left hand edge **21** of the

main board element **12** and is adapted to overlie a portion of the plate element **13**. In the present instance the element **22** includes longitudinally aligned and spaced sockets **23** along the marginal edge **21** to cooperate in interdigitated relationship with the like sockets **24** associated at the terminal edge of the plate element **13**. As best illustrated in FIG. 3 a pintle or hinge pin **24***a* connects the element **22** to the plate via the sockets **23** and **24** to permit relative movement between the elements.

In order to permit line contact of the element **22** with the forms **16**, and as best shown in FIG. 6 the rigid element **22** has at its opposite marginal edge, and extending longitudinally thereof, a downwardly or inwardly bent portion **25**. As illustrated in FIGS. 1 and 2, a plurality of pins **19** project upwardly from the plate element **13** along one marginal portion thereof, the pins being spaced longitudinally so as to cooperate with like spaced apertures extending along the edge of the ledger sheets or forms **16**. In addition, the element **22** contains a plurality of spaced apertures **26** registerable with the studs **19** passing through the plate element **13** and projecting upwardly therefrom.

In order to secure the rigid element **22** to the main board element **12** in overlapping clamping relationship, at least one latch mechanism **30** may be mounted on one of the elements, in the present instance two latch mechanisms are provided adjacent opposite terminal ends of the left hand edge **21**. To this end, and as best illustrated in FIGS. 3–8, each latch mechanism **30** comprises a casing **31** having means, in the present instance a pair of laterally spaced longitudinally extending marginal guides **32**, to accommodate a slide **33**. As illustrated in FIGS. 4, 5, and 8, the slide has a projection **34** which extends exteriorly of one end **31***a* of the casing **31**, to which extension is connected a pushbutton **35** which may be attached to the extension **34** by a screw **36** and spaced from the one end **31***a*.

As illustrated in FIGS. 5 and 8, the casing **31** contains first and second chambers **36** and **37** respectively, separated by an intermediate upstanding wall **38**. As best shown in FIGS. 5, 6, and 8, a ratchet pin **50** having a plurality of radially extending teeth **51** is connected to one of the elements, in the present instance the plate element **13**, and projects upwardly therefrom through an aperture **39** and into the first chamber **36** of the casing **31** when the lip **25** of the rigid element **22** is engaging ledger sheets or forms **16**. As shown in FIG. 5, the aperture **39** associated with the slide **33** is adapted to align with the first chamber **36**, and contains an inwardly and upwardly bent catch **39***a* positioned to engage at least one of the teeth **51** associated with the ratchet pin **50**.

In order to maintain the ratchet pin in engagement with the catch **39***a*, the slide **33** contains an upstanding seat element **40**, longitudinally spaced from the aperture **39** and positioned to register with the second chamber **37** of the casing **31**. Intermediate the seat **40** and the wall **38** biasing means, in the present instance a compression spring **41**, is positioned to maintain engagement between the catch **39***a* and the teeth **51** of the ratchet pin **50**.

In operation, assuming the lip **25** is in clamping engagement against the forms **16**, depressing the pushbutton **35** associated with the extension **34** of the slide **33** permits disengagement of the catch **39***a* from the ratchet pin and permits opening the element **22** about the hinge. In a like manner, upon the insertion of additional forms or ledger sheets **16** onto the studs **19**, the catch will automatically engage another tooth such as the upper tooth of the ratchet pin thus permitting automatic adjustment for additional sheets or forms placed on the board.

In order to rigidize the structure, it has proved helpful to provide a brace **42** underlying the clamping assembly beneath the plate element **13**. (See FIG. 6.) The brace **42** extends preferably along the marginal edge of the clamping assmbly **20** to add support thereto.

In order to facilitate removal of forms from the main board element **12**, it has proved helpful to add an additional rigid element **43** underlying the rigid element **22**, cooperating therewith and extending longitudinally of the clamp assembly **20**. Referring to FIGS. 3, 6, and 7, the lower element **43** is given a lateral width such as to permit a portion of the forms, along the left hand marginal edge thereof, to overlie the element when the clamp assembly is in its closed position. As illustrated, the lower element also includes a socket **44** fittable about the hinge pin **25** and so spaced as to be interdigitated with respect to the sockets **23** of the element **22**. The sockets **23** are provided with a longitudinally extending abutment **23***a* while the sockets **44** are provided with like longitudinally extending abutments **44***a*, which abutments are circumferentially spaced of the hinge pins from the abutments **23***a*. In addition, the abutments **23***a* and **44***a* are in circumferential overlapping relation and therefore, upon moving the element **22** into the open position about the hinge pin **25**, the abutments engage causing the forms to be lifted from the studs **19** thus facilitating removal thereof from the main board element **12**. (See FIG. 7.)

It should be recognized that while in the preferred embodiment the clamp assembly **20** includes two latch mechanisms located near the top and bottom of the main board element **12**, a single latch mechanism may be utilized in the central portion of the clamp assembly **20**. In addition, while the forms discussed herein by way of example contain apertures along the left hand marginal edge, it is a simple matter to place the clamp assembly along the upper portion of the board for clamping of punched or unpunched forms.

Thus the present invention provides a novel clamp assembly for use particularly on a forms mounting board, the clamp assembly being adjustable so as to accommodate different thicknesses of forms placed on the mounting board. As is readily understandable from the foregoing, the clamp assembly of the present invention is easy to release and secure thus facilitating placement and removal of forms onto the mounting board.

Although the invention has been described with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be made without departing from the spirit and the scope of the invention as hereinafter claimed.

What is claimed is:

1. In a mounting board for forms including a plate element, adapted to underlie forms on said board, a clamp assembly mounted along one edge of said board, said clamp assembly comprising a rigid element hingedly secured to said one edge of said board, extending longitudinally thereof and adapted to overlie a portion of said plate element, said rigid element including an inwardly bent marginal lip portion to provide line contact of said element against forms mounted on said board; at least one latch mechanism mounted on one of said elements and a ratchet pin mounted on the other of said elements, said ratchet pin aligned with and adapted to be held and engaged by said latch, said latch comprising a casing and including means to accommodate a slide therein, said slide having a projection extending exteriorly of said casing for moving said slide relative to said pin, a catch on said slide engageable with said ratchet pin to prevent relative movement between said elements upon engagement of said catch with said pin, and biasing means urging said catch against said pin.

2. In a mounting board in accordance with claim **1** including a plurality of spaced studs projecting substantially perpendicular to said plate element and mounted on one of said elements, a plurality of aperatures in the other of said elements spaced and aligned to mate with said studs on the other of said elements.

3. In a mounting board in accordance with claim **1**

wherein said slide is slidably engageable with said ratchet pin.

4. In a mounting board in accordance with claim 3 wherein said casing includes at least one compartment, said slide including an aperture alignable with said compartments and said ratchet pin.

5. In a mounting board in accordance with claim 4 wherein said catch is inwardly and upwardly bent in said aperture.

6. In a mounting board in accordance with claim 4 wherein said casing includes a second compartment separated from said first compartment by an upstanding wall, said slide including an upstanding seat element registering with said second compartment, said biasing means comprising a spring intermediate said seat element and said wall.

7. In a mounting board for forms in accordance with claim 1 including hinge means connecting said rigid element to said plate element, a second rigid element underlying said first element and extending longitudinally thereof and hingedly secured to said one edge of said board by said hinge means, and overlapping circumferentially spaced abutments on said first and second elements whereby rotation about said hinge means of said first element may be effected until said abutments engage and continued rotation causes angular rotation of said second element.

8. In a mounting board in accordance with claim 1 wherein said ratchet pin includes a plurality of radially extending teeth.

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