May 7, 1935. G. H. DAWSON ET AL 2,000,558

SUMMARY BOARD

Filed March 16, 1933 2 Sheets-Sheet 1

FIG. 1

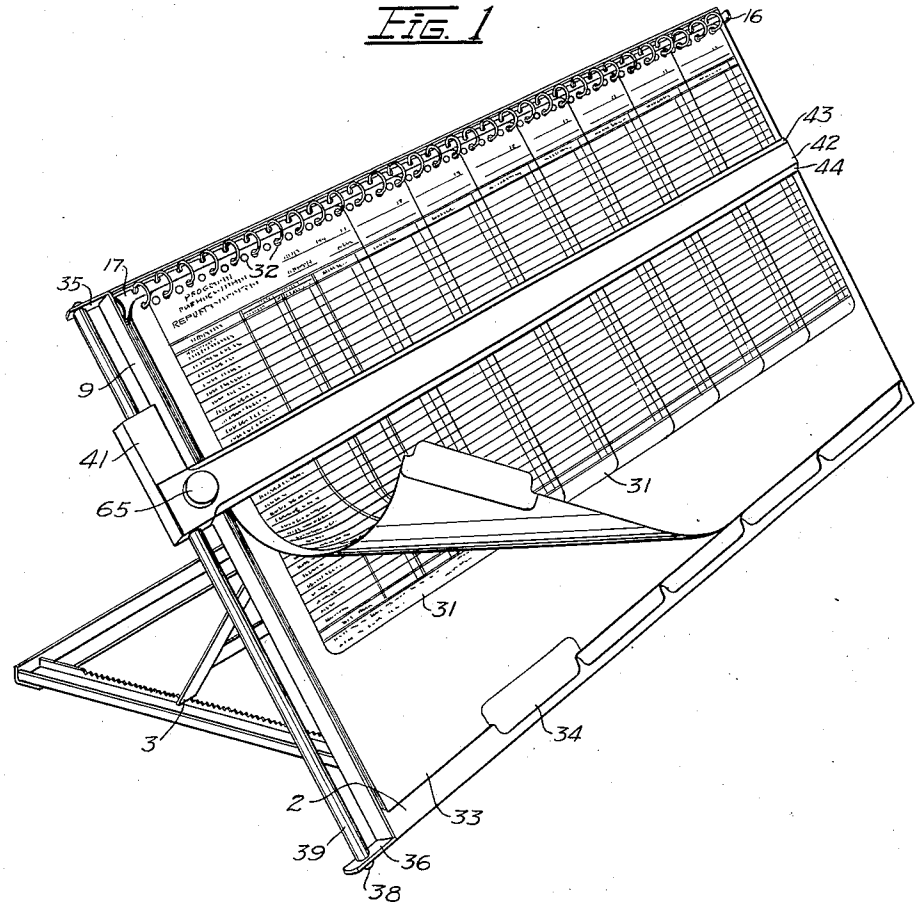


FIG. 2

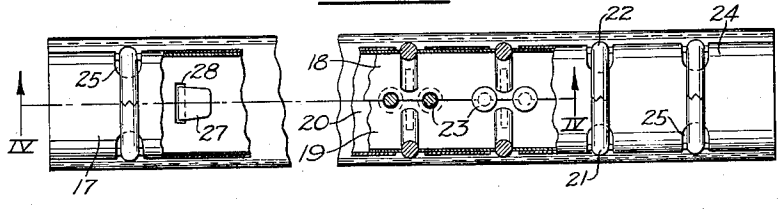


FIG. 3

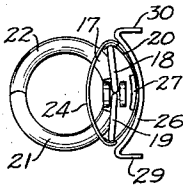
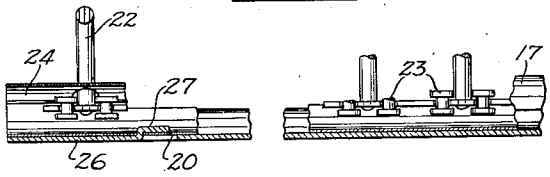


FIG. 4



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SUMMARY BOARD

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Fig. 5

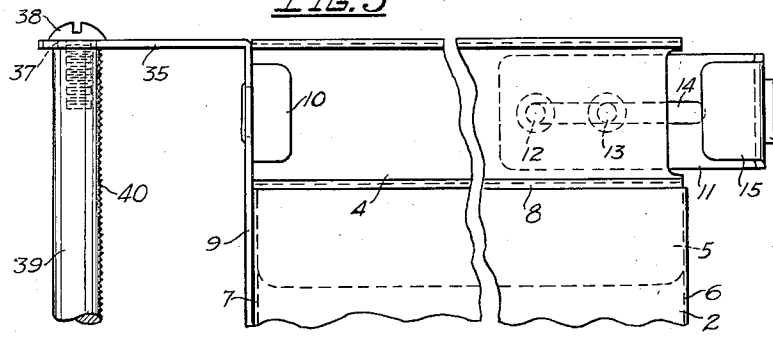


Fig. 6

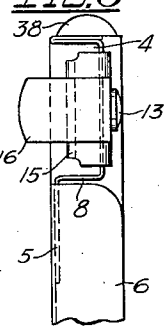


Fig. 7

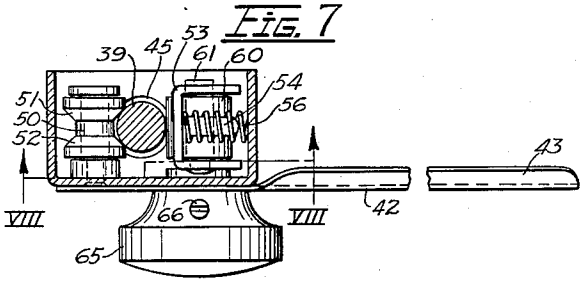


Fig. 8

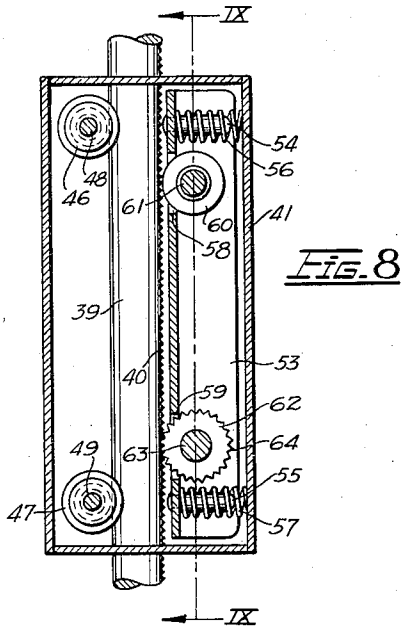
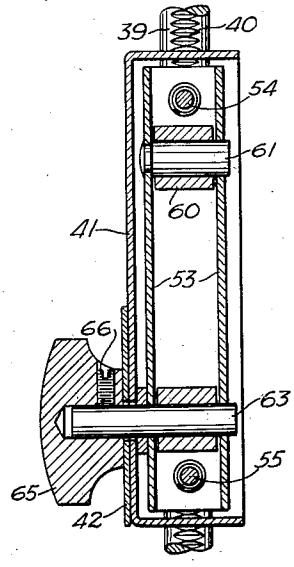


Fig. 9



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Patented May 7, 1935 2,000,558

UNITED STATES PATENT OFFICE

2,000,558

SUMMARY BOARD

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Application March 16, 1933, Serial No. 661,080

10 Claims. (Cl. 120—33)

This invention relates to a summary board whereby a plurality of sheets may be suspended in horizontal overlapping relationship so that single columns on each of the suspended sheets may be held in juxtaposed positions to facilitate summarization of the data contained in the exposed columns.

It is an object of our invention to provide means for removably holding a plurality of banks of sheets in overlapped relationship so that data may be read from the exposed columns of the top bank of sheets along a horizontal line and then the entire top bank of sheets may be turned out of the way to make another bank of sheets available for computation without the necessity for removing the first bank of sheets from the holding means. It is a further object of our invention to provide a line guide capable of hair line adjustment to facilitate reading the data exposed on a horizontal line in the exposed columns of a plurality of separate sheets. It is a further objects of our invention to provide means for holding a plurality of sheets in predetermined overlapped relationship which may be readily removed from its support and reversed so as to expose predetermined portions of the rear faces of the sheets. It is a further object of this invention to provide index sheets for a summary board which are adapted to separate various banks of overlapped sheets and to facilitate movement of each bank of sheets to a position in which they cannot interfere with the reading of data on subsequent banks of sheets. Other objects of this invention will become apparent upon reading the following description taken in conjunction with the accompanying drawings in which:

Figure 1 is a perspective view of our summary board;

Figure 2 is a top plan view of the ring bar with parts broken away to facilitate illustration of the structural details;

Figure 3 is a side elevation of the ring bar;

Figure 4 is a cross-section on the line IV—IV of Figure 2;

Figure 5 is a fragmentary top plan view of the summary board with the ring bar removed;

Figure 6 is a side elevation of Figure 5;

Figure 7 is a cross-section through the device for adjusting the position of the line guide;

Figure 8 is a cross-section on the line VIII—VIII of Figure 7; and

Figure 9 is a cross-section on the line IX—IX of Figure 8.

In the drawings, the reference numeral 2 indicates a flat plate member adapted to be supported at any desired angle by means of an easel structure 3. The preferred easel structure does not constitute part of this invention and is fully described in United States Letters Patent No. 1,883,255 issued October 18, 1932 to Paul O. Unger.

The plate member 2 is provided with a channel shaped depressed portion 4 (Figure 5) adjacent its upper edge. The depressed portion may be formed out of the same blank as the plate member 2, but we prefer to form it separately and weld it to the plate member by means of a longitudinal flange 5. The edges 6 and 7 of the plate member 2 are bent down to add rigidity to the structure and to cooperate with the bottom edge of the plate member 2 and the lower edge 8 of the channel member 4 to form a shallow receptacle for receiving the easel structure 3 when the same is collapsed.

A reinforcing strip 9 welded to the edge 7 closes one end of the channel member 4. A lug 10 is secured to the reinforcing strip 9 in any suitable manner and projects over the channel. The other end of the channel is closed by a slide member 11 which is secured to the bottom of the channel member 4 by means of a pair of studs 12, 13 projecting through a slot 14 in the member 11. The free end of the slide member 11 is bent over, as indicated at 15, Figure 5, at the same height as the lug 10. The slide member 11 is provided with a finger piece 16 to facilitate its manipulation.

The channel shaped depressed portion 4 is adapted to receive a ring bar 17. The ends of the ring bar 17 are open so that it may receive the lugs 10 and 15 therein. The ring bar 17 consists of a pair of toggle plates 18, 19 snugly mounted in a curved metal plate 20. A plurality of mating ring sections 21, 22, have one end of each secured to the toggle plates. A plurality of buttons 23 are secured between the toggle plates to prevent either plate from jumping out of position when the ring sections are opened or closed. Another curved metal plate 24 having notches 25 adjacent its edges to allow the ring sections to pass therethrough is mounted over the top of the toggle plates with its edges embracing the edges of the member 20 to give the top of the ring bar a finished appearance. A reinforcing member 26 is secured to the ring bar 17 by means of a plurality of integral tongues 27 projecting through slots 28 in the metal plate 20. The reinforcing member 26 is provided with a pair of depending flanges 29, 30, so that the ring bar may lie flat on a desk or table. The flanges 29,

39 also add rigidity to the reinforcing member 26.

The ring bar 17 is adapted to receive a plurality of banks of loose sheets 31. The sheets 31 are punched at their top edge to form a plurality of apertures 32 so that the sheets may be arranged in horizontal overlapping position with a single column exposed on all the sheets except the first. The data to be summarized is contained within the exposed columns. The various banks of sheets may be separated by means of index sheets 33 provided with index tabs 34 and punched to fit on the ring sections 21, 22.

A pair of flat strips 35, 36 extend from one edge of the plate member 2 adjacent the top and bottom, respectively. The strips 35, 36 may be integral with the plate 2 or may be secured to the plate in any suitable manner. The strips 35, 36 are provided with apertures 37 through which bolts 38 extend. The bolts 38 are threaded into opposite ends of a rod 39. A portion of the peripheral surface of the rod 39 is serrated, as indicated at 40, Figures 5, 8 and 9, for a purpose to be hereinafter described.

A housing 41, to which a line guide 42 is rigidly secured, is mounted on the rod 39. The longitudinal edges of the line guide are beveled, as indicated at 43, 44, to facilitate reading of data along a horizontal line from the exposed columns of the sheets 31. The top and bottom walls of the housing 41 are provided with apertures 45 through which the rod 39 may pass.

A pair of rollers 46, 47 are mounted in the housing 41 on one side of the rod 39 by means of studs 48, 49. The rollers 46, 47 are each provided with a depressed center portion 50 and conical bearing portions 51, 52 (Figure 7). A metal plate 53, U-shaped in cross-section, is mounted in the housing 41 on the side of the rod 39 opposite from the rollers 46, 47. A pair of studs 54, 55 project from the rear face of the center portion of the plate 53. Coil springs 56, 57 surround the studs 54, 55 and force the plate 53 towards the rod 39. The center portion of the plate 53 is provided with two apertures 58, 59. A roller 60, mounted on a stud 61 secured to the legs of the metal plate 53, projects through the aperture 58 so that its periphery contacts with the rod 39.

Another roller 62 is mounted on a pin 63 which projects through both legs of the plate 53, the front wall of the housing 41 and the fixed end of the line guide 42. The roller 62 is serrated as indicated at 64, Figure 8, so as to interengage with the serrations 40 on the rod 39. A knob 65, preferably having a roughened edge, is secured to the pin 63 by means of a set screw 66.

The operation of our summary board is as follows:—

A plurality of banks of sheets 31, separated by the index sheets 33, are positioned in overlapping relationship on the ring bar 17. The line guide is pushed approximately to the horizontal line containing the data to be summarized. The knob 65 is then turned to position the line guide accurately. The interengaging serrations 40 and 64 enable the positioning of the line guide with hairline precision. When the operator is finished with the data on one bank of sheets the line guide is turned out of the way and the index sheet, with the bank of sheets on top of it, is turned over the top of the summary board. The next bank of sheets is then available for any desired computations and the line guide may then be turned back to indicate the same horizontal line on the new bank of sheets. In this way it is possible to summarize data on a single horizontal line from several banks of sheets without bothering with sub-totals and without the necessity of positioning the line guide for each bank of sheets.

If it is desired to reverse the sheets, the slide member 11 is pulled outwardly by means of the finger piece 16 and the ring bar 17 is slid off the lug 10. The ring bar is then reversed and the slide member is then moved back to holding position. A pluraltiy of ring bars 17 may be used in connection with a single summary board so that the number of sheets that can be summarized without removing the sheets from the ring bar is not limited by the capacity of the ring bar. The use of a plurality of ring bars with one summary board is advantageous also because the office boy can be filling up one ring bar while the clerk is computing data from sheets mounted in another ring bar.

While we have described a preferred embodiment of our invention in detail, it will be understood that the description thereof is illustrative rather than restrictive, as many details may be modified or changed without departing from the spirit or scope of our invention. Accordingly, we do not desire to be restricted to the exact construction described except as limited by the appended claims.

We claim:—

1. In a summary board, a ring bar including a plurality of ring sections mounted on a pair of toggle plates, a pair of curved metal plates enclosing said toggle plates, and a metal reinforcing member secured to the lowermost curved metal plate, said reinforcing member being provided with a pair of depending flanges.

2. In a summary board, a substantially flat plate member, sheet carrying means secured adjacent one edge of said plate member, a rod fixed adjacent another edge of said plate member, said rod having serrations on a portion of its periphery, a housing mounted on said rod, a line guide secured to said housing, a serrated roller carried in said housing, spring means urging said roller into engagement with the serrations on said rod, and means for operating said roller to move said line guide.

3. In a summary board, a line guide, a housing carrying said line guide, a rod serrated on a portion of its peripheral surface, a serrated roller mounted in said housing, spring means urging said roller into engagement with the serrations on said rod, and means for turning said roller in contact with the serrated portion of said rod.

4. In a summary board, a rod serrated on a portion of its peripheral surface, a line guide, a housing carrying said line guide, a pair of rollers mounted in said housing adjacent one side of said rod, a serrated roller mounted in said housing adjacent the serrated portion of said rod, and spring means urging said serrated roller into contact with the serrated portion of said rod.

5. In a summary board, a rod serrated on a portion of its peripheral surface, a housing mounted on said rod, a line guide secured to said housing, two pairs of rollers mounted in said housing on opposite sides of said rod, spring means urging one pair of said rollers into contact with said rod, and a knob mounted on the outside of said housing and adapted to rotate one of said rollers within said housing, said rotated roller being serrated to engage with the serrated portion of said rod.

6. In a summary board, a rod serrated on a portion of its peripheral surface, a housing mount-

ed on said rod, a line guide secured to said housing, a pair of rollers mounted in said housing on one side of said rod, a spring pressed plate U-shaped in cross-section mounted in said housing on the opposite side of said rod, a pair of rollers mounted in said spring pressed plate, one of said rollers being serrated to engage with the serrated portion of said rod, and means to rotate said serrated roller.

7. In a summary board, a substantially flat plate member, a flat bottomed channel member rigidly secured to said plate adjacent one edge thereof, and a ring bar adapted to fit in said channel, said ring bar provided on its bottom with means for permitting it to lie flat.

8. In a summary board, a substantially flat plate member, a flat bottomed channel rigidly secured to said plate adjacent one edge thereof, a ring bar provided with depending flanges adapted to fit in said channel, and means for securing said ring bar in said channel.

9. In a summary board, a rod roughened on a portion of its peripheral surface, a housing mounted on said rod, a line guide secured to said housing, a plurality of rollers in said housing engaging opposite sides of said rod, and a knob mounted on the outside of said housing and adapted to rotate one of said rollers within said housing, to move said housing along said rod.

10. In a summary board, a substantially flat plate member, sheet carrying mans secured adjacent one edge of said plate member, a rod fixed adjacent another edge of said plate member, a housing mounted on said rod, a line guide secured to said housing, a plurality of rollers in said housing engaging opposite sides of said rod, and means operable from outside said housing to rotate one of said rollers, whereby said housing is moved along said rod.

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