

No. 853,298.

PATENTED MAY 14, 1907

E. B. CRAM.

TYPE WRITING ATTACHMENT FOR ADDING MACHINES.

APPLICATION FILED JUNE 8, 1906.

4 SHEETS—SHEET 1.

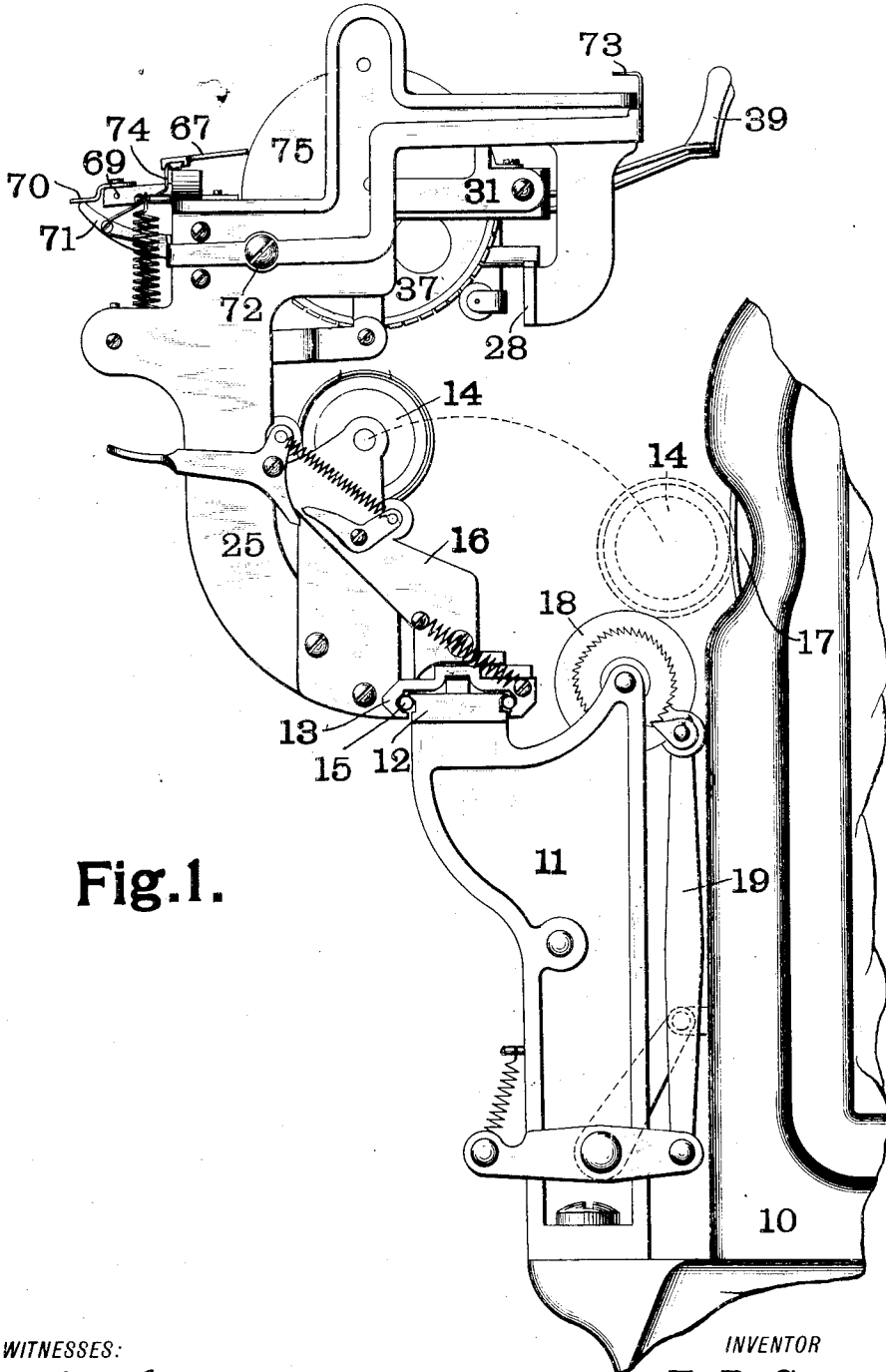


Fig. 1.

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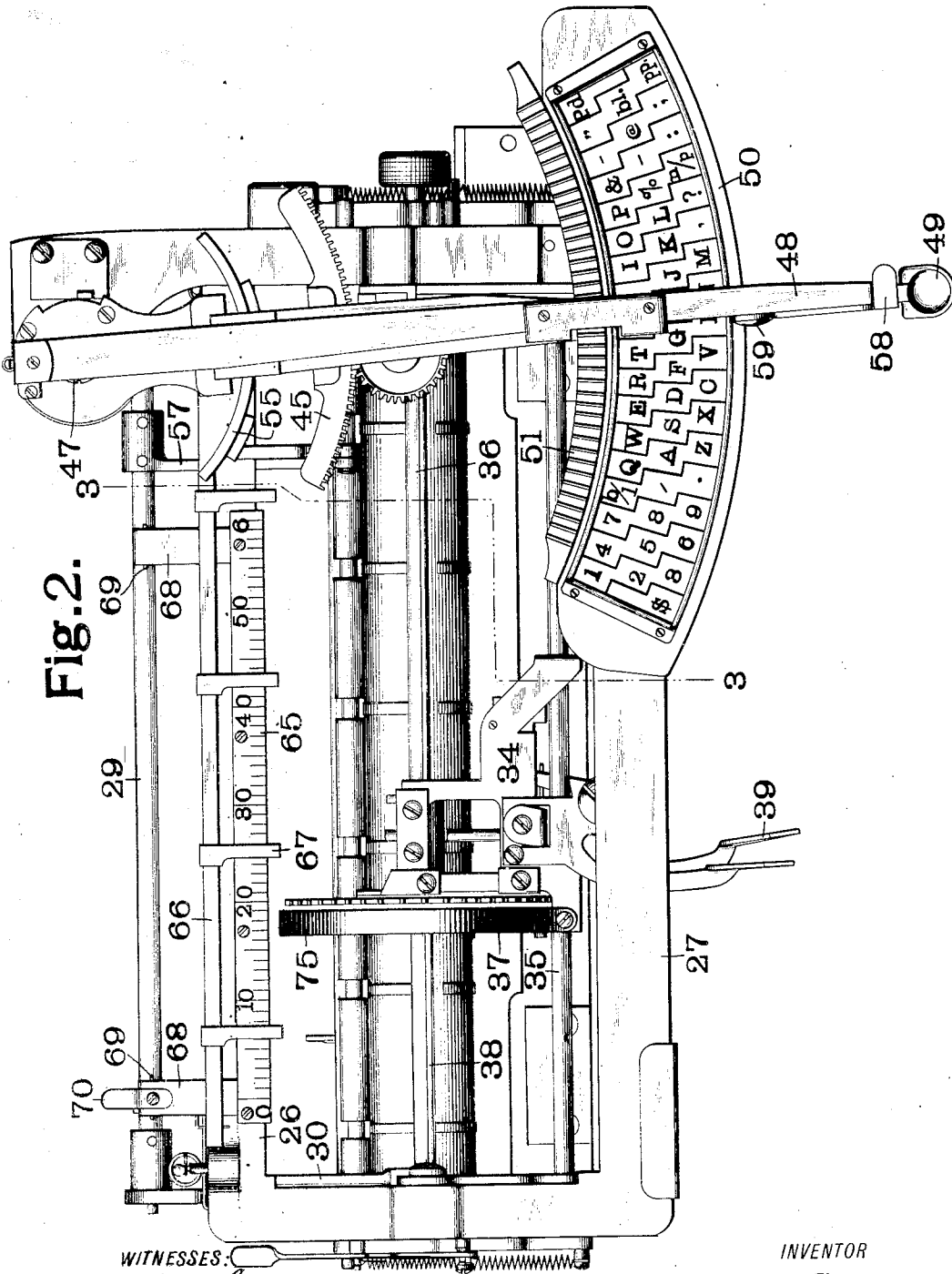


Fig. 2.

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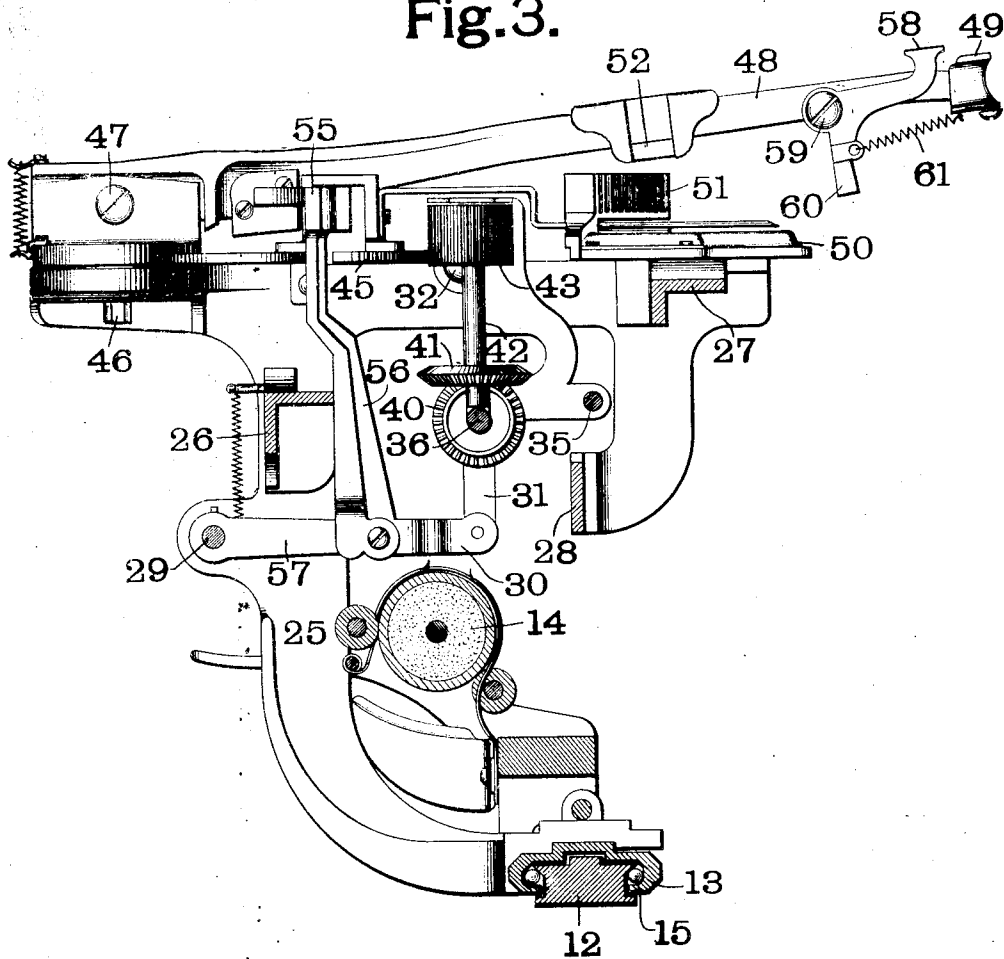
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4 SHEETS—SHEET 3.

Fig. 3.



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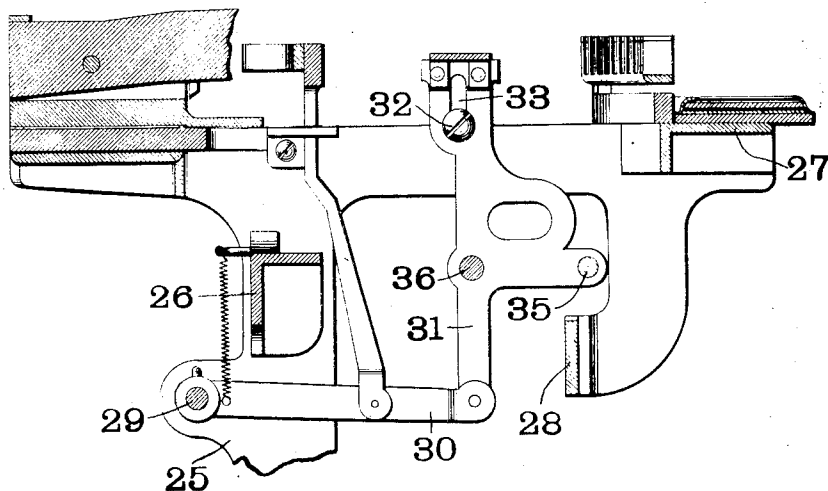
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4 SHEETS—SHEET 4

Fig.4.



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UNITED STATES PATENT OFFICE.

EDWIN BEECHER CRAM, OF ST. LOUIS, MISSOURI, ASSIGNOR TO CRAM WRITING MACHINE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

TYPE-WRITING ATTACHMENT FOR ADDING-MACHINES.

No. 853,298.

Specification of Letters Patent.

Patented May 14, 1907.

Application filed June 8, 1906. Serial No. 320,703.

To all whom it may concern:

Be it known that I, EDWIN BEECHER CRAM, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented a certain new and useful Type-Writing Attachment for Adding-Machines, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to improvements on the class of machines shown and described in Letters Patent No. 761,948, granted to me June 7th, 1904, for typewriting attachment for adding machines, and No. 779,992, granted to me June 10th, 1905, for typewriting machines.

One of the objects of my invention is to provide means whereby the lever for positioning the type wheel also serves to move the type wheel into contact with the platen.

Another object of my invention is to provide simple and convenient means for determining the longitudinal position of the type wheel so as to adapt the machine for tabulating.

Another object of my invention is to improve the details of construction of the machine.

In the accompanying drawings, which illustrate one form of machine made in accordance with my invention, together with a portion of an adding machine to which the same is attached, Figure 1 is an end elevation; Fig. 2 is a top plan view, showing the machine detached from the adding machine; Fig. 3 is a section on the line 3—3 of Fig. 2, and Fig. 4 is a sectional view showing certain details of construction.

Like marks of reference refer to similar parts in the several views of the drawings.

10 represents the adding machine. In the drawings I have illustrated the type of machine shown as the "American arithmometer" or "Burroughs adding machine." I do not wish, however, to limit my invention to use in connection with such class of machines, as it may be used with other adding machines.

Carried at the rear of the adding machine 10 are uprights 11 connected by a cross-bar

12. Sliding upon the bar 12 is a plate 13 carrying the platen 14. Between the plate 13 and the cross-bar 12 are antifriction bearings 15. The platen 14 is connected to the plate 13 by pivoted arms 16, so that the said platen may be either swung into the position shown in full lines in Fig. 1, so as to co-operate with the typewriting mechanism, as will be hereinafter described, or may be swung into the position shown in dotted lines in said figure when it co-operates with the printing mechanism of the adding machine 10.

The printing mechanism of the adding machine is indicated at 17. The platen 14 is fed for line spacing when in position to co-operate with the printing mechanism of the adding machine by means of a roll 18 operated by connections 19 extending to the adding machine. The plate 13 is adapted to be locked in different longitudinal positions so as to bring different portions of the roll 14 into co-operation with the printing mechanism 17 of the adding machine by the usual means, which form no part of my invention and need not, therefore, be described.

Secured to the plate 13 are two end frames 25, which, together with connecting bars 26 and 27 and a feed bar 28, form the main frame of my machine. This main frame is incapable of movement except longitudinal movement, the frame being carried longitudinally with the plate 13 when the same is moved. Journaled in the end frames 25 is a rock shaft 29 to which are secured arms 30. Pivoted to the ends of the arms 30 are two plates 31 slidably connected to the end frames 25 by means of screws 32 passing through slots 33 in said plates 31. The plates 31 are connected by a guide rod 35 and have journaled in them a shaft 36, upon which is mounted the printing wheel 37. The printing wheel 37 is connected to the shaft 36 by a spline 38, as shown in Fig. 2, so that the said wheel cannot rotate independently of the shaft 36, but is movable longitudinally thereon. The longitudinal movement of the wheel 37 is controlled by a carriage 34 sliding on the shaft 36 and the guide rod 35.

39 are finger pieces by means of which the carriage 34 is released so that it may be moved manually to any desired position along the shaft 36. Secured to the end of the

shaft 36 is a bevel gear wheel 40, which meshes with a second bevel gear wheel 41 on a shaft 42. Secured to the upper end of the shaft 42 is a wide faced spur wheel 43, which engages with a toothed sector 45 pivoted to a rearward extension of one of the end frames 25 at 46. In order to move the sector 45 to position the type wheel 37, the said sector has pivoted to it at 47 an operating lever 48, provided at its forward end with a finger piece 49. The lever 48 moved over a scale 50 containing the letters and figures which the printing mechanism is adapted to print, the said scale being so arranged that when the lever is moved over a given letter or figure the type wheel 37 will be positioned to print such letter or figure upon the platen 14.

In order to insure the proper positioning of the lever 48, it has arranged beneath it a comb 51 and is provided with a blade 52 adapted to enter between the teeth of said comb. In order to communicate the movement of the lever 48 when it is rocked on its pivot 47 to the plates 31, I arrange below said lever 48 a segment 55, against the upper edge of which the said lever is adapted to bear. Extending downwardly from this segment 55 are two arms 56, one of which is pivoted to the right-hand arm 30 of the rock shaft 29 and the other to a short arm 57, also carried by said rock shaft. The movement of the lever 48 on its pivot 47 thus rocks the shaft 29 and causes the plates 31 to move downwardly so as to bring the printing wheel 37 into contact with the platen 14. Owing to the width of the gear 43 the same remains in connection with the toothed sector 45 during this downward movement.

In order to feed the carriage 34 without printing, I provide the lever 48 with an auxiliary finger piece 58 pivoted at 59 to said lever 48 and provided with a stop 60 adapted to come in contact with the projecting edge of the scale 50 when the lever is depressed by means of the said finger piece 58. The said finger piece is, however, normally held by means of a spring 61 in such position that the stop 60 does not come in contact with the scale 50, and consequently the type wheel 37 is moved into contact with the platen 14.

Secured to the cross-piece 26 is a scale 65 for indicating the exact position of the type wheel 37 longitudinally of the platen 14. In order to determine the position of the said type wheel so as to adapt the machine for tabulating, I provide a bar 66 carrying forwardly projecting fingers 67. The bar 66 is secured to arms 68 which are pivoted at 69 to rearward projections carried by the cross-bar 26. The left hand arm 68 is provided with a rearwardly extending tail-piece 70, against the lower face of which bears the end of a lever 71 pivoted to the side frame 25 at 72.

This lever 71 extends to the front of the machine and is provided with a finger piece 73 projecting over the top of the cross-piece 27 so as to be within easy reach of the operator. The fingers 67 are normally held by means of a spring 74 in the position shown in Fig. 1, so as to be just out of the path of the guard or casing 75, which partially surrounds the type wheel 37. When, however, the finger-piece 73 is depressed the lever 71 bearing on the tail-piece 70 causes the arms 68 to swing on their pivots 69 and thus move the bar 66 and the finger pieces 67 downwardly so as to move said fingers into the path of the casing 75. If now the carriage 34 is released by means of the finger-pieces 39 the type mechanism can be moved either to the right or left until the casing 75 comes into contact with one of the fingers 67, thus accurately determining the position of the type wheel. It will be evident that the bar 66 may be provided with as many fingers 67 as desired, so as to furnish the required number of columns for tabulating.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is—

1. The combination with an adding machine, of longitudinally movable typewriting mechanism, a platen movable into one position to co-operate with said adding machine and into another position to co-operate with said typewriting mechanism, and a tabulating device for controlling the position of said typewriting mechanism relative to the printing mechanism of said adding machine.

2. The combination with an adding machine, of typewriting mechanism including a laterally movable type wheel, a platen movable into one position to co-operate with said adding machine and into another position to co-operate with said type wheel, and a tabulating device for controlling the position of said type wheel relative to the printing mechanism of said adding machine.

3. The combination with an adding machine, of longitudinally movable type-writing mechanism, a longitudinally movable platen, said platen being also movable laterally into one position to co-operate with said adding machine and into another position to co-operate with said type-writing mechanism, and a tabulating device for controlling the position of said type-writing mechanism relative to the printing mechanism of said adding machine.

In testimony whereof, I have hereunto set my hand and affixed my seal in the presence of the two subscribing witnesses:

EDWIN BEECHER CRAM. [L. S.]

Witnesses:

JAMES H. BRYSON,
BENNETTE PIKE.