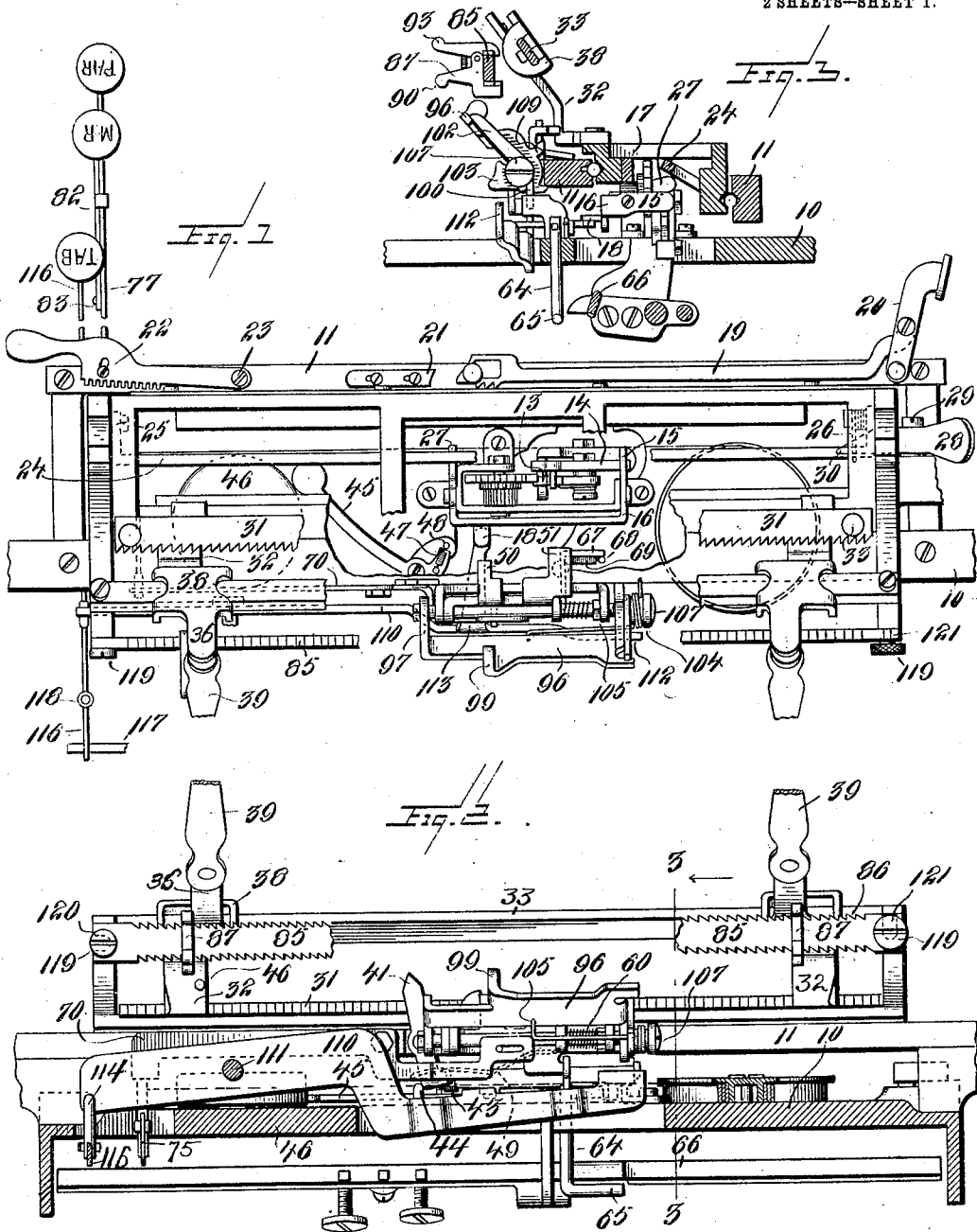


C. & W. J. SPIRO.
 TABULATING MECHANISM FOR TYPE WRITERS.
 APPLICATION FILED JUNE 19, 1908.

953,560.

Patented Mar. 29, 1910.

2 SHEETS—SHEET 1.



WITNESSES.

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BY

INVENTORS

Charles Spiro,
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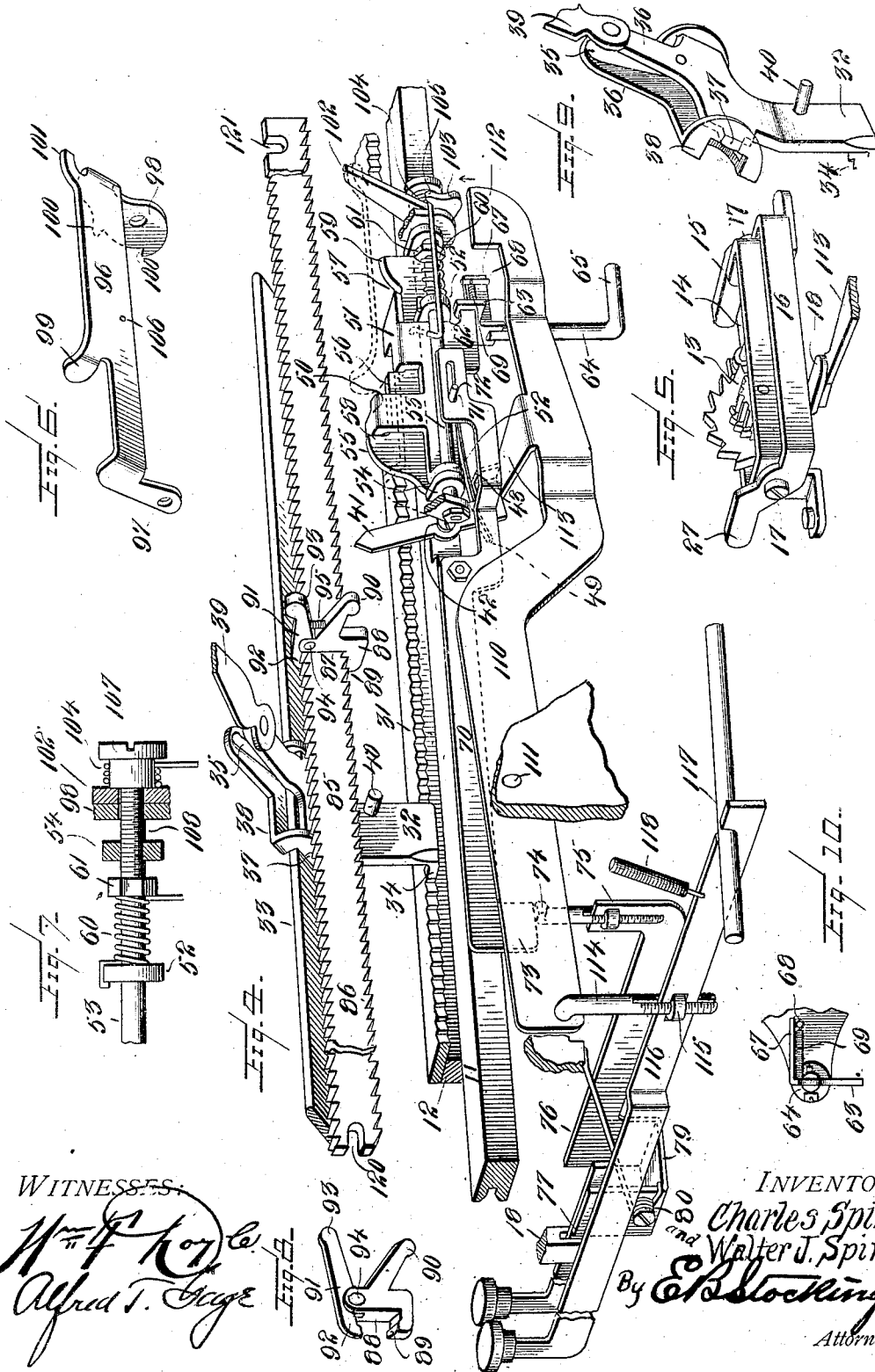
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UNITED STATES PATENT OFFICE.

CHARLES SPIRO AND WALTER J. SPIRO, OF NEW YORK, N. Y.

TABULATING MECHANISM FOR TYPE-WRITERS.

953,560.

Specification of Letters Patent.

Patented Mar. 29, 1910.

Application filed June 19, 1908. Serial No. 439,469.

To all whom it may concern:

Be it known that we, CHARLES SPIRO and WALTER J. SPIRO, citizens of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Tabulating Mechanism for Type-Writers, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a tabulating mechanism for typewriters, and particularly to a construction provided with a carriage stop and a cooperating jumper stop adapted to be thrown into the path of the carriage stop and to simultaneously release the carriage for movement.

The invention has for an object to provide a novel and improved construction of tabulating mechanism whereby the jumper stop thereof is adapted to be moved into the path of the carriage stop through a key lever connection and to simultaneously release the controlling dogs for said carriage. A further object of the invention is to provide a yielding mounting for the jumper stop whereby if it be thrown into contact with the edge of the carriage stop the tabulating operation is not hindered as the yielding connection permits movement of one of the parts upon another, so that when the controlling dogs are released the next carriage stop will abut the jumper stop.

A further object of the invention is to provide an improved form of adjustable carriage stop comprising opposite pivoted members having teeth adapted to engage cooperating toothed faces of a tabulating rack disposed upon the carriage.

Another object of the invention is to provide novel and improved connections between the key lever and the margin gage mechanism and from this mechanism to the line lock device whereby the efficiency of these parts is increased and a positive operation thereof secured.

A further object of the invention is to provide means by which the jumper stop may be longitudinally adjusted for alignment with the scales upon the machine.

Other and further objects and advantages of the invention will be hereinafter fully

set forth and the novel features thereof defined by the appended claims.

In the drawing:—Figure 1 is a plan of a typewriter carriage with parts broken away; Fig. 2 is a rear elevation with parts broken away and the typewriter base in section; Fig. 3 is a central vertical section on line 3—3, Fig. 2; Fig. 4 is a perspective of the margin gage and tabulating mechanisms; Fig. 5 is a similar view of the dog releasing mechanism; Fig. 6 is a detail perspective of the jumper stop; Fig. 7 is an enlarged section of the mounting for the adjustment of this stop; Fig. 8 is a detail perspective of one of the carriage stops; Fig. 9 is a similar view of the margin gage, and Fig. 10 is a plan of the line locking device.

Like numerals refer to like parts in the several views of the drawing.

The numeral 10 designates the frame of the machine which may be of any desired character or configuration and is provided with the bearing tracks or ways 11 supported above the base and upon which the carriage frame 12 travels. This frame may be of any preferred construction and is adapted to carry the adjustable members for both the line lock and tabulating mechanisms, while the cooperating members of these mechanisms are disposed upon the base as well as the key lever connections for operating the same. The base is also provided with any preferred form of controlling dog 13 for the carriage which is under tension in the usual manner. This dog is provided with the releasing lever 14, Figs. 1 and 5, adapted to be engaged by the finger 15 extending from the pivoted bail 16 mounted on the frame of the dog mechanism by means of the pivots 17 at the opposite ends thereof. This bail is provided with the lip 18 adapted to be operated from the tabulating mechanism.

The form of carriage partially illustrated herein is specifically described and claimed in my application filed May 28, 1908, Serial No. 435,455, and is adapted to cooperate with a back space bar 19 operated from the pivoted lever 20 and adapted to engage the holding stop 21 upon one of the ways 11. A toothed locking lever 22 is also pivotally mounted upon this way at 23 adapted to be

engaged with the carriage as disclosed in said application. The carriage is also provided with a longitudinally extending releasing bar 24 pivoted at its opposite ends 25 and normally supported in raised position by spring 26 mounted upon the carriage frame. For the purpose of depressing this bar into contact with a finger 27 carried by the bail 16 to operate said bail and release the dog mechanism, a lever 28 is pivoted at 29 upon the carriage frame and the end 30 rests upon and depresses the bar 24 when it is desired to release the dog mechanism from the carriage.

15 The general construction and arrangement of the margin gage mechanism is disclosed in the patent to Charles Spiro No. 902,263 dated October 27, 1908, although improvements thereon are herein shown.

20 The carriage is provided at its rear with a rack or toothed bar 31 extending longitudinally thereof and adapted to cooperate with a contact block 32 slidably mounted upon the bar 33 upon the carriage and having a 25 toothed lower end 34 to engage the rack 31 in contact with which it is held under normal conditions by the spring 35 interposed between the finger holds 36 one of which is pivoted at 37 in the slide member 38, as 30 shown in Fig. 9. This pivoted finger hold may also be provided with a paper guide 39, and the block 32 has thereon a bell ringing projection 40 adapted in its travel to engage the lever 41 which is pivoted at 42 upon the 35 base and has at its lower end an angular projection 43 disposed in the path of the projection 44 carried by the bell hammer 45 which when released strikes the bell 46 and the lever is restored by spring 49. This 40 hammer is normally held in contact with the bell by the spring 47 extending therefrom to a fixed post 48. By this means the contact blocks or stops for the margin gage may be adjusted to any desired position. The 45 bell hammer herein described is fully disclosed in Patent No. 902,263.

The margin stop mechanism comprises the primary stop 50 and the secondary stop 51 disposed when at rest in a lower horizontal 50 plane from the primary stop. These stops are pivotally mounted by means of the ears 52 at each end thereof so as to swing away from the contact blocks upon the carriage, said ears being mounted upon the bearing 55 rod 53 carried by the lugs 54 at the opposite ends of the plate 55. This plate is also provided with a horizontally disposed contact face 56 for the primary stop and with a similar face 57 for the secondary 60 stop 51, while an abutment wall 58 is disposed at one end of the face 56, and a similar wall 59 at the opposite end of the face 57 both of these walls being out of aline-

ment with the block or stop 32. The wall 59 is curved so as to cause a rising move- 65 ment of both stops as they travel in sliding contact upon the faces of the plate in their longitudinal movement with the carriage for the primary engagement of the contact therewith. The stop plate is re- 70 stored to its normal position after being released from the carriage by means of the coil spring 60 disposed upon the rod 53 and bearing against one of the ears 52 mounted thereon and at its opposite end against the 75 locking nut 61 mounted upon said rod, as shown in Figs. 4 and 7. Depending from the stop plate is a line lock finger 62 disposed in substantially a vertical plane and adapted to engage the contact plate 63 car- 80 ried at the upper end of the line lock 64 which is pivotally mounted in the machine frame and provided with an angle arm 65 adapted to be swung beneath the universal bail 66 which is mounted in the usual man- 85 ner to be depressed by the key levers in their operation. At an angle to the contact plate 63 is a stop plate 67 adapted in its travel to engage a pin 68 and normally held in contact with said pin by the spring 69 ex- 90 tending therefrom to the line lock at one side of its pivot, as shown in Fig. 1. A tilting of the stop plate will release the stop from the block on the carriage and also carry the line lock finger out of engagement 95 with its contact plate to permit the continued writing.

For the purpose of effecting a tilting of the margin gage stops which will also de- 100 termine the paragraph insertion when desired by being moved to different extents a lever 70 is pivoted upon the machine frame and provided at one end with a slotted por- 105 tion 71 through which a projection 72 extends from the stop plate, while the opposite end 73 of the lever 70 rests upon an adjustable post 74 carried by the inner end 75 of a connection 76 from the key lever 77 which is pivoted in a fixed hanger 78. This 110 connection comprises a loop portion 79 in order to dispose the end 75 thereof in proper relation to the lever 70 while retaining the key lever at the extreme side of the key- 115 board. This key lever is normally held in its raised position by means of the spring 80 secured thereon and having an arm 81 in contact with a fixed portion of the frame. For the purpose of securing different de- 120 grees of travel of the key lever 77 a margin lever 82 is pivotally mounted thereon at 83, as fully disclosed in Patent No. 902,263. By this arrangement a depression of the para- graph key 77 causes the greatest extent of movement and swing of the stop plate, while a depression of the margin key on the lever 125 82 causes a lesser travel to permit additional

printing after the right margin gage is first operated.

At the rear of the carriage a tabulating rack 85 is disposed and may be of any desired character, being here shown as provided at its top and bottom with oppositely disposed teeth 86 adapted to be engaged by the adjustable tabulating stops 87. This rack is removably mounted on the carriage by means of screws 119 at each end, and one end thereof is provided with a horizontal slide 120 to embrace the screw shank, while the opposite end is provided with a vertically disposed slide 121 so that when these are secured to the carriage frame the rack is effectually held against any movement and may be removed without entirely removing the screws. These stops comprise clips formed of a lower member 88 having an inclined toothed face 89 to fit the teeth of the rack, and a finger hold 90, and a pivoted upper member 91 having a corresponding toothed face 92 and a finger hold 93, these parts being pivoted together by a pin 94, and the inclined faces normally forced toward each other by a tension spring 95 extending between the finger holds. This structure of clip stop provides a simple device which may be readily set in any desired position for tabulating work and completely removed from the machine when such work is not desired, while owing to the inclination of the teeth cooperating with the rack a positive firm stop is obtained.

The jumper stop 96 is preferably formed of U-shape with the pivoting ears 97 and 98 at opposite ends mounted upon the rod 53 which slidably supports the margin stops, or upon any other desired part. Intermediate of the end of the jumper stop a contact face 99 is provided which when the stop is thrown inward toward the carriage travels into the path of the member 88 of the clip stop which forms an abutment to stop the carriage travel in tabulating work. The pivoting ear 98 is provided with shoulders 100 upon its inner face which engage at opposite sides of the way 11 so as to limit the travel of this part in opposite directions. At this end of the jumper stop the finger 101 is provided which engages the tension arm of lever 102 pivotally mounted on the rod 53 and provided with an angularly disposed operating portion 103. Upon the end of the rod 53 a coil tension spring 104 is mounted and one end thereof rests in the seat 105 above the contact face 103 and extended thence to the jumper stop being connected thereto at 106, as shown by dotted lines, Fig. 4. The tension of this spring normally holds this jumper stop in its position farthest removed from the carriage, and the application of power for shifting this stop and the arm 102

effects a yielding connection between the stop and arm through the spring in the inward movement of the stop while if the stop by contact with any part is prevented from moving the arm travels so that as soon as the contact is removed the jumper stop immediately follows the arm in its travel toward the carriage. Under some conditions it is desirable to adjust the jumper stop longitudinally of the carriage travel for bringing it into proper alinement with the scales on the carriage, and for this purpose the rod 53 is provided with an operating head 107 and is threaded at 108 through the supporting lug 54 from the plate 55. By a rotation of the rod 53 it may be fed longitudinally and can be locked in position by running the nut 61 into contact with the lug 54 thus adjusting the entire jumper stop relative to the remaining parts. For the purpose of operating this jumper stop through the arm 102 a lever 110 is pivotally mounted at 111 upon the machine frame and provided with a contact face 112 disposed beneath the angular extension 103 of the arm 102 so that in the upward movement of the face 112 the arm is swung toward the carriage. This lever 110 is also provided with a lower dog releasing arm 113 extending inward to engage the lip 18 from the bar mounted on the dog mechanism so as to secure a simultaneous release thereof as the jumper stop is thrown into contact with the tabulating stop upon the carriage. The opposite end of the lever 110 is provided with a depending post 114 adjustably connected at 115 with the key lever 116 which is pivotally mounted in the usual manner upon the rod 117 at the rear of the machine and normally held in raised position by the spring 118. The portion of this lever disposed at the keyboard is provided with the usual key for tabulating purposes.

In the operation of the margin gage and paragraph stops the contact blocks or stops upon the carriage are disposed at opposite sides of the stop mechanism upon the machine frame so as to allow cooperation therewith at the opposite margins of the work. In the travel of the carriage from left to right in the ordinary step by step feed the block at the right of the stop mechanism first engages the bell ringer before reaching the end of the line and then by contact with the primary stop shifts the stop plate longitudinally upon the rod, while the line lock extension throws the arm into engagement with the bail. If it now be desired to add additional matter to the line already written spaces for this purpose may be provided by depressing the paragraph key which oscillates the stop mechanism sufficiently to raise the primary stop out of the

path of the block and interposes the secondary stop therein thus allowing an additional number of spaces between these two stops. If it be desired to entirely remove the stops the margin lever may be depressed and the writing extended into the margin at that side of the paper. In the return of the carriage to its initial position for beginning another line the block at the left thereof, Fig. 2, passes over the secondary stop and the inclined face thereon engages the primary stop forcing it backward, and after the passage of the left block the primary stop returns to its initial position and contacts with the right block which establishes a uniform margin at that side of the paper. Under some conditions, such as paragraphing, it is desirable to leave a greater space at this margin, and the paragraph key is then depressed which raises the secondary stop into the path of the right contact block. The operation of the margin lever and paragraph key provides means for oscillating the stop plate for different degrees of travel, and this plate coöperates with each of the contact blocks and controls the margins at both sides of the paper and also the paragraphs and additional spaces at the left ends. The longitudinal travel of this plate by engagement with the stop positively operates the line lock, and the mounting of this lock causes it to be instantly released upon the return of the stop plate to its normal position. The tabulating mechanism comprising the adjustable clips upon the carriage permits an adjustment of these stops to any desired position and their firm engagement when so adjusted. The removable mounting for the tabulating rack permits its removal and replacement on the machine whenever desired. The operation of the tabulating lever simultaneously moves the jumper stop toward the stop upon the carriage and releases the dog mechanism so that the carriage can move into contact with the jumper stop, and as soon as pressure upon the tabulating key is released these parts are immediately restored to their initial position and the step by step feed proceeds. This jumper stop is moved through the yielding connection with the arm bearing in contact therewith, and if the jumper should contact with the edge of the carriage stop when thrown toward the carriage and be thus held against further movement the arm would continue its movement and immediately the obstruction was passed the jumper stop travels into contact with the arm in order to coöperate with the next carriage stop. The lever is positively rocked through connections from the tabulating key lever and the lever in turn moves the jumper stop by means of the spring con-

nection, while this jumper stop may also be adjusted longitudinally to be in accurate alignment with the scales upon the machine.

While this invention has been described in connection with one form or type of typewriting machine, it is adapted for application to various forms of machines by proper mechanical changes to locate the parts in co-operative relation.

Having described our invention and set forth its merits, what we claim and desire to secure by Letters Patent is:—

1. In a tabulating mechanism, a carriage stop, a jumper stop pivoted at each end at its lower portion and having a laterally disposed contact lug intermediate its ends to engage said carriage stop, and means for operating said jumper stop.

2. In a tabulating mechanism, a carriage stop, a pivotally mounted jumper stop having a portion to engage said carriage stop, an independently pivoted angular operating lever having an arm to engage the jumper stop, an actuating lever adapted to engage an arm of the operating lever, and a yielding connection between the operating lever and jumper stop.

3. In a tabulating mechanism, a carriage stop, a bearing, a jumper stop pivotally mounted thereon and having a portion to engage said carriage stop, a lever for operating said jumper stop, an actuating lever communicating with the operating lever, and means for longitudinally adjusting the bearing and jumper stop thereon.

4. In a tabulating mechanism, a carriage stop, a pivotally mounted jumper stop having a portion to engage said carriage stop, a lever for operating said jumper stop, an actuating lever communicating with the operating lever, means for adjusting the jumper stop longitudinally of its pivot, and a yielding connection between the operating lever and jumper stop.

5. In a tabulating mechanism, a carriage stop, a pivotally mounted jumper stop having a portion to engage said carriage stop, a lever for operating said jumper stop, an actuating lever communicating with the operating lever, an arm mounted upon the pivot of the jumper stop, and a yielding connection between said arm and jumper stop.

6. In a tabulating mechanism, a carriage stop, a jumper stop pivoted at its ends and having a lug intermediate its ends to engage said carriage stop, an actuating lever for operating said jumper stop, a carriage feed dog, and an extension from said lever disposed to engage and release said dog simultaneous with the actuation of said jumper stop.

7. In a tabulating mechanism, a carriage rack provided with a stop, a jumper stop

pivoted at its ends upon a relatively fixed part and provided with a lateral extension intermediate its ends to engage the carriage stop, a tension spring connected to said jumper stop and a relatively fixed part, an independently pivoted arm contacting with said jumper stop and held under tension by said spring, and means for moving said jumper stop into the path of the stop upon the carriage rack.

8. In a tabulating mechanism, a carriage rack provided with a stop, a jumper stop pivoted upon a relatively fixed part and provided with a lateral extension to engage the carriage stop, a tension spring for normally holding the jumper stop out of the path of the carriage stop, means for moving the jumper stop into said path, and a lever arm controlled by said spring and engaging the jumper stop and disposed in the path of said operating means.

9. In a tabulating mechanism, a carriage rack provided with a stop, a jumper stop pivoted upon a relatively fixed part and provided with a lateral extension to engage said carriage stop, a tension spring for normally holding the jumper stop out of the path of the carriage stop, means for moving the jumper stop into said path, a lever arm controlled by said spring and engaging the jumper stop and disposed in the path of said operating means, and means for adjusting said jumper stop longitudinally of its pivot.

10. In a tabulating mechanism, a carriage stop, a jumper stop provided at opposite ends with pivoting lugs and an intermediate laterally disposed contact lug for said carriage stop, a tension spring adapted to hold the jumper stop out of the path of the carriage stop, and means for throwing the jumper stop into said path.

11. In a tabulating mechanism, a carriage stop, a jumper stop provided at opposite ends with pivoting lugs and an intermediate laterally disposed contact lug for said carriage stop, a tension spring adapted to hold the jumper stop out of the path of the carriage stop, means for throwing the jumper stop into said path, an extension at one end of the jumper stop, and an arm mounted upon the pivot of said jumper stop and provided with an angular portion disposed in the path of the actuating means.

12. In a tabulating mechanism, a carriage stop, a jumper stop provided at opposite ends with pivoting lugs and an intermediate laterally disposed contact lug for said carriage stop, a tension spring adapted to hold the jumper stop out of the path of the carriage stop, means for throwing the jumper stop into said path, an extension at one end of the jumper stop, an arm mounted upon the pivot of said jumper stop and

provided with an angular portion disposed in the path of the actuating means, a supporting lug through which the pivot of the jumper stop is threaded, and means for adjusting said pivot in said lug.

13. In a tabulating mechanism, a carriage stop, a jumper stop provided at opposite ends with pivoting lugs and an intermediate laterally disposed contact lug for said carriage stop, means for throwing said jumper stop into the path of the carriage stop, an extension at one end of the jumper stop, an arm mounted upon the pivot of said jumper stop and provided with an angular portion disposed in the path of the actuating means, a supporting lug through which the pivot of the jumper stop is threaded, an adjusting head disposed at one end of said pivot, and a tension spring surrounding said head and engaging said tension arm.

14. In a tabulating mechanism, a carriage stop, a pivoted jumper stop having a contact lug for said carriage stop, means for throwing said jumper stop into the path of said carriage stop, a pivoted arm mounted to engage said jumper stop and provided with an angular portion disposed in the path of the actuating means, a supporting lug through which the pivot of the jumper stop is threaded, an adjusting head disposed at one end of said pivot, a tension spring surrounding said head and engaging said arm, and a lock nut threaded upon said pivot to engage said threaded lug.

15. In a tabulating mechanism, a carriage stop, a pivoted jumper stop, a contact lug for said carriage stop, actuating means for moving said jumper stop into the path of the carriage stop, a pivoted arm to engage said jumper stop and provided with an angular portion disposed in the path of the actuating means, and a stop portion carried by the jumper stop and provided with shoulders adapted to engage a relatively fixed portion to limit the oscillation of said jumper stop.

16. In a tabulating mechanism, a jumper stop comprising a plate having at its opposite ends pivoting lugs one of which is provided with stop shoulders, a laterally disposed contact lug intermediate of the ends of said jumper stop, and a projection in the plane of said stop at one end thereof to engage a tension device.

17. In a tabulating mechanism, supporting lugs, a pivoting rod mounted in said lugs, a jumper stop having end portions pivoted upon said rod and an intermediate contact face, and a tension spring surrounding said rod and having one end in engagement with said stop.

18. In a tabulating mechanism, supporting lugs, a pivoting rod mounted in said

lugs, a jumper stop having end portions pivoted upon said rod and an intermediate contact face, a tension spring surrounding said rod and having one end in engagement with said stop, and an angular arm engaging said stop and having a portion contacting with said tension spring.

19. In a tabulating mechanism, a jumper stop pivoted at its ends and having a laterally disposed stop lug intermediate said ends, an operating lever for said jumper stop mounted upon a relatively fixed part, a key lever, a lateral extension from said operating lever, a carriage controlling dog, and means engaging said dog and extension for releasing said dog during the travel of said stop.

20. In a tabulating mechanism, a pivoted jumper stop, an operating lever therefor mounted upon a relatively fixed part, a key lever, a lateral extension from said operating lever, a carriage controlling dog, and a pivotally mounted bail upon the dog casing having an arm to engage and release said dog mechanism, and a projection in the path of said extension.

21. In a tabulating mechanism, the combination with a bar having oppositely facing teeth upon its edges, of a clip stop comprising a toothed member having a shoulder at its free end and an operating handle, a cooperating tooth member pivoted thereto and provided with a shoulder at its free end and an operating handle, and a spring disposed to move said toothed members toward each other.

22. In a tabulating mechanism, a carriage frame having holding screws, a toothed rack provided at one end with a longitudinally disposed open ended slot and at the opposite end with a transversely disposed open ended slot each adapted to embrace the holding screws, and a stop mounted upon said rack to engage the teeth thereof.

23. In a carriage controlling mechanism, a pivotally mounted margin gage having a lateral extension and adapted for sliding movement, an operating lever having a slotted end engaging said extension, and a key lever disposed to engage said operating lever.

24. In a carriage controlling mechanism, a pivotally mounted margin gage having a lateral extension and adapted for sliding movement, an operating lever having a slotted end engaging said extension, a key lever disconnected from said operating lever and provided with a contact member disposed beneath the free end of the operating lever.

25. In a carriage controlling mechanism, a pivotally mounted margin gage having a lateral extension and adapted for sliding

movement, an operating lever having a slotted end engaging said extension, a key lever disconnected from said operating lever and provided with a contact member disposed beneath the free end of the operating lever, and means for adjusting the contact member upon the key lever.

26. In a carriage controlling mechanism, a supporting bracket, a pivoting rod mounted therein, a margin gage disposed upon said rod for oscillatory and sliding movement thereon, and a jumper stop pivotally mounted upon said rod at opposite ends of the margin gage.

27. In a carriage controlling mechanism, a supporting bracket, a pivoting rod mounted therein, a margin gage disposed upon said rod for oscillatory and sliding movement thereon, a jumper stop pivotally mounted upon said rod at opposite ends of the margin gage, and means for adjusting said rod and jumper stop longitudinally of the margin and independently thereof.

28. In a carriage controlling mechanism, a toothed tabulating rack disposed at the rear thereof, a series of adjustable carriage stops mounted upon said rack, a movable jumper stop having a contact face to engage said carriage stops, a lever for said jumper stop pivoted upon the axis thereof, and a spring bearing upon the lever and jumper stop.

29. In a carriage controlling mechanism, a toothed tabulating rack disposed at the rear thereof, a series of adjustable carriage stops mounted upon said rack, a pivoted jumper stop having a contact face to engage said carriage stops, an operating lever for said jumper stop, an angular arm upon the pivot of the jumper stop and adapted to engage one end thereof and the operating lever, and a tension spring for connecting said arm and jumper stop.

30. In a carriage controlling mechanism, a carriage provided with a holding rack, a slide bar mounted upon said carriage, an adjustable holder upon said bar, angularly disposed slotted lugs at each end of said holder to embrace said bar, and a stop block pivotally mounted in said lugs and provided with teeth to engage said rack.

31. In a carriage controlling mechanism, a carriage provided with a holding stop, a slide bar mounted upon said carriage, an adjustable holder upon said bar, angularly disposed slotted lugs at each end of said holder to embrace said bar, a stop block pivotally mounted in said lugs and provided with teeth to engage said rack, and a holding spring disposed between an extension from said block and the adjustable holder.

32. In a carriage controlling mechanism, a holder for a stop block comprising a plate having a finger piece at one end and later-

ally disposed lugs at opposite sides each slotted and provided with a pivoting recess, and a stop block having a finger piece and pivots mounted in said recesses.

5 33. In a carriage controlling mechanism, a holder for a stop block comprising a plate having a finger piece at one end and laterally disposed lugs at opposite sides each slotted and provided with a pivoting recess, a stop block having a finger piece and pivots 10 mounted in said recesses; a lower toothed end extending laterally from said block, and a holding spring disposed between said finger pieces.

15 34. In a carriage controlling mechanism, a holder for a stop block comprising a plate

having a finger piece at one end and laterally disposed lugs at opposite sides each slotted and provided with a pivoting recess, a stop block having a finger piece and pivots 20 mounted in said recesses; a toothed lower end upon said block provided at one side with an inclined face, and a spring disposed between said finger pieces.

In testimony whereof we affix our signatures in presence of two witnesses. 25

CHARLES SPIRO.
WALTER J. SPIRO.

Witnesses:

E. J. BURNSTOCK,
LEWIS HODGES.