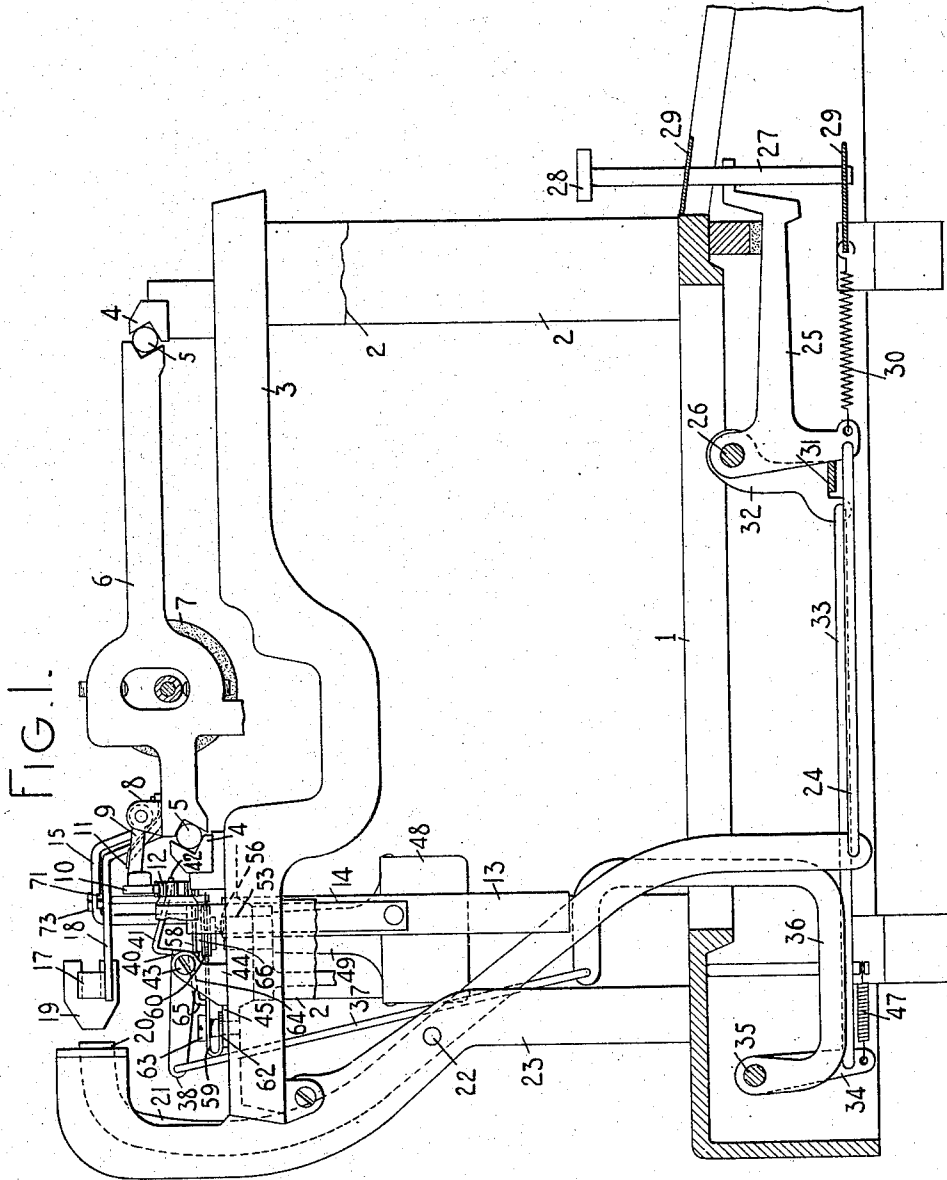


O. WOODWARD.
TYPE WRITING MACHINE.
APPLICATION FILED MAY 16, 1912.

1,041,217.

Patented Oct. 15, 1912.

2 SHEETS-SHEET 1.



WITNESSES:

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M. W. Poole

INVENTOR:

Oscar Woodward
By Jacob Feller

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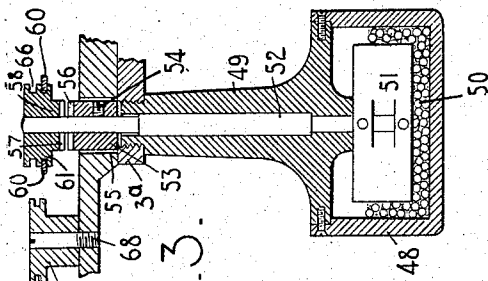


FIG. 3.

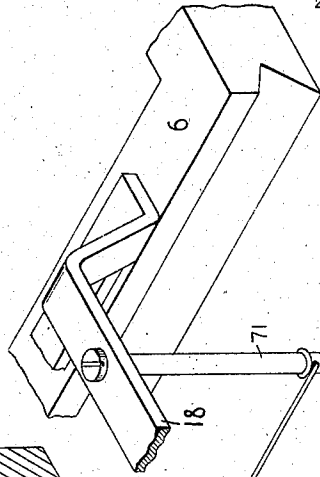


FIG. 4.

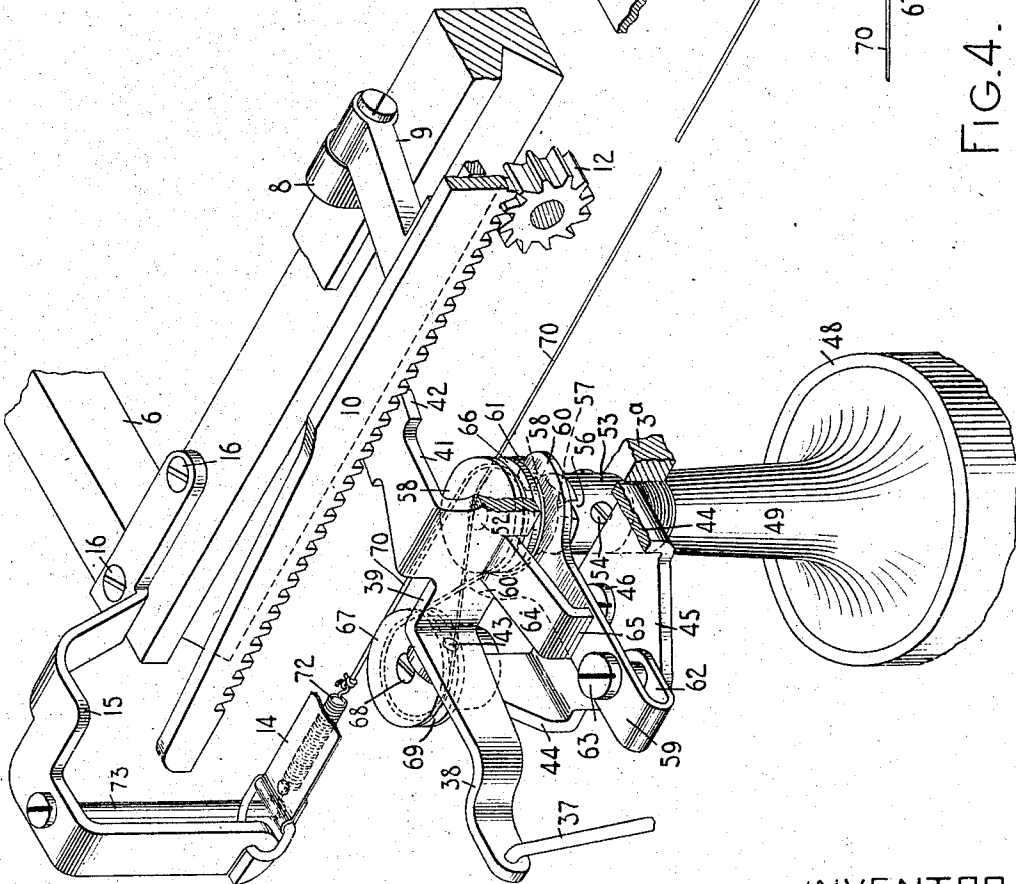


FIG. 2.

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UNITED STATES PATENT OFFICE.

OSCAR WOODWARD, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO UNION TYPEWRITER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

1,041,217.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Application filed May 16, 1912. Serial No. 697,639.

To all whom it may concern:

Be it known that I, OSCAR WOODWARD, citizen of the United States, and resident of Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to retarding or speed regulating mechanism for typewriting machines and its principal object is to provide novel and improved means of connecting the retarding or regulating devices with the traveling element or carriage, enabling said devices to be rendered effective without shock or jar.

To the above and other ends my invention consists in the features of construction, combinations of devices and arrangements of parts hereinafter described and particularly pointed out in the claims.

My invention is shown herein as embodied in a No. 11 Remington typewriting machine and in connection with tabulating mechanism of the sort commonly found in said Remington machine, but it is to be understood that said invention may be applied to other styles of writing machines and tabulating mechanisms.

In the accompanying drawings, Figure 1 is a fragmentary side elevation partly in section of a No. 11 Remington typewriting machine embodying my invention, parts of the machine being omitted and parts broken away. Fig. 2 is a perspective view of the novel retarder or regulator connecting devices and associate parts, including the retarder proper and parts of the traveling carriage. Fig. 3 is a vertical longitudinal sectional view of the retarder or regulator device showing parts of the novel connecting devices. Fig. 4 is a horizontal sectional view of the connecting devices.

As shown in Fig. 1, the main frame of the No. 11 Remington machine comprises a base 1, posts 2 and a top plate 3 above which are fixed stationary grooved track-ways 4 co-operating through anti-friction balls 5 with a carriage or truck 6 in which is mounted a platen 7. Pivoted in lugs 8 on the rear part of the carriage are arms 9 to which is secured a feed rack 10, said rack being normally maintained by springs 11 in mesh with a feed pinion 12 which is operatively

connected with escapement wheels, the latter coöperating with a dog controlled by the printing keys to control the letter feed movements of the carriage as is well understood. The carriage is constantly urged leftward by a motor or spring drum 13 connected by a strap 14 with an arm 15 secured by screws 16 to the rear of the carriage or truck 6 and shaped to extend upward, rearward and downward behind the same as shown best at Fig. 2.

The tabulator mechanism comprises a toothed stop bar 17 supported on arms or brackets 18 fixed to and extending rearward from the carriage. Adjustably mounted on the stop bar are one or more column stops 19 with which are adapted to coöperate denominational stops 20 integral with and at the forward upper ends of vertically disposed denomination levers 21 fulcrumed at 22 in a frame 23 detachably secured to the main frame. These levers are operative to project the stops 20 forward into the path of the column stops by devices comprising for each lever 21 a horizontal link 24 connected at its rear to the lower end of said lever 21 and at its forward end to a bell crank 25 having a fixed pivot 26, the forwardly extending arm of said bell crank being depressible by a key stem 27 provided at the top with a tabulator key 28 and slidable up and down in fixed guides 29. Each bell crank 25 is provided with a restoring spring 30 for restoring the connected parts after a tabulating operation. Each tabulator key 28 is operative not only to project the associate denomination stop 20 but also to release the carriage from the control of its escapement devices and permit it to be drawn freely leftward for a tabulating run under the pull of the spring drum. The releasing devices comprise a bail or universal bar 31 having upwardly extending ears or arms 32 fulcrumed at 26, said bar 31 being arranged behind the bell cranks 25 and operative by each of them to push rearward a link 33 connected at its rear to a crank arm 34 fixed to a rock shaft 35. Also fixed to said rock shaft is an angular arm or member 36 which is connected by an upwardly extending link 37 with a releasing or lever member or frame of novel construction.

The releasing member comprises a rearwardly extending arm 38 with which the

link 37 is connected, said arm 38 being integral with the body or cross portion 39 of said releasing member and being bent rearward from the right end thereof, the left end of said body terminating is a rearwardly bent ear 40. Extending forward from about the middle of the top of the body portion 39 is an integral arm 41 terminating in a broad lip or shoe 42 which underlies the feed rack 10 at the right of the pinion 12 and is adapted to lift the rack out of mesh with the pinion, thereby releasing the carriage. Pivot screws 43 cooperate with the arm 38 and the ear 40 to provide a fulcrum for the releasing member, said screws being supported in upwardly extending ears 44 of a U-shaped bracket which further includes a body portion 45 connecting the ears 44, said body portion being secured in part to the top plate of the machine by a screw 46. It will be understood that under the operation of a tabulator key 28 the link 37 will be pulled down, thereby swinging the releasing member 38—41 on its fulcrum and causing the shoe 41 to engage with the rack 10 and to lift it out of mesh with the feed pinion 12 against the springs 11, so that the carriage will run leftward under the pull of the spring drum until arrested by the engagement of one of the column stops 19 with the projected denominational stop 20. When the key 28 is released a spring 47, connected to the crank arm 34, assists to restore the releasing devices to normal inoperative position.

In order to regulate the speed of the carriage when released as just described for a tabulating run, retarding or regulating devices are preferably provided. The regulating devices shown herein are those employed in the No. 11 Remington typewriting machine but it is to be understood that regulating or retarding devices of any other suitable character may be employed. Said devices, as herein shown, are mounted in a box or container comprising a cylindrical body portion 48 and an upwardly extending stem 49, said stem being threaded at its upper end and screwed into a supporting plate 3^a fixed to the top plate, thus rigidly securing the container 48, 49 to the top plate. As shown in Fig. 3 the box or body portion 48 contains suitable material 50, such as a mixture of small balls and graphite, with which cooperates a rotating element or stirrer 51 fixed to the lower end of an upright shaft 52 which bears in the stem 49, and is shouldered so as not to drop down out of place.

The novel connecting devices for connecting the retarder or regulator to the carriage or traveling element comprise an engageable or clutch member or device 53 secured by a set screw 54 to the reduced upper end of the shaft 52, said clutch member as

shown in Fig. 3 being arranged in a depression or seat 55 in the top plate. At its upper face the clutch member 53 is provided with one or more engaging devices or teeth 56, two of these teeth being preferably provided and arranged diametrically opposite each other (Fig. 3). As shown clearly in Fig. 2 these teeth are provided with vertical or working faces which are adapted to cooperate with corresponding working faces on similar clutch teeth or engaging devices 57 formed on a cooperating engageable or clutch member or device 58 which is slidably mounted on the reduced upper end of the shaft 52. The member 58 is normally separated from the clutch member 53 but is adapted to be slid down to cause engagement between the clutch teeth or devices 56 and 57 by devices comprising a spring arm 59 provided at its forward end with forks or bifurcations 60 which have inwardly bent ends that engage with a circumferential groove or depression 61 formed at the lower portion of the clutch member 58. The arm 59 extends rearward and is bent back on itself to provide a tongue 62, the rear portion of the arm and the tongue being secured to the bracket body 45 by a shouldered screw 63. This shouldered screw serves not only to secure the spring arm in place on the bracket 45 but also assists the screw 46 to secure said bracket to the top plate. Further the screw 63 may serve as a regulating device for regulating the tension or spring and also the position of the arm 59. By turning the screw in or out the arm 59 may be raised and lowered and the tension or lift that it exerts is also varied. The hole in the body of the arm through which the shouldered portion of the screw 63 passes, is larger in diameter than said shouldered portion so that the arm 59 may move freely up and down lengthwise of said shouldered portion. The shoulder on the screw confines the tongue 62 between it and the top plate, the hole in said tongue being larger than and cooperating with the reduced end portion of said screw, said hole however being smaller than the upper portion of the screw above the shoulder thereon. The arm 59 is depressible to lower the clutch member 58 into engagement with the clutch member 53 by an arm or extension 64 which is integral with and extends rearwardly from the body 39 of the releasing member, said arm 64 overlying said arm 59 and having a downwardly bent end 65 which contacts with and forces down the arm 59 when the releasing member is operated, overcoming the inherent tension of said arm 59 and forcing the clutch member 58 into operative engagement with the clutch member 53.

The clutch member 58 is constantly connected with the carriage by devices as now to be described so that the engagement of

the two clutch members effects a connection between the carriage and the retarder or regulator. Said devices comprise generally a yielding and elastic connection from the carriage to the clutch member 58 and more specifically include a spring mounted cord, strap or band which is secured at its ends to the carriage and between its ends runs over a pulley device or devices of which there are or may be two. One of these pulley devices is preferably integral with the clutch member 58, being formed by providing a circumferential groove or depression 66 at the upper part of said member and above the groove 61. The other pulley member 67 is mounted on a screw pivot 68 which rises from the top plate at the left of the pulley and clutch member 58 and slightly to the rear of its axis, although it is obvious that if desirable the member 67 may be movably mounted on the support or arm 59. The pulley 67 is provided with a circumferential groove 69 in a horizontal plane slightly lower than that of the groove 66. The connecting member or cord 70 may be of any suitable material and is secured at its left end to a post or screw pin 71 depending from the left-hand bracket or arm 18. The right-hand end of said cord is connected to a coiled draw spring 72 at the left-hand end of said draw spring, the right-hand end of said draw spring being hooked around a post or screw pin 73 which depends from the arm or bracket 15 and is rigid thereon. The cord and spring 72 are arranged under the strap 14. As appears clearly from Figs. 2 and 4 the cord wire or chain passes from the spring inward or toward the left and at the front of the member 58, engaging with the groove 66 therein, thence passing around the back of said member 58 and then diagonally forward around the member 67, engaging in the groove 69 therein and thence diagonally forward again under the other diagonal portion and over the forward side of the groove 61, not, however, contacting with the bifurcated portions 60 which are behind the cord. By providing two pulleys as described the cord turns freely and without contacting or rubbing against itself so as to create unnecessary friction.

It will be observed that by my present invention I provide simplified and improved devices for connecting the retarding or speed regulating mechanism with the traveling element or carriage: that said mechanism includes flexible and elastic devices enabling the effective connection between the carriage and the retarding mechanism to be brought about smoothly and easily and without perceptible shock or jar; that the elastic connecting devices are combined with means for automatically rendering them operative and inoperative to connect the retarding mechanism or devices with

the carriage; that said means in the present instance includes tabulating mechanism; that the flexible devices in the present instance comprise a cord or strap which is secured at its ends to the carriage and is connected to a spring which maintains said cord under tension and renders the connection an elastic and resilient one; that the elastic connection maintains a constant connection between the carriage and one of a pair of clutch or engageable members, the other of which is constantly connected to the retarding devices; and that one of these clutch members or devices is spring mounted by means of a flexible arm or device controlled by a pivoted member or frame which is automatically operative to release the carriage and render said clutch devices effective one on the other.

It will be understood that various changes may be made without departing from the spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent, is:—

1. In a typewriting machine, the combination of a releasable carriage, retarding devices, and elastic connections through which said retarding devices are connected with said carriage only when said carriage is released.

2. In a typewriting machine, the combination of a carriage, retarding devices, elastic connecting devices, and means for automatically rendering said devices operative and inoperative to connect the retarding devices with the carriage.

3. In a typewriting machine, the combination of a carriage, retarding devices, tabulating mechanism, and elastic connections operative automatically during the operation of said tabulating mechanism to connect said retarding devices with said carriage.

4. In a typewriting machine, the combination of a releasable carriage, retarding devices, and a flexible device through which said retarding devices are connected with said carriage only when said carriage is released.

5. In a typewriting machine, the combination of a releasable carriage, retarding devices, and a flexible spring-mounted device through which said retarding devices are connected with said carriage only when said carriage is released.

6. In a typewriting machine, the combination of a releasable carriage, retarding devices, and a flexible spring-mounted cord through which said retarding devices are connected with said carriage only when said carriage is released.

7. In a typewriting machine, the combination of a carriage, retarding devices, elastic connections secured to said carriage, and means for automatically rendering said

connections operative and inoperative to connect said retarding devices with the carriage.

8. In a typewriting machine, the combination of a carriage, retarding devices, an engageable member constantly connected with said retarding devices, a cooperative engageable member, a constant elastic connection between said cooperative engageable member and said carriage, and means for connecting said engageable members.

9. In a typewriting machine, the combination of a carriage, retarding devices, an engageable member constantly connected with said retarding devices, a cooperative engageable member, a constant elastic connection between said cooperative member and said carriage, and means for moving said cooperative engaging member to connect said retarding devices with said carriage.

10. In a typewriting machine, the combination of a carriage, retarding devices, an engageable member constantly connected with said retarding devices, a cooperative engageable member, a constant elastic connection between said cooperative engageable member and said carriage, and tabulating mechanism, said tabulating mechanism being operative automatically to connect said engageable members.

11. In a typewriting machine, the combination of a carriage, retarding devices, an engageable member constantly connected with said retarding devices, a cooperative engageable member, a constant elastic connection between said cooperative engageable member and said carriage, and tabulating mechanism, said tabulating mechanism being operative to move said cooperative engageable member into engagement with the first named engageable member.

12. In a typewriting machine, the combination of a carriage, retarding devices, a flexible cord constantly connected to said carriage, and key actuated means for connecting said cord with said retarding devices.

13. In a typewriting machine, the combination of a carriage, retarding devices, a flexible element connected at one end to the carriage, a spring connecting the other end of said element with the carriage, and means intermediate the ends of said element for connecting it with said retarding devices.

14. In a typewriting machine, the combination of a carriage, retarding devices, a flexible cord secured at one end to the carriage, a coiled draw spring connecting the other end of said cord with the carriage, and devices intermediate the ends of said cord for connecting it with said retarding devices.

15. In a typewriting machine, the combination of a carriage, retarding devices, a

flexible element secured to said carriage, means for maintaining said flexible element under tension, and means for connecting said flexible element with said retarding devices.

16. In a typewriting machine, the combination of a carriage, retarding devices, a flexible device adapted to connect said retarding devices with said carriage, and means for maintaining said flexible device under tension.

17. In a typewriting machine, the combination of a carriage, retarding devices, a flexible element, means for maintaining said element under tension, and means operative on said element to effect a connection between the carriage and the retarding devices.

18. In a typewriting machine, the combination of a carriage, retarding devices, a flexible element, normally separated engageable devices, one of said devices being connected with said element, and means for connecting said engageable devices to connect said retarding devices with said carriage.

19. In a typewriting machine, the combination of a carriage, retarding devices, a clutch member constantly connected with said retarding devices, a second clutch member, a spring mounted element secured to said carriage and constantly connected with said second clutch member, and means for moving said second clutch member to connect it with said first named clutch member.

20. In a typewriting machine, the combination of a carriage, retarding devices, a pulley, a flexible connection attached to said carriage and running over said pulley, and means operating on said pulley to connect said retarding devices with said carriage.

21. In a typewriting machine, the combination of a carriage, retarding devices, a movable supporting member, an engageable device thereon, elastic connections between said engageable device and said carriage, and means operative on said member to connect said engageable device with said retarding devices.

22. In a typewriting machine, the combination of a carriage, retarding devices, a pivoted supporting frame, a pulley provided with a clutch tooth and controllable by an arm on said frame, a flexible element attached to said carriage and running over said pulley, a clutch member connected to said retarding devices, and means operative on said supporting frame for moving said pulley to bring the tooth thereon into engagement with said clutch member.

23. In a typewriting machine, the combination of a carriage, retarding devices, a pivoted supporting frame, a pulley movable thereby and provided with a clutch tooth, a flexible element attached to said carriage

and running over said pulley, a clutch member connected to said retarding devices, tabulating mechanism, and means operative by said mechanism for moving said frame to bring the tooth on said pulley into engagement with said clutch member.

24. In a typewriting machine, the combination of a carriage, retarding devices, a pivoted supporting frame, a spring-mounted pulley controlled thereby and provided with a clutch tooth, a flexible element attached to said carriage and running over said pulley, a clutch member connected to said retarding devices, a tabulator stop on the carriage, a coöperative stop on the frame, key controlled devices for actuating said coöperative stop, and a carriage releasing device on said frame, said frame being operative by said key controlled devices for causing the release of the carriage and the engagement of the tooth on said pulley with said clutch device.

25. In a typewriting machine, the combination of a carriage, retarding devices, a pivoted supporting frame provided with a carriage releasing device, a pulley provided with a clutch tooth, a second pulley, a flexible element connected to said carriage and running over said pulleys, a toothed clutch member connected to said retarding devices, and means operative to move said supporting frame and said first named pulley to connect the tooth of said first named pulley with said toothed clutch member and also to release said carriage.

26. In a typewriting machine, the combination of a carriage, retarding devices, a pivoted supporting frame provided with a carriage releasing device, a pulley provided with a clutch tooth, a second pulley, a flexible element connected to said carriage and running over said pulleys, a clutch member connected to said retarding devices, and tabulating mechanism comprising a key, the actuation of said key operating to move said frame and said first named pulley to connect said first named pulley with said retarding devices and also to release said carriage.

27. In a typewriting machine, the combination of a carriage; retarding devices comprising a rotary shaft; a pivoted supporting frame; a pulley slidable on said

shaft, said pulley being provided with a clutch tooth; a toothed clutch member rigid on said shaft with which said clutch tooth is adapted to engage; a second pulley; a flexible element under tension and connected to said carriage, said element running over both said pulleys; a yielding arm supporting said slidable pulley and controlled by an arm on said frame; a carriage releasing device on said frame; tabulating mechanism; and means operative by said tabulating mechanism to swing said frame on its pivot, thereby connecting the first named pulley with said clutch member and also releasing said carriage.

28. In a typewriting machine, the combination of a carriage, retarding devices, a yielding arm, a pulley supported by said arm, a flexible element connected to the carriage and running over said pulley, and key controlled devices operative on said yielding arm to connect said pulley with said retarding devices.

29. In a typewriting machine, the combination of a carriage, retarding devices, a pulley, a flexible element connected to said carriage and running over said pulley, a spring arm for supporting and moving said pulley, means for regulating the tension of said arm, and means operative to move said arm to connect said pulley with said retarding devices.

30. In a typewriting machine, the combination of a releasable carriage, retarding devices, and intermediate elastic connections between the two but normally disconnected from the retarding devices and adapted to be connected with the latter when the carriage is released.

31. In a typewriting machine, the combination of a releasable carriage, retarding devices, elastic connections permanently connected to the carriage and means for coupling said connections to the retarding devices whenever the carriage is released.

Signed at the borough of Manhattan, city of New York, in the county of New York and State of New York, this 15th day of May, A. D. 1912.

OSCAR WOODWARD.

Witnesses:

CHARLES E. SMITH,
E. M. WELLS.