H. H. VICKERS.

COMBINED TYPEWRITING AND COMPUTING MACHINE.

APPLICATION FILED OCT. 22, 1920.

1,400,842. Patented Dec. 20, 1921.

Fig. 1.

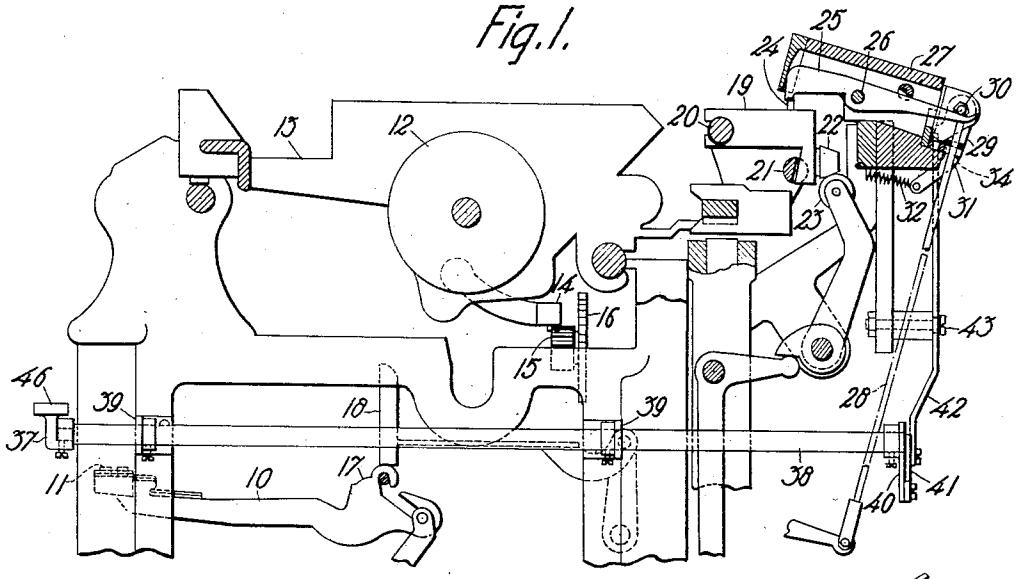


Fig. 3.

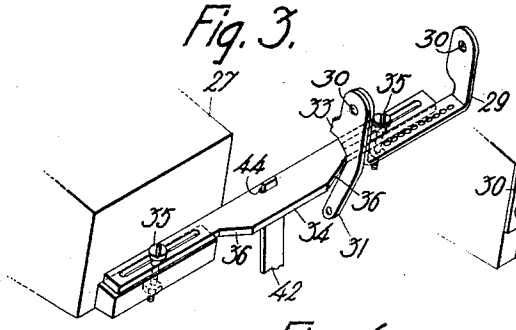


Fig. 2.

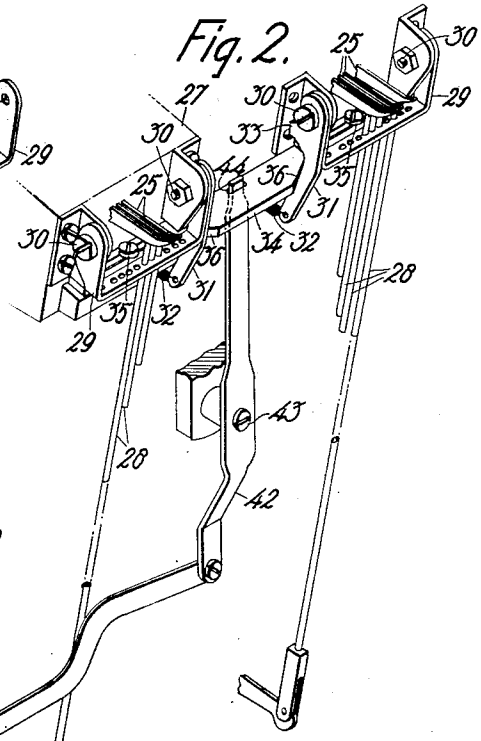
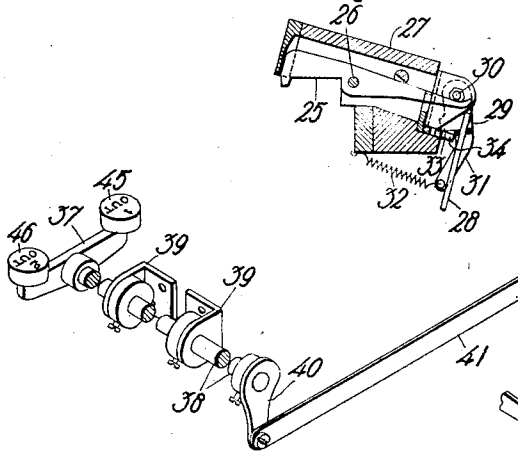


Fig. 4.



Inventor:
Harry H Vickers
by R. B. Stickney
Attorney

UNITED STATES PATENT OFFICE.

HARRY H. VICKERS, OF CORONA, NEW YORK, ASSIGNOR TO UNDERWOOD COMPUTING MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

COMBINED TYPEWRITING AND COMPUTING MACHINE.

1,400,842. Specification of Letters Patent. Patented Dec. 20, 1921.

Application filed October 22, 1920. Serial No. 418,671.

To all whom it may concern:

Be it known that I, HARRY H. VICKERS, a citizen of the United States, residing in Corona, Long Island, in the county of Queens and State of New York, have invented certain new and useful Improvements in Combined Typewriting and Computing Machines, of which the following is a specification.

This invention relates to combined typewriting and computing machines, and is in the nature of an improvement on Patent No. 1,278,062, granted to me September 3, 1918, and the application of Hart, No. 72,015, filed January 14, 1916.

In machines of the Underwood-Hanson type, the carriage in moving through a computing zone causes, by any suitable denomination-selecting means, the advancement *seriatim* of pin-bars to positions to enable the setting of index-pins thereon by linkages actuable by the numeral-keys. Upon completion of the indexing of a number, the general operator may be reciprocated and will cause the pin-bars to actuate the corresponding dial-wheels of the corresponding register in accordance with the pins indexed on the pin-bars.

The main object of the invention is to provide simple and efficient means for selectively determining the effectiveness of the denomination-selecting means for a plurality of registers.

In carrying out the invention, the upper ends of the thrust-links or rods, by means of which the movements of the different denominational jacks are transmitted to the usual levers in the lower part of the machine, may be guided at their upper ends in frames, so that, upon movement of any one of said frames to the rear, the upper ends of the rods guided thereby will be withdrawn, out of contact with the jacks, thereby rendering the denomination-selecting means ineffective for the corresponding register. In order to facilitate the movement of the rods into and out of operative position with respect to the jacks, the rear ends of the latter may be curved upwardly.

The guiding frames for the upper ends of the sets of rods may be held in their effective positions by any suitable means, such as springs, and provision may be made of a bar slidable transversely of the machine and provided with cam-surfaces to coöperate with said guiding frames, so that the latter may be moved to the rear by movement of the slidable bar to the proper position.

Provision may also be made at the front of the machine of manually-operable means having suitable connections with the slidable bar, so that the position of the latter may be determined thereby.

It should be understood that the means for rendering the denomination-selecting means ineffective may also be used in case the machine is provided with but a single register.

Other features and advantages will hereinafter appear.

In the accompanying drawings,—

Figure 1 is a view showing my invention applied to so much of an Underwood-Hanson machine as is necessary for the purpose of illustration.

Fig. 2 is a skeleton, perspective view showing the preferred form of my invention.

Fig. 3 is a detail view, showing the slide by means of which the effectiveness of the denomination-selecting means for the registers is determined.

Fig. 4 is a detail sectional view, showing the upper ends of the rods moved out of engagement with the rear ends of the jacks.

Upon depression of a numeral-key (not shown), a corresponding type-bar 10 will be swung upwardly and rearwardly to cause a type 11 to coöperate with a cylindrical platen 12 and print upon a work-sheet carried by the latter. The platen 12 is rotatably mounted in a carriage 13 normally urged in a letter-feed direction, control of the carriage in its letter-feed direction being obtained by means of a rack 14, fastened to the carriage and meshing with a pinion 15, having the usual one-way connection with an escapement-wheel 16, which is permitted to move step by step in accordance with the actuation of the type-bars, each of which is provided with a heel 17 adapted to strike a universal frame 18 as the type-bar nears the end of its printing stroke, and thereby move said frame 18 to the rear to permit a letter-feed movement of the escapement-wheel by means not shown.

Denomination-selectors 19 may be adjustably positioned at different points at the rear of the carriage, each denomination-selector being mounted for this purpose upon a rod 20, so that it can be swung about or slid along the latter, and being adapted to coöperate with a notched rod 21, so as to be held

in adjusted position along said rod 20. When outside of a computing zone, the selector 19 may be in depressed or ineffective position, but as it approaches a computing zone, in the travel of the carriage, a frusto-conical roll 22 on the selector will ride up one of the tapered ends of a roll 23, the cylindrical part of which extends substantially the length of the computing zone, and the selector will be maintained in effective position while passing through the zone.

The selector 19 is provided with a tappet 24, which, as the carriage passes through the computing zone, will engage and cam up *seriatim* the forward ends of denominational jacks 25, pivoted at 26 in a housing 27, thereby depressing *seriatim* a set of rods or links 28 normally in effective engagement with the rear ends of said jacks. Such depression of the rods 28 may effect denominational selection in a manner more fully disclosed in said Patent No. 1,278,062.

As herein disclosed, provision is made of two sets of jacks 25 and two sets of rods or links 28 to be actuated thereby. The upper ends of the links 28 may be guided in perforations in suitable bails or frames 29, pivoted at 30 in brackets secured to the respective housings 27. The frames 29 may be provided with arms 31 preferably at the adjacent ends of the two frames, and the lower ends of these arms 31 may be drawn to the front by springs 32, so as to hold said frames in position to enable rods 28 to be actuated by jacks 25, each arm 31 being provided with a lug 33 to engage the bracket supporting the adjacent end of the frame 29, thereby limiting the movement of the arm 31 under action of spring 32.

In order to render either set of jacks 25 ineffective upon the corresponding set of rods 28, provision may be made of a slide 34, guided by bolts 35, extending through slots therein and having oppositely-inclined surfaces 36, so that, when moved in either direction from its central or neutral position in which it is ineffective on said arms 31, it will engage one of said arms 31 to swing the corresponding frame 29 to the rear and withdraw the corresponding rods 28 from engagement with the jacks 25. In order to facilitate movement of the upper ends of rods 28 into and out of operative engagement with jacks 25 the rear ends of the latter may be given an upward turn.

For convenience in positioning slide 34, a lever 37 may be mounted at the front of the machine on the forward end of a shaft 38, supported on the frame of the machine by brackets 39, and an arm 40 may be fixed on the rear end of said shaft and connected by means of a link 41 to the lower end of the lever 42, pivoted at 43 and having its upper end projecting through a slot 44 in said slide 34. It will be evident that upon depressing a key 45 at the left end of said lever 37, the slide will be moved to the left of the machine and the left-hand denomination-selecting means rendered ineffective, and that depression of key 46 at the opposite end of said lever 37 will cause slide 34 to render the right-hand denomination-selecting means ineffective. For convenience, the left-hand denomination-selecting mechanism may be considered as No. 1 and the right-hand denomination-selecting mechanism as No. 2, and, since the depression of key 45 renders No. 1 selecting mechanism ineffective, and key 46 renders No. 2 selecting mechanism ineffective, said keys may be marked 1—out and 2—out, respectively.

It will be understood that by means of the controlling mechanism just described the machine may be selectively set so that numbers typed in a single column may be run into both registers simultaneously or into either one of the registers and not the other. The selective mechanism will also be useful in case one set of entries is to be typed on one sheet and another set of entries on another sheet, the columnar position of each sheet corresponding, however, to the same position of the carriage. In this case, one or the other of said registers should be disconnected by proper selective setting of the controlling mechanism.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a combined typewriting and computing machine, in combination, a traveling carriage, carriage-actuated denomination-selecting means comprising a plurality of sets of jacks and a plurality of sets of rods operable thereby, a plurality of guiding frames for the upper ends of said rods, one frame for each set, and a cam-member adapted, when moved to different positions, to shift different frames to positions to disconnect the corresponding sets of jacks and rods.

2. In a combined typewriting and computing machine, in combination, a traveling carriage, carriage-actuated denomination-selecting means comprising a plurality of sets of jacks and a plurality of sets of rods operable thereby, a controlling member at the front of the machine, and means whereby movement of the controlling member to different positions will disconnect different sets of jacks and rods.

3. In a combined typewriting and computing machine, in combination, a traveling carriage, carriage-actuated denomination-selecting means comprising a plurality of sets of jacks and a plurality of sets of rods operable thereby, a plurality of guiding frames for the upper ends of said rods, one

frame for each set, a manually-operable member at the front of the machine, and means controlled by said member for selectively shifting said frames to break the operative connection between the corresponding sets of jacks and rods.

4. In a combined typewriting and computing machine, in combination, a traveling carriage, carriage-actuated denomination-selecting means comprising a plurality of sets of jacks and a plurality of sets of rods operable thereby, a plurality of guiding frames for the upper ends of said rods, one frame for each set, and a cam-member slidable transversely of the machine and adapted when in different positions to hold certain of said frames in such position as to disconnect the rods controlled by said frames from the corresponding jacks.

5. In a combined typewriting and computing machine, in combination, a traveling carriage, a set of denominational members, carriage-actuated means for actuating said members *seriatim*, a second set of members normally operatively connected with the corresponding members of the first set, guiding means for the members of one of said sets, and cam means for shifting said guiding means, so as to break the operative connection between the respective members of said sets.

6. In a combined typewriting and computing machine, in combination, a traveling carriage, a denomination-selecting tappet thereon, a set of denominational jacks to be actuated *seriatim* by said tappet, thrust-rods to be actuated by said jacks, a frame having apertures through which the upper ends of the rods pass, means normally holding said frame in position to render said jacks effective on said rods, a cam to engage said frame, a manually-operable member, and means whereby the movement of said member to one position will cause said cam to shift said frame, so as to withdraw the upper ends of said rods from the paths of the jacks.

7. In a combined typewriting and computing machine, in combination, a traveling carriage, a denomination-selecting tappet thereon, a set of denominational jacks to be actuated *seriatim* by said tappet, thrust-rods to be actuated by said jacks, a frame having apertures through which the upper ends of the rods pass, means yieldably holding said frame in position to render said jacks effective on said rods, and a cam movable transversely of the machine and adapted in one position to hold the frame in position to render the jacks ineffective on the rods, or in another position to enable the frame to return to normal position.

8. In a combined typewriting and computing machine, in combination, a traveling carriage, a denomination-selecting tappet thereon, a set of denominational jacks to be actuated *seriatim* by said tappet, thrust-rods to be actuated by said jacks, a frame having apertures through which the upper ends of the rods pass, means normally holding said frame in position to render said jacks effective on said rods, a cam movable to effective position to shift said frame, so as to withdraw the upper ends of the rods from the rear ends of the jacks, a shaft extending from the front to the rear of the machine, two finger-pieces at the front of the machine connected to said shaft to rock the same in one direction or the other, and means whereby said cam may be moved into and out of effective position by said shaft.

9. In a combined typewriting and computing machine, in combination, a traveling carriage, denomination-selecting tappets thereon, two sets of denominational jacks, two sets of rods for engagement by said jacks, two guiding frames, one for each set of rods, and a cam-member adapted when moved in one direction to shift one frame to disconnect the corresponding rods and jacks, and when moved in the other direction to disconnect the other sets of jacks and rods.

10. In a combined typewriting and computing machine, in combination, a traveling carriage, two carriage-actuated denomination-selecting mechanisms, each of which comprises a set of denominational jacks and a set of rods for actuation by said jacks, two pivoted guiding frames, one for each of said rods, and a controlling member slidable transversely of the machine, said member and said frames being provided with portions adapted to co-act, so that upon movement of said member from its central position, in either direction, one of said frames will be shifted to withdraw the corresponding rods from effective position relative to the corresponding jacks.

11. In a combined typewriting and computing machine, in combination, a traveling carriage, two carriage-actuated denomination-selecting mechanisms, each comprising a set of denominational levers and a set of denominational links normally positioned to coöperate therewith, a guiding frame for each set of links engaging the ends thereof adjacent said levers, and a controlling member normally ineffective on said frames but adapted to move either of said frames and the corresponding links to ineffective position in accordance with the direction of movement of said member.

12. In a combined typewriting and computing machine, in combination, a traveling carriage, two carriage-actuated denomination-selecting mechanisms, each comprising a set of denominational jacks and a set of rods for engagement by said jacks, two guiding frames, one for each set of rods, a nor-

mally ineffective cam-member adapted when moved in one direction to engage one frame to shift the corresponding set of rods to ineffective position relative to the jacks and when moved in the other direction to move the other set of rods to ineffective position, two keys at the front of the machine, and means whereby depression of one of said keys will cause said cam-member to shift one of the frames and the rods guided thereby to ineffective position, and depression of the other key will cause shifting of the other frame and the rods controlled thereby to ineffective position.

13. In a combined typewriting and computing machine, in combination, a traveling carriage, two carriage-actuated denomination-selecting mechanisms, each comprising a set of denominational jacks and a set of rods for engagement thereby, two pivoted guiding frames, one for each set of rods, a spring to hold each of said frames in normal position, and a normally ineffective cam-member adapted when moved in one direction to shift from normal position one frame and the corresponding rods, and when moved in the other direction to shift to ineffective position the other frame and the rods associated therewith.

14. In a combined typewriting and computing machine, in combination, a traveling carriage, two carriage-actuated denomination-selecting mechanisms, each comprising a set of denominational jacks at the rear of the machine and a set of rods for engagement thereby, two pivoted guiding frames, one for each set of rods, a spring to hold each of said frames in normal position, a cam-member adapted when moved in one direction from a normal ineffective position to shift from normal position one frame and the corresponding rods, and when moved in the other direction to shift to ineffective position the other frame and the rods associated therewith, a manually-operable member at the front of the machine, and means whereby movement of the same in either direction from its normal position will effect movement of said cam-member to one of its effective positions.

15. In a combined typewriting and computing machine, in combination, a traveling carriage, carriage-actuated denomination-selecting means comprising a plurality of sets of jacks and a plurality of sets of rods operable thereby, a control-member, and means whereby said control-member may selectively move said sets of rods out of operative relation with said sets of jacks.

16. In a combined typewriting and computing machine, in combination, a traveling carriage, carriage-actuated denomination-selecting means comprising a plurality of sets of jacks and a plurality of sets of rods having operative connections therewith, a control-member, and means whereby said control-member may selectively destroy the operative connections between the sets of jacks and the corresponding sets of rods.

HARRY H. VICKERS.

Witnesses:
ROSE GERSTEIN,
EDITH B. LIBBEY.