No. 853,280. PATENTED MAY 14, 1907.

H. L. WAGNER.

TYPE WRITING MACHINE.

APPLICATION FILED JUNE 27, 1906.

2 SHEETS—SHEET 1.

FIG. 1.

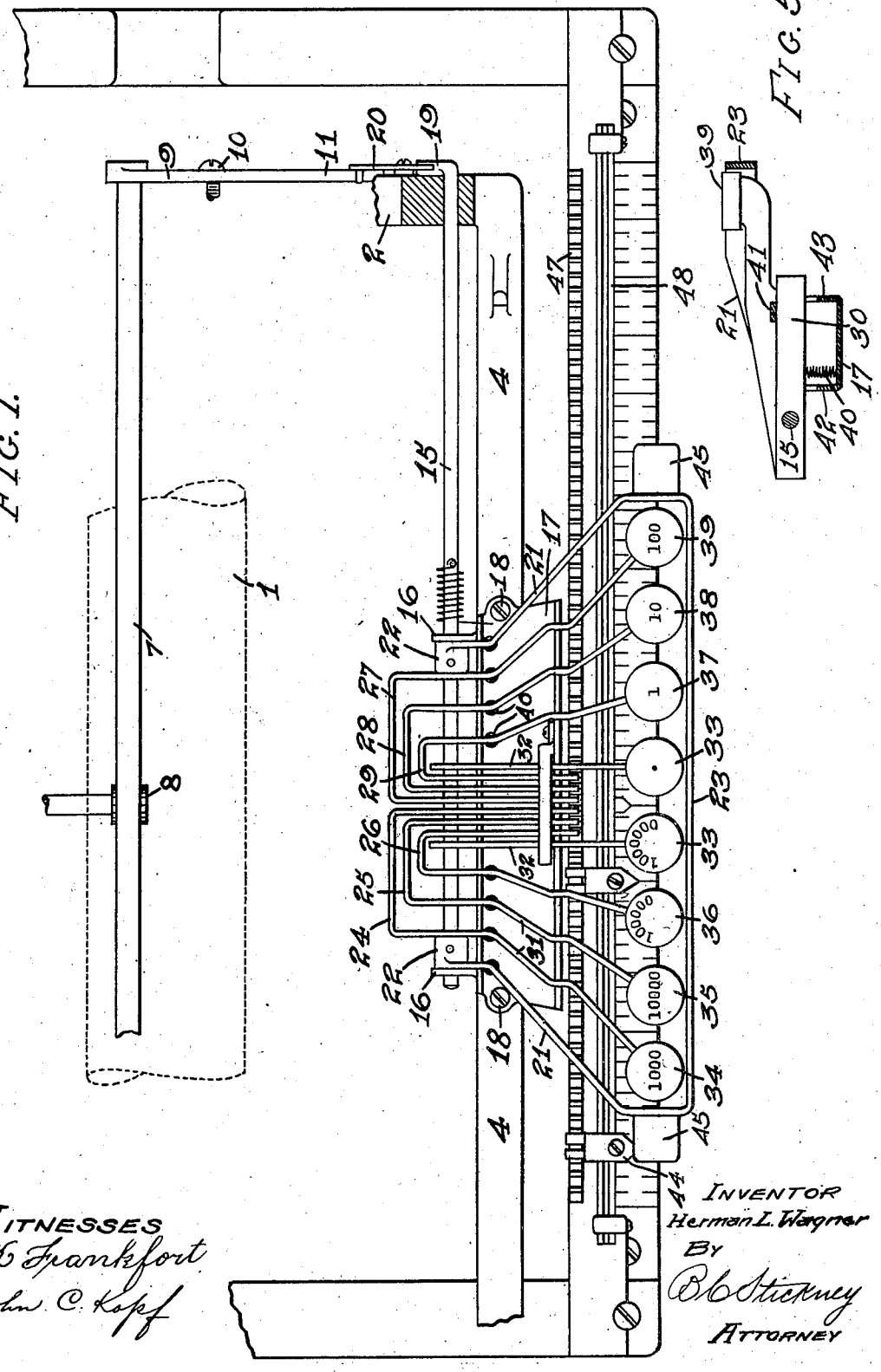

FIG. 5.

WITNESSES
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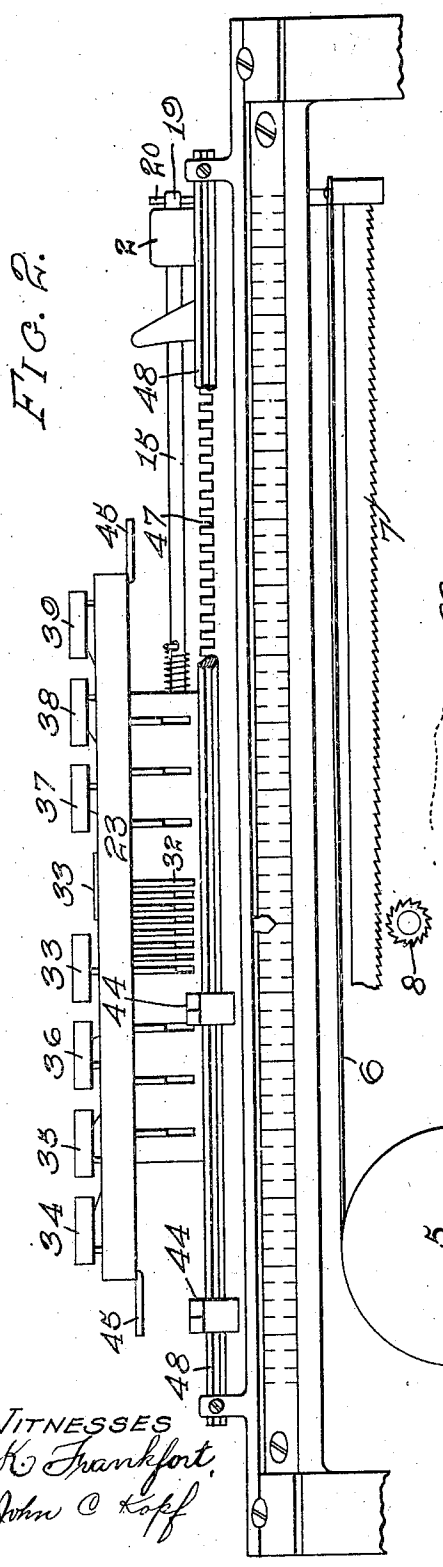

FIG. 2.

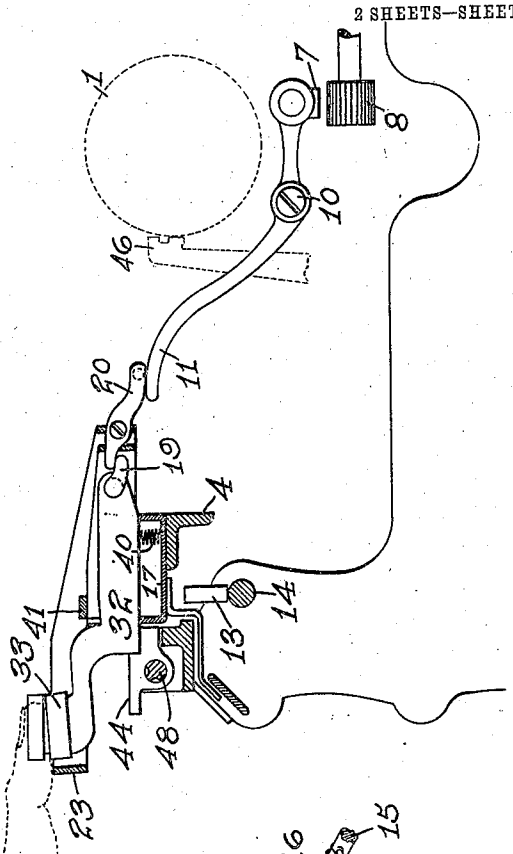

FIG. 3.

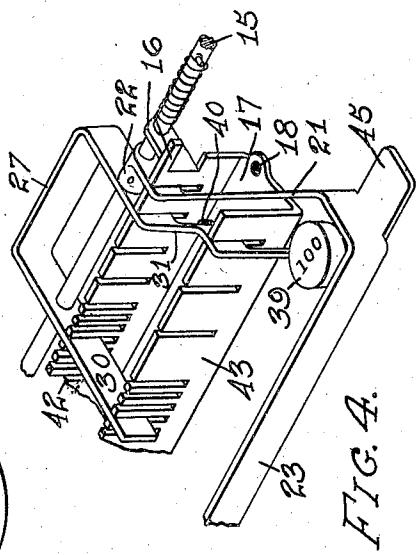

FIG. 4.

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UNITED STATES PATENT OFFICE.

HERMAN L. WAGNER, OF MOUNT VERNON, NEW YORK, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

No. 853,280. Specification of Letters Patent. Patented May 14, 1907.

Application filed June 27, 1906. Serial No. 323,588.

To all whom it may concern:

Be it known that I, HERMAN L. WAGNER, a citizen of the United States, residing in Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to that class of tabulating mechanisms for typewriting and other machines, in which independently operable denomination keys are provided.

The principal object of the invention is to provide a simple, compact, inexpensive and conveniently operated tabulating mechanism which can readily be attached to machines in course of manufacture or already in existence.

In the preferred form of the invention, the keys are mounted in a row on the ends of short arms which extend forwardly from the front bar of the paper carriage, and denomination stops are formed on or rigidly connected to said arms, so as to be depressible independently of one another by the keys into position to engage column stops provided upon the framework.

One of the aims of the invention is to secure compactness of the tabulating mechanism, and to this end the denomination stops are placed side by side at letter space intervals, and the key-bearing arms are mounted some on one side and some on the other of the series of stops, the latter being close to the keys. The key-bearing arms taken with the stops form bails of graduated sizes which are nested together in two sets; the key-bearing arms fanning out at each side of the set of stops, so as to afford room for the keys, the row of keys being much longer than the row of stops.

I show my improvements applied to a power-driven carriage which is provided with a releasing mechanism, inclusive of a bar extending along the row of denomination keys in juxtaposition thereto, so that it is convenient to depress said release bar simultaneously with the depression of any selected key.

Other features and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 is a plan of the front upper portion of an "Underwood" typewriting machine provided with my improvements. Fig. 2 is a front elevation of the parts seen at Fig. 1, but with the period key depressed. Fig. 3 is a sectional side elevation illustrating the manner of effecting simultaneous operation of the carriage releasing bar and a denomination key. Fig. 4 is a perspective view of one of the denomination keys and stops and a portion of the releasing mechanism. Fig. 5 is a side elevation of one of the denomination keys and stops.

The usual cylindrical platen is illustrated at 1, and is mounted upon a shifting platen frame, (not shown,) the latter mounted in the usual manner upon a carriage comprising side bars 2, and front bar 4. The carriage is propelled by the usual spring barrel 5 and strap 6, and is provided with a letter spacing rack 7 to mesh with a pinion 8, the latter forming part of the usual escapement or letter feeding mechanism. Said rack is usually provided at its ends with a pair of arms 9 hinged at 10 upon the carriage frame and provided with a forwardly extending depressible arm 11, so that by depressing the arm, the rack may be raised clear of the pinion 8, and the carriage may run along freely under the influence of the propelling spring 5. The carriage has a front roll 13 running upon a track 14.

Extending along the carriage in front of the platen is a horizontal rock shaft 15 mounted in ears 16 projecting from a bracket 17, the latter detachably secured by screws 18 upon the top of the front carriage bar 4. Said rock shaft extends through the end bar 2 of the carriage and is provided with a short arm 19, to vibrate a lever 20, and thereby depress the arm 11 of the rack frame 7, 9, and release the carriage. Arms 21 are fixed by hubs 22 upon said rock shaft and extend forwardly and are united at their forward ends by a bar 23, so that by depressing said bar, the carriage may be released.

Mounted loosely upon the carriage releasing rock shaft 15 between the arms 21 are two sets of bails of graduated sizes, the bails being nested one within another, the sets of bails being placed side by side, each bail being depressible independently of the others. The largest bail in the left hand set is numbered 24, the next in size 25, and the smallest 26. The other bails are correspondingly numbered 27, 28, 29. Each bail comprises an arm 30 and a key-bearing arm 31 both arms extending forwardly from the rock

shaft. The arms 30 are straight and parallel and arranged at letter space intervals and form a series of six denomination stops. This number of stops is increased to eight by means of single-arm levers 32 loosely pivoted upon the shaft 15 and extending forwardly within the smallest bails 26, 29, and bearing keys 33 on their forward ends. The arms 31 in the left hand set of bails diverge or fan out at the left hand side of the system of stops and bear at their forward ends denomination keys 34, 35, 36. The corresponding arms of the bails in the right hand side fan out at the right hand side of the system of stops and bear numbers 37, 38, 39. The keys 33 are between the keys 36 and 37, and all the keys taken together form a single row which is of much greater length than the set of denomination stops, this discrepancy being compensated by the divergence of the levers or arms 31. All of the keys, levers and stops are preferably confined between the arms 21 of the carriage releasing bail. The denomination stop bails are held up by springs 40 against a stop 41. The bracket 17 is formed at its rear edge with an upturned comb 42 to guide the rear ends of both the diverging and parallel arms. The front edge of the same plate is also bent up to form a corresponding guiding comb 43 for the same arms. It will be seen that the denomination stop mechanism is compactly mounted upon the single plate 17 which is readily attached to the front bar of the carriage. One of the advantages of the invention resides in locating the row of keys close to the row of stops, thereby securing great compactness, the keys being connected to the stops at the rear portions of the latter by the use of bails; this resulting in an easy action and proper movement of both keys and stops.

In operation any desired denomination key is depressed, the finger at the same time pressing down the release bar 23 which is in juxtaposition to all the keys. The carriage is then drawn along by the spring 5 until arrested by the engagement of the depressed stop 30 with a column stop 44 provided upon the framework. The key and bar are then relieved of pressure and the type keys manipulated in the usual manner, the types 46 striking as usual on the front of the platen. The release bar may have finger pieces 45 upon its ends for convenience in releasing the carriage for other purposes than tabulating; and it will be seen that owing to the proximity of said keys 45 to the row of denomination keys, the bar 23 may be dispensed with if desired, because the operator can conveniently depress either of said release keys at the same time with any selected denomination key. One of said release keys may also be dispensed with if desired, thus leaving only a set of denomination keys and a single release key which is the same one used for general purposes, the denomination keys being located where they are convenient to said release key. The stops 44 are adjustable along a rack 47 mounted upon the framework, said stops being pivoted upon a fixed bar 48 parallel with said rack, all as set forth in my pending application No. 315,609.

It will be seen that the keys are not only mounted at the front of the machine where they may be conveniently seen and operated, but also that they are below the line of vision. That is, the tabulating mechanism does not come between the line of writing on the platen and the eyes of the operator.

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 tabulating mechanism for typewriting machines, the combination of a series of bails of graduated sizes and having a common pivot rod, and each comprising a cross-bar and arms extending forwardly therefrom, said bails nested together so that at one side of the nest, the bail arms lie side by side and form denomination stops; and denomination keys connected to the free forward ends of the bail arms on the other side of the nest.

2. In a tabulating mechanism for typewriting machines, the combination of a series of bails of graduated sizes and having a common pivot rod, and each comprising a cross-bar and arms extending forwardly therefrom, said bails nested together so that at one side of the nest, the bail arms lie side by side and form denomination stops; and denomination keys connected to the free forward ends of the bail arms on the other side of the nest, the last-mentioned arms being divergent, and the system of keys being materially wider than the system of bails.

3. In a tabulating mechanism for typewriting machines, the combination of two sets of bails, each bail comprising a cross-bar and arms extending forwardly therefrom, said sets placed side by side and the bails in each set being of graduated sizes, and all of the bails having a common axis of motion; the bails in each set being nested together so that at the adjoining sides of the nest, the bail arms lie side by side and all parallel, forming denomination stops; the remaining arms diverging forwardly upon both sides of the denomination stops and bearing denomination keys at their forward ends.

4. In a tabulating mechanism for typewriting machines, the combination of two sets of bails, said sets placed side by side and the bails in each set being of graduated sizes, and all of the bails having a common pivotal axis of motion; the bails in each set being nested together so that at the adjoining sides of the nests the bail arms lie side by side and

all parallel, forming denomination stops; the remaining arms diverging upon both sides of the denomination stops and bearing denomination keys at their forward ends, and additional denomination stops in the form of single-arms within the innermost bails and mounted upon said pivot or axis, and having keys at their forward ends between the first-mentioned sets of keys.

5. In a tabulating mechanism for typewriting machines, the combination of two sets of bails, said sets arranged side by side, and all the bails having a common axis or pivot rod; the bails in both sets being formed with stops, and said stops being arranged at letter-space intervals and forming denomination stops; keys mounted upon said bails; and additional denomination stops in the form of single arms having keys at their forward ends; all of said keys forming a single row, and all of said stops forming a single system.

6. In a typewriting machine, the combination with a power-driven carriage, of a set of denomination keys mounted upon the front of said carriage and movable independently of one another, denomination stops connected to said keys, a bar extending along the series of keys and close thereto, so as to be engageable directly by the same finger that depresses any key, carriage-releasing mechanism operated by said bar, and a release key provided upon said bar at the end of said row of keys.

7. In a tabulating mechanism for typewriting machines, the combination of a power-driven carriage, a carriage-releasing rock-shaft thereon, a system of independently operable denomination stops pivoted upon said rock-shaft and extending forwardly therefrom, keys rigidly connected each with its associated denomination stop and mounted directly in front of the stops, and a bail fixed upon said rock-shaft and including a bar extending along said keys.

8. In a tabulating mechanism for typewriting machines, the combination of two sets of bails, said sets placed side by side and the bails in each set being of graduated sizes, and all of the bails having a common pivotal axis of motion; the bails in each set being nested together so that at the adjoining sides of the nests the bail arms lie side by side and all parallel, forming denomination stops; the remaining arms diverging upon both sides of the denomination stops and bearing denomination keys at their forward ends; additional denomination stops in the form of single arms within the innermost bails in the nests and mounted upon said pivot or axis, and having keys at their forward ends between the first-mentioned sets of keys; guides for the rear portions of the bail arms, and guides for the forward portions of all the bail arms.

9. In a tabulating mechanism for typewriting machines, the combination of a power-driven carriage, a rack mounted upon the framework in front of the carriage, column stops adjustable along said rack, a set of independently operable denomination stops mounted at their rear ends upon the front of the carriage and overlying said rack or said column stops and provided with guiding means, and levers bearing keys at their forward ends and connected to said stops and fanning out at each side of the latter and extending forwardly of said rack; a carriage-releasing device being also provided upon said carriage in juxtaposition to each of said keys, to enable a single finger to engage simultaneously said releasing device and any of said keys.

10. In a tabulating mechanism for front strike writing machines, the combination of two sets of bails, said sets placed side by side and the bails in each set being of graduated sizes, and all of the bails having a common pivotal axis of motion; the bails in each set being nested together so that at the adjoining sides of the nests the bail arms lie side by side and all parallel, forming denomination stops; the remaining arms diverging upon both sides of the denomination stops and bearing denomination keys at their forward ends; additional denomination stops in the form of single arms within the innermost bails in the nests and mounted upon said pivot or axis, and having keys at their forward ends between the first-mentioned sets of keys; guides for the rear portions of the bail arms, and guides for the forward portions of all the bail arms, said guides being provided upon a bracket which is detachably secured to the front of a power-driven carriage; a carriage releasing mechanism including a rock shaft mounted upon said bracket and constituting said pivot or axis; said keys being in front of a platen upon said carriage and below the line of vision.

HERMAN L. WAGNER.

Witnesses:
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