

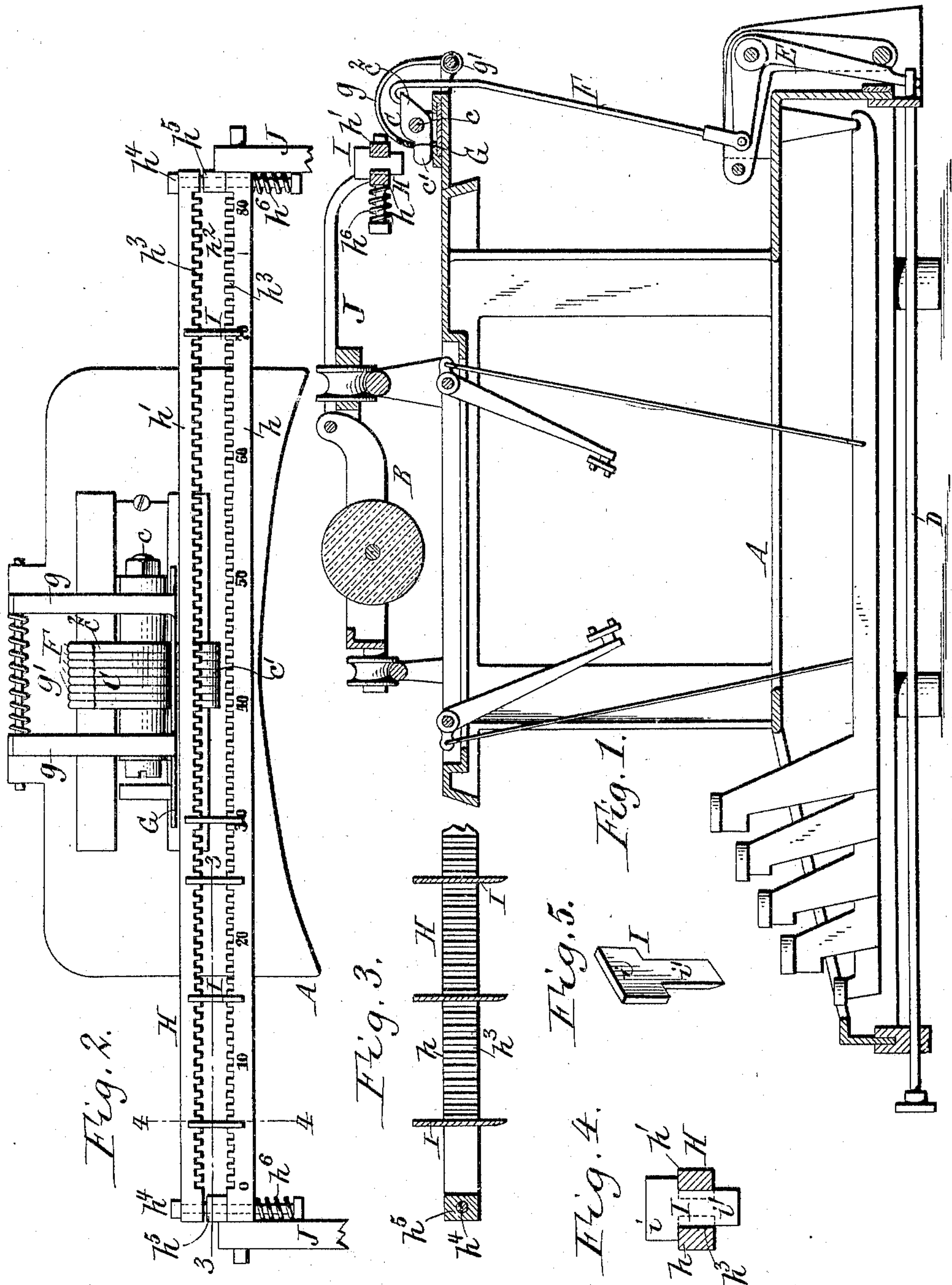
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PATENTED NOV. 29, 1904.

H. JARVIS.  
TABULATING MECHANISM FOR TYPE WRITING MACHINES.

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NO MODEL.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## TABULATING MECHANISM FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 775,925, dated November 29, 1904.

Application filed June 10, 1902. Serial No. 110,995. (No model.)

*To all whom it may concern:*

Be it known that I, HAROLD JARVIS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Tabulating Mechanism for Type-Writing Machines, of which the following is a specification.

This invention relates to the carriage-stops or tappets which are employed in connection with the tabulating mechanism of type-writing machines.

The objects of my invention are to simplify the construction of the stops and to mount the same on their support in such manner that they have the requisite rigidity or stability to effectually avoid twisting or other displacement by their impact against the customary dogs or detents of the tabulator mechanism.

In the accompanying drawings, Figure 1 is a sectional elevation of a type-writing machine having a tabulating attachment provided with my improved stops, only such parts being shown as are necessary for a clear understanding of the improvement. Fig. 2 is a fragmentary top plan view of the tabulating mechanism on an enlarged scale. Fig. 3 is a fragmentary vertical section in line 3 3, Fig. 2. Fig. 4 is a cross-section in line 4 4, Fig. 2. Fig. 5 is a detached perspective view of the stop.

A indicates the frame of the machine, and B the platen-carriage, which may be actuated by keys and a feed mechanism of any suitable or well-known construction.

C indicates the denomination dogs or detents which form part of the variable-spacing or tabulating mechanism and by which the carriage may be arrested at different distances in advance of the printing-point. These dogs form no part of my present invention and may be of any suitable or approved construction. In the construction shown in the drawings they are pivoted side by side on a horizontal rod *c*, supported on the upper rear portion of the frame, so that they can be turned vertically to raise their noses *c'* into an operative position. This movement is effected by means of a longitudinal push-rod D, arranged in the lower part of the machine, an elbow-

lever E, having its lower arm connected with the push-rod, and a connecting-rod F, pivoted at its lower end to the upper arm of the elbow-lever and having its hooked-shaped upper end engaged over the tail *c'* of the dog. The several dogs are depressed to their inoperative position by a vertically-swinging presser-bar G, having its carrying-arms *g* pivoted to the rear part of the stationary frame, said bar being yieldingly held against the upper side of the dogs by a spring *g'*. These dogs and their operating mechanism are more fully described in an application for patent filed by M. H. Blakeslee and myself February 1, 1901, Serial No. 45,625.

H indicates a stop-rack carrying my improved stops or tappets I, by which the platen-carriage is arrested when the tabulating mechanism is in operation. This rack is arranged transversely over the series of dogs C and firmly supported by arms or brackets J, extending rearwardly from the platen-carriage. The rack consists of two parallel bars *h h'*, separated by an intervening space or slot *h''* and each provided in its inner edge with a longitudinal series of parallel-sided notches, recesses, or seats *h'''*. The adjacent notches are separated the distance of a letter-space or, in other words, are spaced like the teeth of the usual escapement-rack which controls the platen-carriage. The opposing notches of the two bars are arranged in alinement with each other crosswise of the bars, forming equidistant pairs of notches extending in a continuous series nearly from end to end of the stop-rack.

The stops or tappets I are adapted to engage in the notches of the stop-rack. As shown in Figs. 4 and 5, each stop consists of a flat-sided plate having a head or enlargement *i* and a contracted lower body portion or stem *i''*, which extends downwardly from the central portion of said head and forms, with the latter, an approximately T-shaped stop. The vertical edges of this stem fit into the opposing notches *h'''* of a pair, so that the stem bridges the slot of the rack, while the head of the stop rests upon the bars of the rack and prevents the stop from falling through the latter. The stem *i''* is made of the proper



length to extend below the stop-rack, so that the stop in advancing with the carriage encounters the elevated nose of whichever dog C has been turned into its operative position, thereby arresting the forward movement of the carriage while the ordinary step-by-step feed mechanism is out of action in a well-known manner. The stops are readily shifted or adjusted on the rack by withdrawing them upwardly therefrom and inserting their stems into the proper pairs of notches. The stops have parallel sides and are made of the required thickness to fit snugly into the parallel-sided notches, so as to be held in place by friction and prevent rocking or lateral play of the stops. In order to more reliably retain the stops in position, one of the bars of the rack may be drawn or pressed toward the other bar by springs, so that the stops are yieldingly clamped between the two bars.

In the construction shown in the drawings the rear bar  $h'$  is bodily movable toward and from the fixed front bar  $h$  and guided by transverse bolts  $h^4$ , which pass loosely through the ends of the bars and through space-blocks  $h^5$ , interposed between the same. These bolts extend forwardly beyond the front bar  $h$ , and upon their projecting portions springs  $h^6$  are mounted, which are compressed between said front bar and the heads of the guide-bolts, so as to constantly draw the movable rear bar toward the front bar. The stems of the stops I are slightly wider than the normal distance between the bars of the rack, so that upon inserting a stop in a pair of notches  $h^3$  the rear bar of the stop-rack is farther separated from the front bar, thereby further compressing the springs  $h^6$  and gripping the stop, as above described. By this yielding capacity of the stop-rack the same also compensates for any slight variations in the width of the stops. By my improved construction and arrangement each stop is firmly held in place at its lateral edges, and its end portion, which extends below or beyond the rack, receives the impact about centrally or opposite the space between said notched bars. The stop is therefore not liable to be deflected or displaced by striking the denomination-detents C, thereby arresting the platen-carriage at the precise point desired and insuring neat and accurate work. The rack and the stops are also simple and inexpensive in construction, and as the stops are simply slipped into the notches of the rack they can be readily shifted from one place to another, as required. Moreover, the stops are free from catches or other attachments which partly cover their stems and which render it difficult to quickly engage the stops with the proper recesses of the rack.

I claim as my invention—

1. In a type-writing machine, the combination with the frame and a platen-carriage, of a tabulating mechanism including denomination dogs or detents mounted on the frame, a

stop-rack mounted on the carriage and composed of a pair of connected opposing bars provided on their inner edges with notches or recesses, and a removable stop or tappet arranged between said bars and seated at its lateral edges in opposing notches thereof and arranged to strike said denomination-detents at a point opposite the space between said notched bars, substantially as set forth.

2. In a type-writing machine, the combination with the frame and a platen-carriage, of a tabulating mechanism including denomination dogs or detents mounted on the frame, a stop-rack mounted on the carriage and composed of a pair of connected parallel bars each provided in its inner edge with a series of parallel-sided notches, adjacent notches of each bar being separated the distance of a letter-space and the opposing notches of the two bars being arranged in pairs crosswise of the bars, and a removable stop or tappet having a parallel-sided stem seated at its lateral edges in a pair of said opposing notches and having its projecting lower end arranged to strike said denomination-detents at a point opposite the space between said notched bars, substantially as set forth.

3. In a type-writing machine, the combination with a platen-carriage, of a tabulating mechanism including a stop-rack mounted on the carriage and having a longitudinal slot provided in its opposing walls with notches or recesses which are arranged in pairs crosswise of the rack, adjacent notches of each of said walls being separated the distance of a letter-space, and a T-shaped stop or tappet having its vertical stem constructed of the proper width to enter said slot and of the proper thickness to fit in a pair of said notches, substantially as set forth.

4. In a tabulating mechanism for type-writing machines, a stop-rack consisting of a pair of separated opposing bars adapted to receive an adjustable stop between them, one of said bars being capable of yielding with reference to the other for clamping the interposed stop, substantially as set forth.

5. In a tabulating mechanism for type-writing machines, the combination of a stop-rack consisting of a pair of separated bars provided in their opposing faces with notches or recesses arranged in pairs crosswise of the rack, one of said bars being movable toward and from the other, guide-bolts passing through said bars, and springs applied to said bolts and tending to move said movable bar toward the opposing bar, and an adjustable stop constructed to engage in a pair of said notches, substantially as set forth.

Witness my hand this 4th day of June, 1902.

HAROLD JARVIS.

Witnesses:

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