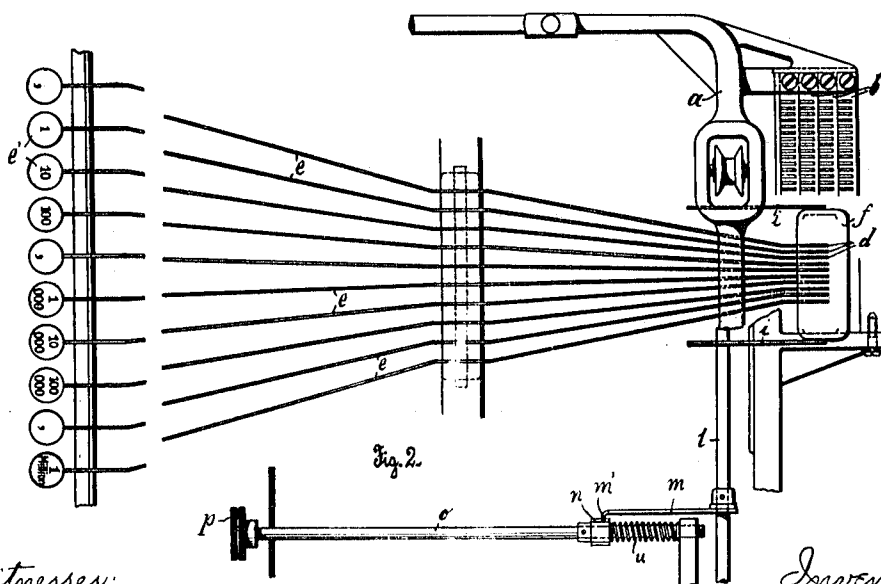
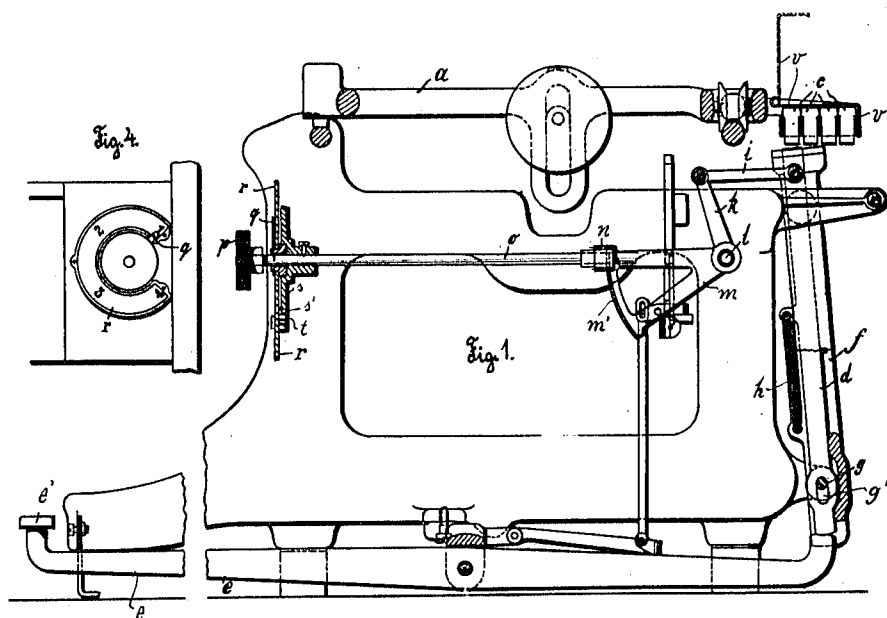


1,035,778.

2 SHEETS-SHEET 1.



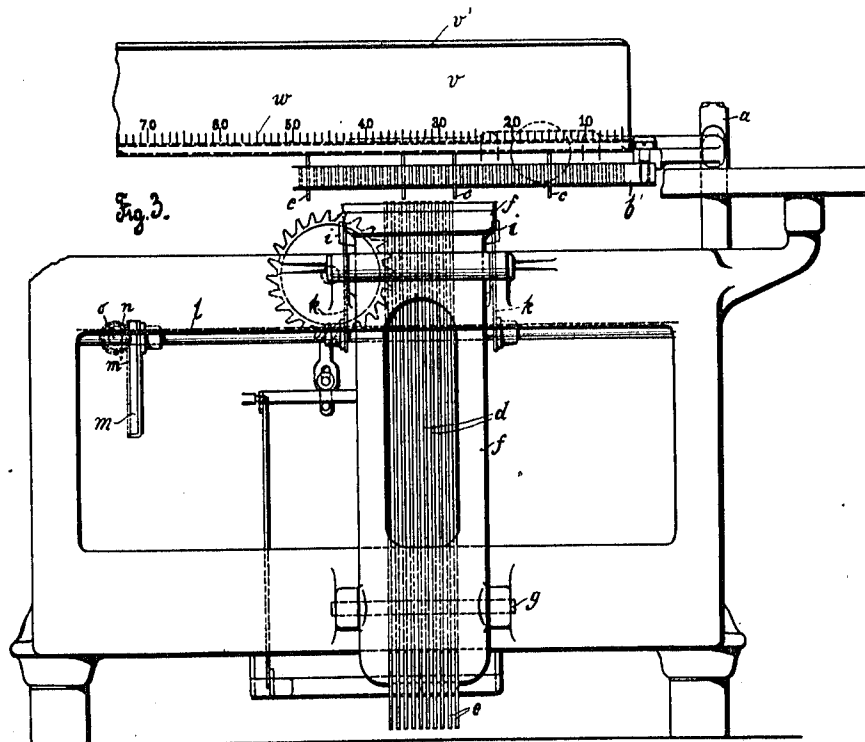
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 TABULATING MECHANISM FOR TYPE WRITING MACHINES.
 APPLICATION FILED APR. 15, 1912.

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Patented Aug. 13, 1912.
 2 SHEETS-SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

THEODOR EUGEN BUSCHMANN, OF CHEMNITZ, GERMANY, ASSIGNOR TO THE FIRM OF
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TABULATING MECHANISM FOR TYPE-WRITING MACHINES.

1,035,778.

Specification of Letters Patent.

Patented Aug. 13, 1912.

Application filed April 15, 1912. Serial No. 690,802.

To all whom it may concern:

Be it known that I, THEODOR EUGEN BUSCHMANN, mechanical engineer, subject of the King of Saxony, residing at Neefestrasse 51, Chemnitz, Saxony, Germany, have invented new and useful Improvements in Tabulating Mechanism for Type-Writing Machines, of which the following is a specification.

10 My invention relates to improvements in tabulating or column stop mechanism for typewriting machines. And the object of the improvements is to provide a tabulating or column stop mechanism, by means of which several sheets of a different arrangement of the columns can be printed in any desired succession and without changing the positions of the column stops.

15 With this object in view my invention consists in providing the tabulating mechanism with several sets of column stops, the number of the said sets depending of the character of the tabulating work which is intended to be done on the particular machine. In ordinary cases the number of the sets of column stops will be two, three, four, or more. When it is desired to write columns or items of a different arrangement on successive sheets or on the same sheet, the column stops of the different sets are set accordingly, and when changing from one sheet or from one arrangement of the columns or items to another one, all that is necessary is to adjust the tabulator stops into position for coöperation with either one of the sets of column stops.

20 For the purpose of explaining the invention I have shown the same embodied in a typewriting machine equipped with a tabulating mechanism of the Gorin type. But I wish it to be understood, that my invention is not limited to the construction of the tabulating mechanism shown in the drawings.

25 In the said drawings Figure 1, is a vertical cross-section of the tabulating mechanism showing in addition parts of the typewriting machine directly associated therewith, Fig. 2, is a plan view of Fig. 1, Fig. 3, is a rear view of Fig. 1, and Fig. 4 is a detail view showing the scale disk and hand for indicating the position of the tabulator stop relatively to the sets of column stops.

30 As is known in the art, the tabulating mechanism of the Gorin type is equipped

with a number of keys and key levers which correspond to the different denominations of the numbers to be printed by means of the machine, and by depressing either one of the said key levers a stop bar connected therewith is raised into position for coöperation with the column stops. Thereby the carriage is arrested in such a position, that the number to be printed in the column appears in the position corresponding to its denomination. A tabulating mechanism of this type has been illustrated in the accompanying drawings.

35 Referring to the said drawings, the paper carriage *a* is equipped with a plurality of tabulating members or bars *b* each of which is provided with a suitable number of column stops *c*. As shown in the drawings, four tabulating members *b* are provided. Below the tabulating members a plurality of vertically movable stops or bars *d* are located either one of which may be shifted into position for coöperation with the column stops. Each of the bars *d* is jointed to a key lever *e* having a key *e'* at its front end. As shown all the tabulating bars *d* are mounted in a rocking frame *f*, and they are guided at their lower ends on a transverse rod *g* passing through longitudinal slots *g'* of the said bars. Thereby the rods *d* have a slight rocking movement on the transverse rod *g* and they are longitudinally shiftable thereon. Normally the bars *d* are held in their lower or inoperative positions by springs *h* attached with one of their ends to the said bars and with their opposite ends to relatively fixed parts of the frame *f*.

40 The frame *f* and the bars *d* mounted thereon can be rocked on the rod *g*, so that the bars *d* can be brought into position for coöperation with either one of the sets of column stops *c*. To rock the frame *f* the following mechanism is provided: The frame is connected at both sides with two crank arms *k* secured to a rock shaft *l*. To the latter a sector *m* is secured which is equipped with laterally projecting teeth *m'* engaged by a pinion *n*. The pinion is keyed to a shaft *o* disposed longitudinally of the typewriting machine and projecting with its front end to the front side of the machine and above the key board. At its front end the shaft *o* carries a milled button *p* and a hand *q* moving in front of a scale *r*. The said scale is shown in detail in Fig. 110

4. At the rear of the scale an arresting disk *s* is secured to the shaft *o* which is formed with circumferential notches *s'* corresponding to the different positions of adjustment of the frame *f* and the bars *d* relatively to the sets of column stops *c* and to the indication marks provided on the scale *r*. The notches *s'* are adapted to be engaged by an arresting block *t* provided at the rear of the scale *r* and to lock the shaft *o*, the pinion *n*, the sector *m* and thereby the frame *f* and stop bars *d* in the adjusted positions. If it is desired to set the stop bars *d* into operative position relatively to either one of the sets of columns, the shaft *o* is slightly pushed inward by pressing on the milled button *p*, whereby the locking disk *s* is disengaged from the block *t*, and the shaft *o* can be rotated into the desired position. Such rotation is transmitted through the pinion *n* to the sector *m*, which is rocked thereby and takes along the rocking frame *f* and the stop bars *d*. The position of the stop bars can be read from the position of the indications made on the scale *r*, and the hand *q* and the scale *r* indicate, whether the stop bars *d* are in position for coöperation with the first, the second, the third, or the fourth set of column stops. After the stop bars *d* have thus been set, the button *p* is released, whereupon the shaft *o* is retracted by a spring *u* into normal position and the block *t* is brought into engagement with one of the notches *s'*. Thereby the tabulating frame *f* is again locked. As shown the spring *u* is constructed in the form of a coiled spring which is laid around the rear end of the shaft *o* and bears with its front end against the pinion *n* and with its rear end on a relatively fixed part of the machine. If desired further notches *s'* may be provided intermediate the notches *s'*, and the said notches may be used for setting the frame *f* and the bars *d* in intermediate positions in which the bars *d* are in position for engagement with two adjacent sets of column stops *c*. Thereby the column stops *c* of adjacent series may be combined to provide for printing in a large number of columns. More particularly the column stops of the first set can be combined with the column stops of the second set, the column stops of the second set with those of the third set, and the column stops of the third set can be combined with those of the fourth set.

Above the tabulating members *b* which carry the column stops a sheet metal plate *v* may be provided which when setting the column stops is rocked upward into the position shown in dotted lines in Fig. 1. When in its normal or horizontal position shown in full lines in Fig. 1, the said plate covers all the column stops of the tabulating members *b*, so that the latter can not be dropped.

The plate is formed at its rear end with a depending flange *v'* which by spring action holds the same in locking position. As shown in Fig. 3 the plate is provided at its lower side with a scale *w* which corresponds to the scale provided at the front side of the carriage and assists in setting the column stops.

While in describing the invention reference has been made to a specific embodiment thereof, I wish it to be understood, that my invention is not limited to the construction of parts shown in the drawings, and that various changes may be made without departing from the gist of my invention. For example, if only two sets of column stops are provided, the vertically movable stop bars *d* may be arranged with their top ends between the tabulating members *b*, so that they are brought into engagement with either one of the sets of column stops by slightly rocking the same.

The invention may also be used in tabulating mechanisms of different types.

I claim herein as my invention:

1. In a tabulating mechanism for type-writing machines, the combination with a carriage, of a plurality of rows of column stops arranged for selective use, and a stop member adapted to coöperate with the stops of any one of the rows and the stops of two adjacent rows.

2. In a tabulating mechanism for type-writing machines, the combination with the carriage, of a plurality of rows of column stops arranged for selective use, a plurality of stop members, and means to place the latter into position for coöperation with the column stops of any one row or two adjacent rows of column stops.

3. In a tabulating mechanism for type-writing machines the combination with the carriage, of a plurality of parallel tabulating members mounted on the carriage, a plurality of alined column stops mounted on said members, a rockable member, stop member movable by rockable member, means to set the latter with the stop members into operative position relatively to the column stops in any one of the tabulating members or the column stops in two adjacent tabulating members.

4. In a tabulating mechanism for type-writing machines, the combination with the machine frame, and the carriage, of a plurality of sets of column stops, a rocker, a stop member mounted on said rocker, a rock shaft operatively connected with said rocker and adapted to impart rocking movement thereto, a rotary shaft operatively connected with said rock shaft, and means connected with said rotary shaft and arranged to indicate the position of the rocker relatively to the sets of column stops.

5. In a tabulating mechanism for type-

writing machines, the combination with the machine frame, and the carriage, of a plurality of parallel tabulating members mounted on the carriage, alined stop members
5 mounted on the tabulating members, rock bars adapted to engage the stop members, a rock shaft, means connecting the bars and shaft, a rotary shaft operatively connected with the rock shaft, and means connected
10 with the rotary shaft to indicate the position of the stop bars relatively to the tabulating members.

6. In a tabulating mechanism for type-writing machines, the combination with the machine frame and the carriage, of a plurality of parallel tabulating members mounted on the carriage, alined stop members

mounted on the tabulating members, rock bars adapted to engage the stop members, a rock shaft, crank arms on the latter connected with the rock bars, a sector on the
20 rock shaft, a rotary shaft, a pinion thereon engaging teeth on the sector, means on the rotary shaft to indicate the position of the rock bars relatively to the tabulating mem-
25 bers, and means to lock the indicating means.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

THEODOR EUGEN BUSCHMANN. [L. s.]

Witnesses:

SIDNEY RICH,
M. F. BENNDARF.