

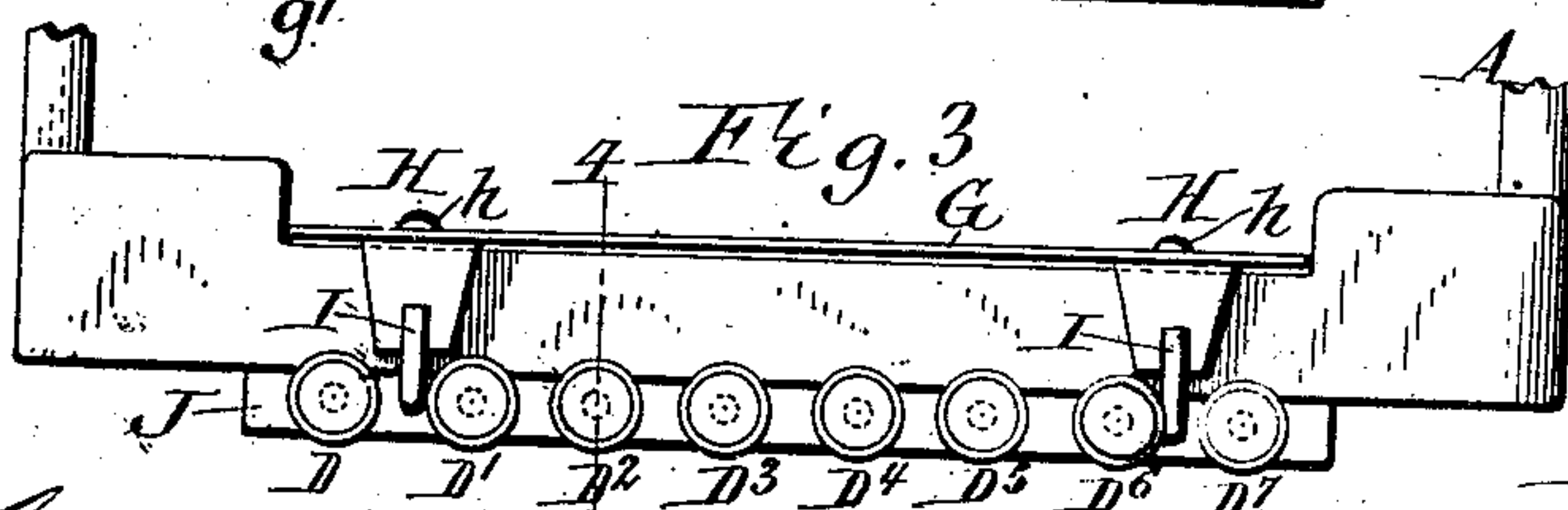
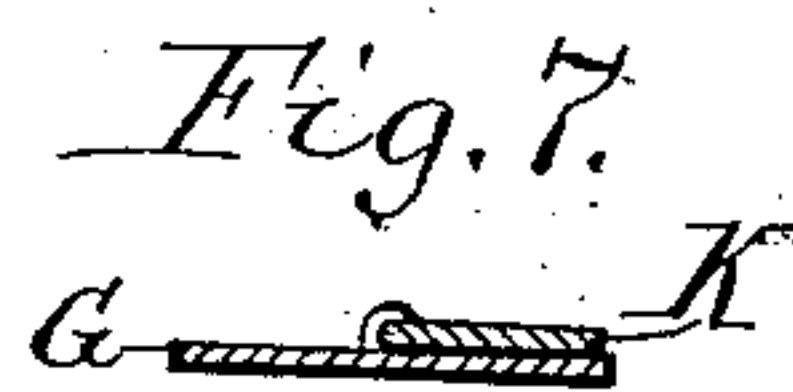
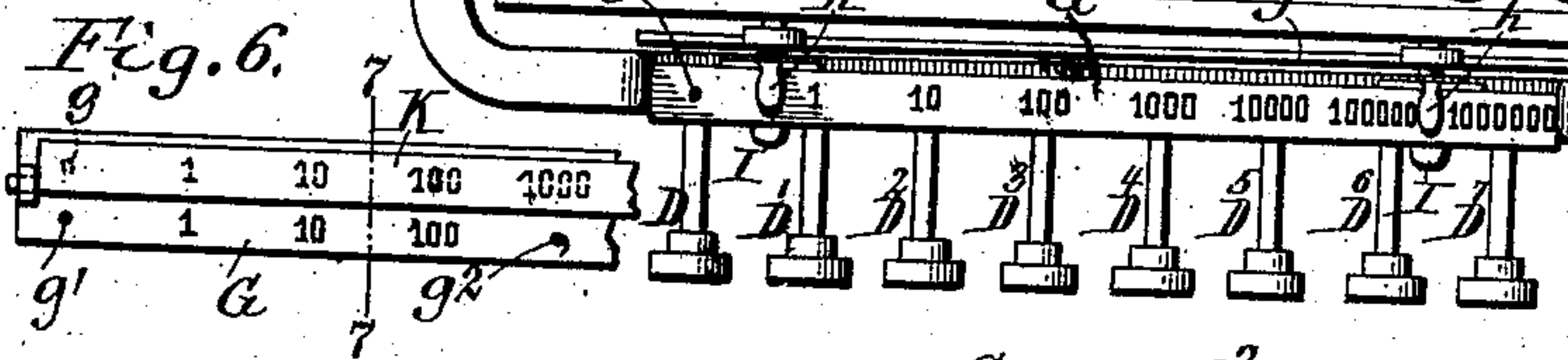
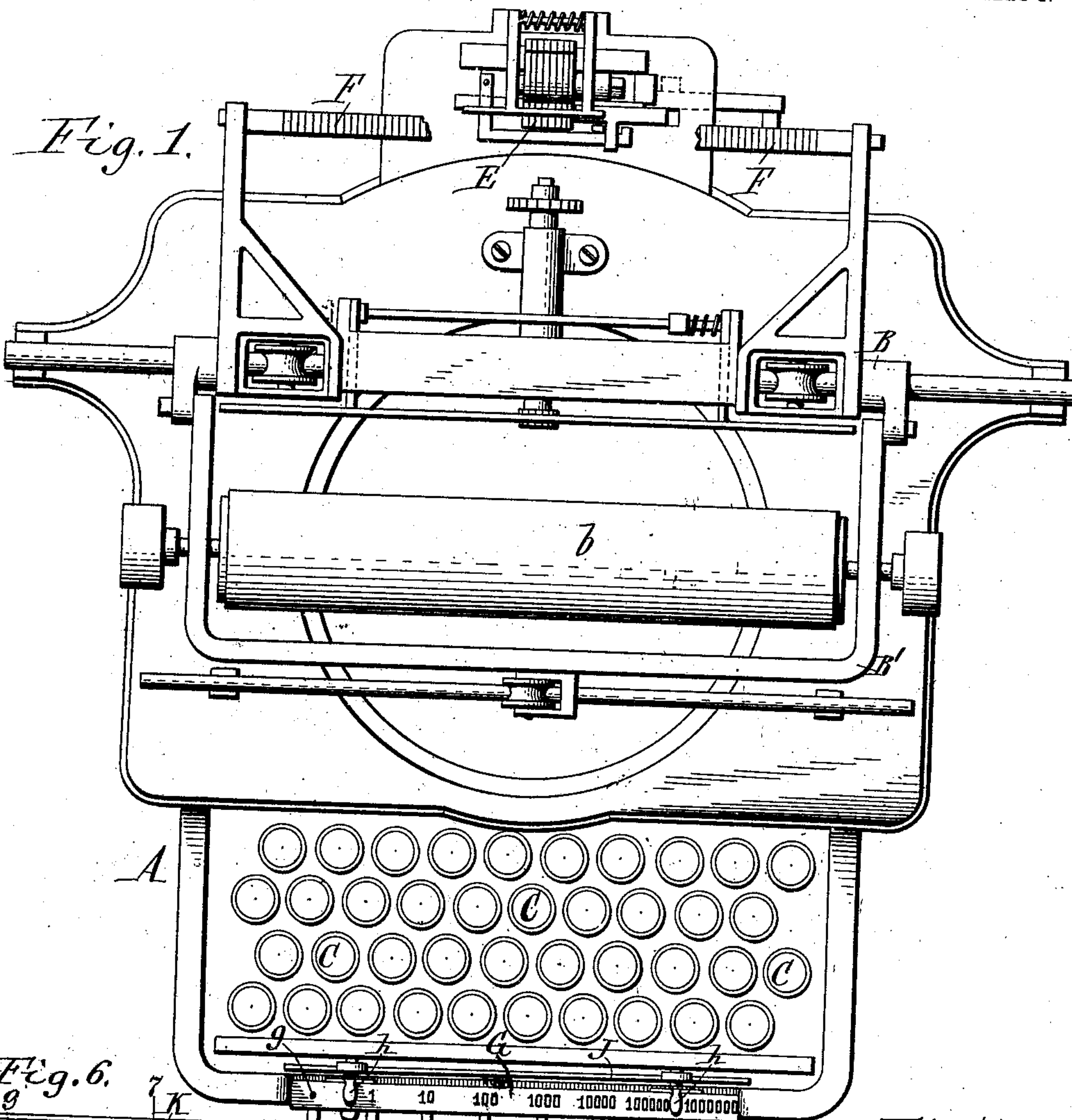
No. 819,433.

PATENTED MAY 1, 1906.

H. JARVIS.
TABULATING MECHANISM FOR TYPE WRITING MACHINES.

APPLICATION FILED DEC. 26, 1902.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2

Fig. 8.

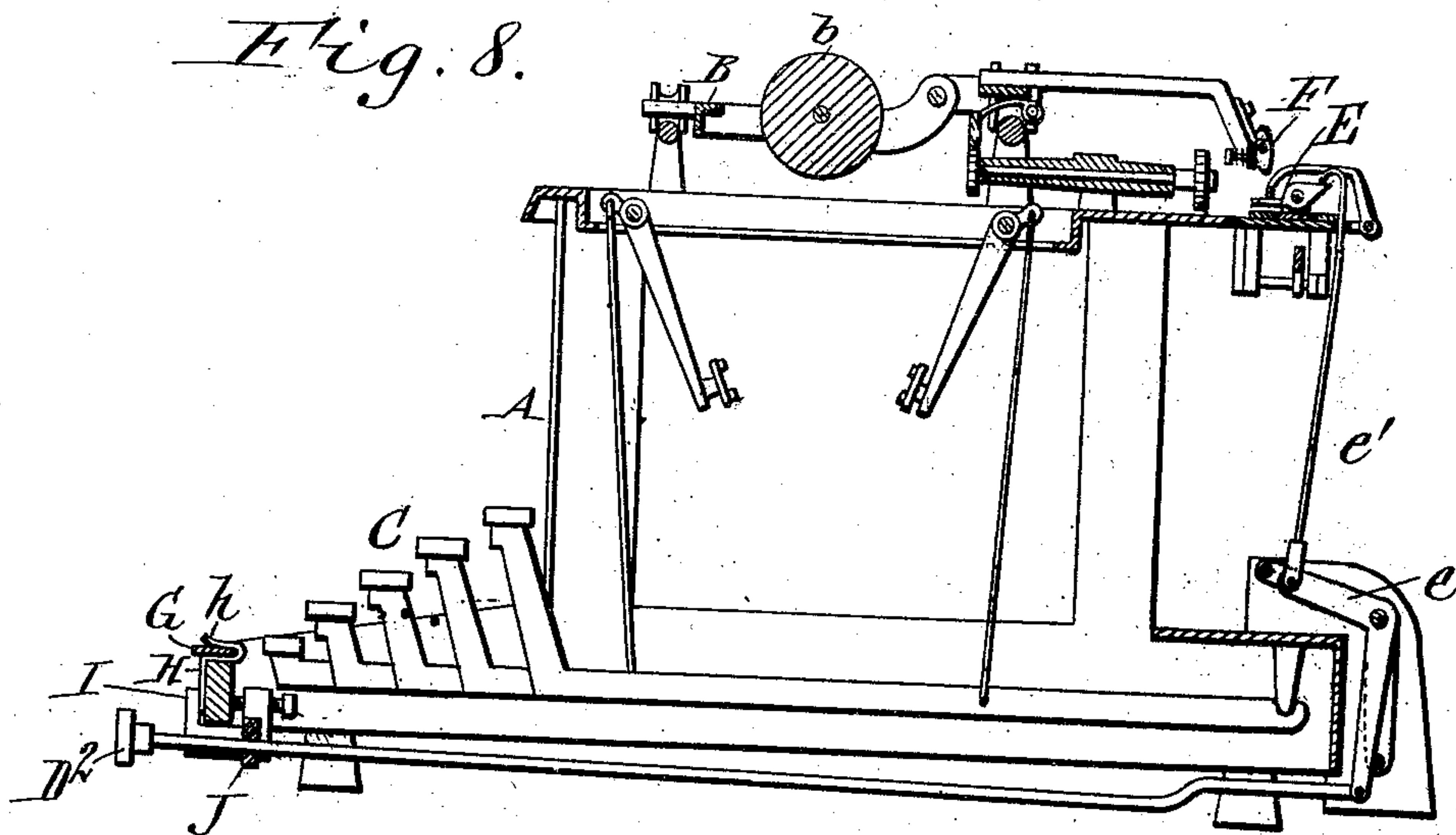
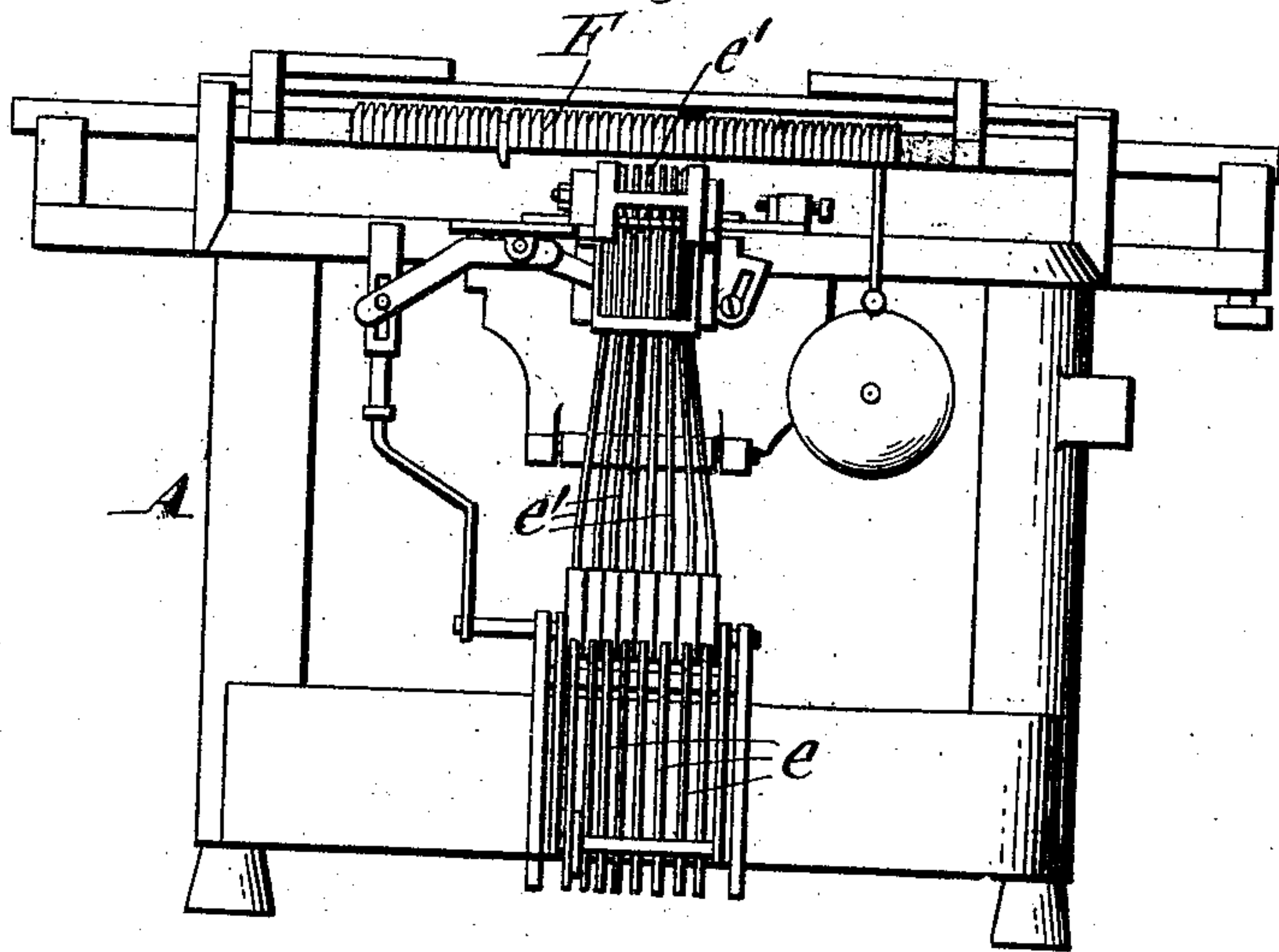


Fig. 9.



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UNITED STATES PATENT OFFICE.

HAROLD JARVIS, OF BUFFALO, NEW YORK, ASSIGNOR TO JARVIS TYPE-WRITER & TABULATOR COMPANY, OF BUFFALO, NEW YORK.

TABULATING MECHANISM FOR TYPE-WRITING MACHINES.

No. 819,433.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed December 26, 1902. Serial No. 136,578.

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 type-writing machines having a tabulating mechanism or attachment. A machine having such a tabulator is shown and described in Letters Patent of the United States No. 753,796, issued to me March 1, 1904. Such attachments usually comprise means for lifting the gear-rack or rack-bar of the carriage out of engagement with the escapement pinion or pawl, a series of movable denomination dogs or detents actuated by a row of keys which are located at the front of the machine and which also control the lifting device of the gear-rack, stops adjustably mounted on a supporting-rack secured to the carriage and adapted to encounter said denomination-dogs for arresting the carriage at the desired points, and a scale arranged adjacent to said tabulating-keys and indicating the denominations represented by them.

The objects of my invention are to combine with the tabulating-keys a simple and convenient scale which permits the machine to be readily adapted to tabulating with or without commas, as desired, and to provide efficient clips or holders for the scale.

In the accompanying drawings, consisting of two sheets, Figure 1 is a top plan view of a type-writing machine embodying my improvement, showing the side of the scale-bar having the ordinary arrangement of the indications for tabulating without commas. Fig. 2 is a detached view of the scale-bar, showing its opposite or reverse side having the indications arranged for tabulating with commas. Fig. 3 is a front elevation of the lower portion of the machine, containing the tabulating-keys and the cooperating scale. Fig. 4 is a cross-section in line 4-4, Fig. 3. Fig. 5 is a detached perspective view of one of the spring-clips of the scale. Fig. 6 is a fragmentary top plan view of a modified arrangement of the scale. Fig. 7 is an enlarged cross-section in line 7-7, Fig. 6. Fig.

8 is a vertical longitudinal section of the type-writing machine, showing parts of the tabulating mechanism. Fig. 9 is a rear view of the same.

Similar letters of reference indicate corresponding parts throughout the several views.

A indicates the frame of the machine, B the rear portion of the usual paper-carriage, and B' its vertically-swinging front portion in which the platen *b* is journaled.

C indicates the customary main writing-keys, and D D' the auxiliary keys or push-rods which control the tabulating mechanism.

E indicates the dogs or detents which are moved to their operative position by the tabulating-keys through the medium of the elbow-levers *e* and rods *e'*, and F indicates the stops or tappets mounted on the paper-carriage and adapted to strike said dogs, the particular stops illustrated in the drawings being rotatable on their carrying-bar, as more fully shown and described in the patent hereinbefore mentioned, to which reference is made for a complete description and illustration of such tabulating mechanism.

My invention is combined with the tabulating-keys, and as the other members of the tabulating mechanism form no part thereof, it is deemed unnecessary to show them fully in the drawings.

G indicates the tabulating-scale, which in the construction shown in Figs. 1 to 5 of the drawings consists of a bar arranged a short distance above the tabulating-keys D D' and reversibly attached to the upper edge of the front bar of the frame A by any suitable means. The preferred devices consist of a pair of clips or holders H, having forwardly-facing spring-fingers *h*, which bear upon the scale-bar. Each of these clips consists of an angle-plate, the upper horizontal flange of which rests upon the front bar of the frame and carries the spring-finger *h*, which is formed integrally therewith. The lower flanges of these clips are securely fastened against the front side of said frame-bar by clamps I, which may also serve as supports for the horizontal bar J, in which the stems of the tabulating-keys are guided, as best shown in Fig. 4.

On one side the scale-bar G bears the usual decimal-point *g* and the numbers 1, 10,

100, 1,000, &c., located in line, with the corresponding tabulating - keys D, D', as shown in Fig. 1. When the tabulator is used with that scale and a tabulating-key is depressed, the carriage is allowed to travel the desired distance before being arrested, according to the adjustment of the stops F, no provision being made for comma-spaces between the hundreds and thousands columns and between the hundreds-of-thousands and the millions columns where the attachment has the capacity to tabulate in excess of hundreds of thousands. On its opposite or reverse side the scale-bar bears a decimal-point g' and a similar series of numbers and also, preferably, a comma g'' between the hundreds and the thousands indications. The numbers indicating units, tens, and hundreds on the last-named or reverse side of the scale-bar are located directly opposite the corresponding numbers on the obverse or first-named side of the bar; but the numbers on said reverse side which indicate thousands, tens of thousands, and hundreds of thousands are each advanced or offset one step of the scale with reference to the like indications on the obverse side—that is, a distance corresponding to the space between adjacent tabulating-keys—so that said numbers come opposite the numbers on the obverse side indicating ten thousands, hundreds of thousands, and millions, respectively. In other words, that tabulating-key which under the ordinary scale represents one thousand simply represents a comma-space under the other scale containing the comma, and the key which under the ordinary scale represents ten thousand indicates one thousand under the scale containing the comma, and so on throughout the remaining indications of the scale. The comma g'' when used comes opposite the thousands indication on the obverse side of the scale-bar. The effect of this arrangement is that upon reversing the scale-bar from the position shown in Fig. 1 to that illustrated in Fig. 2 and pushing, say, the key D⁵ for writing one thousand the carriage is stopped one letter-space sooner than by pushing the key corresponding to the thousands designation under the scale shown in Fig. 1, thus leaving a space for a comma between the hundreds and thousands columns. For example, should the operator desire to write twelve thousand nine hundred and sixty-five in tabulating with the comma-scale he first pushes the tabulating-key located in line with the ten-thousands designation of the scale and then operates the usual writing-keys representing the numerals "1 2," the comma, and the numerals "9," "6," and "5," in the order named.

The comma-scale shown in the drawings ends at hundreds of thousands, and hence

bears but a single comma. It is obvious, however, that it may include higher denominations, and in that case a second comma is arranged between the hundreds-of-thousands and millions columns and another between the hundreds-of-millions and billions columns. When the scale runs above hundreds of thousands, the millions indication on the comma-scale is offset two steps in advance of the corresponding indication on the ordinary or non-comma scale, and so on.

The scale can be readily changed to tabulate with or without the use of commas, as may be preferred, by withdrawing the scale-bar from under the spring-clasps h and then reversing and replacing the bar.

By this simple improvement a duplex scale is provided which requires no changes or modifications in the construction of the tabulating-keys or other members of the tabulating mechanism and which enables an operator to readily adjust the attachment to suit the fancy or preference of the principal as to the use or omission of commas in tabulated work.

The comma shown on the scale-bar in Fig. 2 may be omitted; but it is preferably placed thereon to enable the operator readily to distinguish that particular scale from the other.

Instead of arranging the two series of indications on opposite sides of a reversible scale-bar they may both be arranged on the same side of the bar, one below the other, as shown in Fig. 6. In this case provision is preferably made for concealing the scale series not used by the operator. For example, this may be done by hinging a plate or screen K centrally to the face of the scale-bar, so that the same may be readily swung downwardly over the lower series of indications or upwardly over the upper series, as desired. If preferred, the scale-bar may be provided with the comma-scale only.

In each of the constructions herein described the scale provides for a comma space or spaces between the desired numbers of the tabulating series.

I claim as my invention—

1. The combination with the denomination-keys of a type-writer tabulating mechanism, of a duplex scale located adjacent to said keys and comprising two series of indications registering with the keys, respectively, some of the indications in one of said series being offset with reference to like indications in the other series, whereby the two series may be employed interchangeably for tabulating with or without commas, substantially as set forth.

2. The combination with the denomination-keys of a type-writer tabulating mechanism, of a reversible duplex scale-bar located adjacent to said keys and bearing on

one side a series of indications arranged to register with said keys, respectively, and on its opposite side a similar series of indications, some of which are offset with reference
5 to like indications of the other series to leave comma-spaces between some of the indications, substantially as set forth.

Witness my hand this 19th day of December, 1902.

HAROLD JARVIS.

Witnesses:

CARL F. GEYER,
EMMA M. GRAHAM.