No. 713,695. Patented Nov. 18, 1902.

O. SCHULTZ.

TYPE WRITER.

(Application filed Jan. 14, 1902.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1

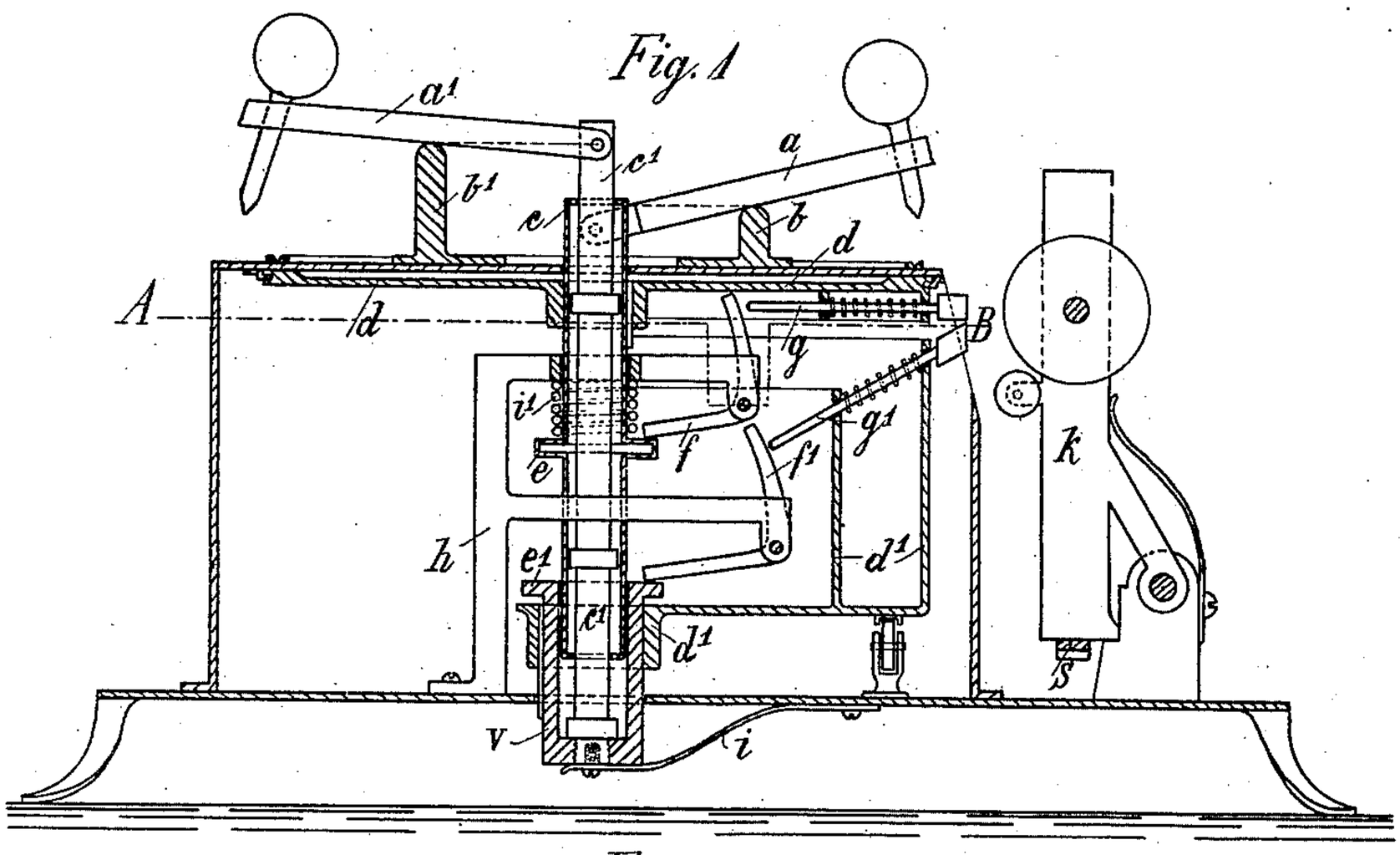


Fig. 3

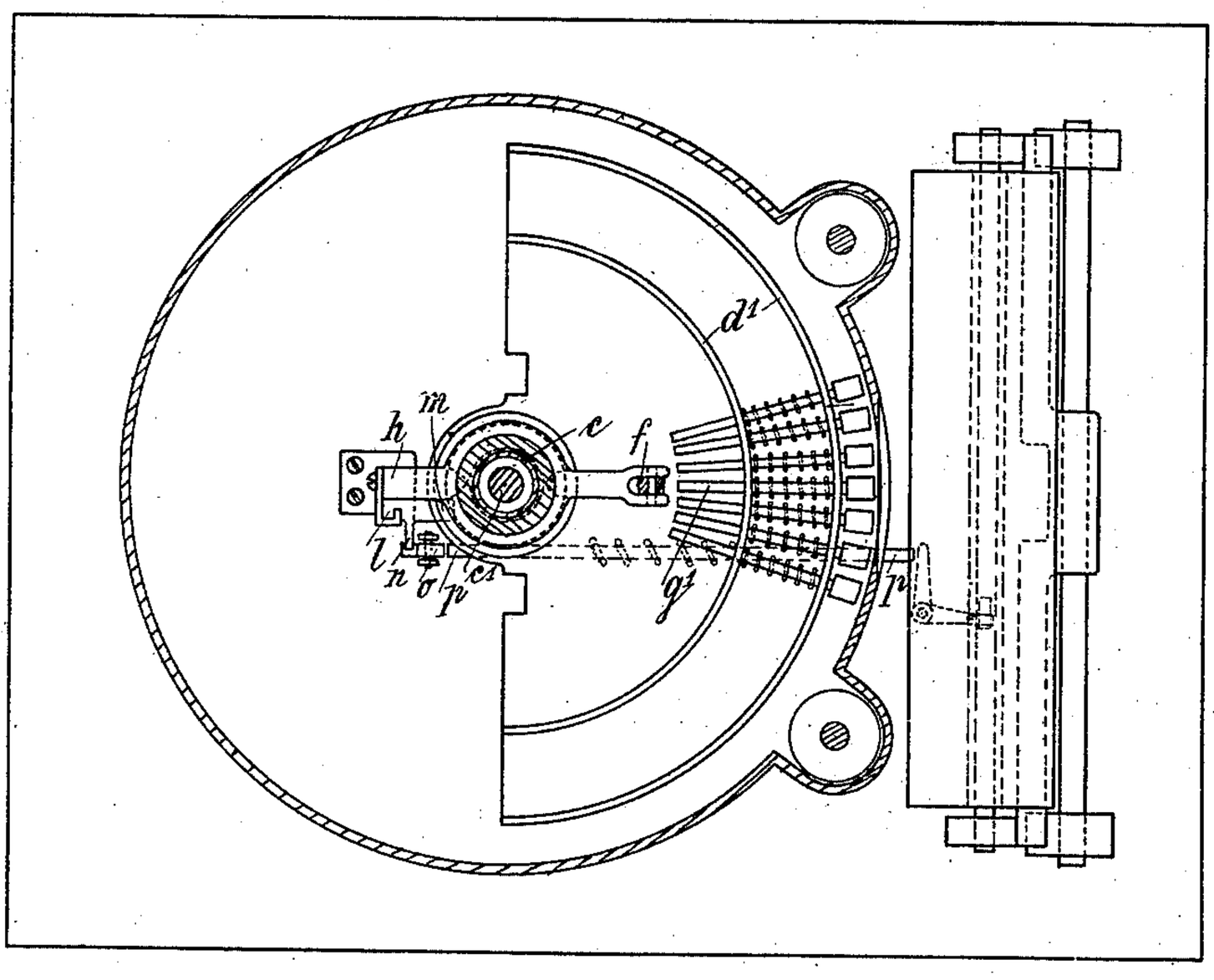
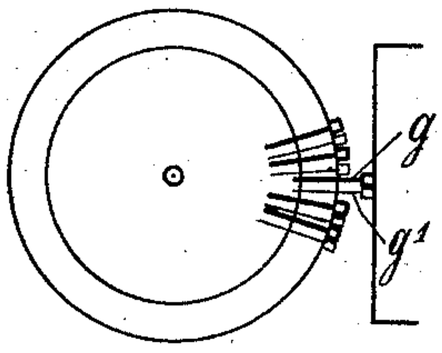


Fig. 3a



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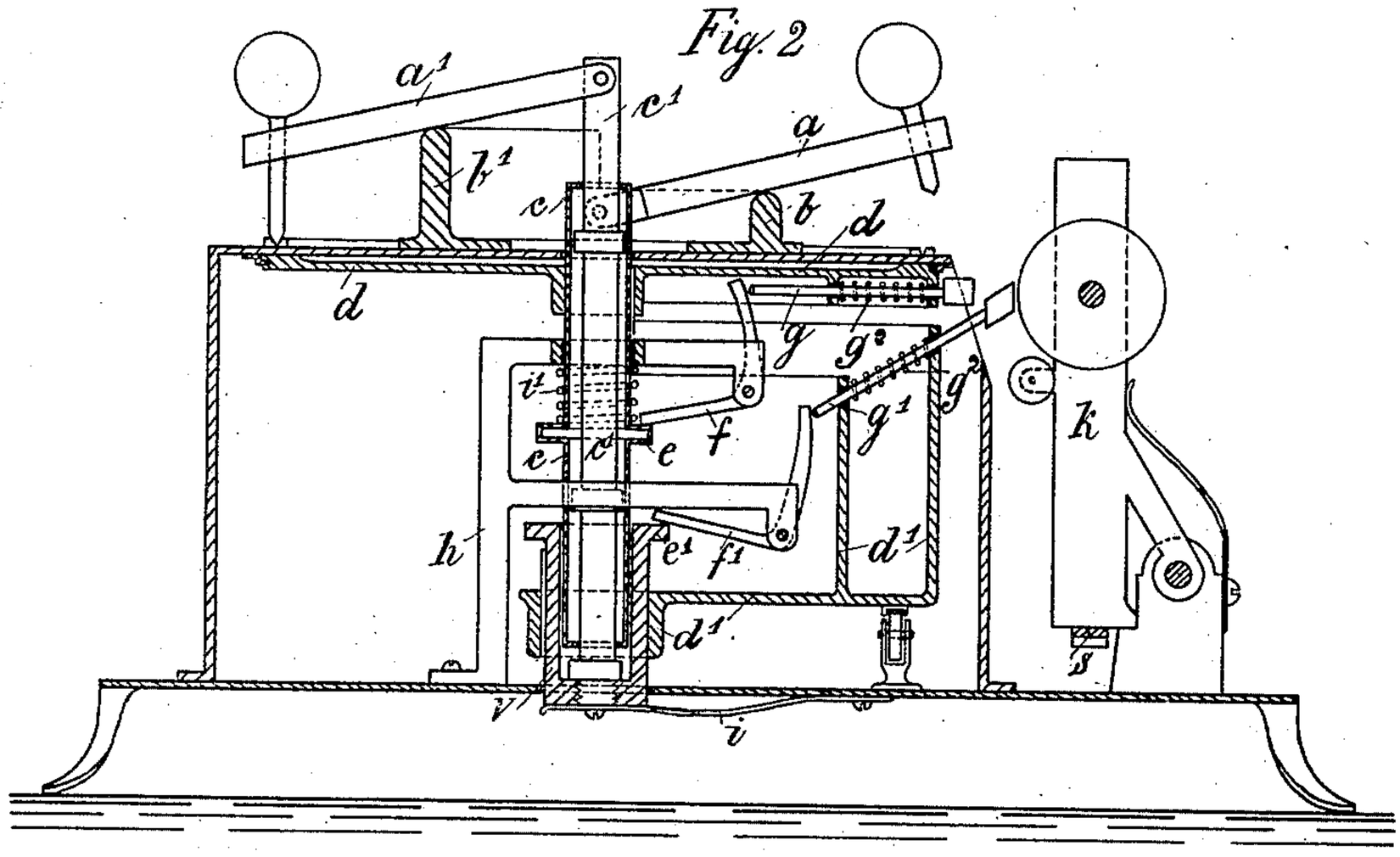
(No Model.) 2 Sheets—Sheet 2.

Fig. 2



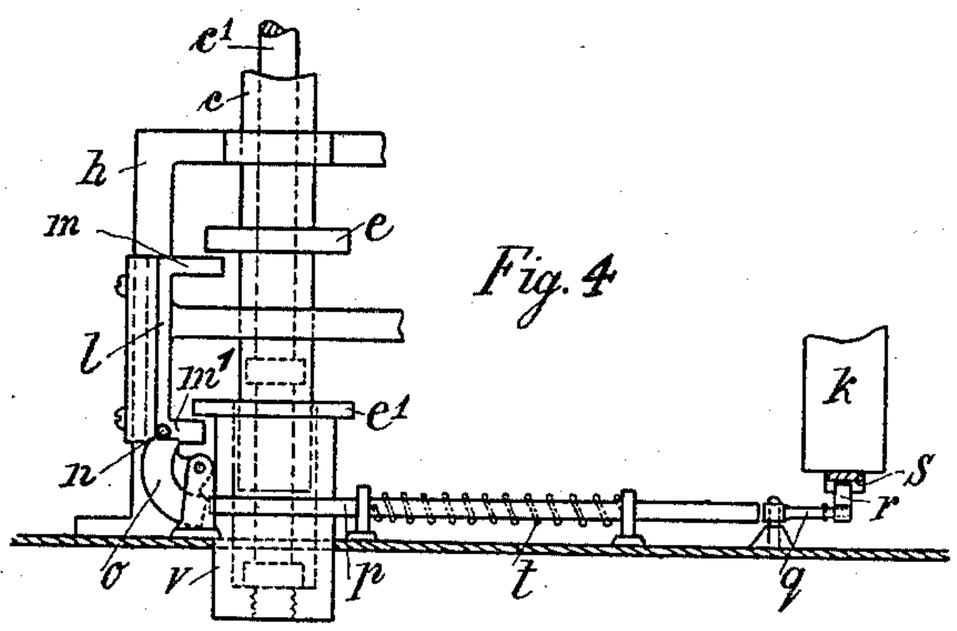


Fig. 4

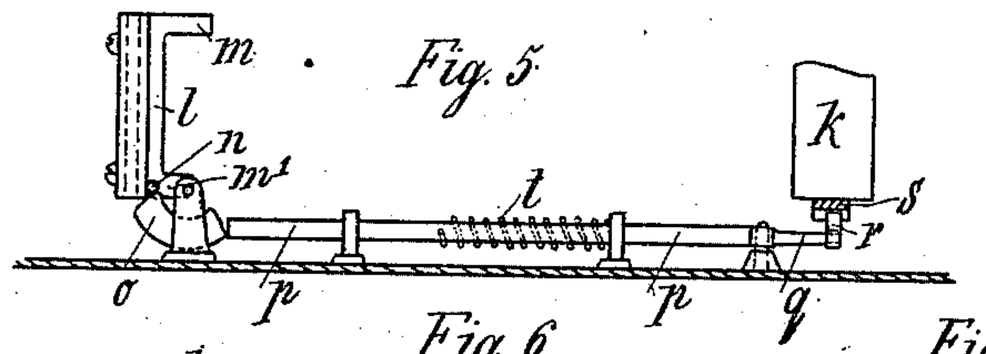


Fig. 5

Fig. 6

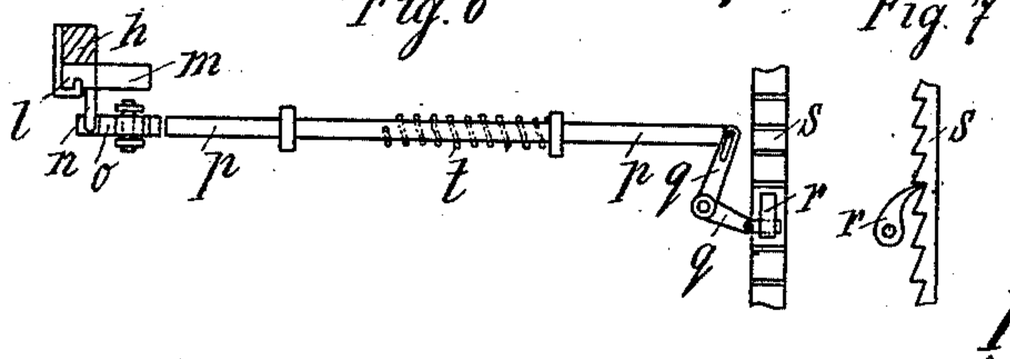


Fig. 7

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UNITED STATES PATENT OFFICE.

OTTO SCHULTZ, OF HANOVER, GERMANY.

TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 713,695, dated November 18, 1902.

Application filed January 14, 1902. Serial No. 89,748. (No model.)

To all whom it may concern:

Be it known that I, OTTO SCHULTZ, a subject of the Emperor of Germany, and a resident of Hanover, Germany, have invented certain new and useful Improvements in Type-Writers, of which the following is a full, clear, and exact description.

The present invention relates to type-writers; and it consists, essentially, in providing means whereby two types may be operated simultaneously and the carriage may be moved two spaces simultaneously in order to properly accommodate the two impressions.

In order to render the present specification easily intelligible, reference is had to the accompanying drawings, in which similar letters of reference denote similar parts throughout the several views.

Figure 1 is a vertical section through a type-writer embodying the present improvements, showing the type-levers in their position of rest. Fig. 2 is a similar section showing one operating-lever depressed and one type projected. Fig. 3 is a horizontal section on line A B of Fig. 1. Fig. 3^a is a view in the nature of a diagram, representing the types projected side by side. Fig. 4 is a detail sectional elevation of the transporting mechanism for the paper-carriage; Fig. 5, a part elevation of the same parts, showing the pawl-operating lever projected forwardly; Fig. 6, a plan of Fig. 5, and Fig. 7 a side elevation of the rack and pawl.

One set of types is carried by the disk d and the second set by the drum d', mounted below the disk. The disk d is fast to the hollow shaft c, and the drum d' is fixed to the shaft c', extending through the hollow shaft c and being concentric therewith. Both shafts are suitably supported in the frame of the machine. The types of the drum are supported on spring-pressed rods g', slantingly mounted in the said drum and adapted to extend out of the same and make the impression on the paper at the side of the horizontally-movable types of the disk d, which latter are also carried by spring-pressed rods g.

The diagram shown in Fig. 3^a illustrates the types projected side by side, and reference to this diagram will render the position of the types of the drum clear. The shafts c and c' are operated by means of the levers a a', which rest upon circular fulcrums b and b', so that when both of the said operating-levers a a' are depressed simultaneously both of the shafts c c' will be raised. The hollow shaft c is provided with a collar e, and the shaft c' carries a cap v, fast to its lower end and having a collar or flange e' at its upper part. The collars e e' engage under the arms of two bell-crank levers f f', the upwardly-extending arms of which are adapted to be projected against the type-bars g and g' of the disk d and drum d' when the shafts c and c' are raised by the depression of the levers a and a'. Both shafts are returned to their positions of rest by means of the springs i and i', respectively. The types are illustrated on the top of the machine-casing, advantageously in a semicircle, and the levers a a' are first turned opposite to the corresponding type on the top of the casing and then depressed, whereby the bell-crank levers f f' project the type-bar g or g', or both, out of the housing or casing, causing the impressions to be made side by side on the paper on the paper-roll carriage k. The levers a a' are operated simultaneously, one being held in each hand of the operator. The type-bars are returned to their positions of rest by means of their springs g^2. In order to shift the carriage a space sufficient for the two impressions, the mechanism illustrated in Figs. 3 to 7 is provided. A slide l is vertically movable and guided on the frame h. This slide is provided with two fingers m and m', which engage under the collars e and e', respectively, so that when the shafts c c' are returned to their position of rest after having been raised the slide l will be depressed. The slide l is provided with a laterally-extending pin n, which engages with a pivotally-mounted segment o, the lower end of which engages with the end of a horizontally-movable bar p, which is normally held against the said segment by means of its spring t. The forward end of the bar p is connected by a pin-and-slot connection to one arm of a bell-crank lever q, pivotally mounted in the base-plate of the machine, and the free end of the said bell-crank lever carries the pawl r, Figs. 6 and 7, which engages and operates the rack s of the paper-carriage k. Thus when the shafts c and c' are raised by the operation of the le-

vers a and a' the slide l and carriage-operating bar p will follow the movement of the collars e and e' under the action of the spring t and will move the pawl r, so that on the descent of the said shafts the depression of the said slide l will move the carriage k by means of the pawl r, bar p, and segment o', as will be readily understood. The stroke of the pawl is sufficiently large to move the said carriage two spaces to allow for the double impression.

I claim as my invention—

1. In a type-writer in which the type-carrying member is first adjusted to the required type and then the impression made, the combination of two type-carrying members each carrying a bank or group of type and having their types adapted to be projected outwardly in alinement, means for operating one type of each type-carrying member simultaneously in the manner and for the purpose substantially as described.

2. In a type-writer of the class specified, the combination of two type-carrying members each carrying a bank or group of type and having their types adapted to be projected outwardly side by side, means for operating one type of each type-carrying member simultaneously and means for moving the carriage two spaces at each double operation of the types substantially as described.

3. In a type-writer of the class specified, the combination of two type-carrying members having their types adapted to be projected outwardly side by side, the said type-carrying members being concentrically mounted to rotate, means for rotating said members to bring the required type to the printing-point and means for projecting one type of each member against the paper-roll simultaneously in the manner and for the purpose substantially as described.

4. In a type-writer, the combination of a type-carrying disk, a vertical shaft carrying the same, a type-carrying drum mounted below the disk, a shaft connected to the said drum, said shafts being arranged one within the other, a series of horizontally-arranged type-bars in the disk, a series of type-bars arranged at an inclination in the drum, a platen to the surface of which the horizontal and inclined type-bars converge, means for raising the shafts of the drum and disk, means for projecting the horizontal and inclined type-bars forward when the shafts are raised and means for giving the platen a double-spacing movement when two type-bars are projected forward simultaneously, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

OTTO SCHULTZ.

Witnesses:
WILHELM OPPERMANN,
LEONORE RASCH.