

(No Model.)

D. KUNHARDT.

TELEGRAPH KEY.

No. 368,342.

Patented Aug. 16, 1887.

Fig. 1.

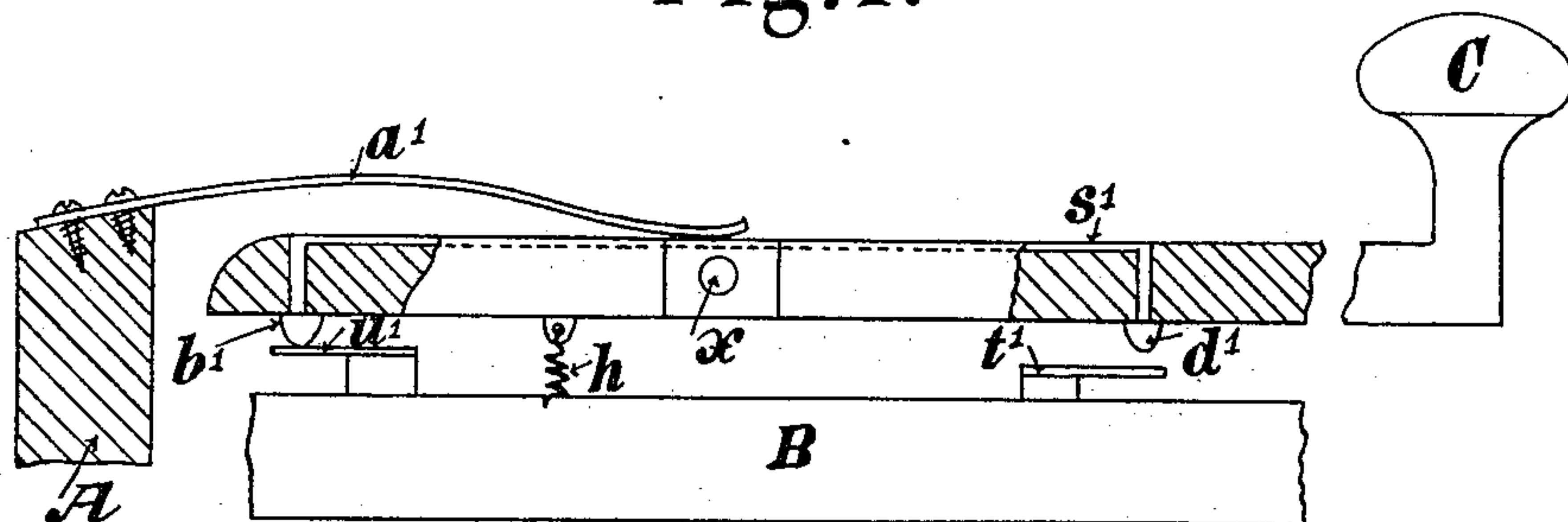


Fig. 2.

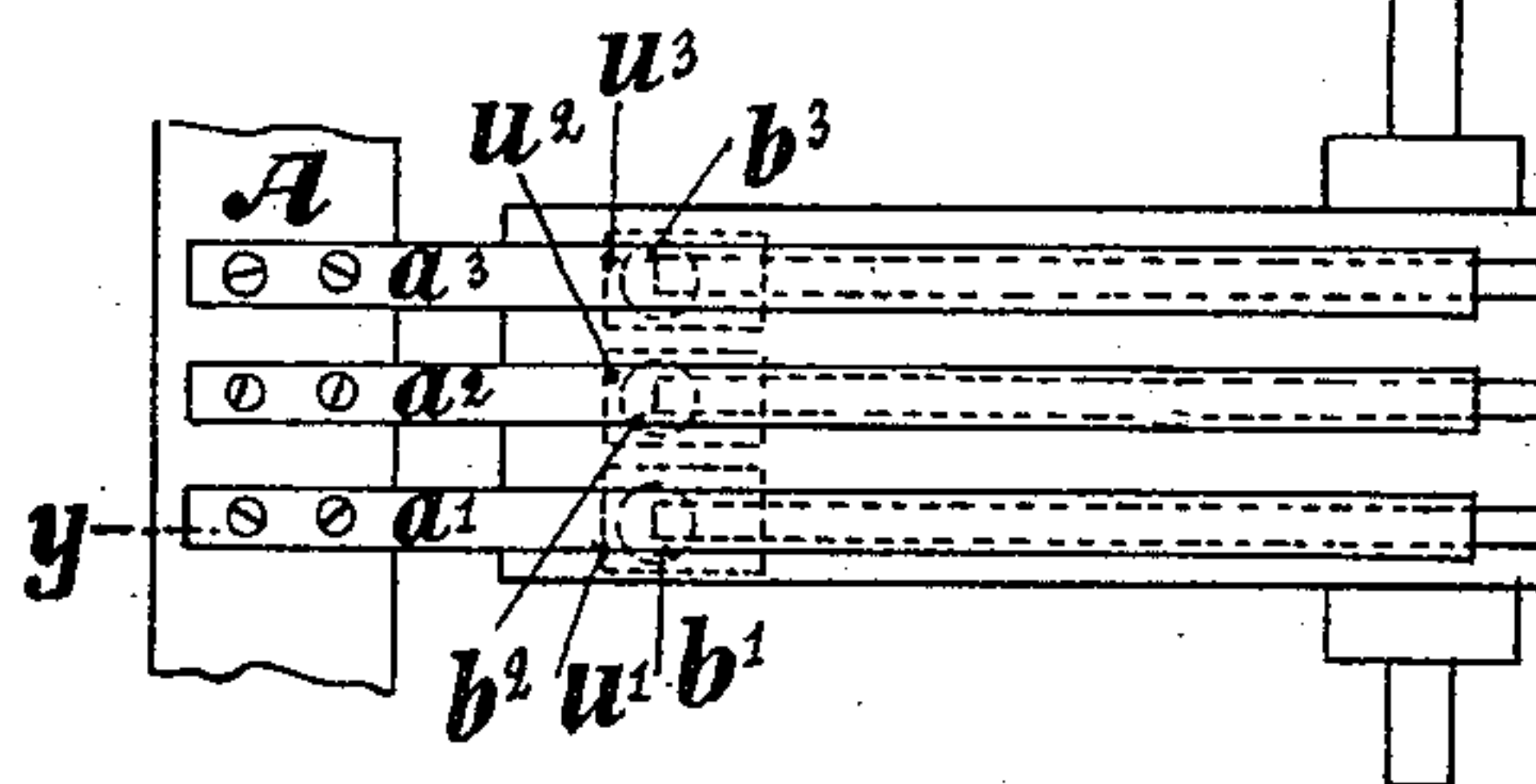


Fig. 3.

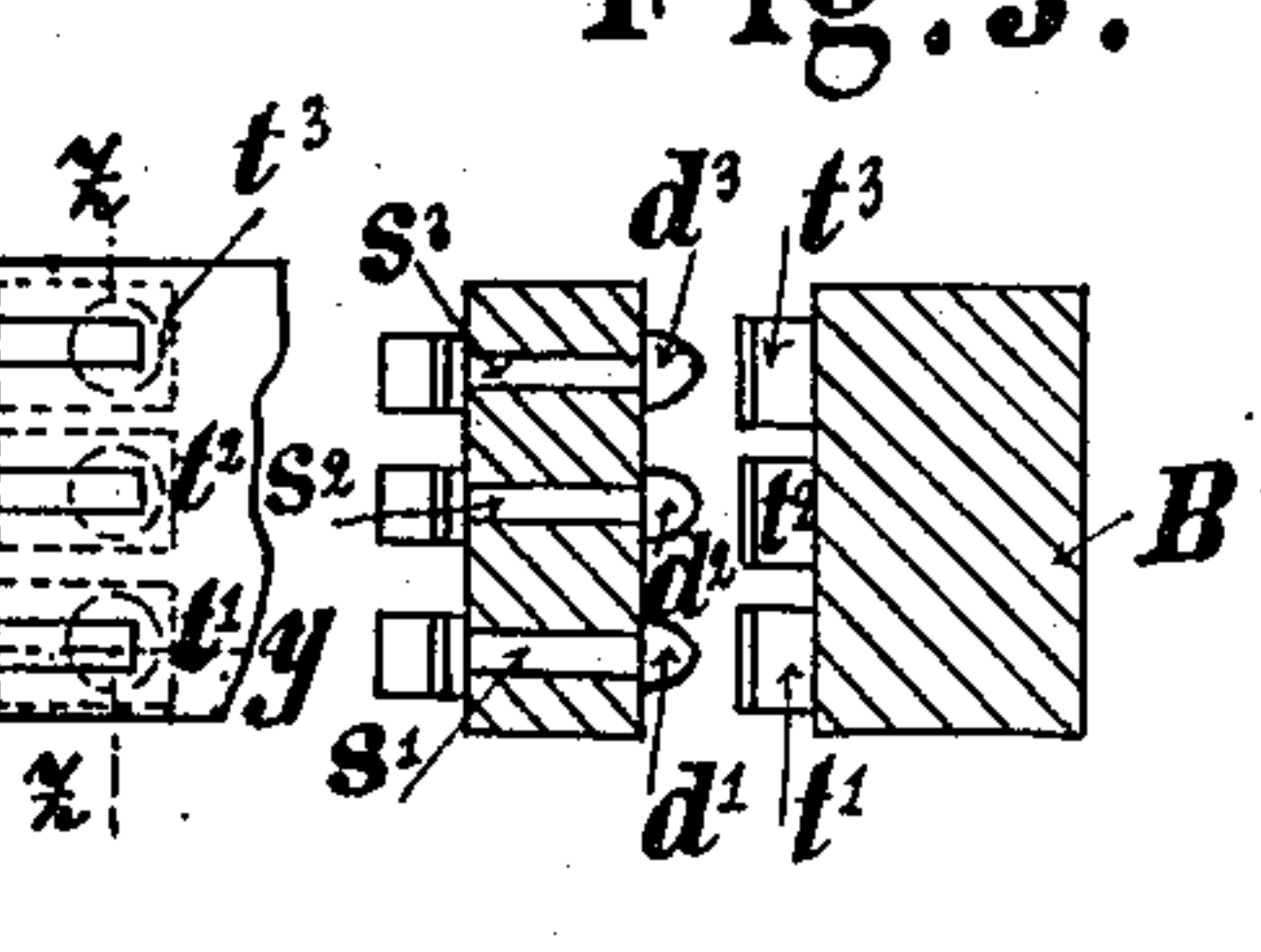
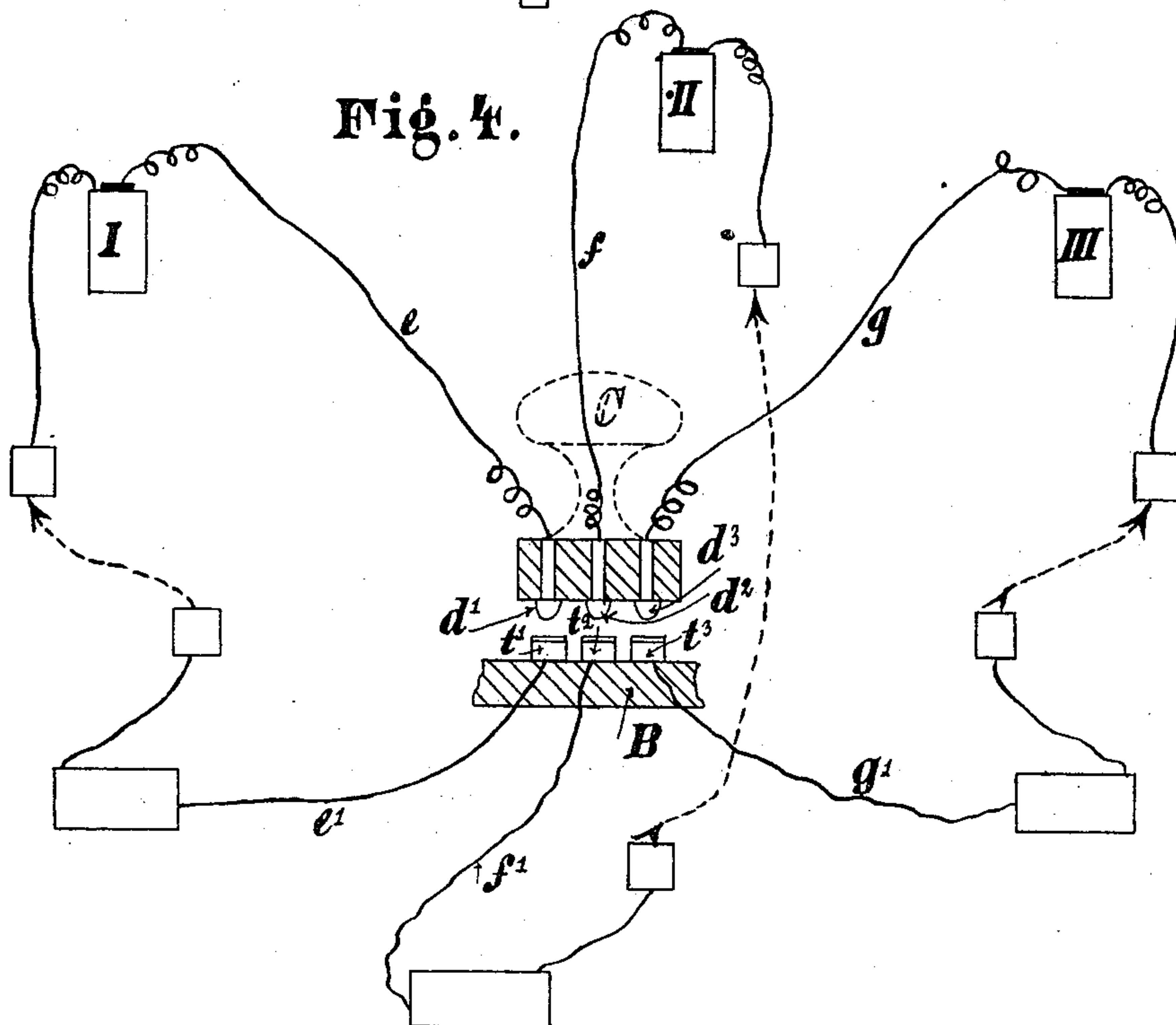


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

DAVID KUNHARDT, OF AACHEN, PRUSSIA, GERMANY.

TELEGRAPH-KEY.

SPECIFICATION forming part of Letters Patent No. 368,342, dated August 16, 1887.

Application filed March 29, 1887. Serial No. 232,915. (No model.)

To all whom it may concern:

Be it known that I, DAVID KUNHARDT, a citizen of Germany, residing at Aachen, Kingdom of Prussia, German Empire, have invented a new and useful Improvement in Morse keys with multiple contacts for simultaneously transmitting one and the same telegram to several stations, of which the following is a specification.

My invention relates to improvements in Morse keys; and it consists in a key having a multiple contact for the purpose of transmitting one and the same telegram simultaneously to several stations, all as will be herein- after more fully described; and in order to make well understood my invention and enable other persons skilled in the art to perform the same I refer to the accompanying drawings, which form part of this specification, and in which—

Figure 1 is a longitudinal section of a key embodying my invention on line *yy*, Fig. 2. Fig. 2 is a plan of the same. Fig. 3 is a transverse section of the same on line *zz*, Fig. 2. Fig. 4 is a diagram of the system, showing the circuits and wire-connections.

The multiple contacts of every key are arranged side by side in the following manner: On a block, A, metallic spring-blades *a' a² a³*, &c., are secured and connected, each with a battery, I II III, by connecting-wires, the letters *e e' f f' g g'* representing the line-wires. The free ends of said blades are slightly bent down to have a sliding contact with insulated metallic blades *s' s² s³*, arranged upon the upper surface of the key, above the pivot *x* of the same. The ends of the blades *s' s² s³* are bent down and project beyond the lower surface of the key, to form on one side the rest or silent contacts *b' b² b³* and on the other side the active or transmitting contacts *d' d² d³*. The said contact-points may as well be suitably connected with the blades *s' s² s³*, instead of forming part of the same.

As will be clearly understood from the plan

the following combinations are formed, viz: Battery I, blades *a' s'*, point *b'*, or battery I, blades *a' s'*, point *d'* for the first circuit; and battery II, blades *a² s²*, point *b²*, or battery II, blades *a² s²*, point *d²* for the second circuit, and so on.

The lower surface of the key is connected to a plate, B, by a spiral spring, *h*, which draws one end of the key down and closes the rest or silent contact as long as there is no pressure working upon the knob C of the key.

The contacts between the plate B and the points *b' b² b³* and *d' d² d³* are obtained through spring-blades *u' u² u³* and *t' t² t³*, which are carried by small metallic blocks on plate B. By this means a simultaneous contact of all the circuits is secured, even in case that one contact should be worn out more than the other contacts, and that no equal distances should prevail between the several contacts.

If with a key arranged to make simultaneous contacts with several lines one or the other of said lines, or several of them, are to be disconnected, it will only be necessary to use a suitable shunt to exclude the respective battery or batteries.

What I claim is—

A Morse key with multiple contacts for simultaneously transmitting one and the same telegram to several stations, said key consisting of a pivoted lever bearing on its upper surface metallic blades *s' s² s³*, forming part with or connected to the transmitting contact-points *d' d² d³*, and rest or silent contact-points *b' b² b³* on the lower surface of the key, elastic metallic blades *a' a² a³* and the contacts *t' t² t³* and *u' u² u³*, and of spring *h*, substantially as specified.

In testimony whereof I have hereunto signed my name, in the presence of two subscribing witnesses, this 11th day of March, 1887.

DAVID KUNHARDT.

Witnesses:

FRANZ BERTRAM,
JOH. HECKMANN.