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TELEPHONE KEY WITH BISECTING PLATE

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Fig. 1.

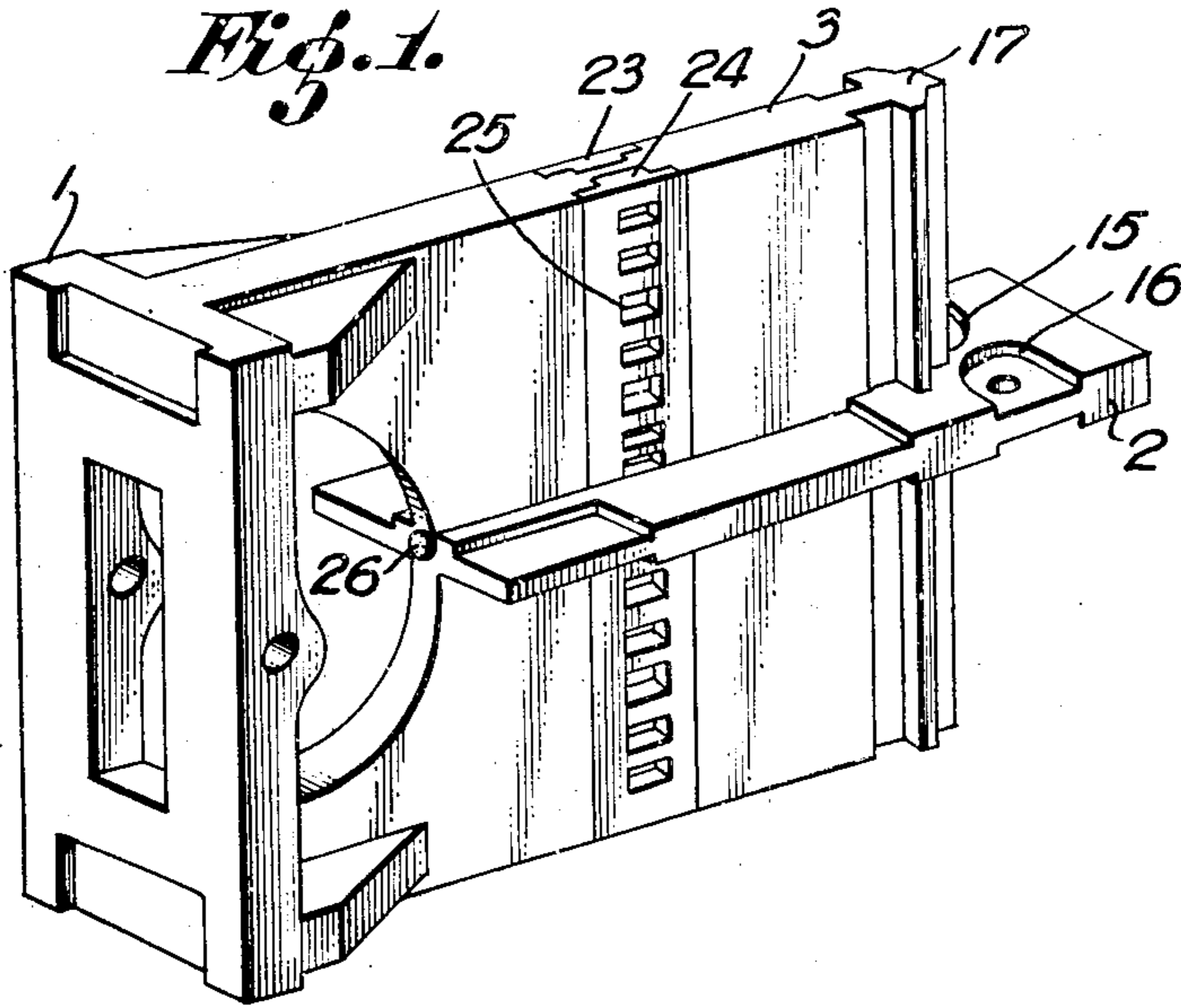
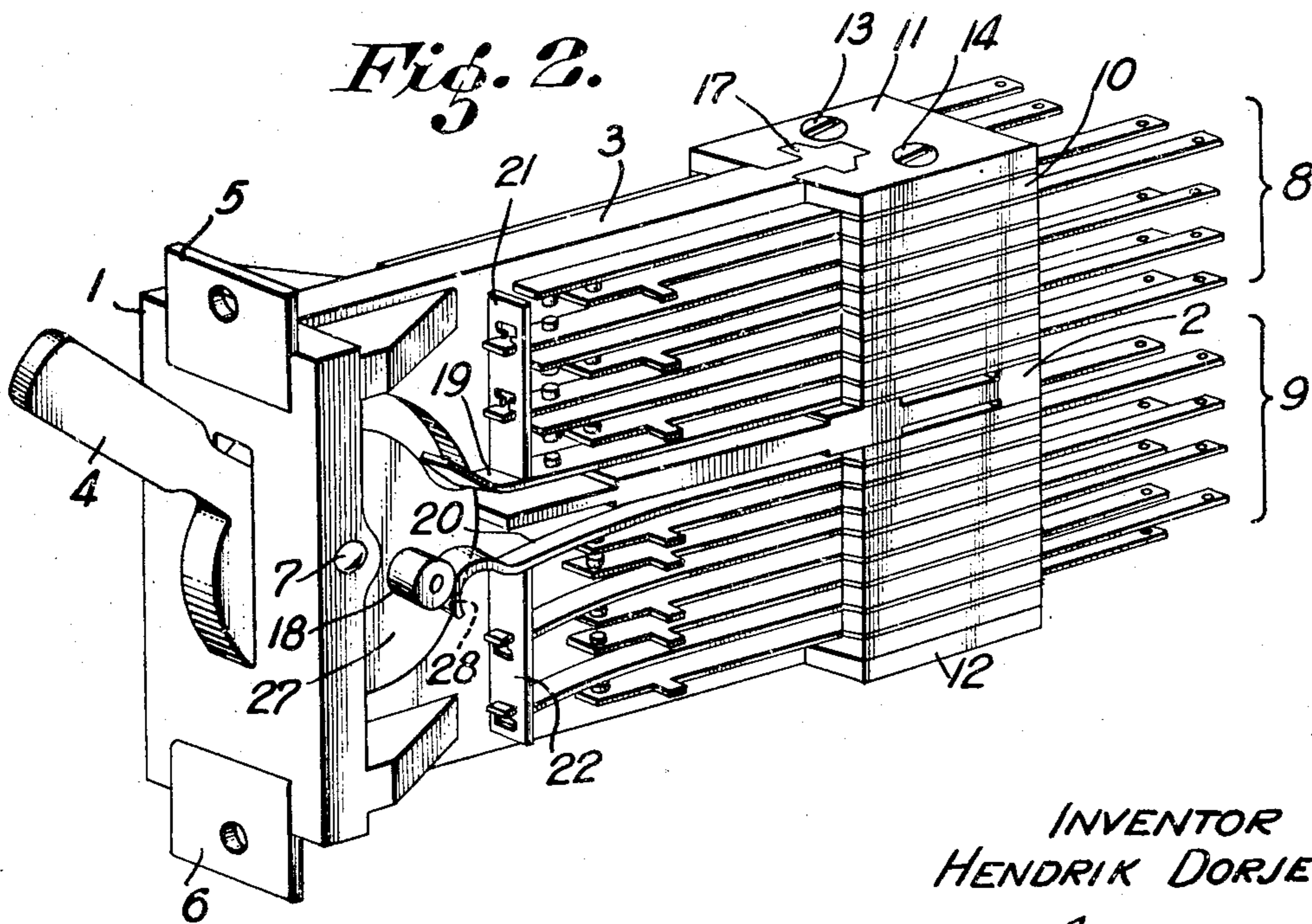


Fig. 2.



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TELEPHONE KEY WITH BISECTING PLATE

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5 Claims. (Cl. 179—176)

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This invention relates to a telephone key comprising a control-lever, which projects from the surface of attachment and is rotatable about a spindle supported by this surface, and at least one set of springs which is mounted on a mounting plate normal to the surface of attachment.

In the case of telephone keys of the conventional constructions, the frame consists of an L-shaped metal strip, the two limbs of which form the fastening and the mounting plate. This construction has the advantage that the frame is extremely simple and is made in one piece which can be manufactured in a simple manner.

The object of the invention is to provide an entirely novel construction for a telephone key which has the aforesaid advantage of the conventional construction and in addition several further advantages.

According to the invention the frame of the telephone key is constituted by a body of insulating material formed by the mounting surface, the fastening surface and a supporting surface which is normal to these two surfaces and which establishes the mechanical junction between them, the parts of the set of springs being arranged on either side of the supporting surface. About the spindle of the control lever this surface has a recess in which parts of the control lever are movable.

In this case the frame is made in one piece constructed in such manner that it can be manufactured in series by a single operation so that it is very cheap and on the other hand sufficiently robust to satisfy the requirements in this respect. As may be seen hereinafter, moreover, the construction according to the invention enables various particularly advantageous forms of construction, owing to which the mounting is simplified and component parts are economized.

In order that the invention may be clearly understood and readily carried into effect, it will now be described more fully with reference to the accompanying drawing given by way of example.

Fig. 1 represents the frame which is used for the construction of the telephone key according to the invention.

Fig. 2 represents one form of construction of the telephone key according to the invention, in which use is made of the frame shown in Fig. 1.

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The frame shown in Fig. 1 consists of three surfaces 1, 2 and 3 substantially normal to one another. Surface 1 constitutes the fastening surface which serves to fasten the key to the wall of a cabinet or to a chassis plate, from which the control lever 4 (Fig. 2) projects. In the form of construction shown by way of example the attachment of the telephone key to a wall is effected by means of metal tags 5 and 6. As an alternative the attachment may be effected by means of screw bolts extending through apertures of the fastening surface 1. The surface 1 furthermore comprises the bearings for the spindle 7 of the control lever 4.

As may be seen from Fig. 2, the mounting surface 2 has piled on it two sets of springs 8 and 9. The springs are insulated from one another by means of plates 10 of insulating material, the sets being clamped together by metal end plates 11 and 12. The plates 11 and 12 are interconnected by screw bolts 13 and 14 which are passed through apertures 15 and 16 (Fig. 1) in the surface 2. The mounting surface 2 and the sets of springs attached thereto are supported by the third of the three surfaces which are normal relatively to one another, i. e. the supporting surface 3 which establishes the mechanical junction between the mounting surface 2 and the fastening surface 1. Each set of springs comprises two piles of spring arranged on either side of the supporting surface 3. This surface bisects the key so to say, so that the parts of the surfaces 1 and 2 projecting on either side have only half the total width of these surfaces. The compact construction thus ensured permits, in spite of the use of insulating material instead of metal, to fulfil the mechanical requirements. In this case it is essential that the supporting surface 3 about the spindle 7 of the control lever 4 exhibits a recess (in the case represented a semicircular recess) in which parts of the lever 4 are movable which will be described in detail hereinafter.

The frame construction described permits to economize in price and weight by the use of insulating material and in addition to obtain diverse constructional advantages. The mounting surface, in effect, is provided on the rear with a dovetail profilation. The insulating plates 10 and the compression plates 11 and 12 of the sets of springs exhibit a recess fitting this profile, so

that they are supported in a lateral direction i. e. against movements in their plane, which considerably facilitates the mounting (the stacking).

The control lever is provided on either side with a roller 18 which drives the usually central springs 19 and 20 of the sets. These springs are required to be at rest in the mid-position (not shown). This is ensured most easily by arranging the mounting surface 2 mid-way the key i. e. in such manner that the spindle 7 of the lever 4 is in line with the mounting surface, the springs 19 and 20 being symmetrically mounted on either side of this surface. If the mould is given a suitable construction the mounting surface is automatically at the correct height.

The movement of the springs 19 and 20 is transmitted by ladder-shaped members 21 and 22 to the other driven springs of the sets. The surface 3 is provided on either side with profiled slits, in which strips 23 and 24 are secured by gluing. These strips are made of insulating material and provided with perforations which are chosen in accordance with the set of springs to be used. The stationary springs of each set have a lateral projecting part by means of which they rest, under the desired preliminary tension, in one of the recesses 25 of strips 23 and 24. In order to minimize the number of component parts, the non-driven springs of the set are provided on either side with a projecting part, so that they can serve both on the right hand side and on the left hand side. The centre of the frame exhibits, along the line of intersection of the surfaces 2 and 3, a bore 26, which accommodates a screw spring which urges a steel ball against the cylindrical surface of the member 27 of the control lever 4. In the mid-position of the lever 4 this ball drops precisely into the stop slit 28 provided in the said member. In this manner the control lever is blocked in the mid-position.

What I claim is:

1. An electrical contact device comprising an electrically insulating wall portion provided with a recess at one end thereof and having a surface thereof lying in a given plane, an electrically insulating fastening portion provided with an aperture, said fastening portion having the major surface thereof lying in a plane substantially perpendicular to said first plane and being integral to said wall portion, an electrically insulating mounting portion integral to said wall portion and having a mounting surface thereof lying in a plane substantially perpendicular to the planes of said wall portion and said fastening portion, a spring-contact assembly secured to said mounting portion and having a portion thereof positioned adjacent to said supporting portion and extending towards said fastening portion, and a rotatable member pivotally secured within the aperture of said fastening portion and extending into said recess portion.

2. An electrical contact device comprising an electrically insulating wall portion provided with a recess at one end thereof and having a surface thereof lying in a given plane, an electrically insulating fastening portion provided with an aperture, said fastening portion having the major surface thereof lying in a plane substantially perpendicular to said first plane and being integral to said wall portion, an electrically insulating mounting portion integral to said wall portion and having a mounting surface thereof lying in a plane substantially perpendicular to the planes

of said wall portion and said fastening portion, said supporting portion substantially bisecting the said mounting surface, a spring-contact assembly secured to said mounting portion and having a portion thereof positioned adjacent to said supporting portion and extending towards said fastening portion, and a rotatable member pivotally secured within the aperture of said fastening portion and extending into said recess portion.

3. An electrical contact device comprising an electrically insulating wall portion provided with a recess at one end thereof and having a surface thereof lying in a given plane, an electrically insulating fastening portion provided with an aperture, said fastening portion having the major surface thereof lying in a plane substantially perpendicular to said first plane and being integral to said wall portion, an electrically insulating mounting portion integral to said wall portion and having a mounting surface thereof lying in a plane substantially perpendicular to the planes of said wall portion and said fastening portion, said supporting portion substantially bisecting the said mounting surface, spring-contact assemblies respectively secured to said mounting portion and having portions thereof positioned adjacent to said supporting portion and extending towards said fastening portion, and a rotatable member pivotally secured within the aperture of said fastening portion and extending into said recess portion.

4. An electrical contact device comprising an electrically insulating wall portion provided with a recess at one end thereof and having a surface thereof lying in a given plane, an electrically insulating fastening portion provided with an aperture, said fastening portion having the major surface thereof lying in a plane substantially perpendicular to said first plane and being integral to said wall portion, an electrically insulating mounting portion integral to said wall portion and having a mounting surface thereof lying in a plane substantially perpendicular to the planes of said wall portion and said fastening portion, said supporting portion substantially bisecting the said mounting surface, spring-contact assemblies respectively secured to the bisected portions of the said mounting portion and having portions thereof positioned adjacent to said supporting portion and extending towards said fastening portion, and a rotatable member pivotally secured within the aperture of said fastening portion and extending into said recess portion.

5. An electrical contact device comprising an electrically insulating wall portion provided with a recess at one end thereof and having a recessed surface thereof lying in a given plane, an insulating electrically fastening portion provided with an aperture, said fastening portion having the major surface thereof lying in a plane substantially perpendicular to said first plane and being integral to said wall portion, an electrically insulating mounting portion integral to said wall portion and having a mounting surface thereof lying in a plane substantially perpendicular to the planes of said wall portion and said fastening portion, a spring-contact assembly secured to said mounting portion and having a portion thereof positioned adjacent to said supporting portion and extending towards said fastening portion, and a rotatable member pivotally secured within the aperture of said fastening portion and extending into said recess portion, certain spring portions of the said assembly being provided with

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projections extending into the said recessed surface of the said wall portion.

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