

R. REIN.
CALCULATING MACHINE.
APPLICATION FILED JULY 19, 1909.

Patented Nov. 2, 1909.

938,791.

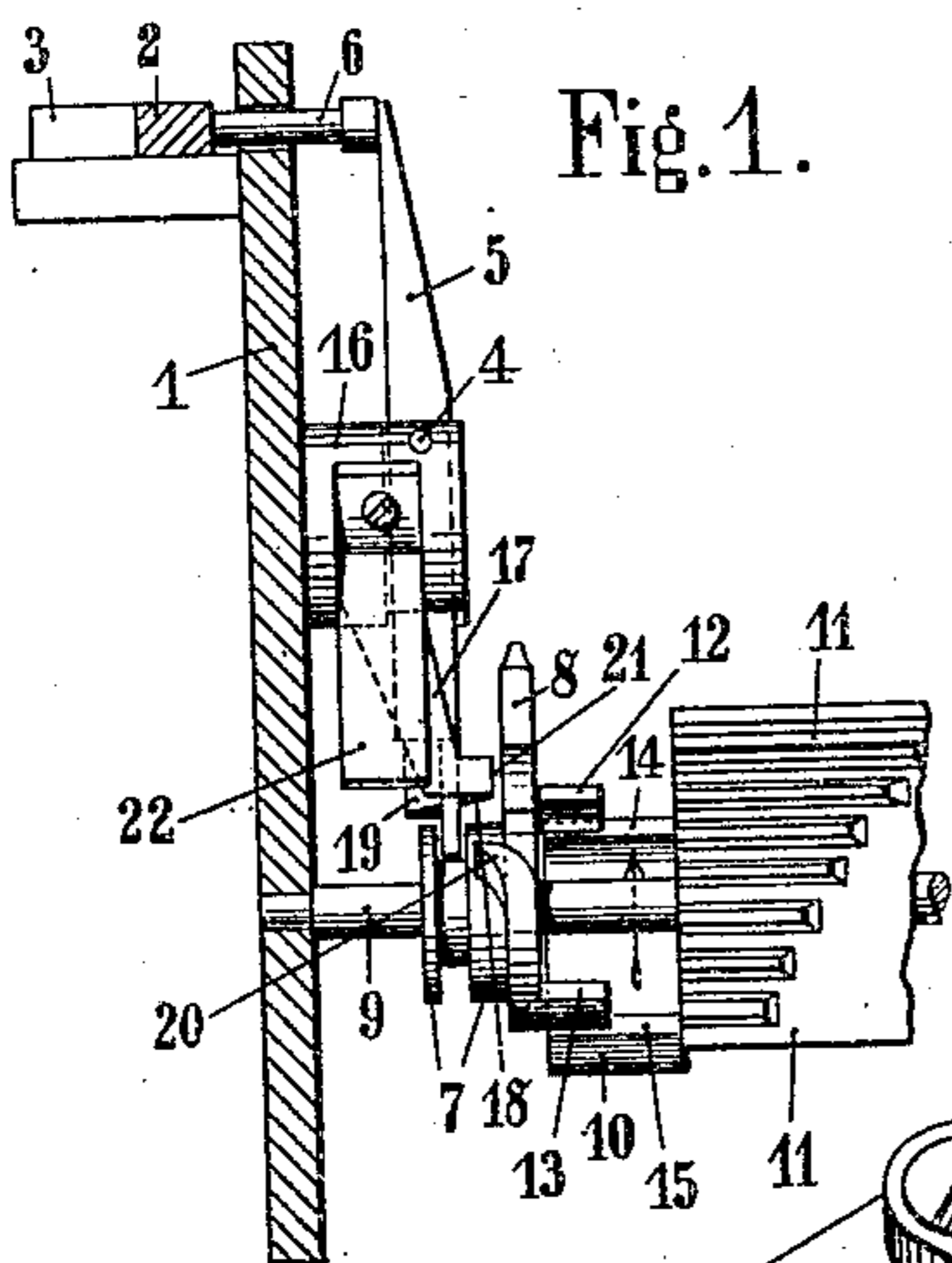


Fig. 1.

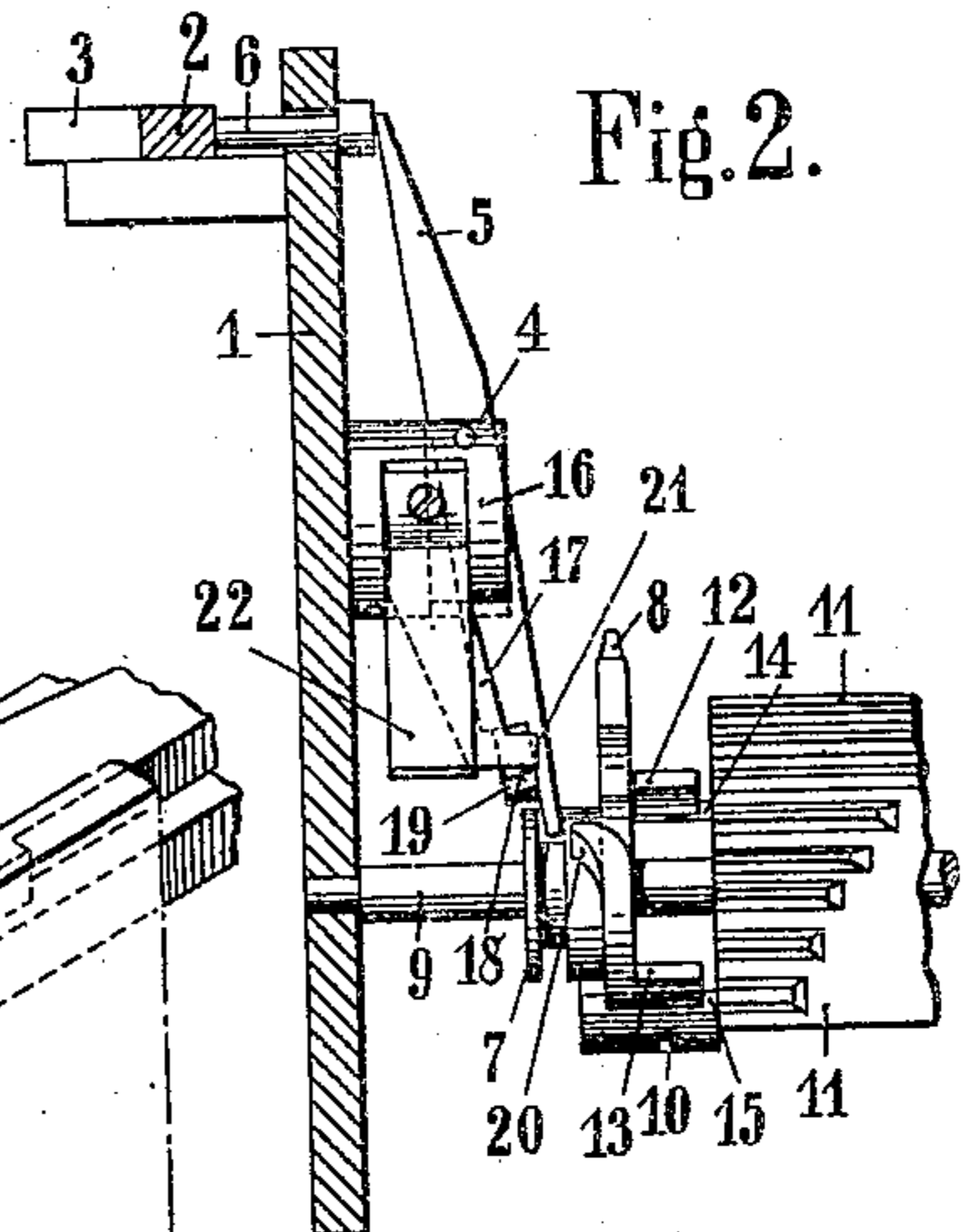


Fig. 2.

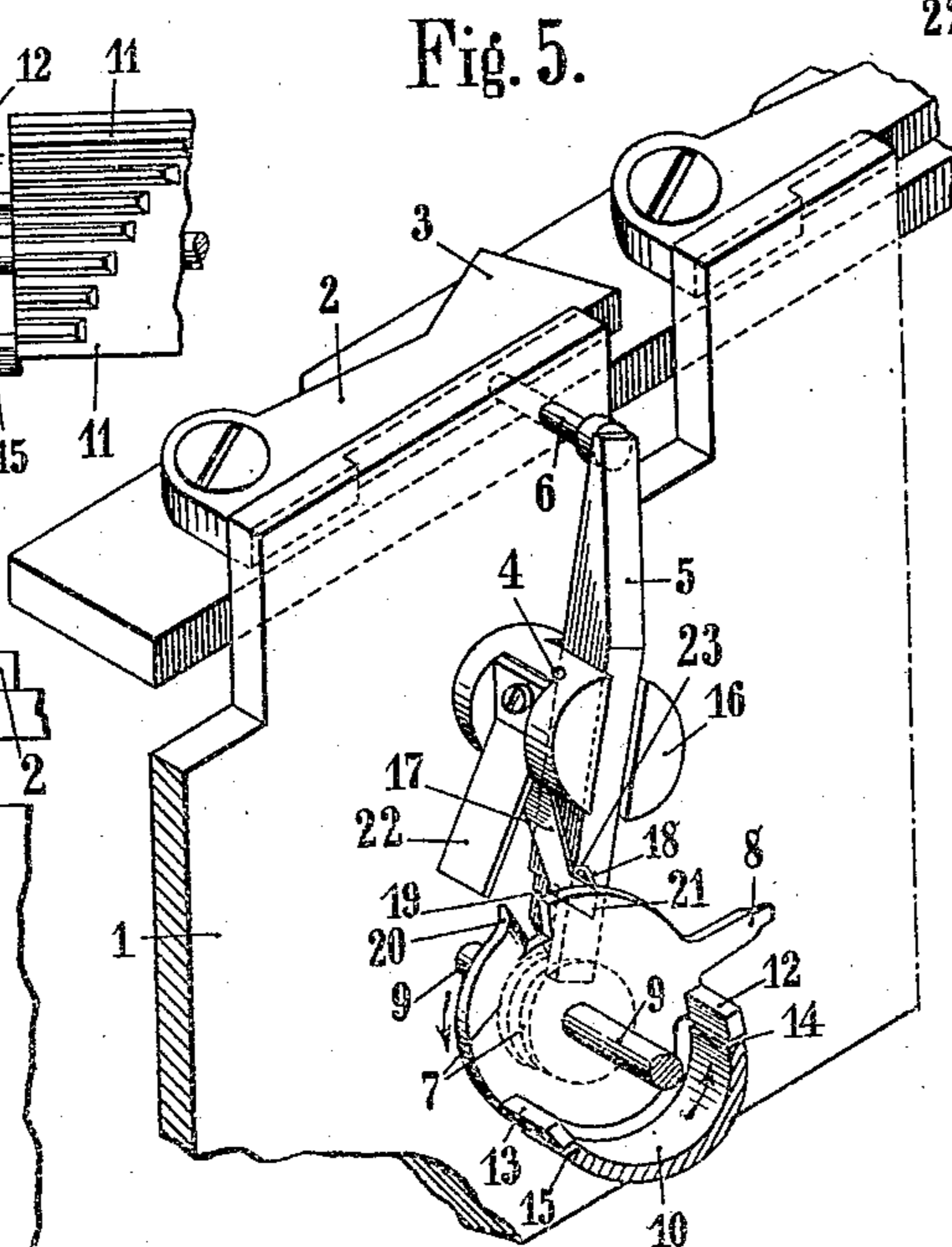


Fig. 5.

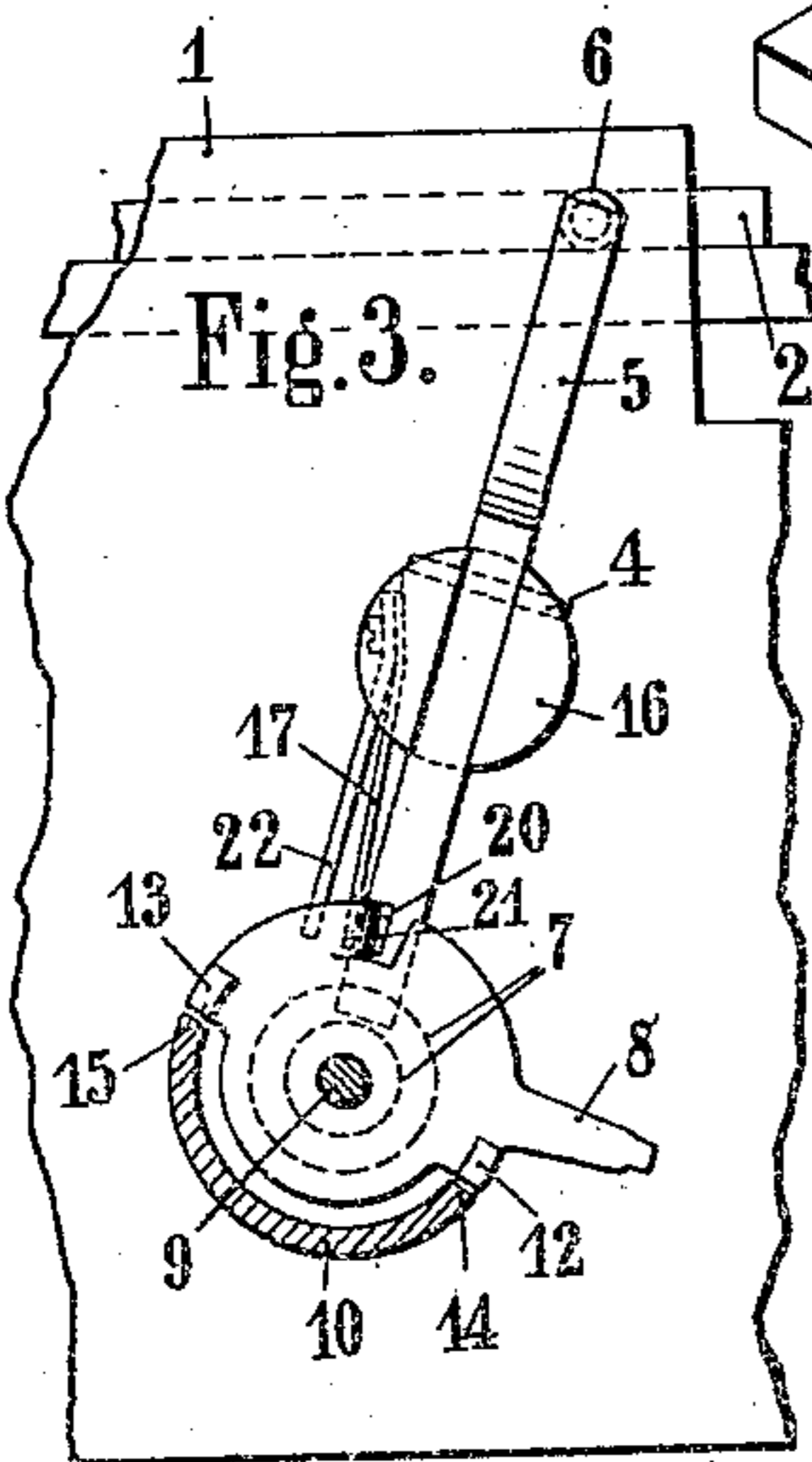


Fig. 3.

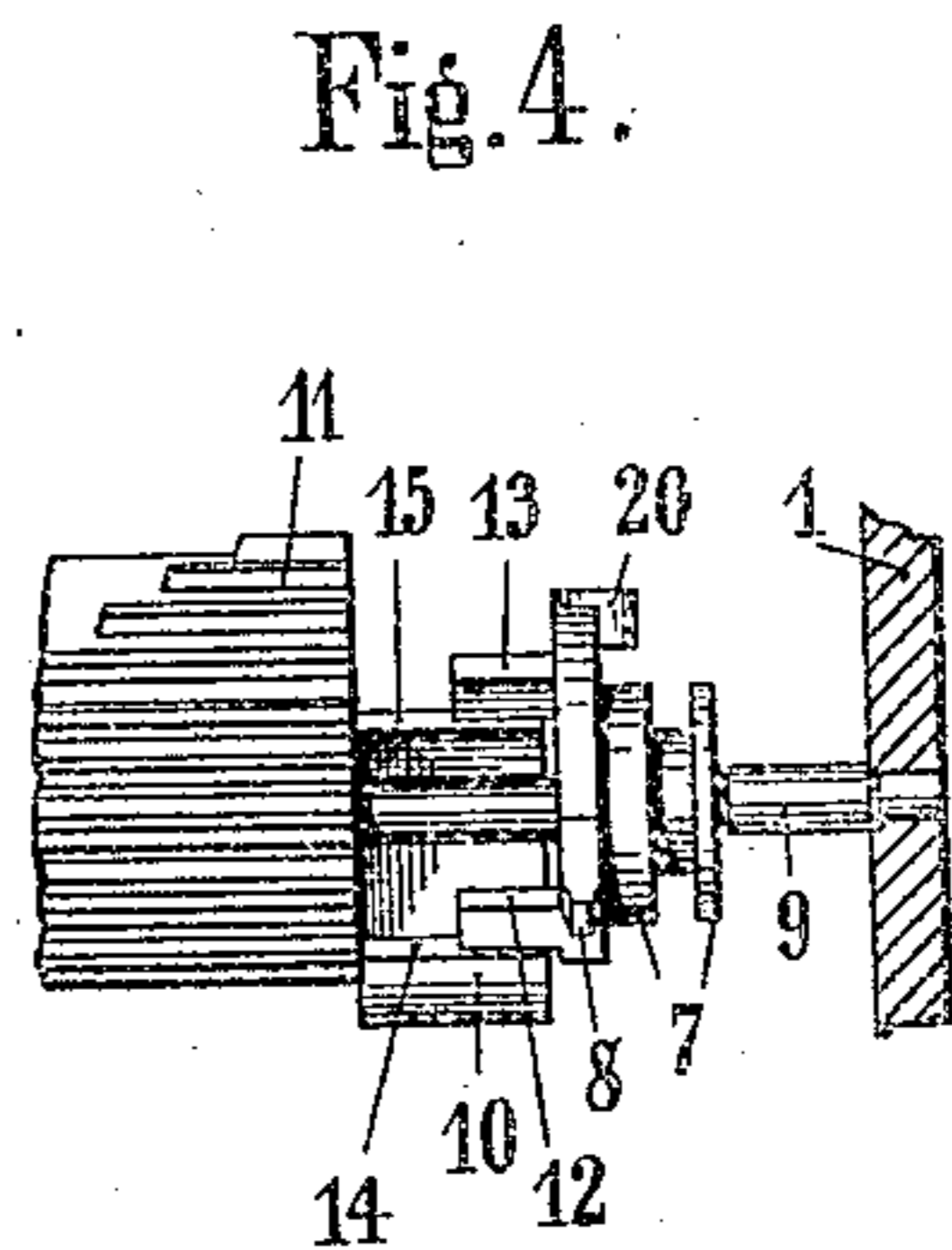
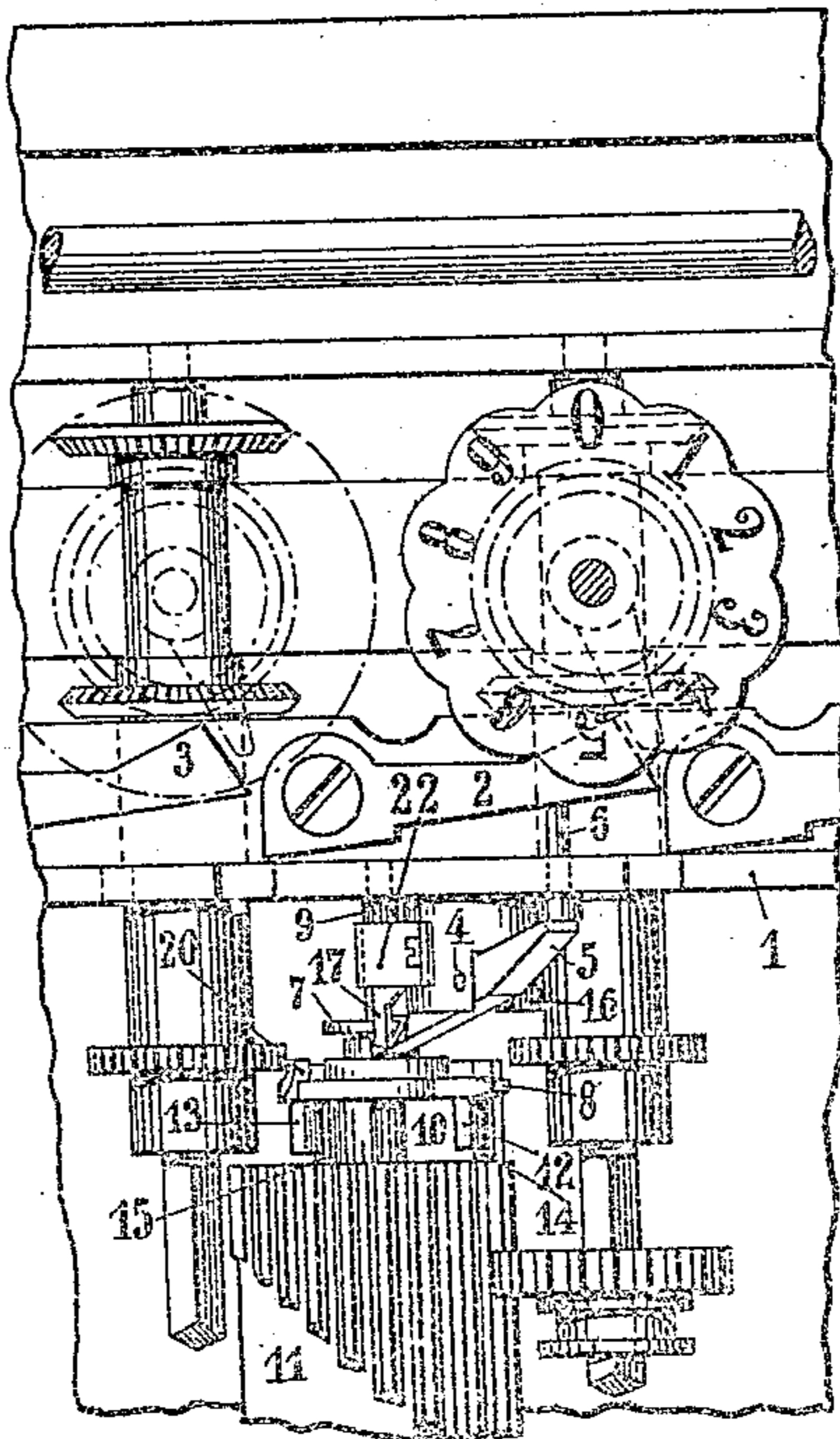


Fig. 4.

Fig. 6.



Witnesses:
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UNITED STATES PATENT OFFICE.

ROBERT REIN, OF BERLIN, GERMANY.

CALCULATING-MACHINE.

938,791.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed July 19, 1909. Serial No. 508,495.

To all whom it may concern:

Be it known that I, ROBERT REIN, a subject of the Emperor of Germany, and resident of Berlin, Germany, have invented a certain new and useful Improvement in Calculating-Machines, of which the following is a specification.

This invention relates to a novel tens transferring or carrying device for calculating machines of the kind described in the specifications of British Patents Nos. 13,054 of 1851 and 26,296 of 1906.

The essential feature of the present invention consists in the reduction of the number of parts of the mechanism to be accelerated during the tens carrying movement and in the arrangement of special locking springs by which recoil of the carrying lever after the transferring operation has taken place, is prevented.

A further advantage which is obtained by means of the construction according to the present invention consists in this that the previously square actuating shaft can now be made cylindrical whereby an essential simplification in the production of the machine and saving is effected.

In the accompanying drawings, which illustrate one construction in which the invention may be embodied:—Figure 1 is an elevation, with certain parts in section, of the feed drum and the transfer mechanism, showing the parts in carrying position. Fig. 2 is a similar view, showing the parts in normal position. Fig. 3 is an elevation, at right angles to Figs. 1 and 2, of the transfer mechanism, showing the locking cylinder in section. Fig. 4 is a plan view, partly in section, of certain of the parts shown in Figs. 1 and 2. Fig. 5 is a perspective view of the transfer mechanism. Fig. 6 is a plan view of the transfer mechanism and certain other parts of the computing mechanism.

According to Fig. 5, on the back of the frame 1, are mounted in known manner carrying arms 2, the lugs 3 of which are pressed to one side by corresponding lugs on the counting mechanism on transferring of the tens taking place. These carrying arms act on the carrying levers 5 which are pivoted on pivots 4 on the front of the frame through pins 6 entering holes in the frame 1. The ends of the carrying levers 5 now engage in

known manner in the collar 7 integral with the tens transferring teeth 8 so that on transferring the carrying arm 5 and the collar 7 together with the tens transferring teeth 8 are moved axially on the actuating shaft 9. Previously with the tens transferring tooth 8 was rigidly connected a locking cylinder 10 by engagement of which in the corresponding locking disk the positive locking of the mechanism was effected, so that on axial movement of the transferring tooth into transferring position or out of the same the locking cylinder, which was of considerable mass, was required to be moved. According to the present invention the locking cylinder is not constructed integral with the tens transferring cam but integral with a feed drum 11 so that on transferring taking place the locking cylinder no longer requires to be moved axially, an essential reduction of the weight to be moved on transferring of the tens suddenly taking place, thus being effected. In order to dispense with the otherwise necessary square milled actuating shaft and instead of this to use cylindrical shafts the feed drums together with the locking cylinders connected therewith are rigidly connected to the shaft by clamping or in other known manner while the tens transferring tooth 8 has projecting lugs 12 and 13 formed by being bent up, which lugs engage the faces 14 and 15 of the locking cylinder 10 which is secured on a feed drum 11 so that on rotation of the feed drum in the direction of the arrow the tens transferring tooth 8 is connected on rotation and is carried with it.

In order to prevent the possibility of recoil of the parts of the transfer mechanism notwithstanding the essential reduction of the mass to be accelerated in rapid calculation, according to the present invention, on the guide pieces 16, supporting the fulcrum of the carrying levers 5, recoil springs 17 are arranged, the beveled faces 18 of which are supported, in the inoperative position of the carrying levers 5, against the correspondingly beveled faces 19 of these carrying levers in order to hold them in this position. In the operative position of the carrying levers 5, however, the face 23 of the correspondingly bent spring 17 rests against the face of this carrying lever 5 and prevents it from swinging back so that the parts

of the transfer mechanism are retained in the transferring position.

In order to effect the automatic return of the tens transferring tooth into the inoperative position after engagement of the same in its tens transferring wheel, the tens transferring tooth 8 has a projection or outwardly bent lug 20 which after engagement of the tens transferring tooth in the tens transferring wheel, strikes the face 18 of the spring 17 and thereby presses this to the side so that now the carrying arm 5 can freely swing forward and backward. As the lug 20 is obliquely bent outward, the sloping face of the same slides in the guide piece 16 in such manner that the axially movable tens transferring tooth 8 together with its collar 7 moves axially forward and thereby carries with it the carrying lever 5. By rotation of the transferring tooth 8 the locking spring 17 is pressed to the side so that the carrying lever 5 is released and the return of the parts 8, 7, 6, 5, 3, 2 of the transfer mechanism into the original position is effected. In order to prevent the spring 17 from being pressed back too far by the lug 20 of the tens transferring tooth 8 a spring catch 22 is arranged on the guide piece 16. By the special formation of the spring 17 in conjunction with the arrangement of a projection or lug 20 on the tens transferring tooth 8 a still further reduction of the mass of the parts of the transfer mechanism to be accelerated is thereby effected so that a spiral shaped projection on the collar 7 and which rests against a corresponding pin secured on the wall 1 which otherwise served for the return of the parts of the transfer mechanism now becomes superfluous.

Having described my invention what I

claim and desire to secure by Letters Patent of the United States is:—

1. Tens transferring or carrying mechanism for calculating machines comprising, in combination with the frame, carrying levers arranged in the front of said frame, a shaft, a collar on said shaft, a tens transferring tooth axially movable on said shaft, a feed drum, a locking cylinder, said locking cylinder being provided with faces, lugs on said tens transferring tooth adapted to engage said faces and thereby connect said feed drum with said locking cylinder, and recoil springs for locking the said carrying levers in transferring position, as and for the purpose set forth.

2. Tens transferring or carrying mechanism for calculating machines comprising, in combination with the frame, carrying levers arranged in the front of said frame, a shaft, a collar on said shaft, a tens transferring tooth axially movable on said shaft, a feed drum, a locking cylinder, said locking cylinder being provided with faces, lugs on said tens transferring tooth adapted to engage said faces and thereby connect said feed drum with said locking cylinder, recoil springs for locking the said carrying levers in locking position, lugs on said locking springs and projections on said tens transferring tooth, said projections being adapted to press to the side said locking springs and to slide over said lugs, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT REIN.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.