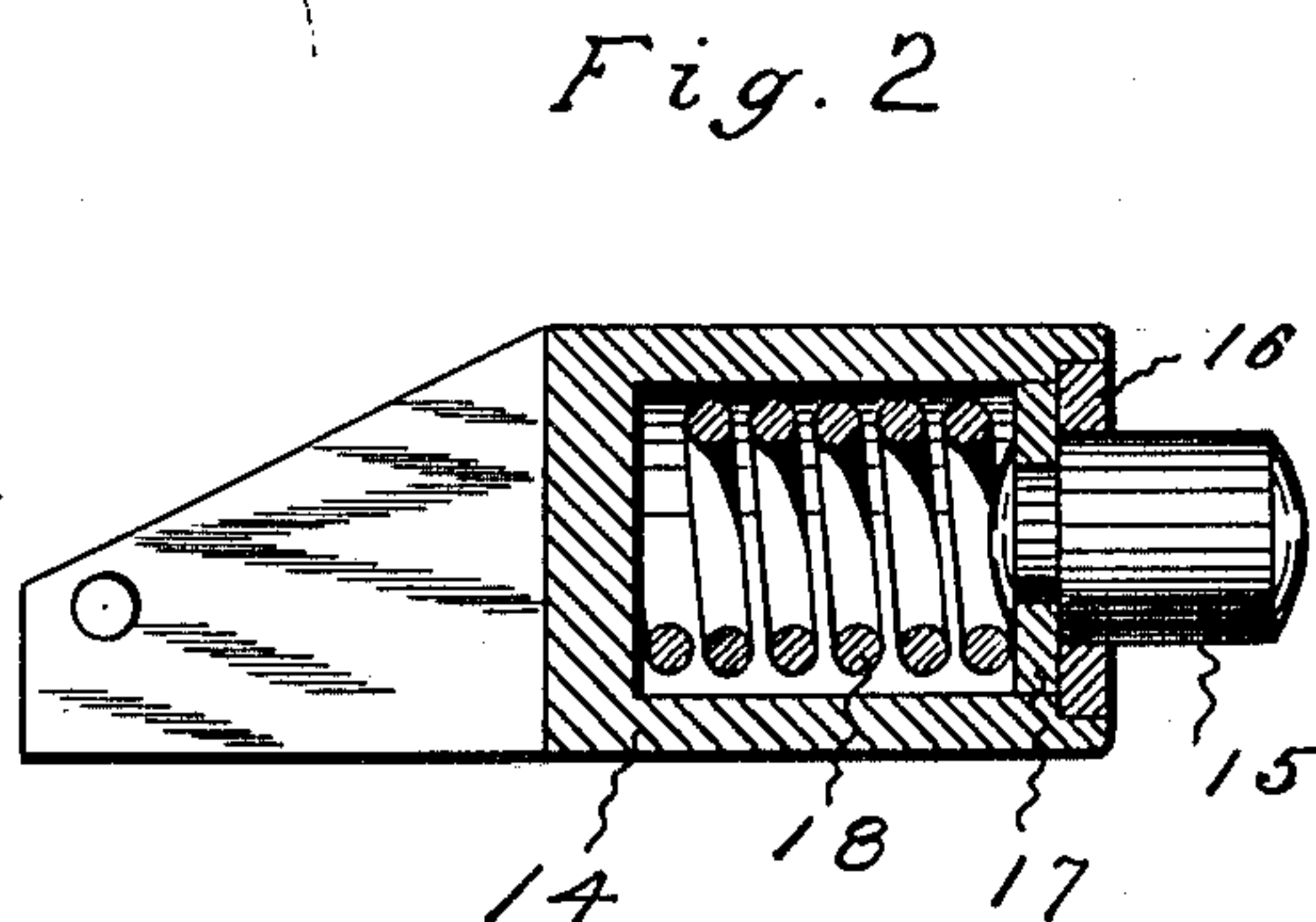
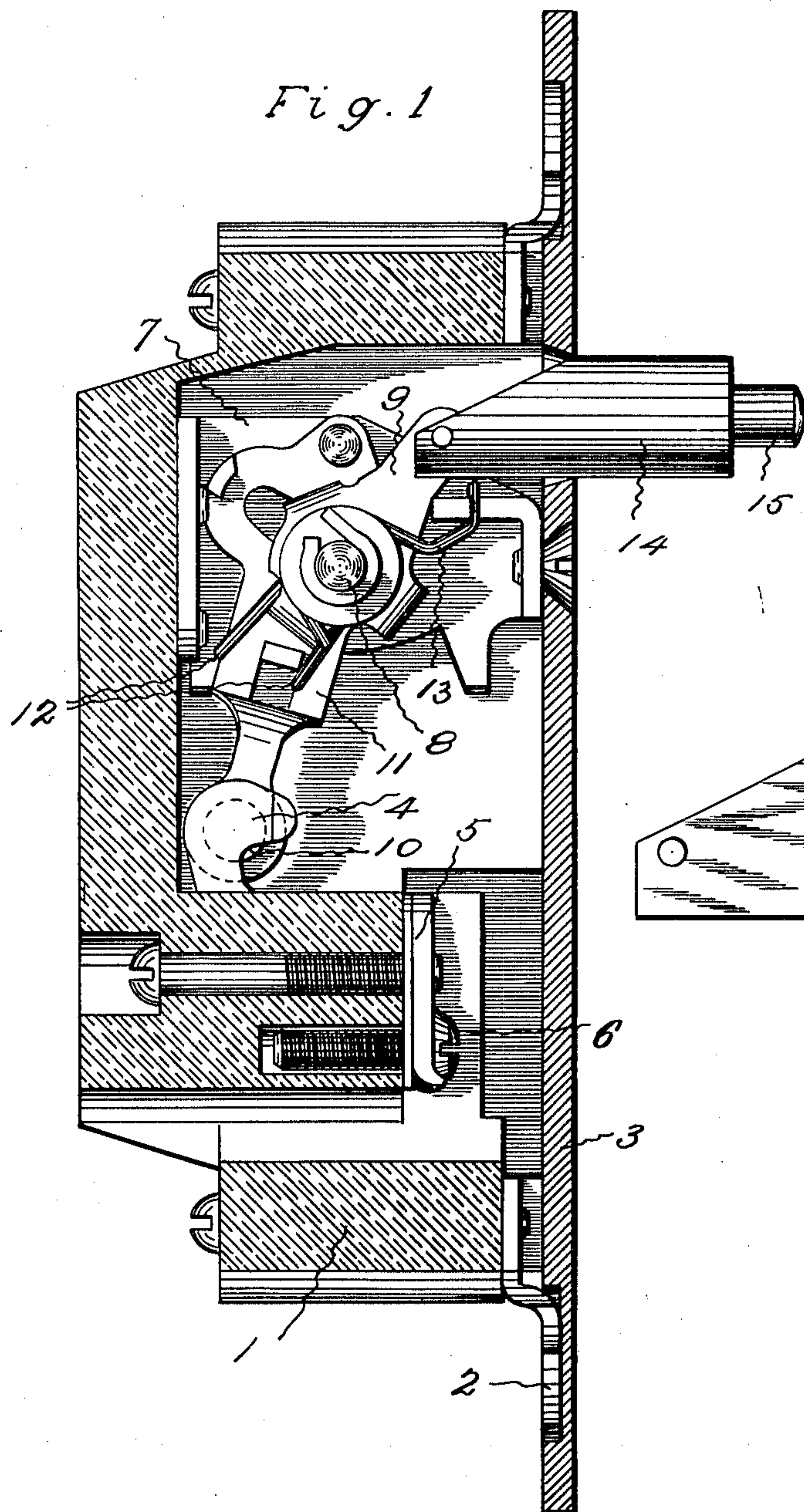


J. G. PETERSON.
DOOR SWITCH.
APPLICATION FILED NOV. 3, 1909.

970,264.

Patented Sept. 13, 1910.



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DOOR-SWITCH.

970,264.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed November 3, 1909. Serial No. 525,981.

To all whom it may concern:

Be it known that I, JOHANN G. PETERSON, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Door-Switches, of which the following is a specification.

Door switches are usually set into casing jambs in such positions that when the doors are closed, the hanging stiles engage and force inwardly the push buttons and cause the mechanisms to be actuated for opening or closing the circuits, as the case may be, the switches being actuated for reversing the circuit conditions, and the push buttons being thrust outwardly, by springs when the doors are opened. In order to actuate the switch mechanisms, the push buttons must be forced inward a certain uniform distance, and the buttons should not project in such manner that they will interfere with the tight shutting of the door, nor put undue strain upon the hinge butts.

Owing to shrinking and swelling of the wood from which doors and door casings are made, and the sagging of doors and the settling of buildings, and to the construction of hinge butts and the irregularity with which they are set, the spaces between the faces of the casing jambs and the edges of the hanging stiles of doors vary considerable. As a result of this variation, the actions of common door switches are very irregular and uncertain; they may operate satisfactorily when first installed, but after a short time, as the spaces between the jambs and stiles become greater, they fail to operate.

The object of this invention is to construct a door switch in such manner that it will always be operated by the closing of the door, regardless of the amount of space between the meeting faces of the door stile and casing jamb. This object is attained by providing such switches with yielding operating buttons, which project sufficiently to insure the operation of the switches under all conditions, and after the switches have been actuated, contract and permit the door to be closed tightly.

Figure 1 of the accompanying drawings shows a side view of a door switch that embodies this invention, with the receptacle cut in section in order to expose the actuating mechanism. Fig. 2 shows a section of the operating push button of such a switch.

The receptacle 1, which is shown, is of common form and material. This receptacle has the usual fastening lugs 2 and face plate 3. In the receptacle are the necessary stationary contacts 4. These are connected with terminals 5, to which the ends of the circuit wires are designed to be connected by binding screws 6.

The actuating mechanism which is illustrated, is of common form and arrangement. This mechanism being well known to those familiar with this art, and as its details form no part of the present improvement, it is not described in detail herein. It is sufficient to point out that the mechanism is mounted upon a frame plate 7 which is fastened to the bottom of the receptacle. Projecting from this support is an arbor 8, turning upon which is a rocker plate 9. The movable contact 10 is mounted on a plate 11 that is pivoted to the support. This movable contact plate is swung back and forth for causing the movable contact to be engaged with and disengaged from the stationary contacts, by means of the ends 12 of the actuating spring which is arranged in the usual manner, and is made tense by the movement of the rocker plate. In this form of switch a spring 13, coiled about the spindle, has one end engaged with the rocker plate and the other end engaged with the support in such manner that the tension of the spring normally holds the rocker plate in such position that the movable contact is engaged with the stationary contacts. When the push button 14 is forced in, the rocker plate to which it is connected, is swung against the tension of the spring 13 so that the spring 12 throws the movable contact out of engagement with the fixed contacts. When the push button is free, the spring 13 forces it out and allows the actuating spring 12 to throw the movable contact into engagement with the stationary contacts.

The push button shown is provided with a socket. A knob or operating part 15 is arranged to move through an opening in the plate 16 that is fastened in the open end of the button. On the inner end of the knob is a washer 17, and arranged between this washer and the inner end of the socket so as to thrust the knob outwardly, is a spring 18. These parts are assembled by first securing the washer to the inner end of the knob and then, after placing the spring in

the socket and the washer against the end of the spring, the plate is located in the end of the socket and secured in position by peening, staking or forcing the metal of the end of the button against the cover plate. The spring 18 which is in the socket of the button is, of course, stiffer than the spring 13 which is arranged to force the button outwardly. A door switch provided with a yielding button of this nature is set into the casing jamb in the usual manner. When the door is shut, the hanging stile engages the knob or yielding member of the button and forces the button inward sufficiently far to cause it to actuate the switch mechanism. Then as the door continues to close, the knob is forced against its spring down into the socket so that the door can shut tightly without straining any of the parts, or putting undue strain on the hinge butts of the door.

The invention claimed is:

1. In a door switch, the combination of an actuating lever, a spring for throwing said lever, a part for operating said lever against said spring, and a spring intermediate said operating part and said lever, said last named spring being stronger than said first named spring, whereby said lever

may be actuated by said operating part, and said operating part may yield to allow the final closing of the door in connection with which said switch is used.

2. The combination with the actuating mechanism of an electric switch, of a spring arranged to normally retain the actuating mechanism in one position, a push button having an inner section connected with the actuating mechanism, an outer section movable with relation to the inner, and a spring thrusting between the two sections of said button.

3. The combination with the actuating mechanism of an electric switch having a spring arranged to normally retain the actuating mechanism in one position, of a telescopic push button, said button comprising a member that is connected with said mechanism, a member telescopically connected with said first mentioned member, and a spring stiffer than the first mentioned spring arranged to normally hold said members extended.

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