

No. 833,734.

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J. DIEHL.
SCREEN DOOR HINGE.
APPLICATION FILED DEC. 12, 1905.

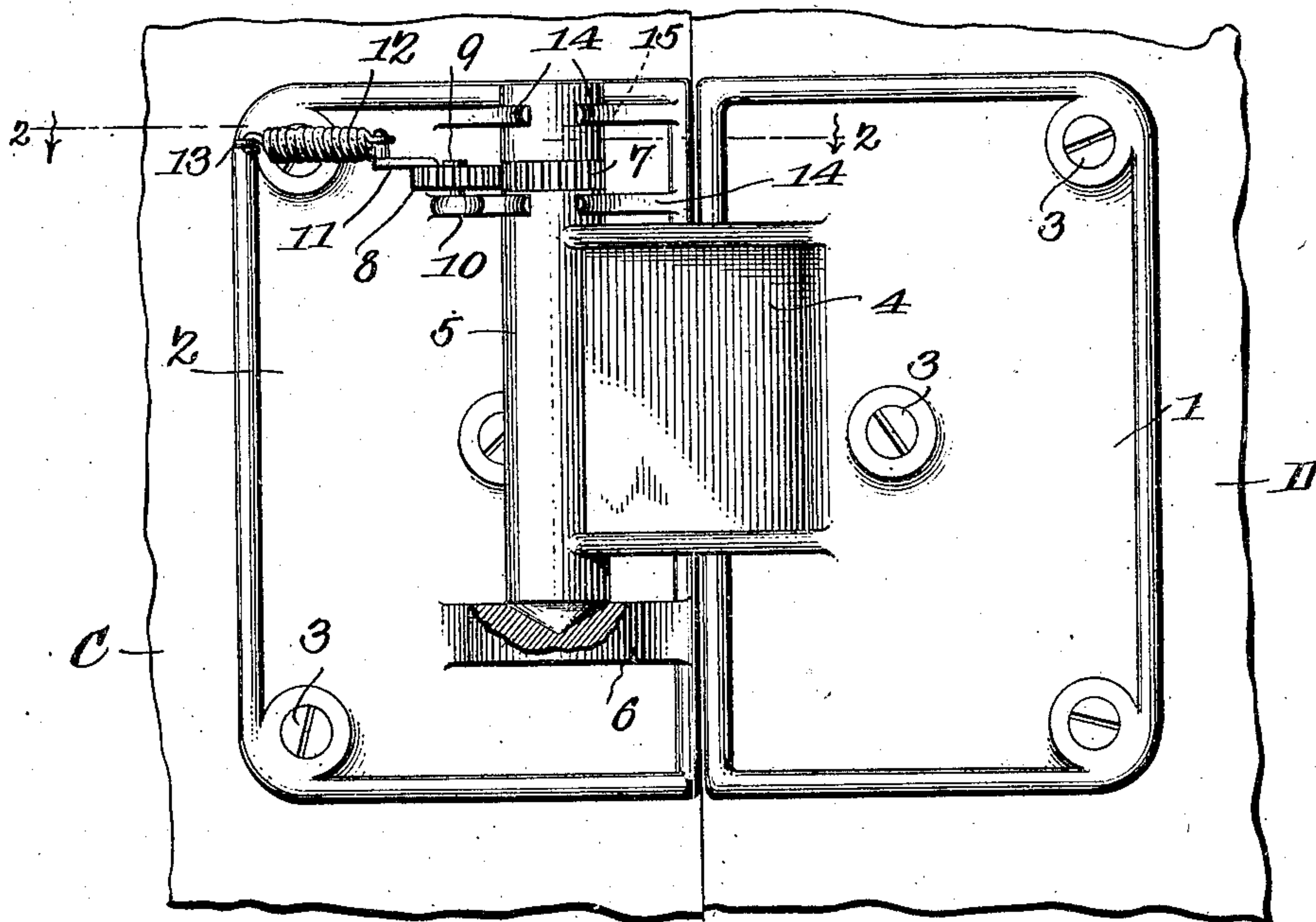


Fig. 1.

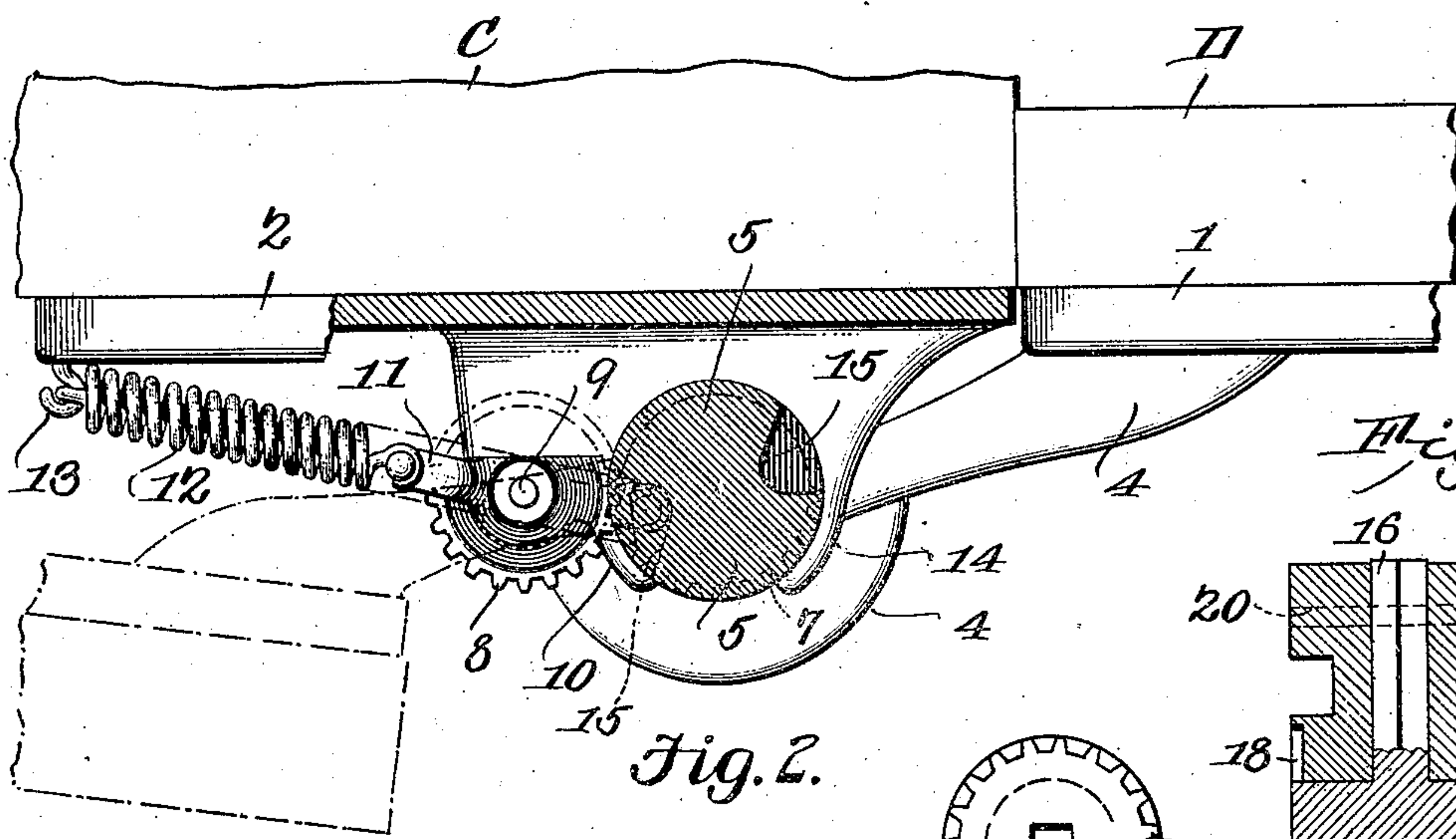


Fig. 2.

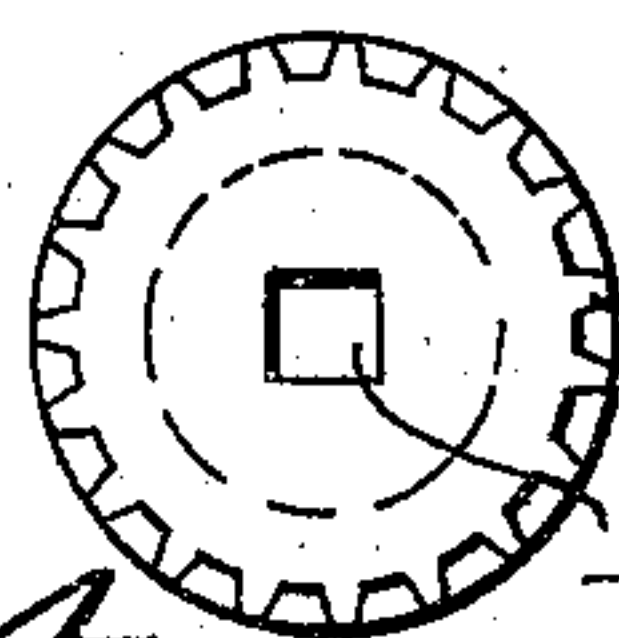


Fig. 4.

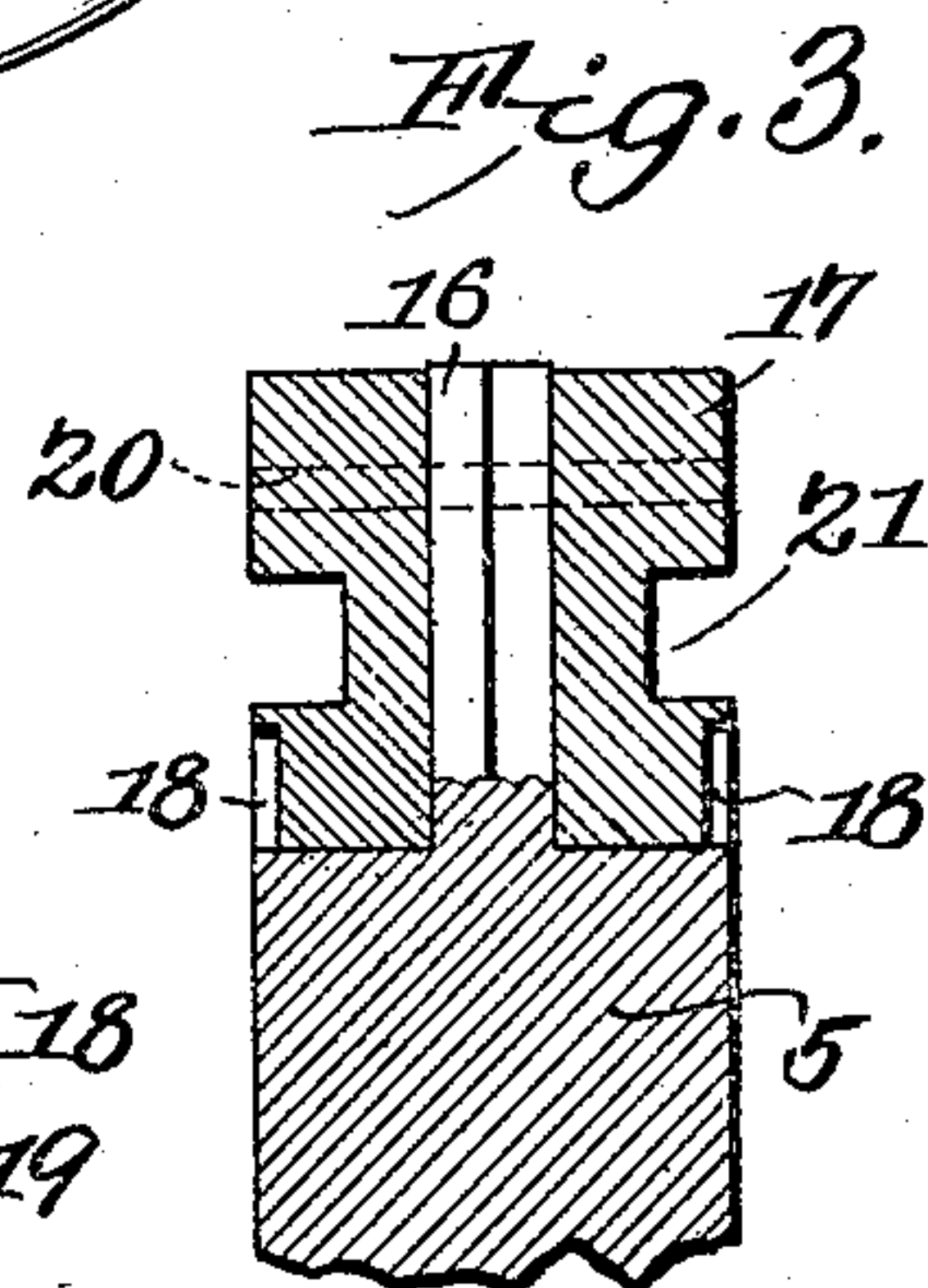


Fig. 3.

WITNESSES:

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SCREEN-DOOR HINGE.

No. 833,734.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed December 12, 1905. Serial No. 291,458.

To all whom it may concern:

Be it known that I, JACOB DIEHL, a citizen of the United States, residing at Sheboygan, in the county of Sheboygan and State of Wisconsin, have invented a new and useful Screen-Door Hinge, of which the following is a specification.

This invention relates to screen-door hinges.

10 The object of the invention is to provide a hinge of this character in which the parts are constructed and combined in such manner that the door will be self-closing up to a certain point and thereafter will remain locked
15 in its open position, whereby the necessity of employing chocks or other means for holding the door open will be obviated.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a spring-hinge for screen-doors, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, Figure 1 is a view in elevation exhibiting a hinge of the present invention applied to position. Fig. 2 is a horizontal sectional view taken on the line 2 2, Fig. 1, and looking in the direction of the arrow thereon. Fig. 3 is a sectional detail view of a slightly-modified form of the invention. Fig. 4 is a detail view in plan of the improvements
35 shown in Fig. 3.

Referring to the drawings, D designates a portion of the door, and C a portion of the door-casing, and as these parts may be of the usual or any preferred construction detailed illustration thereof is deemed unnecessary.

The hinge comprises, as usual, two leaves 1 and 2, the former being secured to the door and the latter to the door-casing. As usual, the leaves are provided with orifices to receive screws 3, by which they are positively secured in place. The leaf 1 is provided with an arm 4, that extends obliquely to its face and carries a pintle 5, the lower end of which is pointed or tapered to engage a similarly-shaped seat formed in a boss 6, carried by the leaf 2. The arm 4 is of less width than the length of the pintle. The upper portion of the pintle is provided with flush teeth 7, that are engaged by a gear 8, supported upon a stud 9, mounted in a bracket 10, the said gear
55 having secured to it in any suitable manner a

crank 11, with which connects one end of a coiled spring 12, the other end of which engages with a hook 13, carried by the leaf 2. In addition to the bracket 10 the leaf 2 carries three other similarly-shaped brackets 14, which, as clearly shown in Fig. 2, partially surround the pintle, and thus hold it in operative position relatively to the gear-wheel 8. In order to permit the crank to pass its center, thus to hold the door in open position, the pintle is provided with a recess 15, in which the outer end of the crank enters when the door is moved open to its limit, as shown by dotted lines in Fig. 2.

It will be seen from the foregoing description that when the door is being opened the gear-wheel 8 is rotated by means of the teeth 7, thereby placing the spring 12 under tension, and this energy will remain stored to close the door when released; but when the door is thrown to the position shown by dotted lines in Fig. 2 it will remain open until manually moved to throw the crank off of its dead-center, whereupon the spring will exert its function and cause the door to close.

Instead of having the teeth 7 integral with the pintle, as shown in Figs. 1 and 2, the upper end of the pintle may be provided with a polygonal spindle 16, which is engaged by a collar 17, having flush teeth 18, the orifice 19 in the collar that engages the spindle being of the same contour. The collar is held detachably combined with the spindle by a pin 20, which may be removed by a punch or other appropriate implement when desired to remove the collar, which will be done should any of the teeth 16 be stripped or become worn out, thereby practically renewing the collar. In order to allow the crank to pass the dead-center, the collar is provided with a circumferential groove 21 for the purpose. As will be seen by reference to Fig. 3, the collar is of the same transverse diameter as the pintle, and therefore forms an appropriate bearing to engage with the brackets 14.

I claim—

1. A spring-hinge comprising two members, one of which includes a pintle carrying teeth, and the other a gear-wheel meshing with the teeth, a crank carried by the gear-wheel, and a spring operatively connected with the crank.

2. A spring-hinge comprising two members one of which carries an arm having a pintle associated therewith and provided with a pointed terminal, the other member having

a boss provided with a socket to receive the terminal of the pintle, and with brackets to hold the pintle in position, teeth carried by the pintle, a gear-wheel mounted on one of the brackets and engaging the teeth, a crank 5 carried by the gear-wheel, and a spring having one terminal connected with the crank and the other with one of said members.

3. A spring-hinge comprising two leaves, 10 one of which carries a pintle provided with teeth, with a lateral recess and with a pointed terminal, and the other leaf of which carries a boss provided with a socket to be engaged by said terminal and with brackets partially

encircling the pintle to hold it in rotary en- 15 gagement with said leaf, a gear-wheel carried by one of the brackets, a crank mounted on the gear-wheel and adapted to enter the recess of the pintle when the door is thrown wide open, and a spring connected with the 20 crank and with the second-named leaf.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JACOB DIEHL.

Witnesses:

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W. OBIGT.