

No. 747,776.

PATENTED DEC. 22, 1903.

C. ROSENHEIM.

FASTENING FOR CASEMENT WINDOWS, FANLIGHTS, OR THE LIKE.

APPLICATION FILED FEB. 10, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.

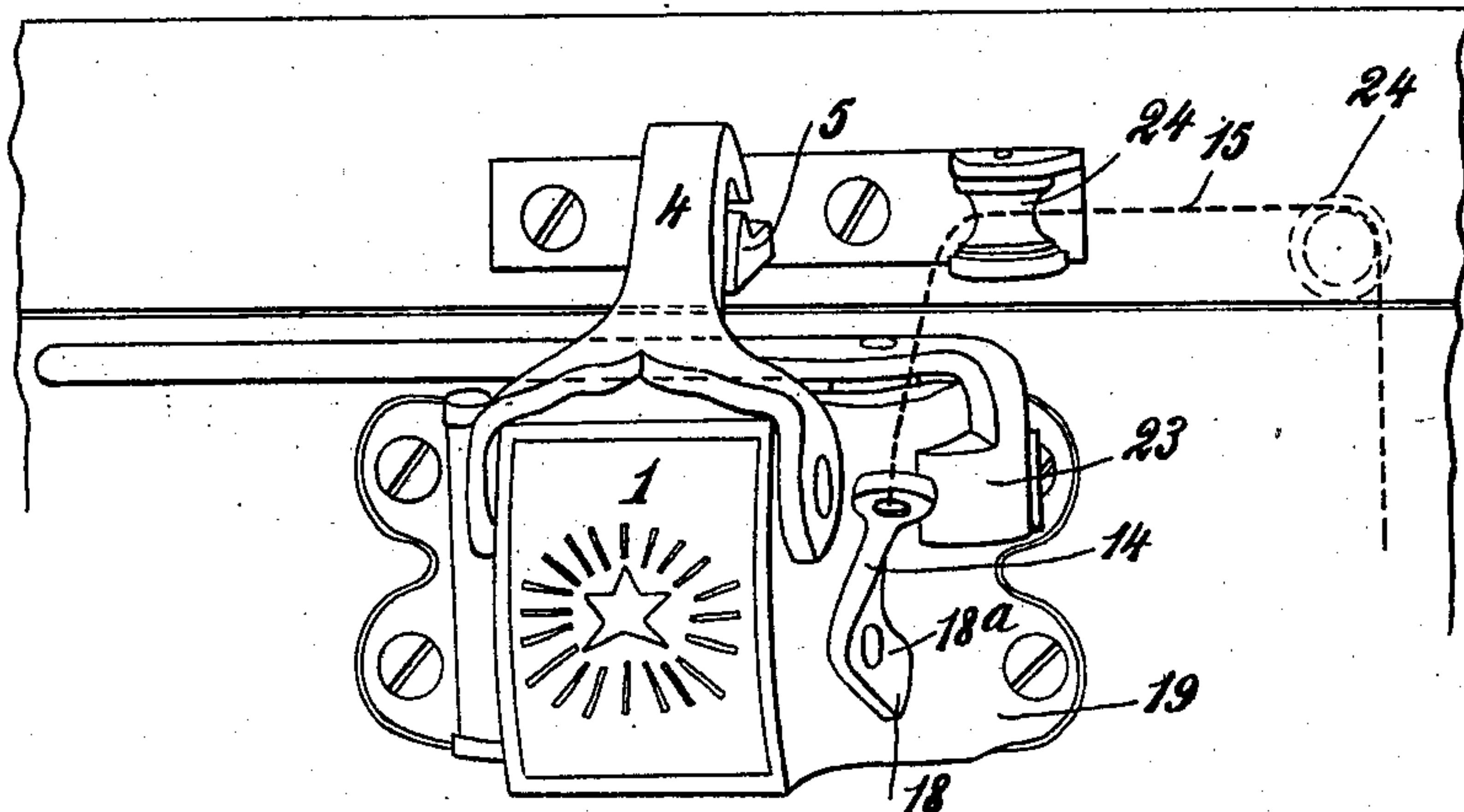


Fig. 2.

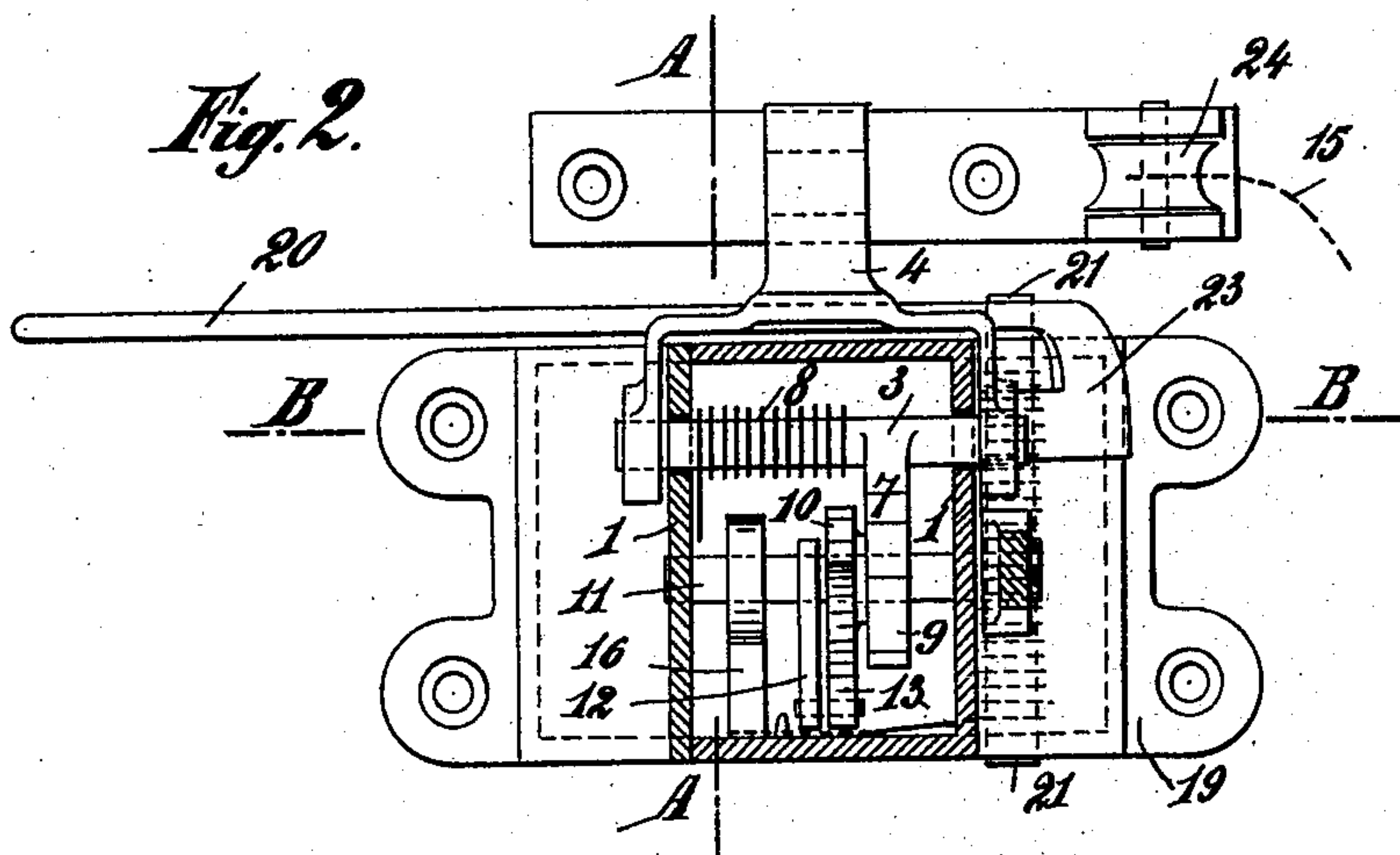
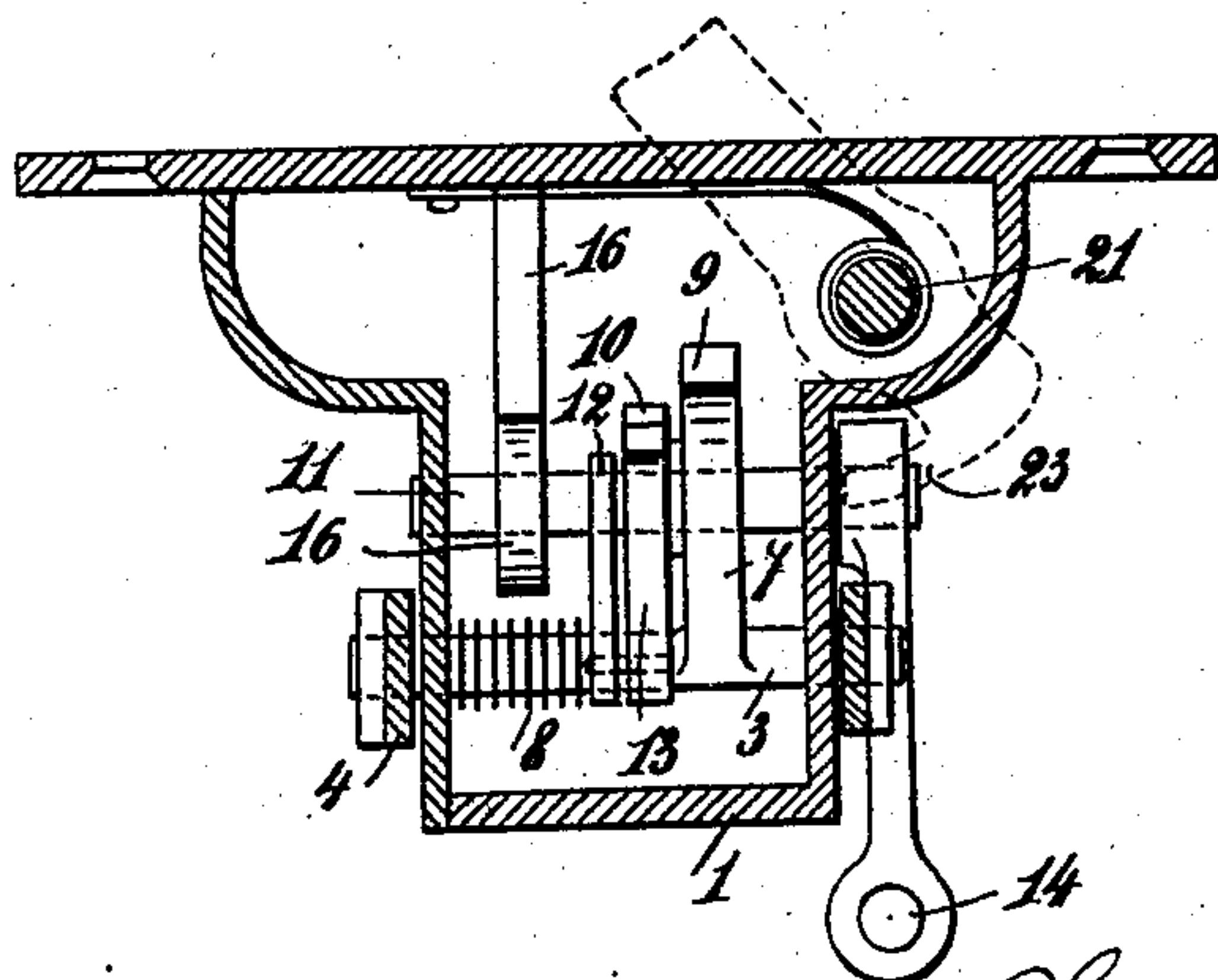


Fig. 4.



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3 SHEETS—SHEET 2.

Fig. 3.

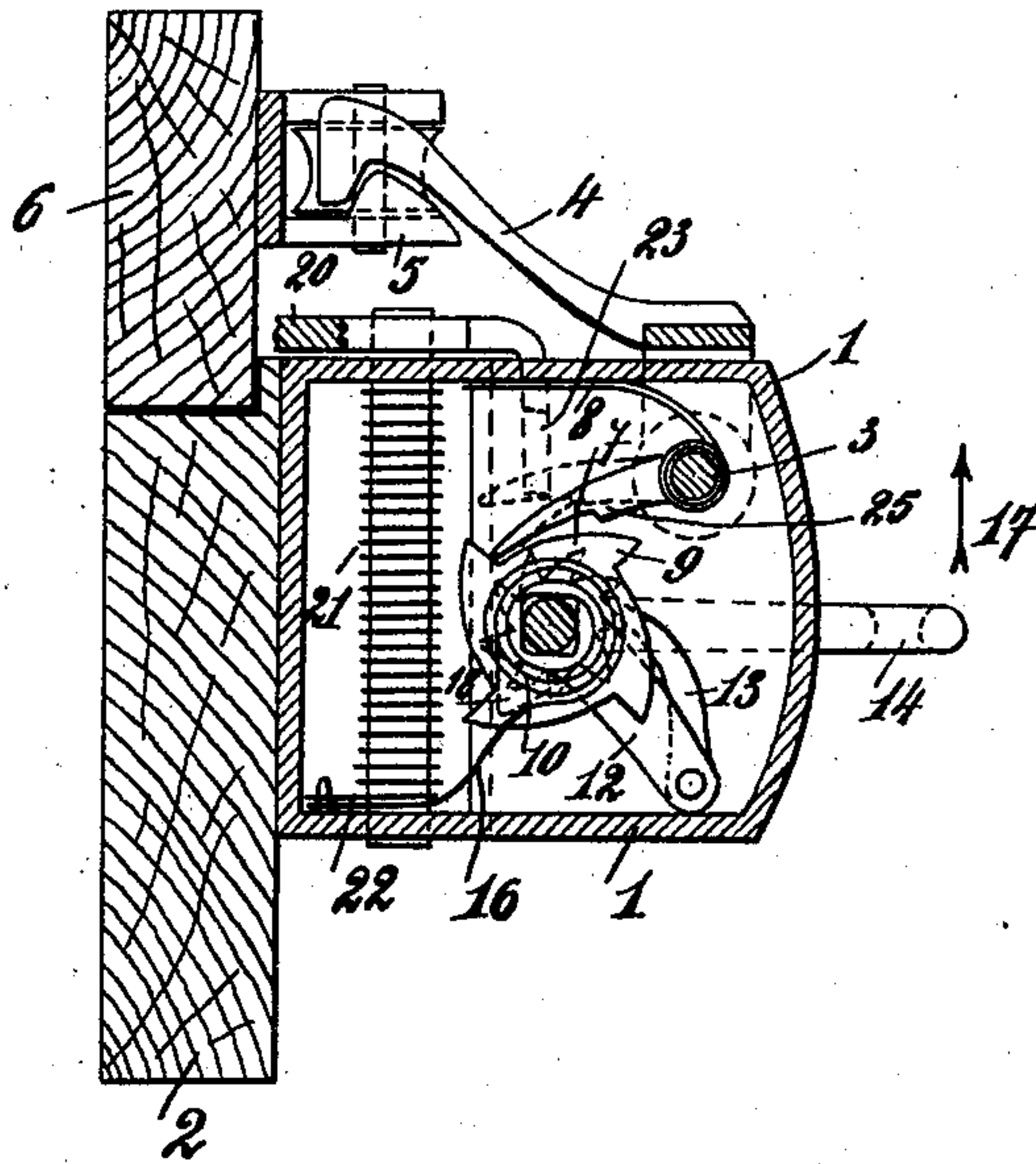
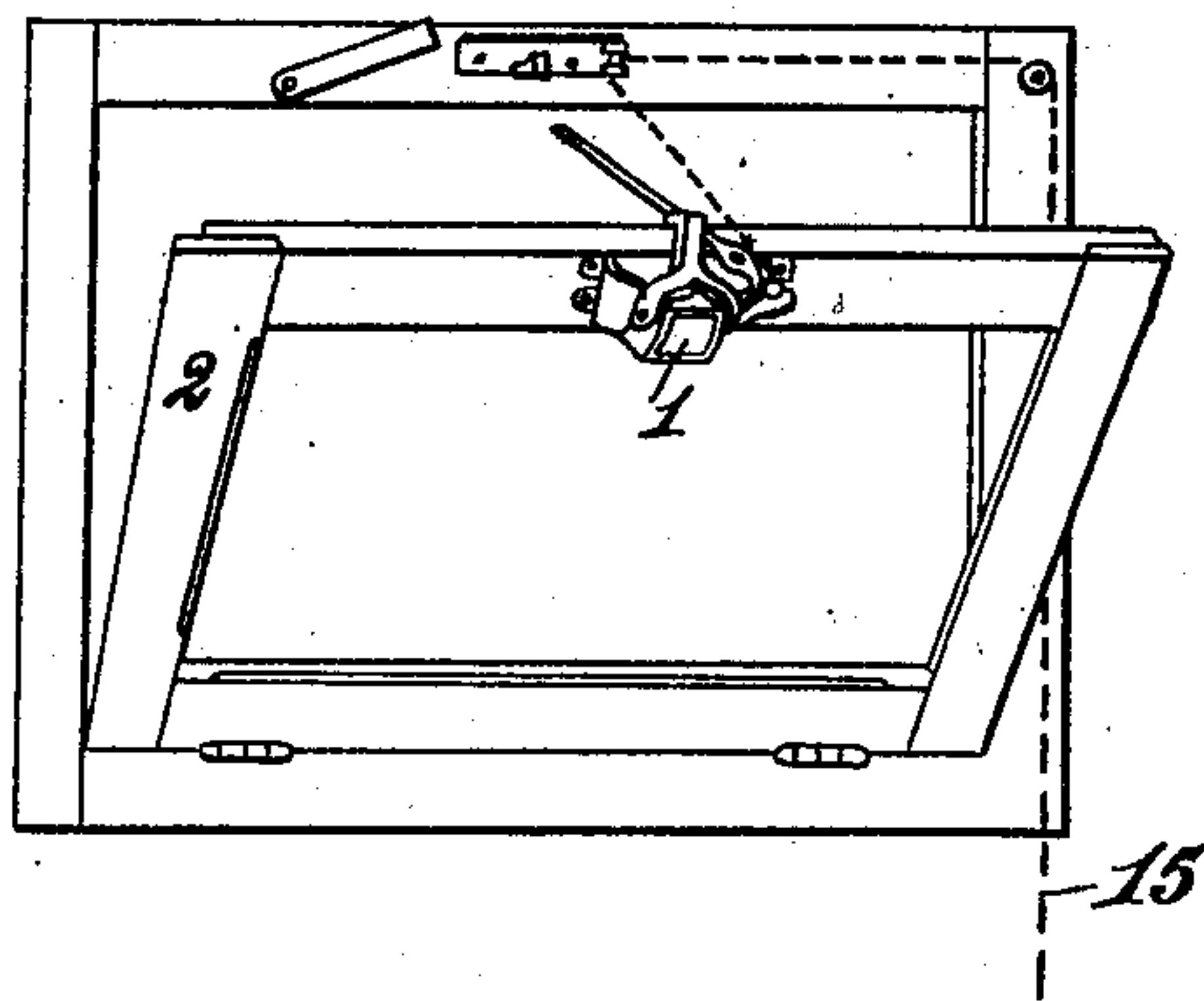


Fig. 5.



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3 SHEETS—SHEET 3.

Fig. 6.

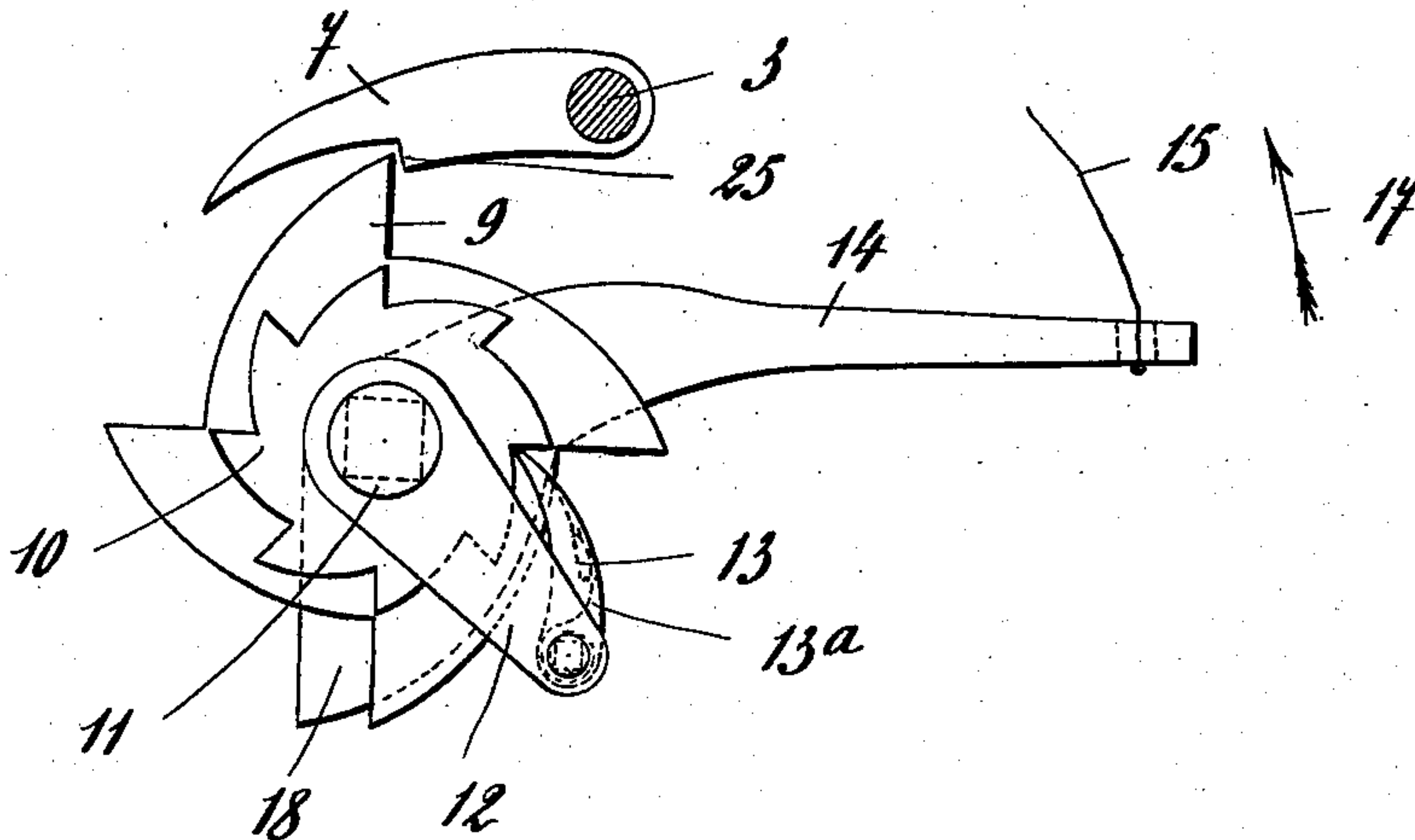
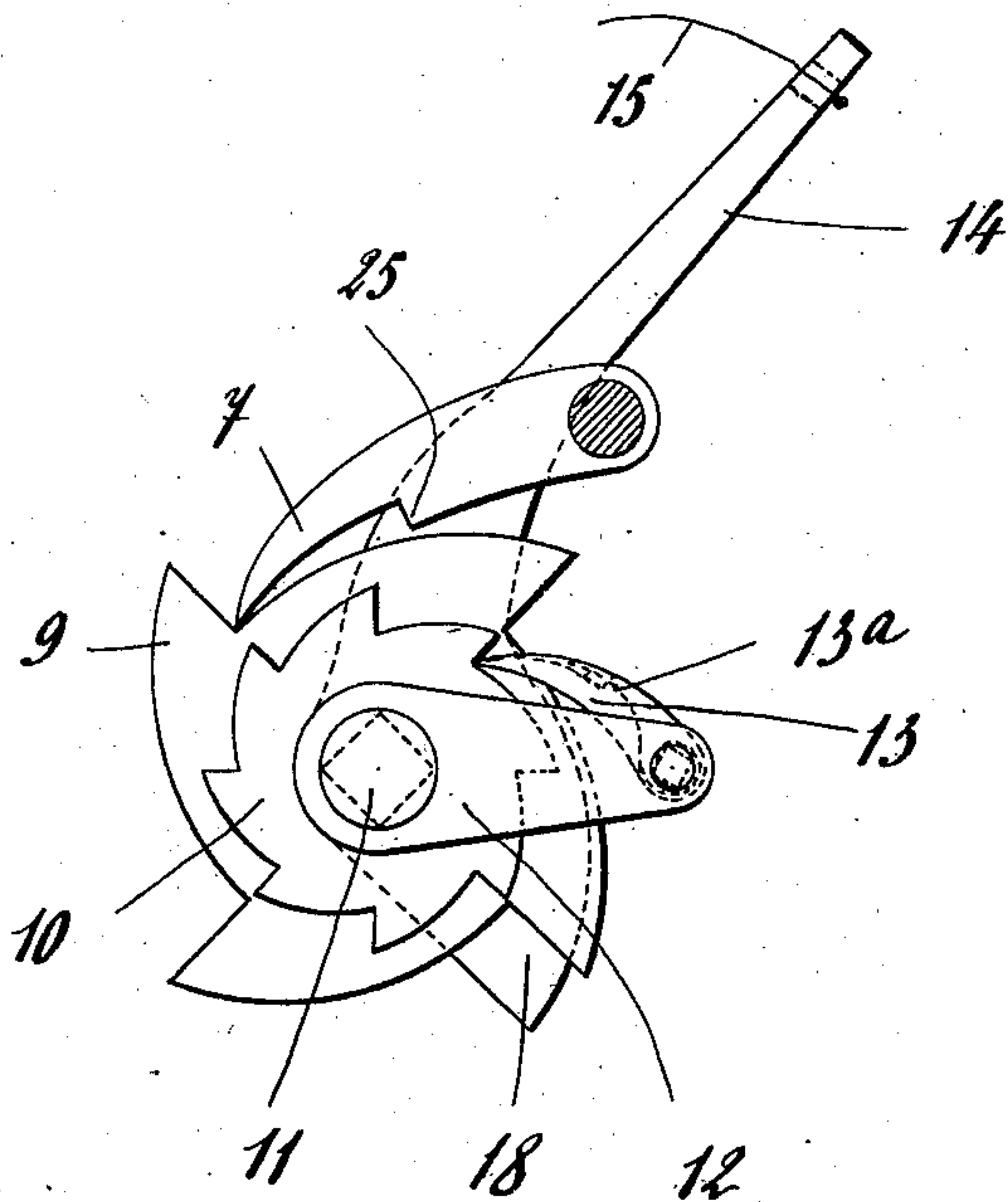


Fig. 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES ROSENHEIM, OF BRUSSELS, BELGIUM.

FASTENING FOR CASEMENT-WINDOWS, FAN-LIGHTS, OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 747,776, dated December 22, 1903.

Application filed February 10, 1903. Serial No. 142,792. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ROSENHEIM, manufacturer, a subject of the Emperor of Germany, residing at Brussels, in the Kingdom of Belgium, have invented certain new and useful Improvements in Fastenings for Casement-Windows, Fan-Lights, or the Like, of which the following is a specification.

This invention relates to an improved fastening apparatus for casement-windows, fan-lights, and the like, the object of which is to permit such windows or the like to be closed and firmly secured in position within their frames and released therefrom and opened by two successive pulls on a cord, chain, wire, or the like easily accessible for convenient manipulation.

This apparatus essentially comprises a double ratchet-wheel, one of which may be called the "driving" ratchet-wheel and the second the "cam-like" ratchet-wheel, the driving ratchet-wheel being provided with a number of teeth double of the number of teeth of the cam-like ratchet-wheel. The driving ratchet-wheel is rotated the value of one tooth at each pull on the cord, chain, or the like, while simultaneously the teeth of the cam-like ratchet-wheel cause a lever to be oscillated or alternately raised or lowered, the said lever being combined with a suitably-shaped hook adapted to engage with a similar-shaped hook connected to the window or like framework.

Referring to the annexed drawings, Figure 1 is a front view of the apparatus in its position at the moment of the opening or closing of the window or fan-light. Fig. 2 is a front view, partially in section, showing the interior of the apparatus. Fig. 3 is a section taken on line A A of Fig. 2. Fig. 4 is a horizontal section taken on line B B of Fig. 2. Fig. 5 is a diagrammatic view showing a fan-light in its opened position. Figs. 6 and 7 are illustrations showing the operation of a portion of the device.

In the casing 1, fixed to the window or fan-light movable portion 2, is mounted an axle or spindle 3, the ends whereof project beyond the sides of the casing 1 and receive the forked ends of a suitably-shaped hook 4, adapted to engage with a hook 5, connected to the window-framework 6 when the window is to be maintained in its closed position.

On the axle 3 is mounted in the casing 1 a pawl 7, pressed by means of a spring 8 on a cam-like ratchet-wheel 9. The said ratchet-wheel is combined with a second ratchet-wheel 10, hereinafter called the "driving" ratchet-wheel, provided with a number of teeth double to that of the ratchet-wheel 9. These two ratchet-wheels are loosely mounted on an axle 11, passing through the casing 1 and provided inside the said casing with an arm 12, to which is pivoted a pawl 13, adapted to engage with the teeth of the ratchet-wheel 10. The said axle 11 is further provided outside the casing 1 with a lever 14, to which is attached the cord or chain 15, actuating the window or fan-light. The axle 11 is subjected to the action of a spring 16, reengaging automatically the pawl 13 with one tooth of the ratchet-wheel 10 when the lever has been raised in the direction of the arrow 17, Fig. 3. The displacements of lever 14 in the direction of the arrow 17 and in the opposite direction are limited by two shoulders 18 and 18^a, provided on said lever and adapted to bear against the plate 19 of the apparatus, the shoulder 18^a acting when the lever 14 is displaced in the direction of the arrow 17 under the action of a pull on the cord 15 and the shoulder 18 when said lever is returned in the opposite direction under the action of the spring 16.

The apparatus may be combined with a sash-lever 20, mounted on a pivot 21, subjected to the action of a spring 22. The displacement of the said sash-lever is limited at the moment of the opening of the window by aid of a shoulder 23, bearing against the lateral wall of the casing 1. This shoulder 23, when the window is in its opened position, is brought in the path of the manipulating-lever 14, thus preventing the rotation of said lever, and consequently as long as the window remains in its opened position preventing the weight of the window to unduly strain the spring 16, acting on the lever 14.

The actuating-cord 15 is attached at the end of the lever 14 and is conducted on suitable rollers 24, so as to be accessible for convenient manipulation.

The apparatus acts as follows: The window or fan-light being in its closed position, the hook 4 is in engagement with the hook 5, as shown in Fig. 3. The pawl 7 then rests in

the space between two consecutive teeth of the ratchet-wheel 9. At the moment when a first pull is exerted on the cord 15 the lever 14 is rotated in the direction of the arrow 17, and consequently also the axle 11, which, putting the spring 16 under tension, causes the driving ratchet-wheel 10 to advance or rotate the value of one tooth by means of the pawl 13. The cam-like ratchet-wheel 9, forming only one piece with the ratchet-wheel 10, is also rotated and acts by one of its teeth on the pawl 7, which is raised (as shown in dotted lines, Fig. 3) and held by a notch 25 on the end of the tooth of the ratchet-wheel 9. The pawl 7 is consequently held in its raised position. The raising of the pawl 7 has caused the axle 3 to be partially rotated, and the hook 4 has consequently been disengaged from the hook 5. The casement-window or the like is consequently free to move and falls into its opened position, this movement being facilitated by the action of the sash-lever 20 on the framework 6. As soon as the pull on the cord 15 is released the lever 14 is returned by the spring 16 in its original position, in which the shoulder 18 rests against the plate 19. Simultaneously the pawl 13 is engaged by the next tooth of the ratchet-wheel 10. At the moment when a second pull is exerted on the cord 15 the window is first returned to its closed position. Then the lever 14 is again rotated, causing a new partial rotation of the ratchet-wheel 10. At the moment when a second pull is exerted on the cord 15 the window is first returned to its closed position. Then the lever 14 is again rotated, causing a new partial rotation of the ratchet-wheel 10. Consequently on account of the relation existing between the teeth of the driving ratchet-wheel 9 and of the cam-like ratchet-wheel 10 the pawl 7 falls again into the space comprised between two consecutive teeth of the ratchet-wheel 9, and as a result the hook 4 is again brought in engagement with the hook 5, thus holding firmly the casement-window or the like in its closed position. The same operation (opening or closing) will take place alternately at each pull on the cord 15.

It is obviously not necessary to combine the sash-lever directly with the apparatus, the use of said lever in itself being well known and its location being possible at any suitable place. Its location, as shown on the drawings, with its axle or pivot 21 situated on one side of the middle line of the apparatus and the end of the arm 20 on the other side of said middle line, has the special advantage of balancing the strains on the movable framework, and of thus avoiding any deformation of said framework.

Having thus described my invention, what I claim is—

1. An improved fastening apparatus of the kind described comprising a cam-like ratchet-wheel, a driving ratchet-wheel having a number of teeth double of that of the cam-like

ratchet-wheel a hook acted upon by the cam-like ratchet-wheel and means for rotating partially the driving ratchet-wheel, the partial rotation of the driving ratchet-wheel causing the hook to be alternately raised and lowered by the cam-like ratchet-wheel substantially as described.

2. An improved fastening apparatus of the kind described comprising a cam-like ratchet-wheel, a driving ratchet-wheel having a number of teeth double of that of the cam-like ratchet-wheel and rigidly connected to said cam-like ratchet-wheel, a spring-actuated pawl engaging with the teeth of the cam-like ratchet-wheel, a hook connected to said pawl and adapted to engage with a similar hook and means for rotating partially the driving ratchet-wheel so as to cause the pawl and the hook connected thereto to be raised at a first partial rotation of the driving ratchet-wheel and lowered at a second partial rotation of said driving ratchet-wheel, substantially as described.

3. An improved fastening apparatus of the kind described comprising a suitable casing, an axle 11 extending outside the casing, an actuating-lever 14 mounted on said axle, a double ratchet-wheel loosely mounted on said axle and comprising a driving ratchet-wheel 10 and a cam-like ratchet-wheel 9 the driving ratchet-wheel having a number of teeth double of that of the cam-like ratchet-wheel, an arm 12 mounted on said axle 11, a pawl 13 carried by said arm and engaged with the teeth of the driving ratchet-wheel, a second pawl 7 acted upon by the cam-like ratchet-wheel, an axle 3 carrying said pawl, said axle extending outside the casing and a hook 4 mounted on said axle substantially as described.

4. An improved fastening apparatus of the kind described comprising a casing 1 an axle 11 extending outside the casing, an actuating-lever 14 mounted on said axle, the said lever being provided with two shoulders 18, 18^a limiting its displacements, a double ratchet-wheel loosely mounted on said axle and comprising a driving ratchet-wheel 10 and a cam-like ratchet-wheel 9, the driving ratchet-wheel having a number of teeth double of that of the cam-like ratchet-wheel, an arm 12 mounted on the ratchet-wheel-carrying axle 11, a pawl 13 carried by said arm and engaged with the teeth of the driving ratchet-wheel, a second pawl 7 acted upon by the cam-like ratchet-wheel, an axle 3 carrying said pawl, a hook 4 mounted on said pawl-carrying axle, a sash-lever 20 provided with a shoulder 23 and a spring 22 actuating said sash-lever substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CHARLES ROSENHEIM.

Witnesses:

GEORG BEDE,

GREGORY PHELAN.