

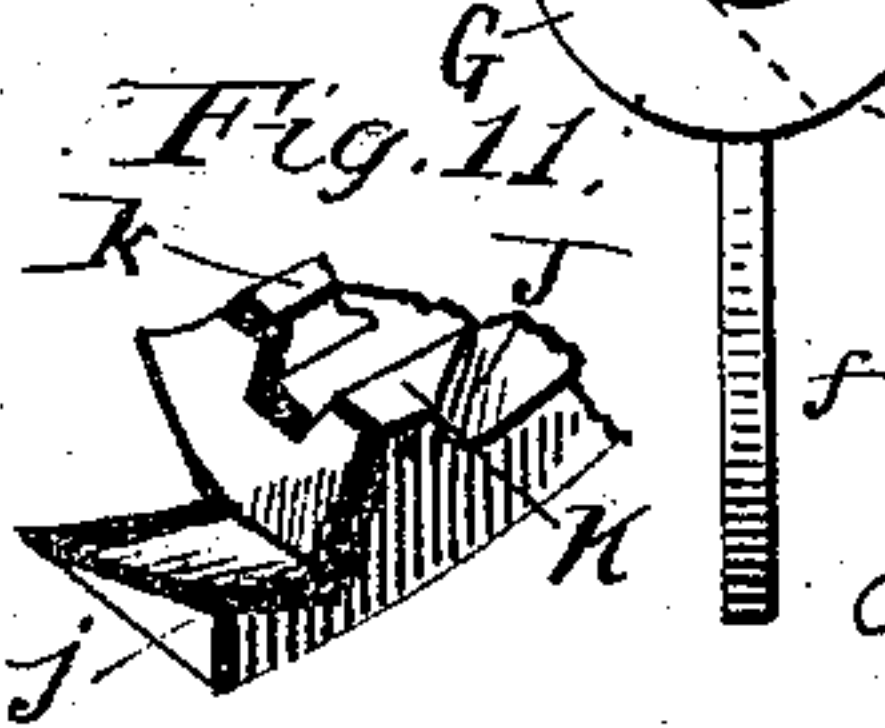
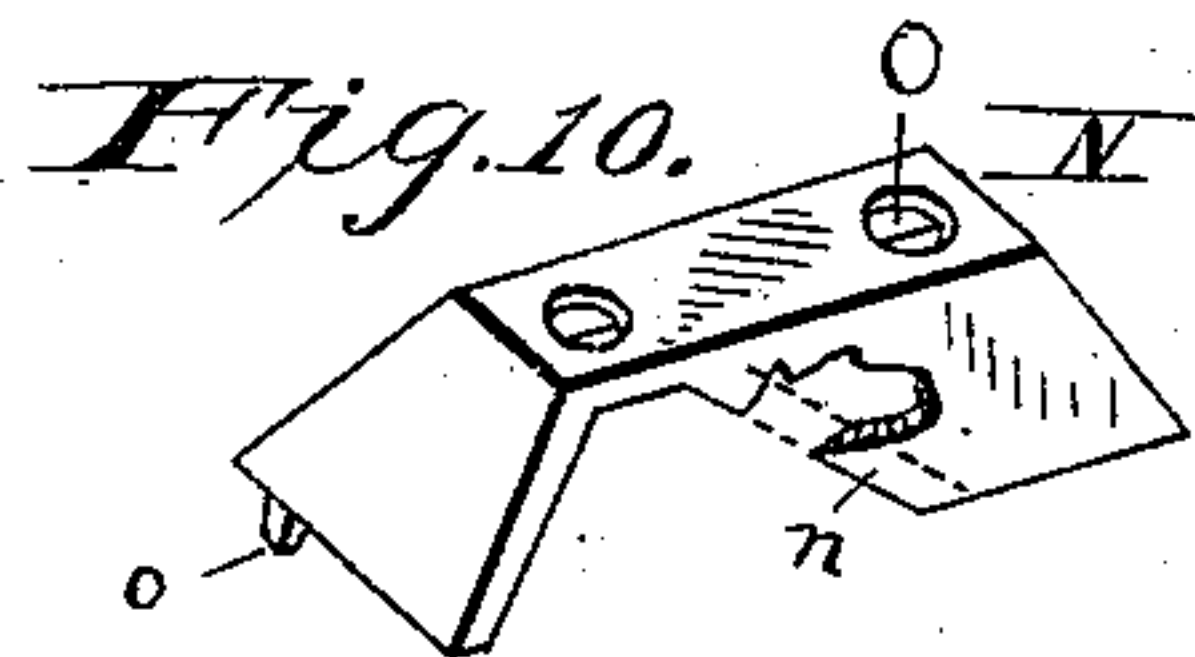
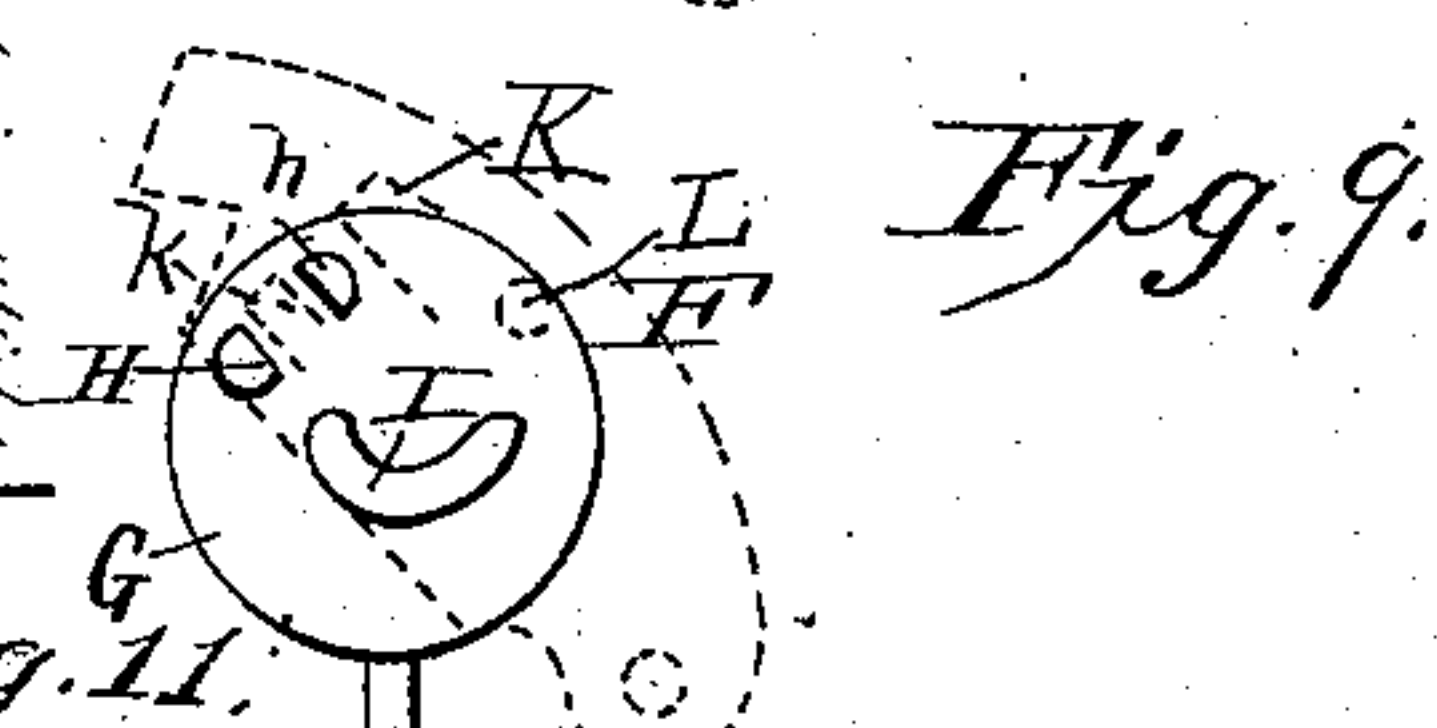
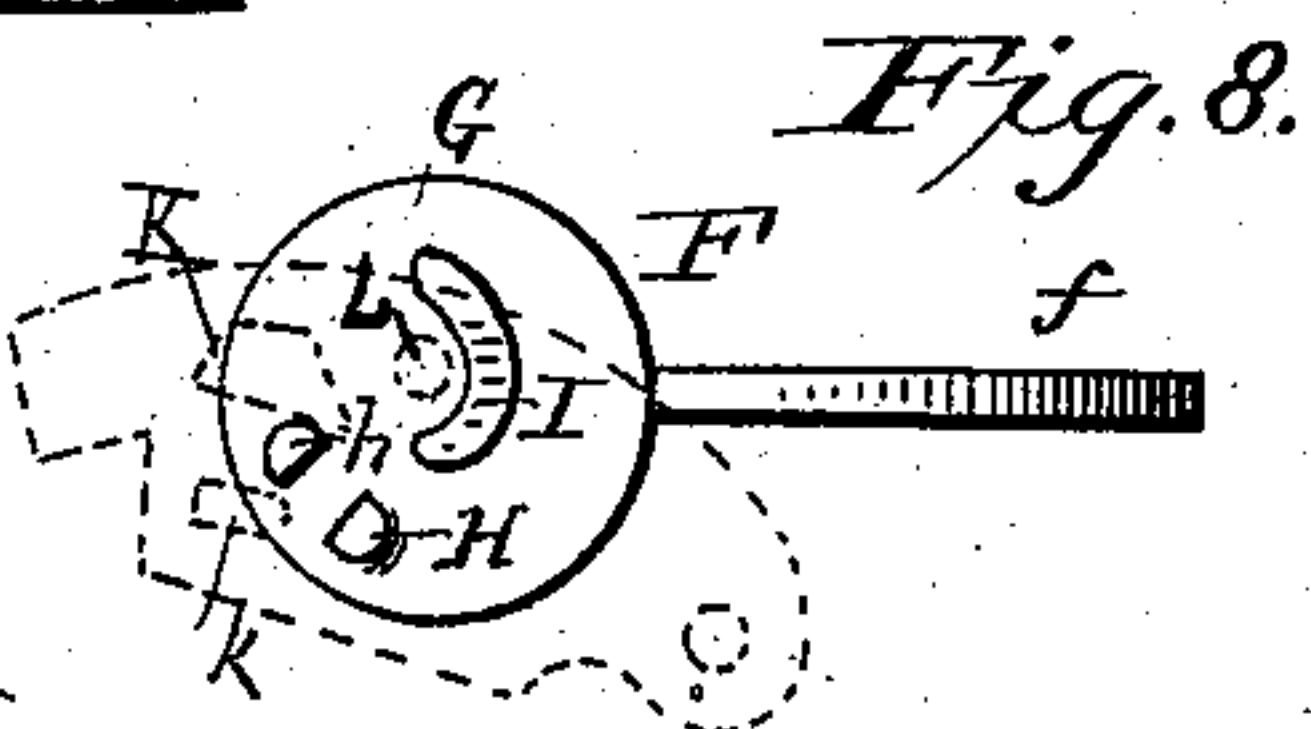
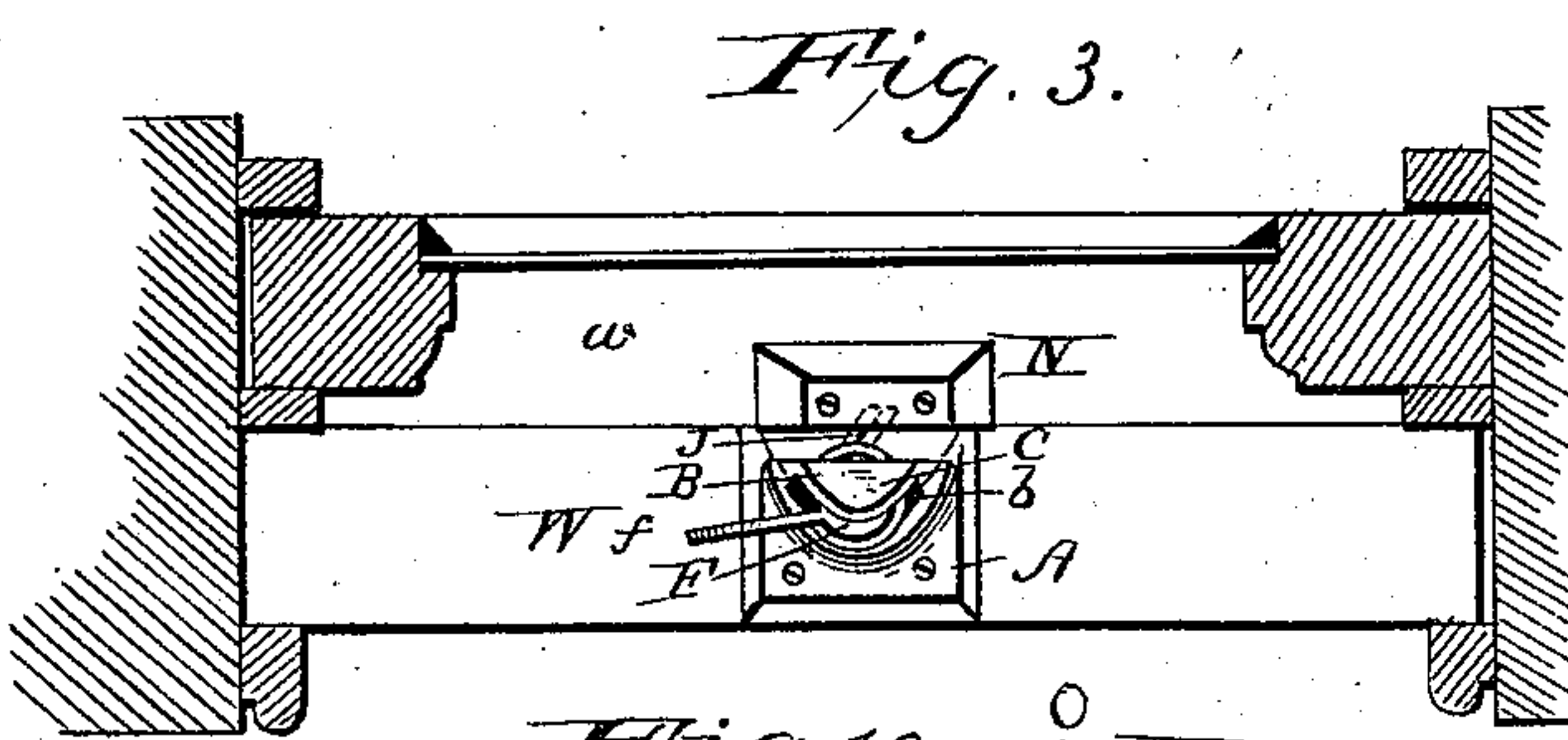
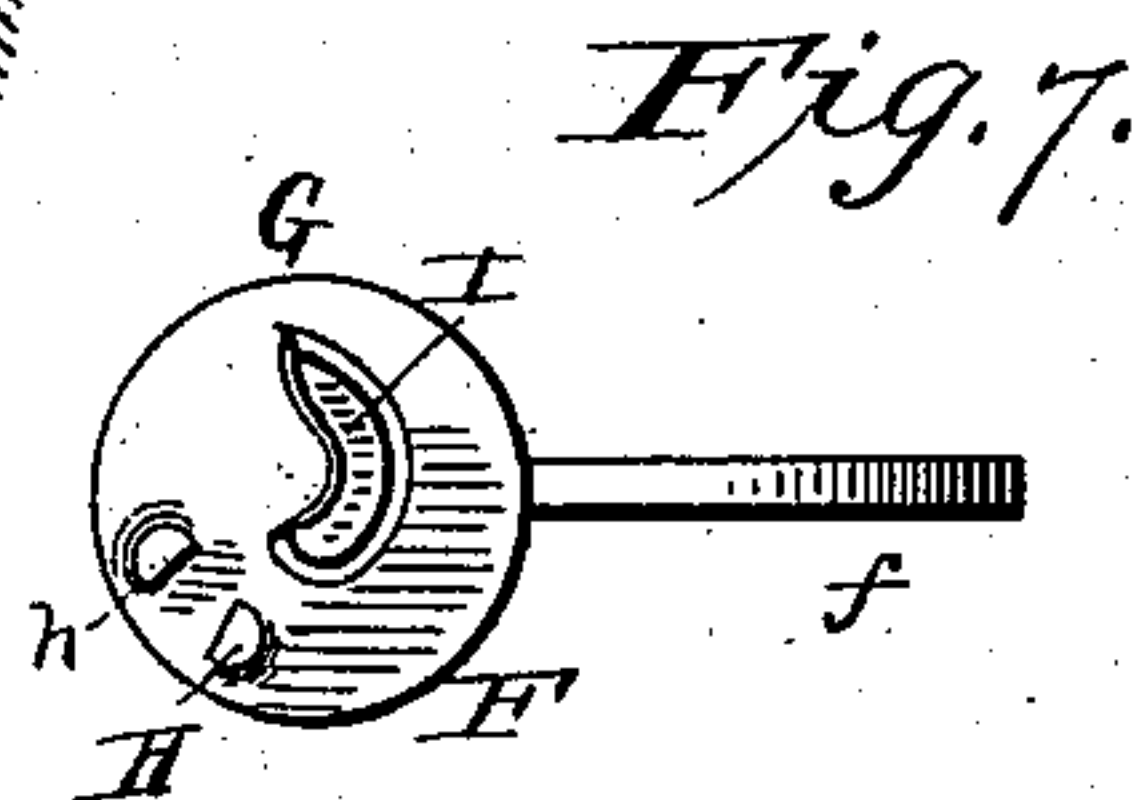
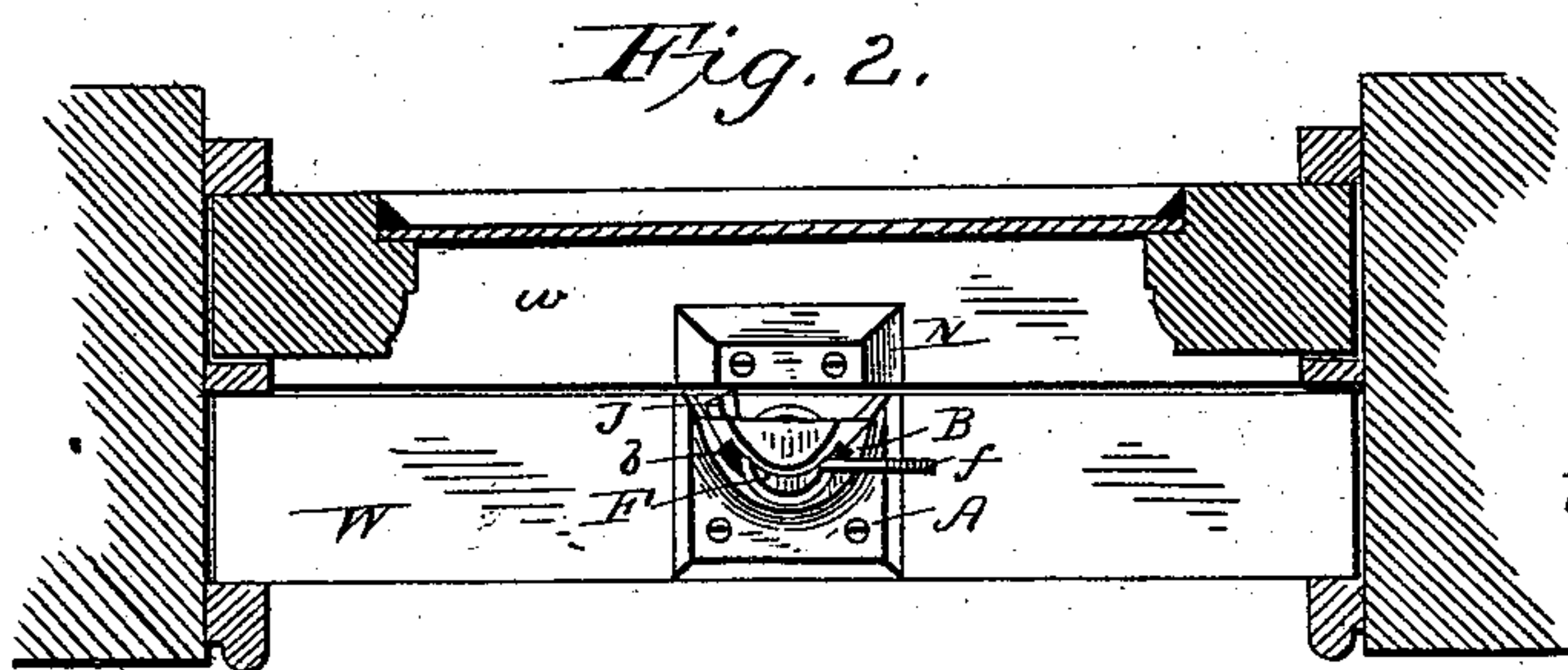
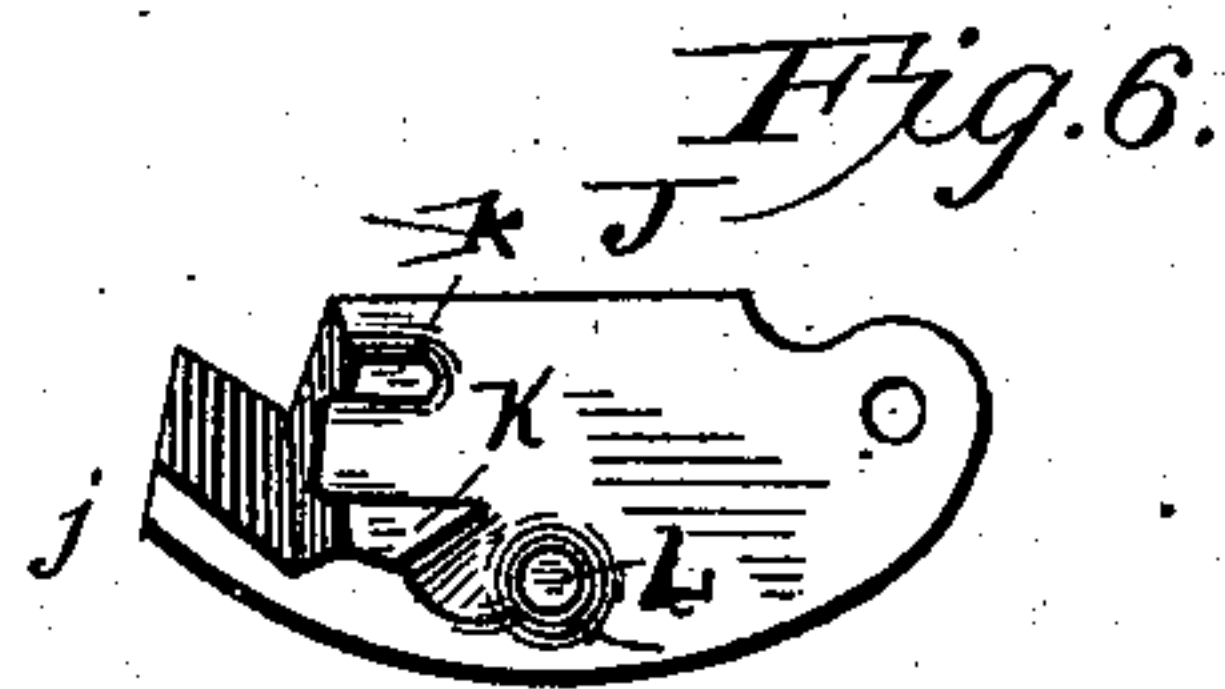
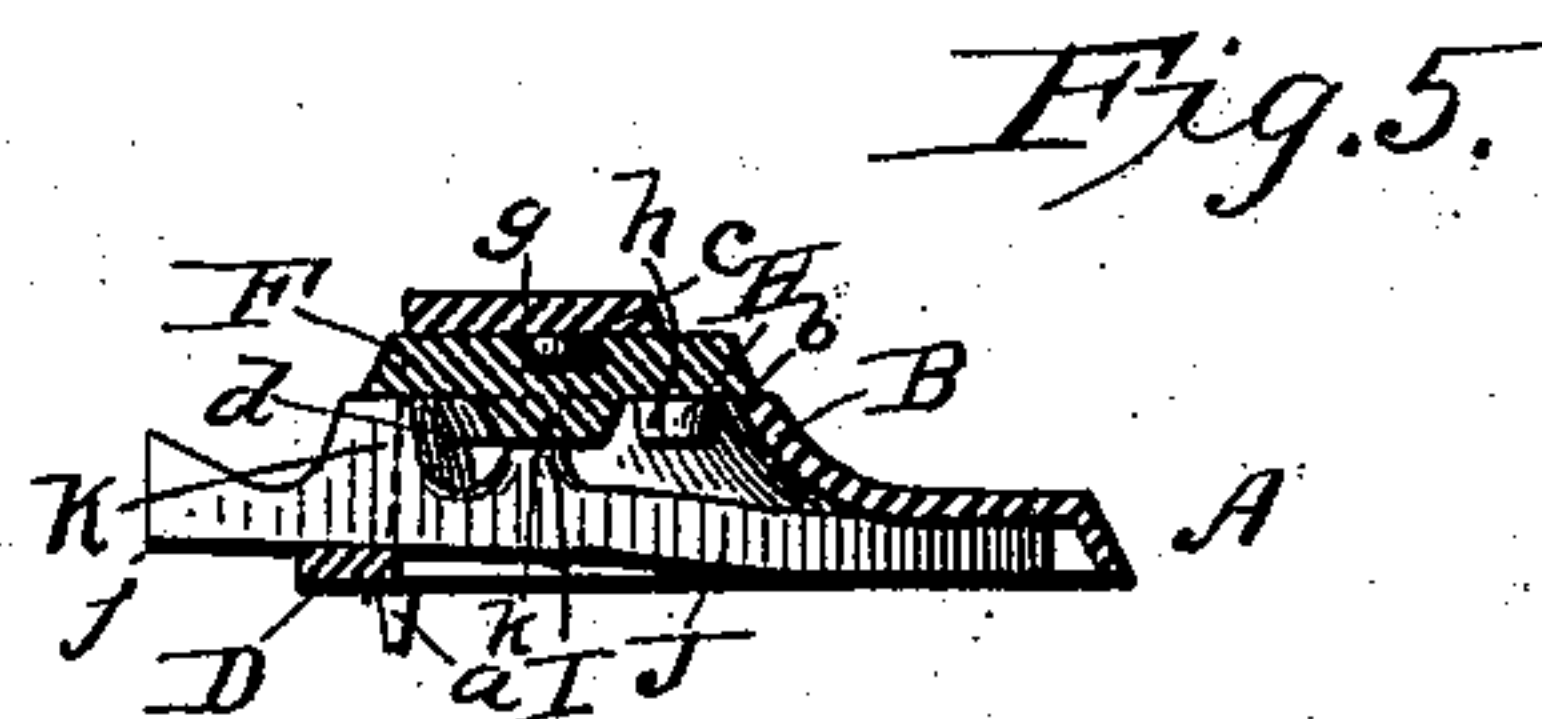
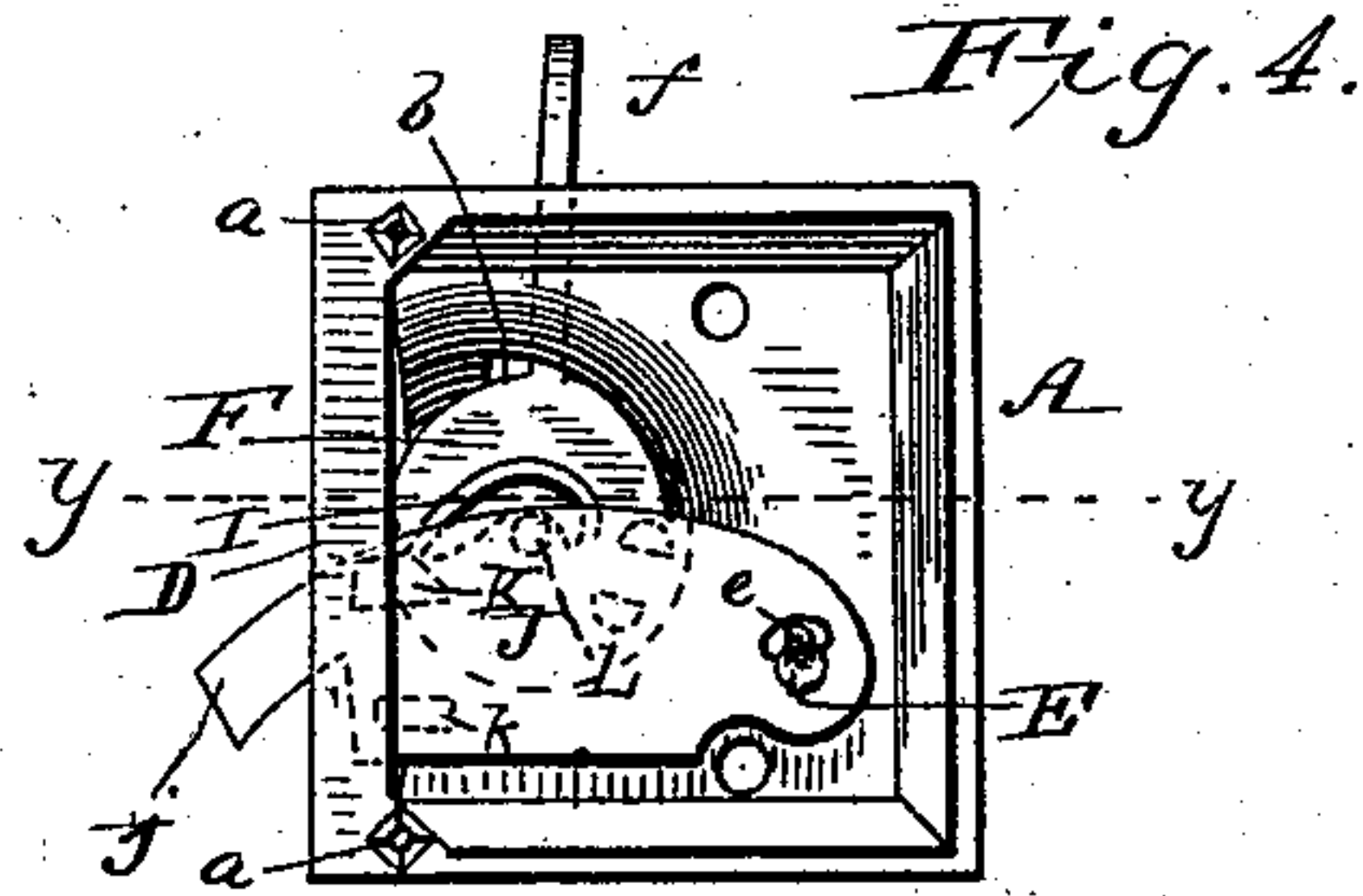
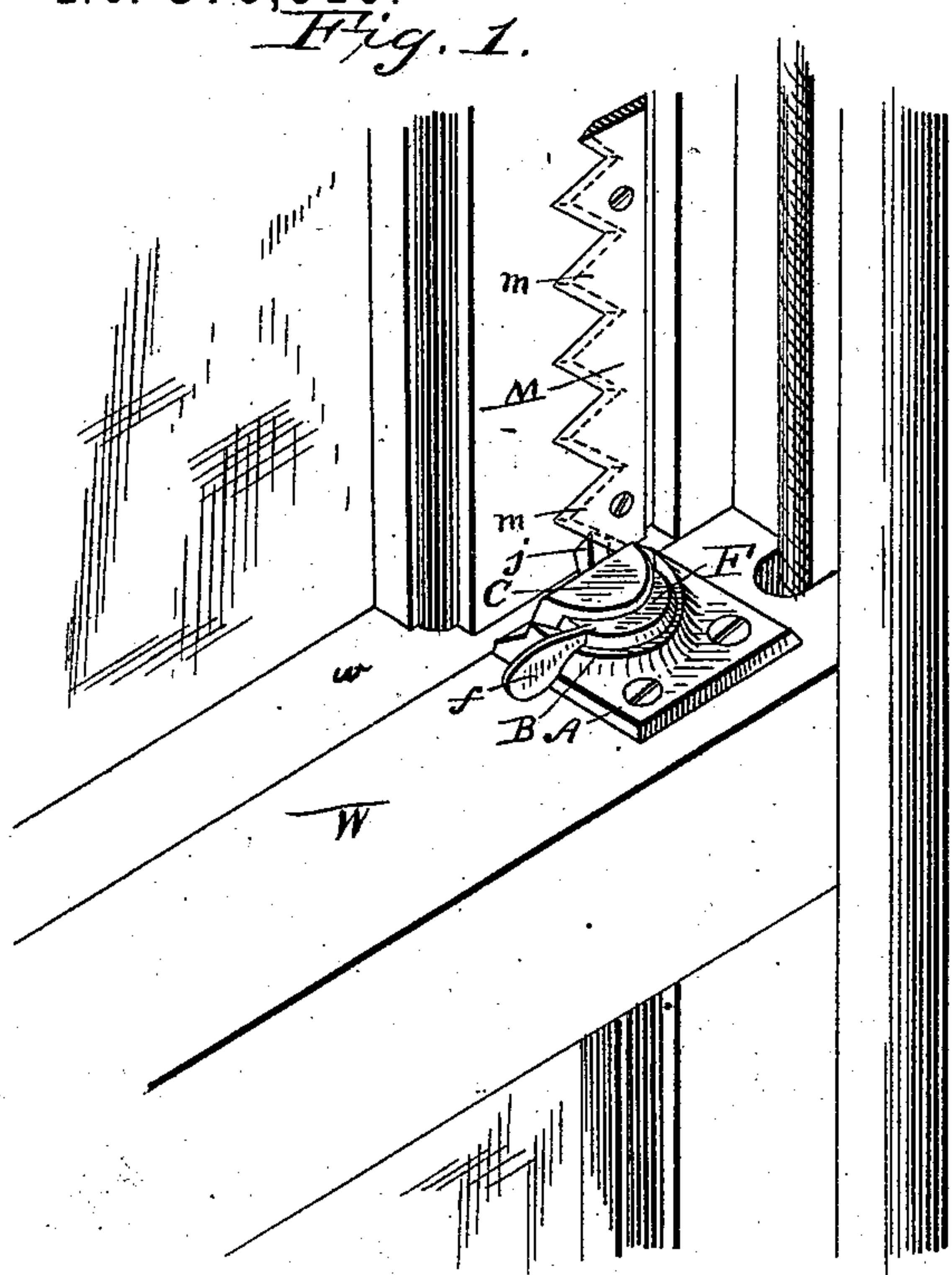
(Model.)

F. L. ROSENTERER.

FASTENER FOR MEETING RAILS OF SASHES.

No. 379,910.

Patented Mar. 20, 1888.



Witnesses,

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UNITED STATES PATENT OFFICE.

FRANK L. ROSENTER, OF CLEVELAND, OHIO, ASSIGNOR TO THE ANDRUS MANUFACTURING COMPANY, OF ROCHESTER, NEW YORK.

FASTENER FOR MEETING-RAILS OF SASHES.

SPECIFICATION forming part of Letters Patent No. 379,910, dated March 20, 1888.

Application filed June 6, 1887. Serial No. 240,355. (Model.)

To all whom it may concern:

Be it known that I, FRANK L. ROSENTER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Locks for Meeting-Rails of Window-Sashes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which--

Figure 1 is a perspective view of my improved window-sash meeting-rail fastener applied in position for use, and also showing the serrated strip applied to the outer sash, by which the sashes can be locked together at different relative positions. Fig. 2 is a top plan sectional view showing the fastener applied to the meeting-rails of the upper and lower sashes, but not locked. Fig. 3 is a similar view showing the fastener locked. Fig. 4 is a bottom view of the fastener in locking position. Fig. 5 is a sectional view on line *y y*, Fig. 4. Fig. 6 is a top view of the locking-plate. Fig. 7 is a bottom view of the cam-block detached. Fig. 8 is a detail view showing the relative positions of the cam-block and locking-plate when partly locked. Fig. 9 is a similar view showing the positions of said parts when unlocked. Figs. 10 and 11 are details of the keeper and engaging-head.

This invention relates to improvements in fasteners for meeting-rails of window-sashes, or devices for locking the upper and lower sashes of windows together; and it has for its objects to provide a fastener which will effectually lock the sashes together, and at the same time will cause both sashes to bind tightly in their guides on the window-frame, so that rattling and shaking of the sashes in any direction will be effectually prevented.

Further objects of the invention are to provide means whereby the fastening may be employed to lock the sashes and hold them at different relative positions, whereby free ventilation of the apartment may be had without permitting any rattling of either sash independently or together. These objects I attain by the present invention, which consists in the novel construction and arrangement of parts hereinafter described, illustrated in the drawings, and particularly specified in the appended claims.

Referring to the drawings by letter, *W* designates the lower sash of a window, and *w* the upper sash thereof.

To the upper horizontal rail of sash *W* is secured the fastener proper, which consists of an inclosing-shell, *A*, of general rectangular form, which is closed on its inner face and sides, but is open on its face adjoining the outer sash. At the upper portion of shell *A* is formed the horizontal semicircular conoidal swell or enlargement *B*, and the inner face of this swell is cut away, as shown, forming a horizontal slot, *b*, which slot is concavo-convex in plan view, owing to the conoidal form of the swell *B*. At the opposite inner corners of shell *A* are formed suitable perforations, through which the retaining-screws or similar devices are passed to secure the fastener in position, and from its outer corners depend studs *a*, for assisting in keeping the shell in position. The top portion, *C*, of swell *B* of shell *A* corresponds in contour to the outer edge of slot *b*, looking down upon the same, and on the inner and lower front edge of top *C*, at the center of the slot *b*, is formed a lug, *c*, which forms a pivot for the actuating-cam block *F* of the device, hereinafter described.

The outer faces of the swell *B* and shell *A* are cut away vertically to a point near the lower edge of shell *A*, where the sides of the shell are slightly extended; and connected by a horizontal transverse bottom bar, *D*, as shown, in the mouth or opening *d* thus formed at the outer face of the shell *A* plays the locking-plate *J*, hereinafter described.

From the top of shell *A*, near one inner corner thereof, depends a lug, *E*, which forms the pivot-bearing of the locking-plate *J*, and which is provided with an extension, *e*, as shown, which is adapted to be turned down upon plate *J* after the latter is properly placed on lug *E* and prevent the plate escaping therefrom during transportation of the fastener. Ordinarily the lug *E* and extension *e* are made integral, of iron or bronze, as is the shell *A*; but when the shell and lug are made of friable metal the extension *e* should be replaced by a short wire, which can be bent down upon plate *J* without injury to itself or other portions of the fastener.

The cam-block *F* consists of a disk, *G*, which corresponds in thickness to the depth of slot *b*, as shown, and which disk is provided centrally with a socket, *g*, which corresponds

with and is engaged by the lug *c* of the top part, C, of shell A, as shown. At a proper point of disk G, outside of slot *b*, is the handle *f*, by which the disk is rotated.

5 On the undersurface of disk G, and arranged in proper relation to its pivotal point, are formed the pair of depending lugs H *h* and the depending cam I. This cam I is formed on a partial convolute curve, having its inner end
10 lying near the pivotal point of disk G to the inside of lug H, and extending thence on a convolute curve away from lugs H *h* and partly around the circumference of the disk, its length being about one-third thereof. The lugs H *h*
15 and cam I engage corresponding lugs and projections on the upper face of the locking-plate J when the latter is in position and actuate the same.

The locking-plate J is made sufficiently thin
20 to play freely within shell A without binding against the same unduly. Its inner end is supported by the lug E, as described, and its outer end is supported and moves upon the upper surface of bar D. The locking-plate is
25 of such length that when in its normal or unlocked position, in which position it lies diagonally across the shell, its outer end is flush with the outer edge of bar D; but when the plate is shifted by turning it on its pivot into
30 locking position the outer end of the plate is extended considerably beyond the edge of bar D, so as to engage with a proper retainer secured on the outer sash.

At a point on the upper surface of plate J
35 coinciding with the lugs and cam on the disk G are formed the projections K *k*, which are adapted to be engaged by the lugs H *h*, and the lug L, which is adapted to be engaged by the inner face of the cam I upon the dis-
40 engagement of lugs H *h* and projections K *k*. The pivot end of plate J is rounded, as shown, to prevent any friction against the side of shell A. The outer end of plate J is provided with a head, *j*, as shown. This head is beveled
45 both inwardly and downwardly or longitudinally and transversely, so that the outer edge of this head is larger than its point of junction with the plate, as shown. This double-beveled head *j* serves an important function in
50 locking the sashes, as hereinafter described.

The fastener is put together and operated as follows: The cam-block F is inserted handle first upward through slot *b*, cam and lugs downward, until its socket *g* corresponds with
55 the lug *c*. The handle *f* is then depressed, causing lug *c* to engage in socket *g* and pivoting cam-block F on shell A. The locking-plate J is then pressed outward partly through mouth *d* until its end can be engaged on lug
60 E, where it is secured, as described, and by properly turning the cam-block F the lugs, projections, and cam on the block and plate are engaged. When thus arranged, the lugs H *h* of cam-block F engage between them the
65 projection *k* of the plate, and the lug *h* is similarly engaged between the lugs K *k* of the plate, as shown in Fig. 9. When the lugs are

engaged and the fastener opened, the handle *f* of block F stands in line with the bar D, and the cam I is entirely removed from the lug L. 70
Then, to throw plate J into locking position, the block F is turned to the position shown in Figs. 3 and 4. This movement of the block causes lug *h* to engage with projection *k* and turn the plate J forward rapidly until the lugs 75
H *h* and projections K *k* are disengaged, owing to the different pivot-points of the plate and block, as is evident. Simultaneously with the disengagement of lugs H *h* and projections K *k* the cam I engages by its outer end and 80
inner face with the lug L, and the rotary movement of the disk G, being continued, forces the plate J to move still farther forward until its lug L has reached the inner end of cam I. The cam I is arranged in such manner that 85
pressure thereon from lug L is transferred directly to the pivot of block F, so that the plate can be locked at any point after its lug L has engaged the cam I. The distance from lug E to lug L must be at least as great as the short- 90
est line drawn from lug E to cam I at any point of rotation of the cam-block F. By reason of the convolute form of the cam great pressure or grip can be given to plate J to cause it to firmly hold to the retaining devices, which I 95
will hereinafter describe.

In unlocking the fastener the cam-block F is retracted or turned, causing the lugs H *h* to engage projections K *k* and throw the plate into normal position. The projection K is pur- 100
posely made longer than projection *k*, to insure the engagement of lug *h* therewith after the locking-plate has been actuated by the cam, so that said locking-plate will be at once en- 105
gaged and thrown back upon the returning of the cam-block to its normal or unlocked position.

By the employment of two lugs and two projections a greater amount of quick movement can be imparted to plate J, and the operation 110
of the device is rendered more rapid. It will be seen that, owing to the different pivotal points of the plate and block, the lugs H *h* will actuate the plate, as described, a greater or less degree, according as they are placed 115
closer to or farther from their pivot, and that by setting them at varying diametrical points in relation to the end of cam I the rapidity with which the said cam is brought into action or into position for engaging lug L can be reg- 120
ulated. The essential features of this portion of my fastening device are the arrangement of lugs, projections, and cam, by which the locking-plate is first rapidly moved forward toward its locking position before engaging with the 125
cam, and then engaged by the cam, and more slowly, but powerfully, moved into position and locked, and in which the quick-throw devices disengage the plate simultaneously with the engagement thereby of the cam. 130

I will now describe the retaining devices.

M designates a serrated or toothed metal strip, the teeth *m* of which are angular and are formed at the side of the strip. The edges

of these teeth are beveled inwardly, as shown, on an angle corresponding to the bevel of head *j* of plate *J*. This strip *M* is secured to one of the vertical rails of the upper sash, *w*, and in a position corresponding to the fastening device on the upper rail of the lower sash. When it is desired to lock the sashes together, the fastener is operated, as described, throwing the head *j* out and into engagement with the lower edge of one of the teeth *m*. Owing to the peculiar described bevels of the teeth and head *j*, the sashes are drawn together when pressure is exerted to close the fastener, and at the same time, owing to the lateral motion of head *j* in relation to the shell *A*, the sashes will be forced sidewise, so that if they had any lateral play before the fastener was closed they will be bound tightly against the uprights of the window-frames, as well as against each other, as clearly shown in Fig. 3.

Owing to the number of teeth on strip *M*, the sashes may be adjusted to different positions, so as to leave a ventilating-space at top or bottom of window, and when the fastener is closed, as described, the sashes are bound firmly against the window-frames and each other in all directions, both laterally and horizontally, so that rattling thereof is prevented, which would not be the case if, as in ordinary meeting-rail fasteners, the sashes, if bound at all, are only bound horizontally, but not laterally, and as the sashes, when worn, fit loosely between the opposite sides of the window-frames, they are liable to rattle more or less, and my invention, by causing the sashes to bind laterally, as described, effectually prevents any such annoyance.

Instead of using the strip *M*, I may in some cases employ the keeper *N*, as shown in Figs. 2, 3, and 10, which keeper consists of a hollow rectangular shell, which has a portion of its inner wall adjoining the fastener cut away, leaving an inclined and beveled portion, *n*, which is adapted to be engaged by the angular head *j* of plate *J*, the action of the fastener and keeper being the same as that just described for the fastener and strip.

The keeper *N* is provided on its undersurface with retaining-studs *o*, and is provided with proper eyes, *O*, through which pass suitable retaining-screws.

It will be observed that, owing to the peculiar arrangement of the beveled head and beveled retainer, if the rails upon which the fastener and retainer respectively rest should not be flush, the head *j*, when the fastener is closed, will elevate the upper sash or depress the lower sash until the rails are flush, and thus when the lock is closed the sashes are forced into proper relation and present a neat appearance.

It will be observed from the foregoing that I have a very effective, cheap, and useful fastening device, and in which the working parts are all protected, and, further, that no working part of the fastener bears upon the window-

sash, but all the bearings are contained in the fastener itself. Consequently the fastener will not lose its effectiveness and require resetting so soon as do those fasteners in which some of the movable parts bear directly upon the wooden rail of the sash.

The fastener and keeper or strip *M* may be varied somewhat and ornamented in any suitable manner without departing from the essential features of my invention.

Having described my invention, what I claim is—

1. In a meeting-rail sash-fastener, the combination, with the upper and lower sashes, of an inclosing-shell secured to the top rail of the lower sash, a cam-block pivoted to the top of said shell and about centrally of the width thereof, a locking-plate pivoted to the interior of said shell at one inner corner thereof and underneath said cam-block and engaged by the latter, whereby it can be reciprocated laterally, said plate having on its outer end a double beveled head adapted to engage a beveled retainer secured to the upper sash, all constructed and arranged substantially as and for the purpose described.

2. The combination, with a proper shell and a cam-block, *F*, pivoted to the shell and provided on its lower face with the lugs *H h* and cam *I*, of the locking-plate *J*, pivoted to the shell underneath the cam-block, and having the projections *K k* and lug *L*, for engaging with the lugs and cam of the block *F*, whereby the locking-plate is operated, all constructed and arranged substantially as and for the purpose described.

3. In a meeting-rail sash-fastener, the combination of the cam-block pivoted to a proper shell or support by its upper face and having on its lower face concentric with its pivot a pair of lugs and a partial convolute-bend cam, substantially as described, with a plate pivoted at one end underneath and to one side of said cam-block, and provided on its upper face below said cam-block with suitable projections for engaging the lugs of the block, and with a lug for engaging the cam thereof, substantially as described, whereby the plate is initially moved with a quick throw by the engagement of the lugs and projections before engagement of the lugs and cam, which are engaged simultaneously with the disengagement of the lugs and projections, the cam being so arranged as to lock the plate upon engagement therewith and prevent its retraction, and a suitable retainer for engaging the locking-plate, all constructed and arranged substantially as and for the purpose described.

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

FRANK L. ROSENTERER.

Witnesses:

A. E. DOWELL,
F. T. F. JOHNSON.