N. CAMPBELL.

CURTAIN-FIXTURES.

No. 188,280. Patented March 13, 1877.

Fig. 1.

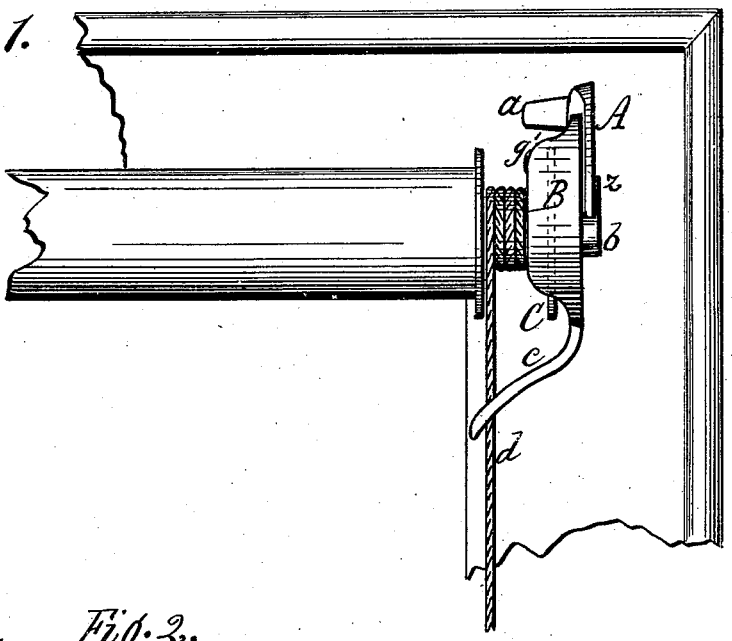


Fig. 2.

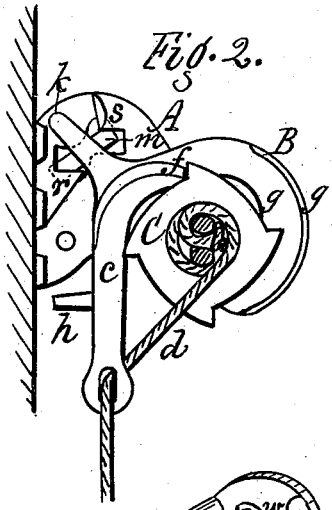


Fig. 3.

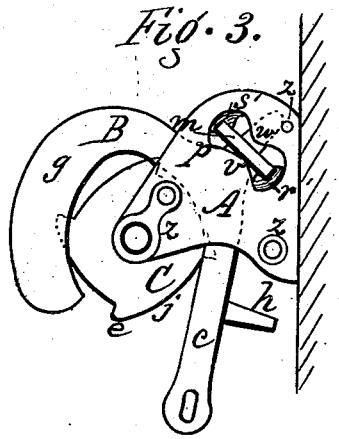
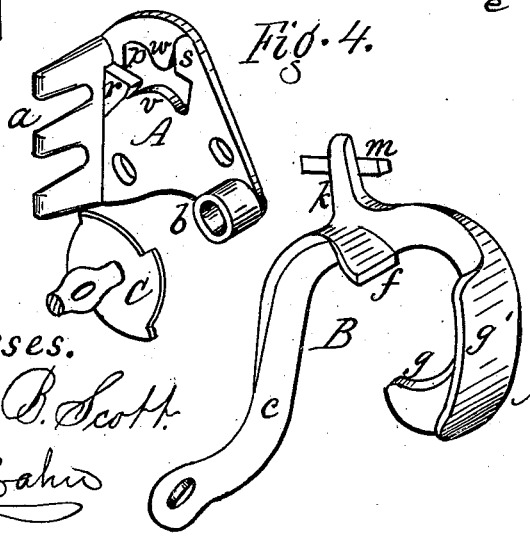


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

NATHAN CAMPBELL, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN CURTAIN-FIXTURES.

Specification forming part of Letters Patent No. **188,280**, dated March 13, 1877; application filed June 9, 1875.

To all whom it may concern:

Be it known that I, NATHAN CAMPBELL, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Curtain-Fixtures; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation, showing my improvement applied to a window. Fig. 2 is an elevation of the fixture, looking on one side. Fig. 3 is a similar view, looking on the opposite side. Fig. 4 is a perspective view of the parts separated.

My improvement relates to curtain-fixtures in which the roller is controlled by a ratchet-wheel and pawl-lever, which engage together to retain the roller in a fixed position, but disengage to allow the curtain to run up or down.

The invention consists in the construction and arrangement of the lever and bracket, as hereinafter more fully set forth.

A represents the bracket, and B the lever. The bracket is constructed with a right-angled foot, *a*, which enables it to be screwed to the casing, and also with a projecting socket-bearing, *b*, which receives the journal of the curtain-roller. These parts are so far separated as to allow the lever to lie between them, and have proper play to engage with and disengage from the ratchet-wheel C, and the face of the bracket over which the lever works is made flat, so as to present no impediment to the action. The lever B is constructed with the depending arm *c*, which stands inward from the vertical plane of the axis of the roller, as in other fixtures of my invention in this class, so that when the cord *d*, which passes from the roller through the slotted end of the arm, is drawn, the lever will be elevated, thereby releasing the curtain-roller and allowing it to fall. The lever also has a pawl, *f*, which engages with the ratchet-wheel C by the gravity of the lever itself.

The drawing of the cord, as above described, will throw the pawl out from the ratchet as the lever is elevated, thus allowing the roller to run either up or down. The lever is also constructed with a curved end, *g*, which projects outward above and around the ratchet-wheel, and has a right-angled shoulder, *g'*, that covers the ratchet and protects it from the interference of any outside body—such, for instance, as a lace curtain, which covers the fixture, and would otherwise come in contact with the ratchet and obstruct it. In addition to this function, the curved end *g* serves as the counter-weight to throw the pawl into engagement with the ratchet at all times, except when elevated by the cord. The lever has a stop, *h*, on the back side of the arm *c*, which, when the fixture is attached, strikes the wood casing, and serves as the stop on that side to prevent the disconnection of the lever from the bracket. On the other side the socket-bearing *b* forms the stop to the lever.

The lever and bracket are connected together by a loose joint, as follows: *k* is an arm cast upon the upper part of the lever, and provided with a cross bit or lug, *m*. The bottom surface of the arm and top surface of the bit are in the same plane with each other, and also in plane with the bearing surface or face of the bracket, by which means, as the front and rear bearings are in the same line, the lever will turn with the minimum amount of friction, and be sure of its engagement with the ratchet at all times.

The bracket is provided with a socket or key-hole, *p*, to receive the bit or lug of the lever. On the front side of the bracket are two bosses, *r s*, Figs. 2 and 4, at the ends of the socket, which set out from the body of the bracket sufficiently to bring their rear flat surfaces *r' s'*, Fig. 3, in the same plane with the front or bearing surface of the bracket. These surfaces *r' s'* form the seats for the bit *m* to turn against as the lever swings, and they retain it from disconnection. The shape of the key-hole socket and the position of the seats *r' s'* are such as to admit the bit through the socket before the fixture is applied to the window, and to retain it after being put up, but still to allow the free joint action of the lever in the socket. This form will readily suggest itself to a competent mechanic.

The form of the key-hole socket and bit

above described greatly facilitates drawing from the sand in molding.

The lower edge of the key-hole socket is formed with a central sharp-edged bearing, *v*, Figs. 2, 3, and 4, upon which the center of the bit hangs and has its bearing, being thus suspended from this point, by which means it can swing with great ease and with scarcely any friction, thus making the lever sure in its action. By this means I obviate one difficulty which arises from the great friction of the lever in curtain-fixtures of this class, the small weight of the lever being insufficient to make it work with certainty unless the friction is removed. This sharp-edged bearing, in connection with the bosses *r s*, before described, forms one of the novel features of my invention. I also employ upon the upper edge of the key-hole socket a projecting bearing, *w*, whose object is to keep the bit in place against end thrust of the lever, and thereby prevent loose and irregular movement.

It will be noticed, as peculiar to this case, that the lever is located and plays between the foot *a* of the bracket and the socket-bearing *b*, and that the joint between the lever and the bracket is located between the said parts, so that the pawl will be sure always to engage with the teeth of the ratchet-wheel, even if the engaging contact comes at the points of the teeth instead of at the bottom, the pawl in that case drawing down into place at the bottom of the teeth.

The ratchet-wheel is constructed with rounded points *e*, and with flattened edges *j*, so as to make the engagement with the pawl more certain, and prevent the pawl from riding or jumping over the ratchet under rapid motion of the roller in running down. Furthermore, the bearing of the lever against the face of the bracket, both above and below the joint, and on either side, is so broad and extended as to give a firm contact with the face of the bracket, so that in moving forward and back the lever is firmly seated and cannot twist or get out of place laterally. The bit *m*, having its bearing in the same plane with the face of the bracket, facilitates the true and easy working of the lever, and renders it more effective than if the rear bearing was out of plane. The lever thus connected will hold its place against lateral displacement outward, and prevent any interference by the lever with the ratchet-wheel.

In order to prevent the bit from striking against the wood, and to insure a free action of the same, the back of the bracket is constructed with projecting bosses Z Z Z, Fig. 3, which form the bearings that rest against the wood, the body of the bracket standing off from the wood a distance equal to the projection of the bosses. The latter may be of any desired form. They are of use only when the flat side of the bracket is attached to the casing. They also lessen the weight of the casting.

In my patent of July 25, 1876, (filed subsequent to this application,) is shown a lever of somewhat similar form, but extending outside of and around the ratchet, instead of lying between it and the foot of the bracket, as in my present invention. In this invention the construction is different, inasmuch as the lever is so formed as to present a broad bearing-surface against the ratchet, thereby preventing any twisting action and enabling a loose joint to be employed.

Having thus described my invention, I do not claim, broadly, a self-acting ratchet and pawl-lever; but

I claim—

1. The bracket A and detachable lever B, the latter located between the foot *a* and socket-bearing *b* of the bracket, and provided with the loose joint connection *m p*, whereby the lever retains its place against end thrust and lateral displacement, and is made effective in its connection with the ratchet-wheel, as herein described.

2. The bracket A, constructed with the foot *a* and socket-bearing *b*, and the lever B, constructed with the arm *c*, pawl *f*, and arm *k*, the connection between said parts being made by the bit *m* and key-hole *p*, located between the foot and socket-bearing of the bracket, as and for the purpose specified.

3. The bracket A, with key-hole *p*, constructed with the sharp-edged bearing *v* and projection *w*, and with the bosses *r s*, as herein shown and described.

4. The lever B, constructed with the curved end *g*, with shield *g'* for protecting the ratchet, and with or without the stop *h*, as shown and described, and for the purpose specified.

5. The bosses Z Z, formed upon the back side of the bracket, for the purpose of preventing contact of the bit *m* with the wood in its turning movement, as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

N. CAMPBELL.

Witnesses:
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R. F. OSGOOD.