

(No Model.)

F. B. BROWNELL.

BRAKE HANDLE FOR STREET CARS.

No. 350,525.

Patented Oct. 12, 1886.

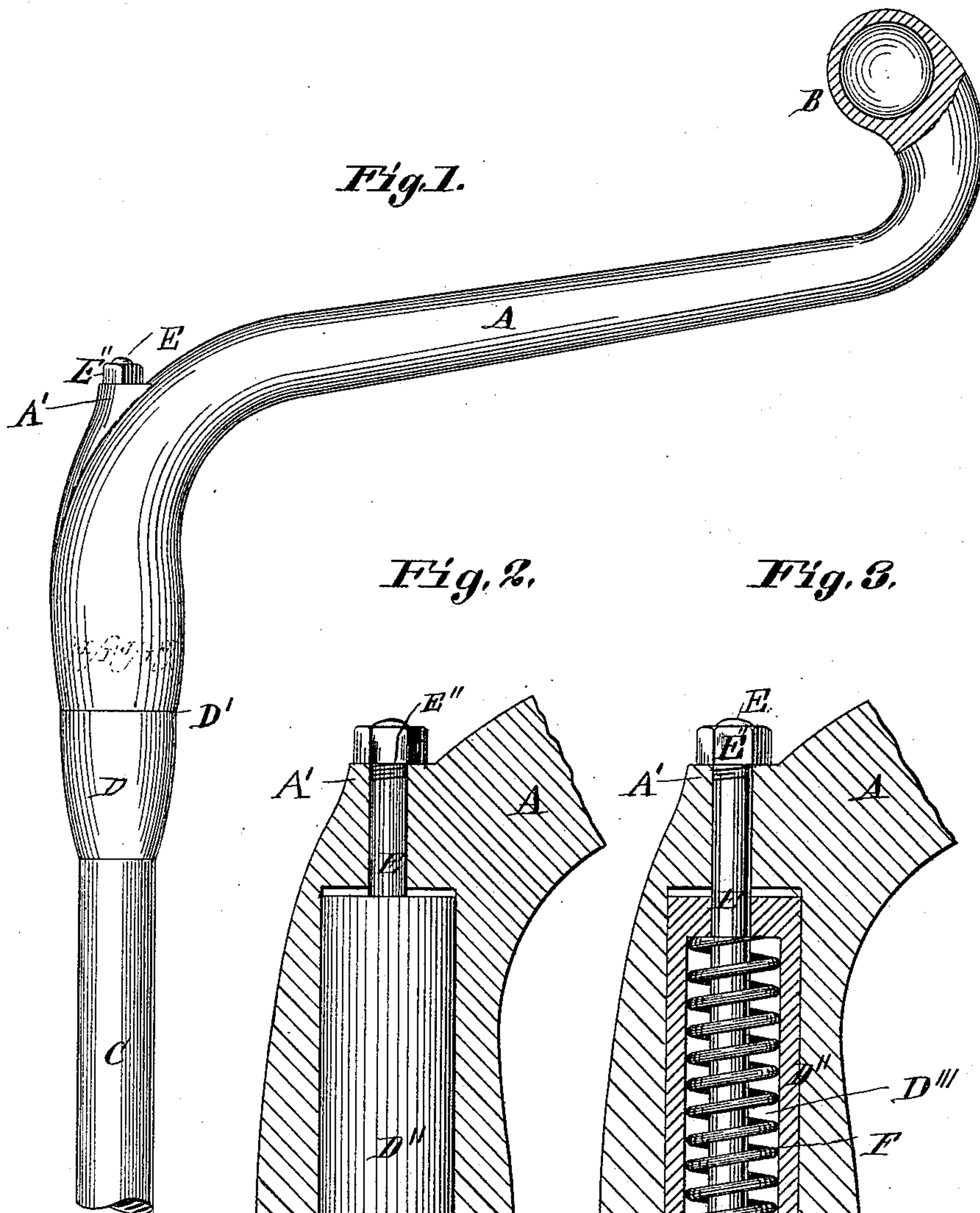
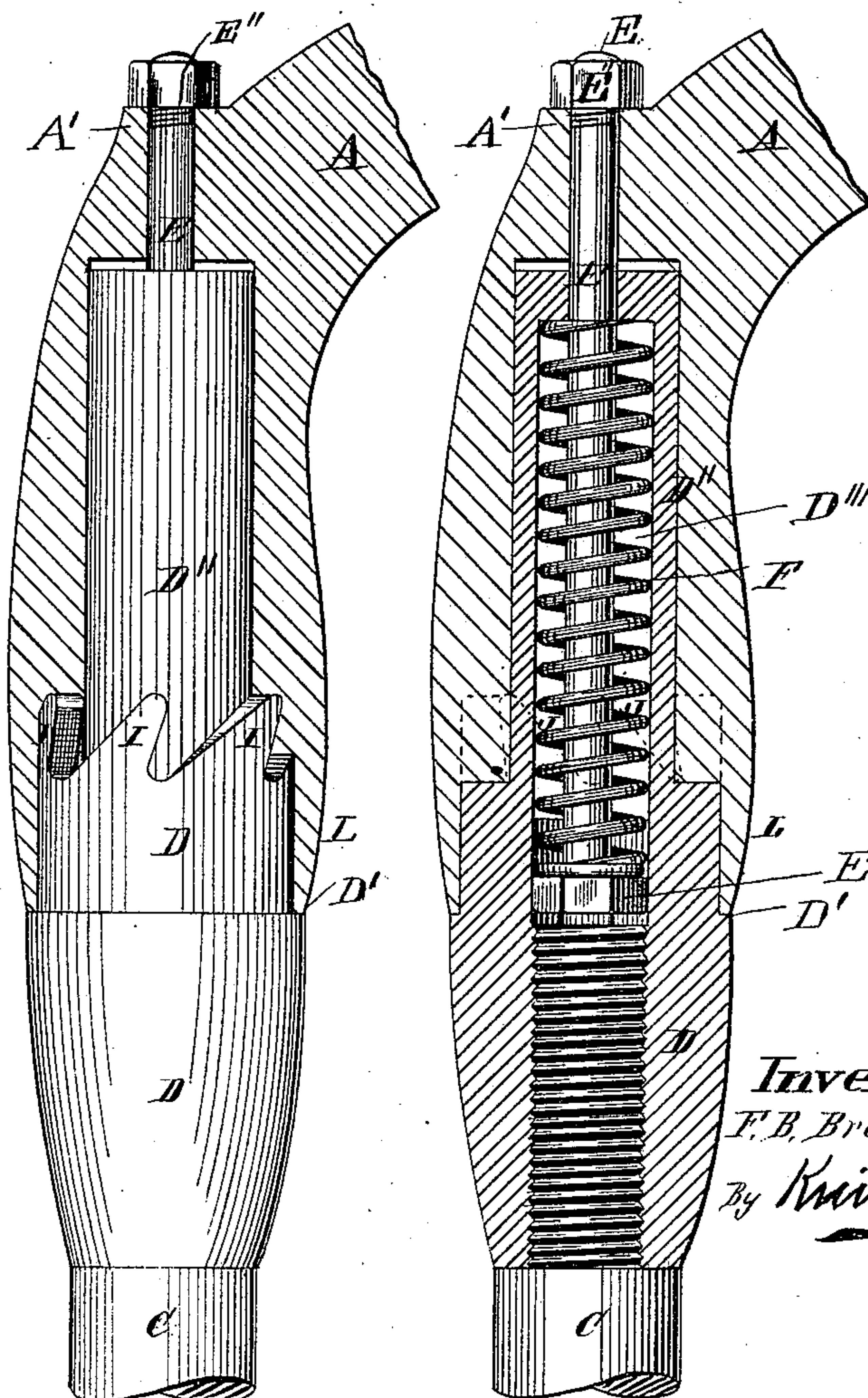


Fig. 2.

Fig. 3.



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FREDERICK B. BROWNELL, OF ST. LOUIS, MISSOURI.

BRAKE-HANDLE FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 350,525, dated October 12, 1886.

Application filed May 15, 1886. Serial No. 202,291. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK B. BROWNELL, of the city of St. Louis, in the State of Missouri, have invented a certain new and
5 useful Improvement in Brake-Levers or Handles for Brakes of Street-Cars, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a side view of a handle attached to the brake-rod by means of my improved attachment, the upper end or knob of the handle being shown in section. Fig. 2 is an enlarged view, part in section and part in elevation, illustrating the attachment. Fig. 3 is an enlarged view in vertical section.

My invention relates to an improvement in the means for securing handles to the brake-rod of street-cars and like vehicles, and relates to that class of attachments wherein there is a ratchet connection between the handle and the brake-shaft, permitting of a backward movement of the handle independently of the
25 brake-shaft, the object being to provide a means whereby the driver can keep the handle of the brake directly in front of him, and operate the brake by a forward thrust of the handle without a complete revolution or rotation of it, so that he may always have the handle in a position where he can operate it to the best advantage.

My invention consists in an improved means for connecting these handles to the brake-shafts, whereby the backward movement of the handle is permitted independently of the brake-shaft at any time. The attachment has none of the disadvantages existing heretofore in such attachments—such as the handle—
40 when the brake is released and the shaft revolves backward rapidly, owing to its momentum, turning back farther than the brake-shaft, resulting in displacing the handle with relation to the brake-shaft, so that the next time the brake is applied the handle is not in the proper position in front of the driver; and another advantage of my attachment is that the spring of the ratchet is of such a length and such a nature that it is not liable to break
50 or lose its tension.

The novel features of my invention are here-

inafter fully described, and pointed out in the claims.

Referring to the drawings, A represents the handle of a street-car brake or other brake
55 provided with knob or hand-piece B at its upper end, which I prefer to make hollow, as shown in Fig. 1, so as to reduce the backward momentum of the handle, when the brake is released, by reducing the weight of the
60 handle.

C represents the brake-shaft, which is connected to the brake in any ordinary way. On the upper end of this shaft is secured a sleeve, D, which is held from turning on the shaft by
65 any suitable means. This sleeve is formed with an annular shoulder, D', and socket D'', having chamber D'''. I have shown the upper end of the shaft screw-threaded, and the lower end of the sleeve D is correspondingly
70 threaded to screw over the end of the shaft. (See Fig. 3.) The upper end, D'', of the sleeve D is closed, except that it has an opening sufficiently large to allow the passage of a bolt, E, which connects the handle A to the sleeve.
75 Surrounding the bolt within the chamber D''' of the socket D'' of the sleeve D and between the head E' of the bolt and the upper end of the socket of the sleeve D is a spring, F, the office of which is to hold the handle A
80 down upon the shoulder D' of the sleeve D, as will be readily understood, but which permits of the upward movement of the handle, allowing the ratchet-teeth to slip past each other.

On the sleeve D are ratchet-teeth I, which
85 are preferably inclined, as shown in Fig. 2, and in dotted lines, Figs. 1 and 3. These teeth project upwardly, and into them fit similarly-shaped teeth J, projecting downwardly
90 and formed upon the handle within its socket L, which fits over the teeth I down upon the shoulder D' of the sleeve D. These ratchet-teeth are so presented that they will interlock and remain in engagement when the handle of
95 the brake is at rest or when it is forced forward to apply the brake. The spring F also acts to hold the teeth into engagement and to force them into engagement when out. The bolt E' is supported on the shoulder A' of the
100 handle by means of a nut, E''.

When the brake-shaft C is held from back-

ward movement, and the handle is moved backward, the teeth I J slip past each other, the inclines of the teeth J sliding upward upon the inclines of the teeth I. The spring F at this time compresses to permit of this backward movement of the handle, and as soon as the backward movement of the handle, independently of the brake-shaft, ceases, the spring draws the teeth into engagement. The teeth being inclined, as I have shown and stated, they are self-interlocking, so that there is no danger of them slipping past each other when the brake is applied, and the engagement does not depend upon the action of a spring to hold them into engagement. Another advantage arising from their interlocking, which is partly due also to the long spring F, which may be of any desired tension, is that when the brake is released and the handle and shaft revolve backward rapidly together, the handle does not, owing to its momentum, revolve farther than the shaft, when the teeth of the ratchet would slip over each other. This would result in the improper adjustment of the handle upon the shaft, which would have to be adjusted before the driver would have the handle in the proper position in front of him when the brake is again applied. While the accidental backward movement of the handle is thus avoided, the means does not prevent the handle from being pulled back when it is desired. The form of connection I have shown also permits of the use of the long spring F, which is not liable to be strained or broken, as is the case with a short spring acting on a pawl to keep it into engagement with the ratchet-teeth.

I prefer to extend the handle below the ratchet-teeth, as shown at L, the same fitting upon a reduced portion of the sleeve D and resting on the shoulder D', as shown in Figs. 2 and 3, and which acts to strengthen the connection between the handle and sleeve.

My improved attachment is cheap and durable, and effectual in performing the functions for which it is designed.

I claim as my invention—

1. The combination, with the handle A, provided with ratchet-teeth, and the brake-shaft

C, of the sleeve D, secured to the shaft C, and having the socket D'', ratchet-teeth to engage the ratchet-teeth on the handle, a spring, F, and connection between the handle and sleeve, substantially as shown and described, for the purpose set forth.

2. In combination with the handle provided with ratchet-teeth and the brake-shaft C, the sleeve provided with a socket, D'', and ratchet-teeth to engage the teeth on the handle, connecting-bolt, and spring, arranged and operating substantially as and for the purpose set forth.

3. In combination with the handle provided with rearwardly-inclined ratchet-teeth and the brake-shaft, the sleeve provided with forwardly-inclined ratchet-teeth to engage and interlock with the teeth on the handle, bolt connecting the handle to the sleeve, and spring surrounding the bolt, substantially as and for the purpose set forth.

4. In combination with the handle having rearwardly-inclined ratchet-teeth, the sleeve having forwardly-inclined ratchet-teeth to engage and interlock with the teeth on the handle, substantially as set forth.

5. In combination with the rearwardly-inclined ratchet-teeth secured to the brake-shaft, the forwardly-inclined ratchet-teeth secured to the operating-lever, substantially as described.

6. In combination with the handle provided with ratchet-teeth, the sleeve provided with a socket, D'', ratchet-teeth to engage the teeth on the handle, and spring-connection between the handle and sleeve, substantially as and for the purpose set forth.

7. A brake-handle consisting of a sleeve, D, formed with an annular shoulder, D', teeth I, and socket D'', having spring-chamber D'', the handle proper, A, formed with socket L, and teeth J within the socket L, the bolt E, having the head E', and nut E'', and a spring, F, substantially as described.

FREDERICK B. BROWNELL.

In presence of—

GEO. H. KNIGHT,
JOE. WAHLE.