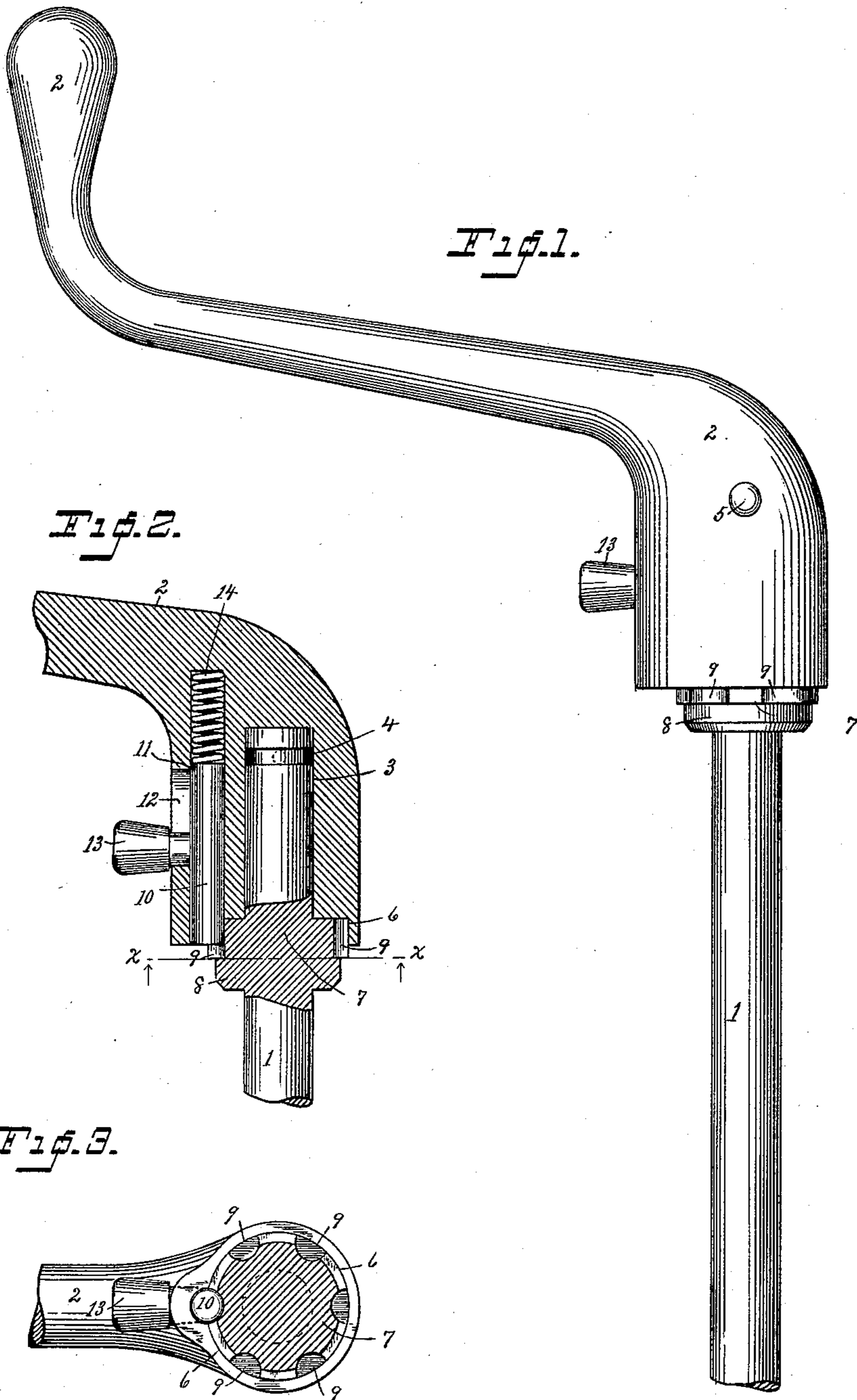


(No Model.)

S. A. BURNS.
BRAKE HANDLE.

No. 401,003.

Patented Apr. 9, 1889.



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UNITED STATES PATENT OFFICE.

SAMUEL A. BURNS, OF BRIDGEPORT, CONNECTICUT.

BRAKE-HANDLE.

SPECIFICATION forming part of Letters Patent No. 401,003, dated April 9, 1889.

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To all whom it may concern:

Be it known that I, SAMUEL A. BURNS, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Brake Mechanism; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the class of brakes that are used upon street-cars, and has for its object to devise a novel means for adjusting the handle upon the brake-staff.

It is of course well understood that in using brakes of this class it is desirable that the normal position of the handle shall be such that it may be readily grasped by the driver, so that the full power of the brake may be applied as quickly as possible and without unnecessary movement of the handle. Owing to the numerous different styles and sizes of cars, as well as the convenience of the individual drivers, it is desirable that convenient means be provided for adjusting the handle upon the staff at any time. It is furthermore frequently necessary to shift the handle to compensate for stretching of the chain in use, it being understood that mechanism of this class is necessarily subjected to great strain and to very rough usage. It is therefore desirable that the parts shall be few in number and strong, and that the construction shall be such that should any breakage of the adjusting mechanism actually occur the action of the brake mechanism shall not be impaired in the slightest. With these ends in view I have devised the novel construction of which the following description, in connection with the accompanying drawings, is a specification, numbers being used to denote the several parts.

Figure 1 is an elevation of the upper end of a brake-staff and handle illustrating my novel construction; Fig. 2, a section corresponding therewith, certain of the parts being in elevation; and Fig. 3, a section on the line *x x* in Fig. 2, looking upward.

1 denotes the brake-staff, and 2 the handle. The upper end of the staff rests in a socket,

3, in the base of the handle, the staff being provided with a circular groove, 4, and a pin, 5, being driven or screwed in from the outer side of the base of the handle, the end thereof engaging said groove. (See dotted position of end of pin in Fig. 2.) The staff and handle are thus secured tightly together, but the handle is left free to be turned independently of the staff, as will presently be explained. In the lower side of the base of the handle is a recess, 6, which receives more or less of an enlargement, 7, on the staff. This enlargement may be made integral with the staff, or a separate piece may be secured thereto. In practice the enlargement is usually shrunk upon the staff and is additionally secured by a pin or set-screw. The lower portion of this enlargement constitutes a circular flange, 8. In the upper portion of the enlargement, at the outer edge thereof, I form notches 9, which extend from the top of the enlargement down to the flange, where they terminate abruptly.

10 is a bolt lying in a socket, 11, in the base of the handle; 12, a slot extending from the outer side of the base of the handle and into socket 11; and 13 is a finger-piece, the shank of which passes through slot 12 and engages the bolt, the shank being tapped into the bolt or secured by a drive fit, as may be preferred. The lower end of the bolt is adapted to engage any one of the notches 9 in enlargement 7, thereby locking the handle and staff rigidly together. The bolt is placed vertically and socketed loosely enough, so that it will operate by gravity alone. In practice, however, I preferably place a spring, 14, in socket 11, above the bolt, which acts to force the latter downward to the locked position.

The object of flange 8 below the notches is to prevent the possibility of the escape of the bolt from the socket should the finger-piece become broken or removed, or any accident or breakage happen to the parts. It will be seen that when bolt 10 is engaged in one of the notches of the enlargement the brake will operate in the ordinary manner—that is, the brake is set by turning handle and staff in one direction and released from its set or locked position by disengagement of the usual dog, allowing the staff and handle to

rotate in the opposite direction, the usual or any preferred staff-locking mechanism being employed.

As is of course well understood, the usual mechanism is a ratchet upon the staff and a dog upon the platform operated by the foot of the driver. As this construction has been in common use for many years, it is not deemed to require illustration.

10 The operation of my invention is as follows:

The brake is set or locked in the usual manner by turning the handle toward the right, it being of course understood that bolt 10 is in engagement with one of the notches in the enlargement. To release the brake, the handle is forced toward the right, so that the dog may be disengaged from the ratchet by the foot of the driver in the ordinary manner, and then the handle is allowed to fly backward to relieve the pressure upon the wheels. The adjustment of the handle upon the staff of course requires to be made when the brake is in the unlocked position. It is simply necessary to disengage the bolt from the notch in the enlargement by means of the finger-piece and then to turn the handle one or more notches in either direction, as may be required. As soon as the finger-piece is released the spring will force the bolt down into the notch, thereby locking the handle and staff together, and the brake is ready to be used in the ordinary manner, as before. It will be seen that the only movement neces-

sary to adjust the handle is simply to lift the bolt, and that the parts are again automatically locked together as soon as the bolt is released. Flange 8 renders it impossible for the bolt to escape from its socket should the finger-piece get broken off or come out. In fact, it is practically impossible for any breakage or accident to occur that can interfere in any way with the operation of the brake mechanism.

Having thus described my invention, I claim—

1. In combination, a brake-staff having an enlargement provided with notches at its outer edge, said notches terminating abruptly in a flange, 8, a handle secured to said staff, but free to rotate thereon, and a bolt socketed in said handle and adapted to engage said notches, as and for the purpose set forth.

2. The brake-staff having an enlargement with notches 9 and flange 8, in combination with a handle secured to said staff, but free to rotate independently thereof, and a spring-actuated bolt socketed in said handle and adapted to engage said notches, said bolt being provided with a finger-piece for convenience in operation.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL A. BURNS.

Witnesses:

A. M. WOOSTER,
ETTA F. PETTIT.