

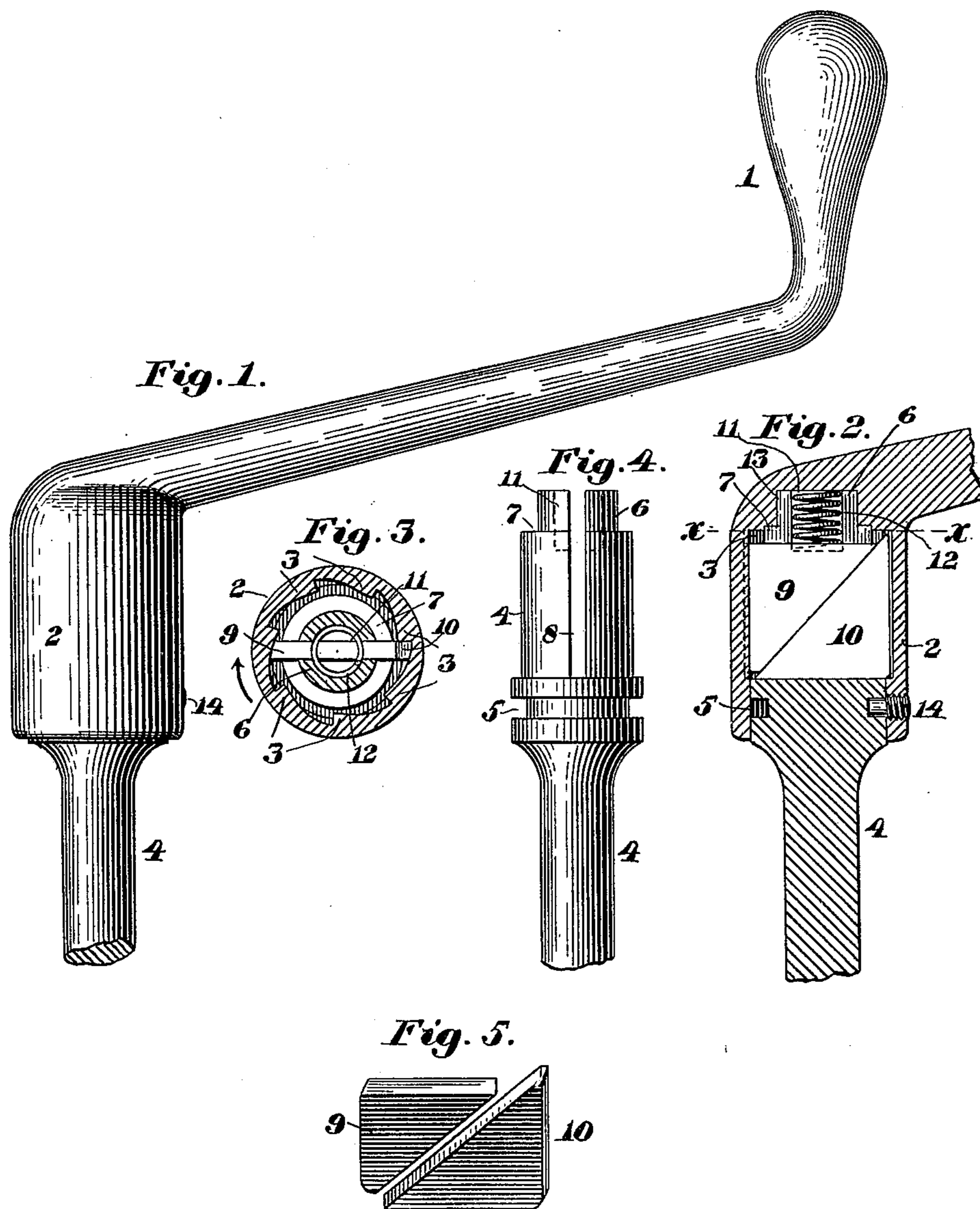
No. 641,639.

Patented Jan. 16, 1900.

E. C. COLLINS.
BRAKE HANDLE.

(Application filed Dec. 2, 1899.)

(No Model.)



Witnesses:
Walter C. Lombard
James A. Woodbury

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Atty.

UNITED STATES PATENT OFFICE.

EDWARD C. COLLINS, OF TAUNTON, MASSACHUSETTS.

BRAKE-HANDLE.

SPECIFICATION forming part of Letters Patent No. 641,639, dated January 16, 1900.

Application filed December 2, 1899. Serial No. 738,948. (No model.)

To all whom it may concern.

Be it known that I, EDWARD C. COLLINS, of Taunton, in the county of Bristol and State of Massachusetts, have invented certain new and
5 useful Improvements in Brake-Handles, of which the following, taken in connection with the accompanying drawings, is a specification.

My present invention relates to "brake-handles;" and it consists in certain novel features of construction, arrangement, and combination of parts, which will be readily understood by reference to the description of the accompanying drawings and to the claims hereto appended and in which my invention
15 is clearly pointed out.

Figure 1 of the drawings is a side elevation of a brake-handle and a portion of the brake-shaft, illustrating my invention. Fig. 2 is a central vertical section of the same. Fig. 3
20 is a transverse section on line $x x$ on Fig. 2. Fig. 4 is a sectional elevation of the upper portion of the brake-shaft. Fig. 5 is a perspective view of the two sliding pawls slightly separated from each other.

25 In the drawings, 1 represents the brake-handle, provided with the hollow hub 2, in the interior of which are found a series of ratchet-teeth 3, preferably an odd number, extending longitudinally of said hub or parallel to the
30 axis about which said handle moves in operating the brake.

The upper end of the brake-shaft 4 is enlarged, has formed therein the circumferential groove 5, has its extreme upper portion 6
35 reduced in diameter to form the annular shoulder 7, and has the slot 8 cut diametrically through its upper portion. So far the construction is substantially the same as shown and described in another application of
40 mine filed August 8, 1899, Serial No. 726,000.

The slot 8 has fitted therein the two triangular pawl-plates 9 and 10, both of which are constructed and arranged to be movable transversely of said shaft when the pawl 9 is moved
45 vertically. The upper end of said shaft 4 has formed therein a cylindrical chamber 11 concentric with the axis of said shaft, in which is placed the spiral spring 12, the lower end of which rests upon the broad upper end of the
50 pawl 9, while its upper end abuts against the upper wall or surface of the recess 13, formed in the hub 2 above the larger chamber contain-

ing the teeth 3, the tension of said spring tending to press the pawl 9 downward, which movement causes both pawls to be moved out-
55 ward as far as the width of the larger chamber in said hub will permit.

The recess 13 in the hub 2 embraces the reduced upper end of the brake-shaft 4, and thus practically ties the two parts of the said
60 shaft upon the opposite sides of the slot 8 together. The reduced upper portion of said shaft and the portions just above and below the groove 5 are fitted to bearings in the hub 2, as shown. The slot 8 instead of extending
65 to the extreme upper end of said shaft may extend upward only to the shoulder 7, if desired, but as a matter of convenience in forming said slot I prefer to make it as shown. There being two pawls and an odd number
70 of teeth it follows that when one pawl is engaged with the shoulder of a tooth the opposite pawl will be bearing against the center of the inclined surface of another tooth, as shown in Fig. 3, and said pawls will act al-
75 ternately upon the teeth 3, whereby a much stronger tooth may be had with an equally fine adjustment of the handle, as if a single pawl and double the number of teeth were employed.
80

The handle 1 is secured against being accidentally withdrawn from the shaft by the screw 14, the smooth inner end of which enters the groove 5, as shown in Fig. 2. This construction makes a very strong and dura-
85 ble brake-operating device that is effective in operation, inexpensive to construct, and that will not easily get out of order.

As the tension of the spring 12 acting upon the pawl 9 to move it downward causes the
90 outer edges of both pawls to be held in contact with the peripheral surface of the chamber in said hub 2, if the handle be turned in the direction indicated by the arrow in Fig. 3 one or the other of said pawls will engage
95 a tooth 3 and cause the shaft 4 to be turned in the same direction. If, however, the handle be turned in the opposite direction, the action of the inclined surfaces of the teeth upon the pawls will cause them to be moved
100 inward against the tension of said spring.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a brake-handle for cars the combina-

tion of a handle having a chambered hub to inclose the upper end of the brake-shaft; a series of ratchet-teeth formed in the inner perimeter of said chambered hub; a brake-shaft
5 having a slot cut diametrically through it at or near its upper end; a pair of triangular sliding pawls fitted in said slot with their outer edges parallel to each other and adapted to be moved laterally in opposite directions
10 in said slot by pressure being applied to the upper end of one of said pawls; and a spring interposed between the upper end of one of said pawls and the closed upper end of the chamber of the hub of said handle.
15 2. In a brake-operating device the combination of a handle provided with a hub having the recess 13 and a larger chamber; a series of ratchet-teeth formed in and extending longitudinally of said chamber; a brake-shaft
20 having a slot cut diametrically through it at

or near its upper end, and having a cylindrical recess formed in its upper end concentric with its axis, and having its upper end reduced to fit the recess 13 in said hub; a pair of triangular sliding pawls fitted to said slot 25 with their outer edges parallel and their oblique edges abutting against each other; and the spring 12 inserted in the recess 11 and bearing at one end upon one of said pawls and at the other against the closed upper end 30 of the recess 13.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 27th day of November, A. D. 1899.

EDWARD C. COLLINS.

Witnesses:

EDWARD T. HALL,
EDGAR L. CROSSMAN.