Oct. 10, 1933. J. BINGHAM 1,929,473

LEVER

Filed April 6, 1929

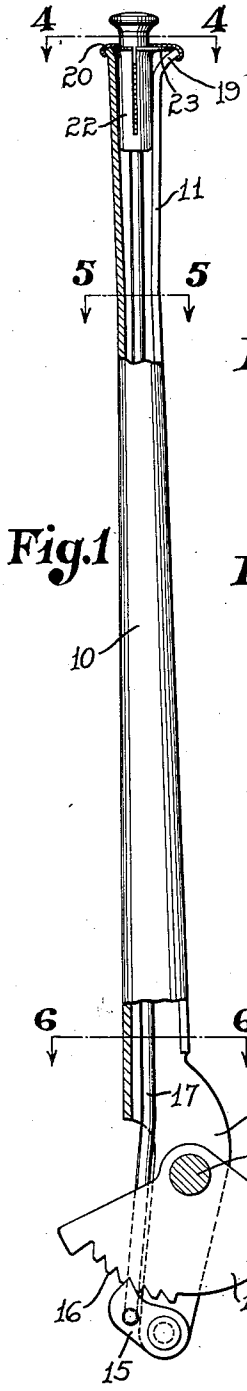


Fig.1

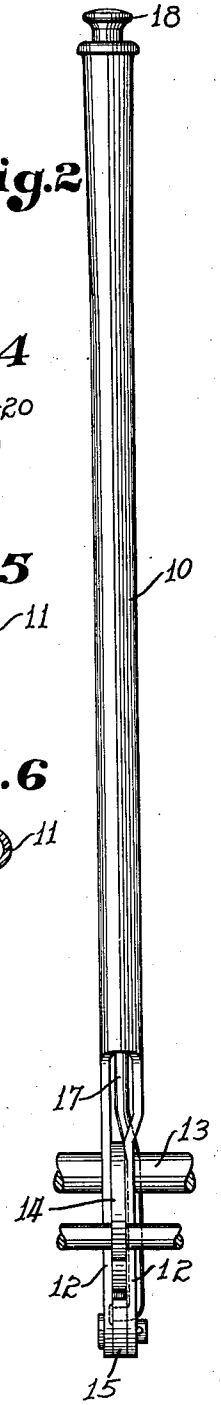


Fig.2

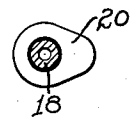


Fig.4



Fig.5

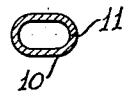


Fig.6

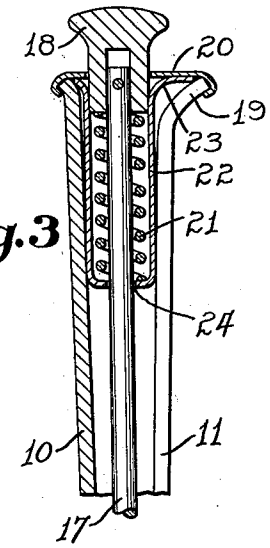


Fig.3

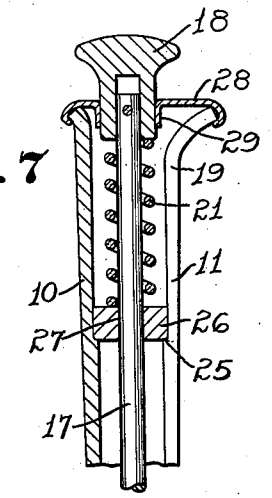


Fig.7

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LEVER

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Application April 6, 1929. Serial No. 352,936

8 Claims. (Cl. 74—39)

This invention relates to a lever, especially adapted to be used in connection with the hand brake of a motor vehicle, although not necessarily limited thereto. In cars of the better class, it has been customary to make such levers by drop forging and to drill a hole longitudinally of the lever to receive the rod which controls the ratchet mechanism. For cheaper cars, a less expensive lever has been made by stamping, but in such case, the rod has been located outside of the lever and actuated by means of a member pivoted in the upper end of the brake handle, which is objectionable for obvious reasons.

The general object of the present invention is to provide a lever which may be economically made by stamping and which is so arranged that the ratchet control rod may extend through the same and be guided and actuated in substantially the same manner as has heretofore been accomplished only with the drop forged lever above described. A further object is to provide a lever of this type, within which the ratchet control rod may be actuated and properly guided, and in the manufacture of which very little, if any, drilling is necessary.

The construction of the invention and the advantages thereof will be more particularly described in connection with the accompanying drawing, in which

Figure 1 is a side elevation of the invention, parts thereof being broken away.

Figure 2 is a front elevation of the same.

Figure 3 is a central longitudinal section through the upper part of the lever.

Figure 4 is a transverse section taken on the line 4—4 of Figure 1.

Figure 5 is a transverse section of the lever shank taken on the line 5—5 of Figure 1.

Figure 6 is a transverse section of the lever shank taken on the line 6—6 of Figure 1.

Figure 7 is a view similar to Figure 3, but showing a modified construction.

In manufacturing this improved lever, the body portion 10 is made from a blank which is stamped from a plate of steel or other metal having the requisite qualities. This blank is cut to the proper shape, so that when it is bent by successive stages to form the lever, the edges 11 may be pressed together to form a tight seam, which will remain tightly closed without any necessity of welding. Thus a hollow lever shank is formed which is circular in cross section near its upper end, as shown in Figure 5, and which is oval in cross section near its lower end, as shown in Figure 6. The lower end of the lever is formed with oppositely disposed legs 12 which are pivotally mounted on a pin 13 and straddle the ratchet sector 14. The usual locking pawl 15 is pivoted to the lower ends of the legs 12 and adapted to engage teeth 16 on the sector 14. The pawl 15 is controlled by a rod 17 which extends through the hollow body 10.

A thumb button 18 is secured by a pin or other suitable means to the upper end of the pawl rod 17 and extends above the upper end of the handle 10. The upper extremity of the handle is flared, as shown at 19, and is covered as shown in Figure 3 by a cap 20, which may be die cast in the proper shape and secured by rolling the edges over the flared upper end of the handle. The upper portion of the lever handle 10 preferably has a slight taper downwardly and receives a spring cup 22, which has a close fit therein. The upper end of the cup 22 may be formed with an outwardly turned rim 23, which is secured between the flared extremity 19 of the handle and the cap 20. The bottom of the cup 22 is formed with a hole 24 through which the pawl rod 17 passes. A coil spring 21 within the cup 22 acts between the bottom of the cup and the button 18 to raise the pawl rod 17 and normally to retain the pawl 15 in engagement with one of the teeth 16. The button 18 may, however, be pressed downwardly by the thumb in the usual manner to release the lever.

In the form shown in Figure 3, no machining of the brake handle is necessary. The cup 22 affords a suitable support for the spring 21 and at the same time forms a guide within which the button 18 reciprocates.

In the form shown in Figure 7, instead of using the cup 22, the upper portion of the lever handle is reamed out to form an annular shoulder 25 which is adapted to receive a bushing 26. This bushing constitutes a support for the spring 21 and has a central opening 27 through which the pawl rod 17 passes. In this form of the invention, the lever cap 28 is formed with an internal flange 29 which constitutes a bearing and guide for the reciprocation of the thumb button 18.

From the foregoing description, it will be seen that I have provided a lever which is of the type used for operating the hand brake of a motor vehicle, which may be very economically manufactured by stamping, and which has substantially the same appearance and operates in the same manner as the more expensive levers heretofore made by drop forging. It is to be understood, however, that the details of the construc-

tion above described are shown merely for the purpose of illustration and that various other modifications may be made therein without departing materially from the scope of the invention as claimed.

What I claim is:

1. A lever comprising a stamping forming a hollow shank with a fulcrum near its lower end, the upper extremity of the shank having a flared edge, a cap having its peripheral edge rolled over said flared edge to secure the cap to the upper extremity of said shank, a reciprocable pawl rod extending within the shank longitudinally thereof, and a button secured to the upper end of said rod, said cap having an opening in which the button is guided.

2. A lever comprising a stamping forming a hollow shank with a fulcrum near its lower end, the upper extremity of the shank having a flared edge, a cap having its peripheral edge rolled over said flared edge to secure the cap to the upper extremity of said shank, and a reciprocable pawl controlling means extending within the shank longitudinally thereof, said cap having an opening constituting a guide for the upper end of said controlling means.

3. A lever comprising a stamping forming a hollow shank with a fulcrum near its lower end and of increased internal diameter toward its upper end to form an abutment, a reciprocable pawl rod passing through said shank, means seated on said abutment for centering the rod and constituting a spring housing, and a spring within said housing urging said rod in one direction.

4. A lever comprising a stamping formed into a hollow handle with an increased internal diameter towards its outer end to form an abutment, a spring seat and housing supported by said abutment, a rod passing through said handle, a thumb button on the end of the rod and guided for reciprocation within said housing, and a spring within said housing acting between said seat and said button to urge the rod in one direction.

5. A lever formed of sheet material having a handle portion and a body portion; a pawl rod passing through said handle portion, said pawl rod being provided at its upper end with a manipulating button; a cylindrical socket positioned in said handle portion; a spring for normally holding said manipulating rod in one position, the lower end of said socket having a flanged portion adapted for snug engagement with said rod to prevent lateral motion between the parts.

6. A lever formed of sheet material having a hollow handle portion and a body portion, a pawl rod passing through said handle portion; a removable socket positioned within said handle portion; said socket having a flanged portion for defining its position within said handle portion; manipulating means carried by the upper extremity of said rod; and means including a resilient member interposed between said manipulating means and said socket adapted to normally hold said pawl rod in one position.

7. A lever formed of sheet material having a hollow handle portion and a body portion; a pawl rod passing through said handle portion; a removable socket positioned within said handle portion; said socket having a flanged portion for defining its position within said handle portion; a manipulating button carried by the upper extremity of said rod; means including a member of resilient material interposed between said button and said socket adapted to normally hold said rod in one position and a flanged plate adapted to close the upper end of said handle portion.

8. In an emergency brake lever construction, a plate adapted to be fixedly secured to a motor vehicle, in a longitudinally and vertically extending plane, said plate having an opening therethrough adjacent to its upper edge, and a series of ratchet teeth therein on its lower edge, a one piece lever body portion having a pair of integral arms extending therefrom and straddling said plate, said arms having strengthening sections adjacent the connection with the body portion, said arms being pivotally secured to the plate at the axis of the opening therein with the free ends of the arms extending across the plate to position beyond the ratchet teeth, a manually operable ratchet pawl pivotally mounted between the free ends of said arms in position to coact with said teeth, an operating rod within said lever body member connected with said pawl and extending adjacent said pivot, said arms being adapted to be connected to a brake operating rod.

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