

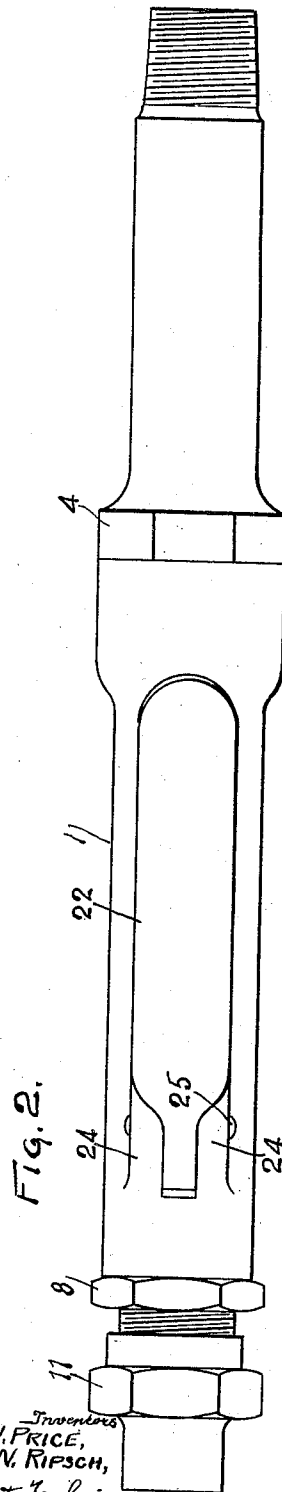
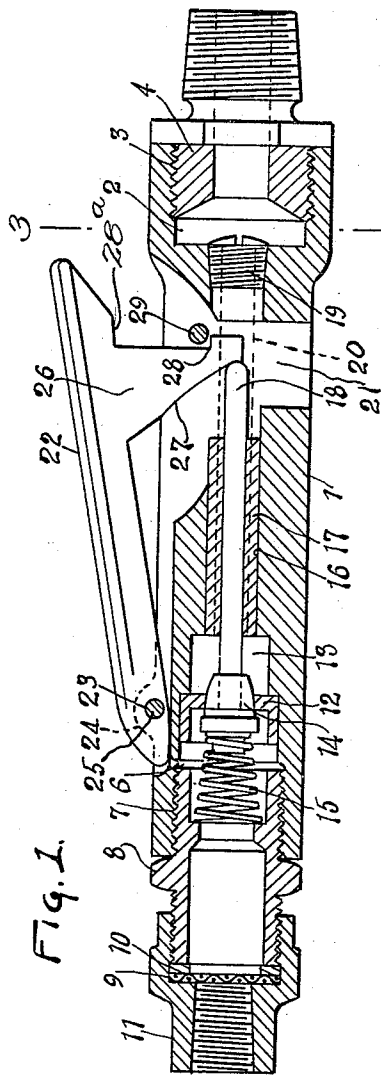
Sept. 13, 1932.

W. W. PRICE ET AL
THROTTLE

1,877,197

Filed April 18, 1929

2 Sheets-Sheet 1



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Fig. 5.

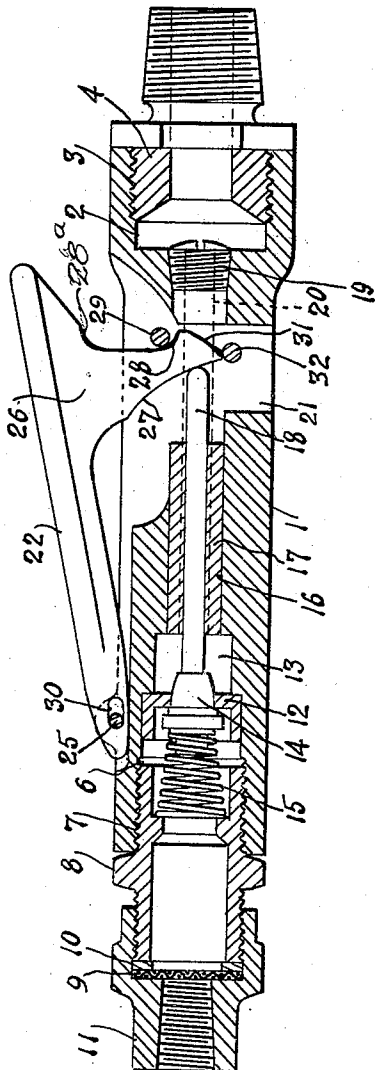
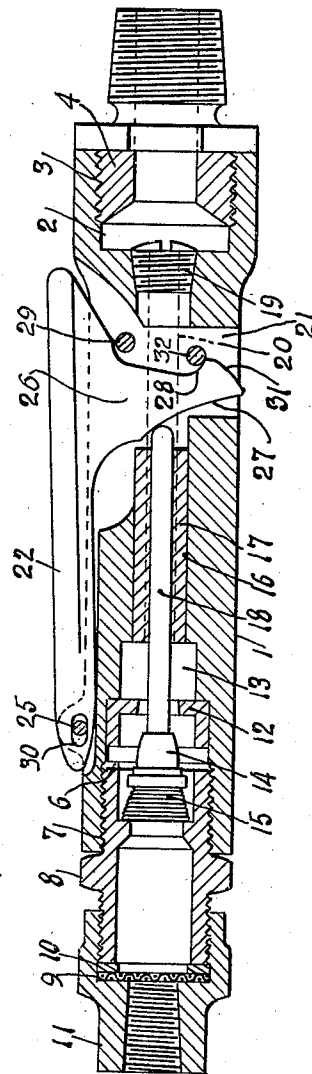


Fig. 6.



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THROTTLE

Application filed April 18, 1929. Serial No. 356,264.

This invention relates to throttles, and more particularly to throttles for air tools.

The object of the invention is to provide a throttle of the straight type with one or more free straight passages for air so that it may be adapted to any and all types of air tools and meet the demands for safety.

It is a further object of the invention to provide such a throttle which is positive, easily controlled, sensitive, and is very little trouble to the operator, all parts being easily accessible for repair or renewal.

It is more particularly the object of this invention to provide a valve operating trigger with means for locking said trigger in valve opening position, and to so construct the trigger that it is held in valve opening position by means of the spring that actuates the valve to seat it.

It is a further object of this invention to provide the valve trigger with positive means for limiting the movement thereof and prevent the displacement thereof.

These and other advantages will appear from the following description taken in connection with the drawings, which show a preferred embodiment of this invention.

Figure 1 is a longitudinal sectional view of this improved throttle.

Figure 2 is a top plan view of the throttle shown in Figure 1 with an elongated shank attached thereto.

Figure 3 is a cross section on the line 3—3 of Figure 1.

Figure 4 is a front end view of the throttle shown in Figure 1.

Figure 5 is a longitudinal sectional view of a modified form showing means for holding the trigger in valve opening position.

Figure 6 is a view similar to that of Figure 5 but showing the trigger locked in valve opening position.

In Figure 1 there is shown a longitudinal section of the throttle.

The numeral 1 designates the body part which is oblong and more or less circular in shape and has at the front end thereof a front cavity, indicated by the numeral 2.

This cavity has a screw threaded part 3 adapted to receive a front plug 4. The rear

part of the front cavity forms a front air chamber. The rear end of the body has therein a rear cavity 6 having a threaded part 7, which receives a rear plug 8.

Over the end of this rear plug there is placed a screen 9, which has between it and the rear end of the plug 8 a washer 10. Fitting over the rear end of the rear plug 8 and inclosing the screen and washer is a connection 11, adapted to have attached thereto a hose or some suitable air pipe. There is located within the rear cavity a valve seat 12. This valve seat is located within the intermediate part of the rear cavity and provides a cavity between it and the front end of the rear cavity, which forms a rear air chamber 13.

Suitably fitted in the valve seat is a valve 14 engaged and held in seat-engaging position by means of a spring 15. Extending through the body of the throttle is a circular opening 16, which has in the rear part thereof a bushing 17 which provides a seat for the valve stem 18. This valve stem is attached at its rear end to the valve 14.

The front end of the circular opening 16 is closed by means of a screw plug 19. In addition to this circular opening there is on each side of it a longitudinal air passage, indicated by the numeral 20. These air passages extend from the rear chamber 13 to the front chamber 2. The entrance of air into these passages is controlled by the valve 14. Between the two air passages and intercepting the circular opening 16, is a vertical transverse slot 21. The valve stem 18 extends into the transverse slot 21 and is engaged by a certain part of the valve trigger 22. The rear end of the valve trigger 22 has a hole or slot 23 therein.

On a suitable part of the body there are two upstanding ears 24, which receive therebetween the valve trigger or lever 22. The valve trigger is mounted between these two ears by means of a pin 25, which passes through the openings therein and through the hole 23 in the rear end of the trigger 22.

Extending downwardly and laterally from the front end of the trigger is a dog or cam member 26, having on the rear face

thereof a cam surface indicated by the numeral 27, to engage and move valve stem 18. The front end of this dog is provided with a shoulder 28 to prevent the dog from moving entirely without the transverse slot and with a shoulder 28a to limit the inward movement of the dog. For this purpose there is provided a pin 29 to be engaged by the shoulders 28 and 28a on the dog 26. This pin 29 extends through the body of the throttle.

The parts shown in Figures 5 and 6 are similar to those shown in Figures 1 and 2, with the exception that the hole 23, as shown in Figures 1 and 2, has been enlarged to a slot 30 in the form shown in Figures 5 and 6. Fitting within this slot 30 is the pin 25, similar to that found in Figures 1 and 2. In the form shown in Figures 5 and 6, the lower part of the dog or cam member has provided thereon a cam surface, indicated by the numeral 31, which engages a removable pin 32 as the trigger is pressed down, as shown in Figure 5. By removing the pin 32 there is produced a safety throttle valve similar to that shown in Figure 1.

As shown in Figure 5, the trigger moves backward slightly against the action of the valve spring until the cam surface 31 passes entirely beyond the pin 32 so that the pin 32 will engage the shoulder immediately above the cam surface 31 and lock the trigger in its lower position with the upper surface thereof substantially in line with the upper surface of the body of the throttle. In this position the trigger does not need to be manually held since the pin acts to hold the trigger in valve-opening position, and the spring 15 tends to hold the trigger in that position through the valve stem 18.

To release the trigger it is only necessary that the trigger be moved backward against the action of the valve spring until the shoulder above the cam 31 can pass beyond the lock pin 32. When this is done the trigger is raised so that the valve may be closed and the passage of air from the air chamber 13 to the air chamber 2 is prevented.

There is provided here a throttle thus adapted to be used for various purposes and may be used in such places where it would not be convenient for the operator to have his hand on the trigger. There is also provided in these throttles a substantially straight passageway for the air.

We desire to comprehend within our invention such modifications as may be clearly embraced within our claims and the scope of our invention.

Having thus fully described our invention, what we claim is new and desire to secure by Letters Patent, is:

1. In a throttle valve of the character described, a valve head, a stem extending from said head, a manually operated lever piv-

oted on one end and having on the other end a laterally extending cam member to engage said stem to move said valve, and a spring return to hold said valve in closed position.

2. In a throttle valve of the character described, a valve head, a seat for said head, a valve stem extending from said head, and a manually operated lever pivoted at one end and having a cam on the other end to engage said stem to move said valve from said seat, said cam having means thereon to limit the movement of said manually operated lever.

3. In a throttle valve of the character described, a valve head, a seat for said head, a valve stem extending from said head, a lever pivoted at one end and having at the other end a laterally extending cam member to engage said stem to remove said head from said seat, and shoulders on said cam member to limit the movement of said cam member in each of its directions of movement.

4. In a throttle valve, a body having an air passageway extending therethrough, a valve member to close said passageway, a stem extending from said valve member, a spring return means holding said valve to normally close said passageway, a manually operated lever having cam means thereon to engage the end of said stem to open said valve, said cam means having a pair of shoulders thereon, and means on the body member to engage said shoulders to limit the movement of said manually operated lever in both of its directions of movement.

5. In a throttle valve, an elongated body member having a cavity in each end thereof and a plurality of passageways leading from one cavity to the other, a spring operated valve member in one of said cavities serving to close the passageway through the cavity, a cam member for moving said valve to open said passageway, a plurality of shoulders on said cam member, and means on said body member to be engaged by said shoulders to limit the movement of the cam member in each of its directions of movement.

6. In a throttle valve, an elongated body member having a cavity in each end and a plurality of passageways connecting said cavities, a valve to close the passageway through one of said cavities, a manually operated longitudinally movable lever adapted to operate said valve to open said passageway, and means on said body member adapted to be engaged by said lever on longitudinal movement thereof to lock the valve open.

7. In a throttle valve, a body member having a cavity in each end thereof and a pair of passageways connecting said cavities, a spring operated valve member adapted to close the passageway through one of said cavities, a manually operated longitudinally movable lever having a cam member connected thereto to open said valve, and means on

said body adapted to engage said cam member on the longitudinal movement of said lever to hold said valve open.

8. In a throttle valve, a body member having a cavity therein, a pair of passageways leading from said cavity, a spring operated valve adapted to close the end of said cavity spaced from said passageways, a manually operated longitudinally movable lever having a cam thereon in operative engagement with said valve to open said valve against the action of the spring and coacting means on said cam and on said body adapted to engage each other to lock and hold said manually operated lever in valve opening position.

9. In a throttle valve, a body member having a cavity therein and a plurality of passageways leading from said cavity, a spring operated valve to close the end of said cavity spaced from said passageways, a longitudinally movable lever having a cam thereon coacting with part of said valve to open said valve, said lever having a second cam surface and a locking shoulder thereon, and a locking means on said body adapted to engage with said second cam whereby said locking means engages said shoulder on longitudinal movement of said lever snapped against the operation of said spring for locking the lever in valve opening position, said spring acting to hold said lever in said valve opening position.

10. In a throttle valve, a longitudinally extending body member having a cavity in one end thereof and a passageway leading from said cavity, a spring operated valve to close the end of the cavity spaced from said passageway, a longitudinally movable lever pivoted to said body, a projection extending from said lever having a cam surface thereon adapted to engage a part of the valve to open said valve, and a second cam surface on said projection ending in a shoulder, means on said body adapted to engage said second cam surface and to be snapped into engagement with said shoulder by the action of said spring to lock said lever in a valve opening position, said spring acting to maintain said lever in its locked position.

11. In a throttle valve, a body member having a valve seat, a spring operated valve to engage said seat, cam means movable longitudinally and transversely of said body to engage part of said valve to move said valve from said seat against the action of said spring, and means to engage said cam means after the longitudinal and the transverse movements thereof to lock said valve open, said spring serving to maintain said parts in locked position.

12. In a throttle, a body member having an air chamber in each end thereof and a plurality of air passageways connecting said air chambers, a valve in one of said air chambers to control the passage of air there-

through, a trigger pivotally mounted to said body member for longitudinal movement, a dog extending from said trigger and having a cam surface thereon, a plunger extending from said valve and adapted to be engaged by the cam surface of said dog to open said valve, and means on said body member adapted on the oscillating and longitudinal motion of said trigger to engage said dog and to hold said trigger in position to hold the valve open.

13. In a throttle, a body member having in each end thereof an air chamber and a plurality of longitudinally extending air passageways leading from one chamber to the other, a valve member in one of said air chambers having extending therefrom a plunger, a trigger pivotally mounted on said body member and adapted to have longitudinal motion, a dog extending from said trigger having a pair of cam surfaces and a shoulder thereon, one of said cam surfaces adapted to engage said plunger to operate said valve, and a pin in said body member adapted to engage the second cam surface and the shoulder of said dog to lock the trigger in valve opening position.

14. In a throttle, a body therefor having at each end an air chamber and a pair of longitudinally extending air passageways extending from one chamber to the other, an air valve member in one of said air chambers, a spring engaging said valve to hold it closed, a plunger extending from said valve, a trigger pivoted to said body member and adapted to have longitudinal motion, a dog on said trigger having a cam surface adapted to engage said plunger and to open said valve against the action of said spring, a second cam surface on said dog ending in a shoulder, a pin extending through said body member and adapted to engage said second cam surface on said dog and to snap onto said shoulder to hold the trigger in position to hold the valve open.

15. In a throttle, a body member having an air passageway therein, a valve member for closing said passageway, a trigger pivotally mounted on said body member and adapted to have longitudinal movement, a dog on said trigger having a pair of cam surfaces and a shoulder thereon, one of said cam surfaces adapted to operate said valve, and a removable lock means on said body member adapted to engage the other of said cam surfaces and said shoulder to lock the trigger in valve opening position.

16. In a throttle, a body member having an air passageway therein, a valve member for closing said passageway, a trigger pivotally and slidably mounted on said body member, a dog on said trigger having a pair of cam surfaces and a shoulder thereon, one of said cam surfaces adapted to operate said valve, and a pin on said body member adapted to

engage the other of said cam surfaces and said shoulder to lock the trigger in valve open position.

17. In a throttle, a body member having an air passageway therein, a valve member for closing said passageway, a trigger pivotally and slidably mounted on said body member, a dog on said trigger having a pair of cam surfaces and a shoulder thereon, one of said cam surfaces adapted to operate said valve, and a removable pin on said body member adapted to engage the other of said cam surfaces and said shoulder to lock the trigger in valve open position.

18. In a throttle, a body member having in each end an air chamber and a plurality of air passageways leading from one chamber to the other, a valve member in one of said chambers to control the passage of air through said passageways, said valve and passageways being so arranged as to provide a substantially straight passageway for the air through said passageways, and means to open the valve and hold it in open position.

In testimony whereof, we affix our signatures.

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