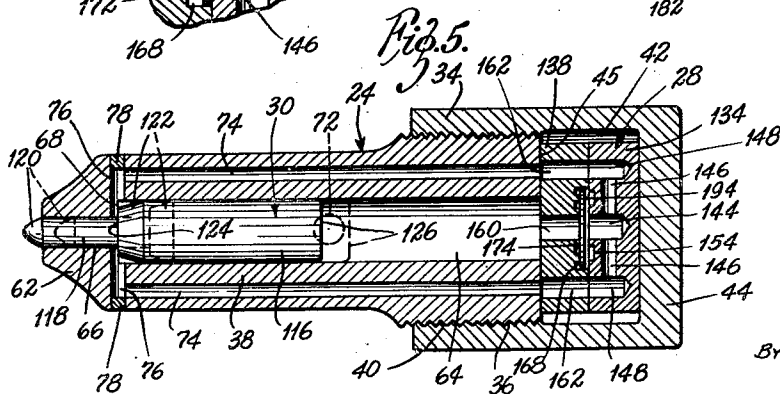
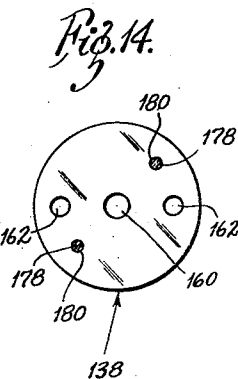
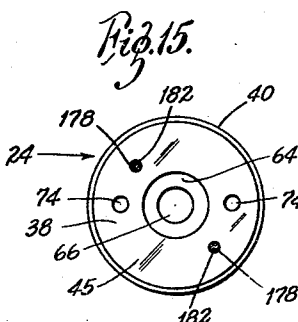
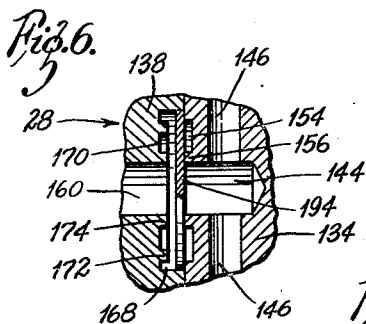
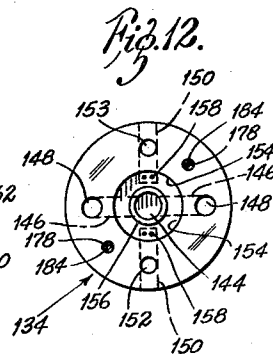
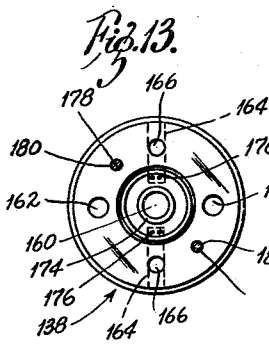
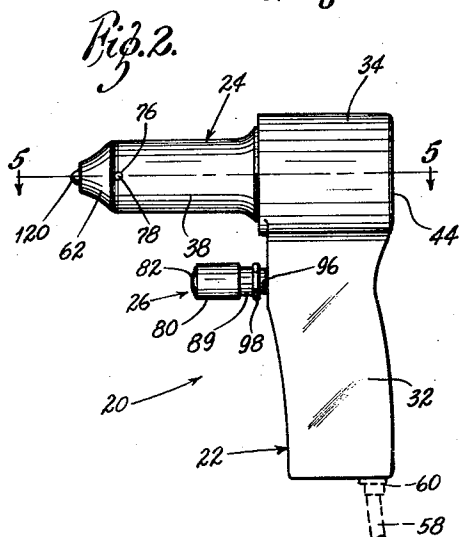
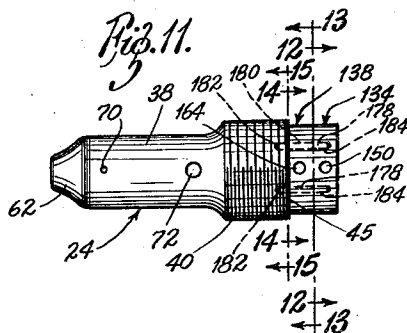


L. N. BROWN

PNEUMATIC TAP HAMMER

2 Sheets-Sheet 1



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Feb. 18, 1958

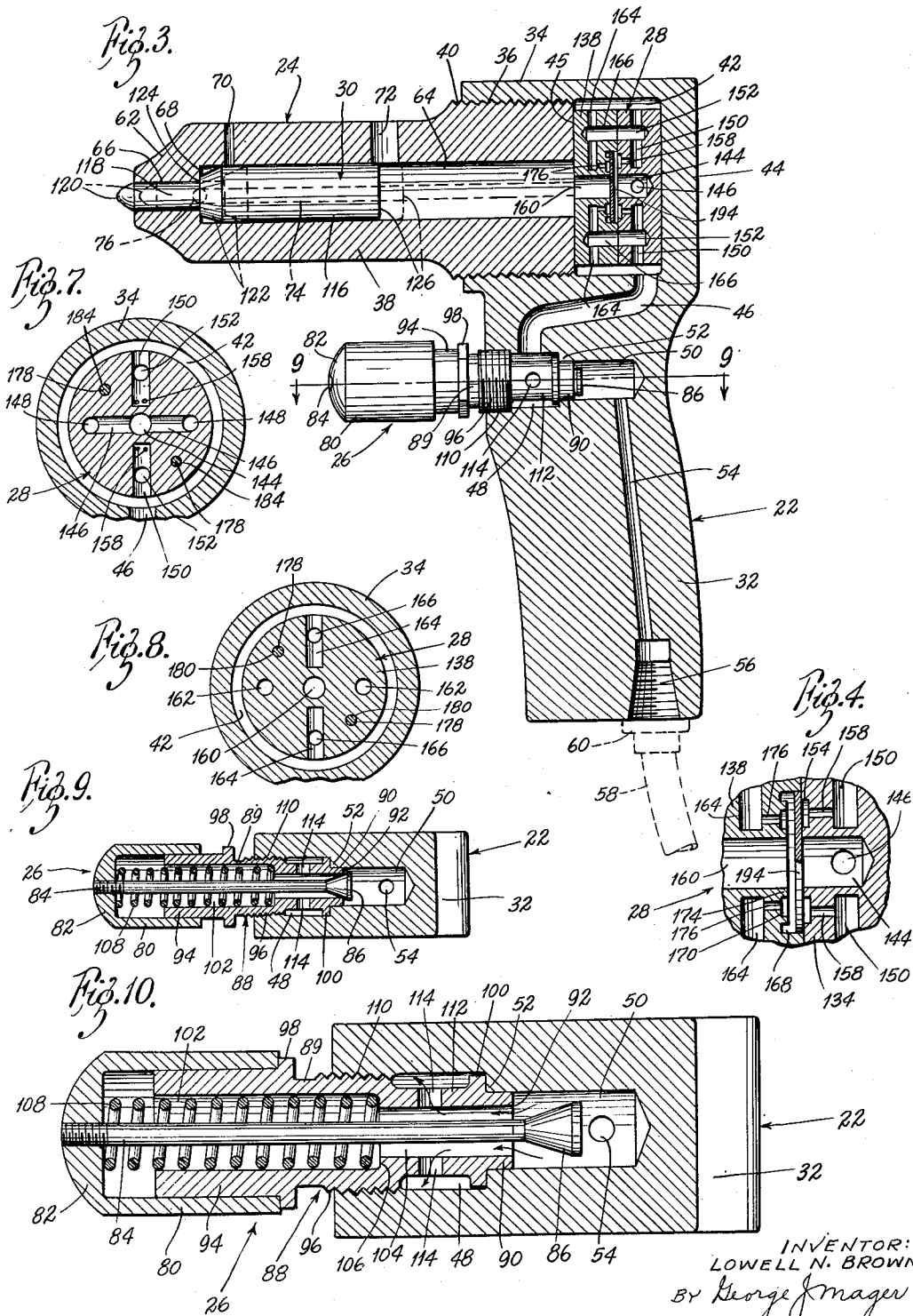
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2,823,646

PNEUMATIC TAP HAMMER

Filed March 5, 1954

2 Sheets-Sheet 2



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2,823,646

PNEUMATIC TAP HAMMER

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Application March 5, 1954, Serial No. 414,287

4 Claims. (Cl. 121—3)

The present invention relates generally to a novel construction for a portable tool of the pneumatic hammer type, and is designed for use primarily, though not at all exclusively, in automobile body repair work.

More particularly, this invention relates to a novel hand tool, operable by means of air under pressure, for delivering what will be termed "soft" hammer blows to dents in automobile body members, such as fender, doors and so on. The tool of the invention will therefore hereinafter be referred to as a tap hammer, because unlike conventional pneumatic hammers which deliver powerful blows, the instant device delivers slight blows or taps to the surface of the material against which it is directed. As will appear hereinafter, the invention provides means for regulating the rapidity of tap delivery, whereby delicate smoothing operations may be effected without requiring great skill on the part of the user.

In external appearance, the tap hammer of my invention simulates the general configuration of a pistol, whereby to facilitate the handling and operation thereof. That is to say, the hammer includes a handle member associated with a barrel member substantially normal thereto, so that the tool may be directed horizontally, perpendicularly, or angularly, without reducing its operational efficiency.

The primary object of my invention is to provide an efficient, light weight portable hand tool of the gun type, that is pneumatically operable in such manner as to solve some of the major problems existent in the automobile body repair industry.

Heretofore, as far as I am aware, a device of the character under consideration has not been available. As a result, the removal of dents from fenders and the like for example, has been a tedious and laborious task, aggravated particularly when an indentation happened to be a small one in area or depth, or both. As will be more fully explained below, the present invention provides means for effecting what is spoken of in the trade as a "dot" operation, so called because the application of a succession of gentle blows directed against the dented portions of a fender or the like is required to restore the surface thereof to its pristine smoothness.

A manually operable pressure control valve assembly is mounted in the handle member of the tool, and said handle member has integrally formed therewith a hollow cylindrical section adapted to receive and support one end of the barrel member. Secured to, and supported by the barrel within said cylindrical section, is a composite assembly for automatically effecting intermittent reciprocatory movements of a piston member slidably disposed in the longitudinal bore of the barrel member, in response to manipulations of the pressure control assembly. The said composite assembly however, forms per se no part of the present invention and is not claimed herein, being identical with that illustrated, described, and claimed in United States Letters Patent No. 2,655,901, issued to me on October 20, 1953.

The piston member includes a cylindrical extension of

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reduced diameter that will be termed the tap stem, and said stem terminates in a rounded tip portion which, as will be seen, serves to deliver soft blows to the material being repaired.

- 5 A more comprehensive understanding of the advantages of the invention, the construction thereof, and its mode of operation, may be had from the detailed description to follow with reference to two sheets of accompanying drawings, wherein the preferred embodiment of my invention is illustrated.

10 In said drawings:

Figure 1 is a top plan view of a pneumatically operable hand tool embodying the principles of the present invention;

- 15 Figure 2 is a side elevational view thereof;

Figure 3 is a vertical longitudinal sectional view thereof, taken on the line 3—3 of Figure 1, and drawn to actual size scale;

- 20 Figure 4 is a further enlarged reproduction of a fragmentary portion of Figure 3, with an included disk or wafer member shown occupying an alternate position relatively to that which it occupies in Figure 3;

Figure 5 is a horizontal sectional plan view taken on the line 5—5 of Figure 2, and drawn to a scale corresponding with that of Figure 3;

- 25 Figure 6 is a further enlarged reproduction of a fragmentary portion of Figure 5, with an included disk or wafer member occupying an alternate position relatively to that which it occupies in Figure 5, said position of the wafer member corresponding to the Figure 4 position thereof;

- 30 Figures 7 and 8 are vertical sectional views taken respectively on the lines 7—7 and 8—8 of Figure 1, these views being drawn to a scale corresponding to that of Figures 3 and 5;

Figure 9 is a horizontal sectional view taken on the line 9—9 of Figure 3, particularly illustrating an air control valve assembly in closed disposition;

- 35 Figure 10 is a reproduction of Figure 9 on an enlarged scale, the air control valve assembly being illustrated in open position;

Figure 11 is a top plan view of the barrel member of the invention and the composite assembly associated therewith for operatively actuating the tap hammer responsive to manipulations of the air control valve assembly, the scale to which the view is drawn corresponding to that of Figures 1 and 2; and

- 40 Figures 12, 13, 14, and 15 are elevational views taken respectively on the lines 12—12, 13—13, 14—14, and 15—15 of Figure 11, a pair of dowel pins being shown in section, and the scale of these views corresponding to that of Figures 3 and 5.

- 45 In Figures 1 through 3, the pneumatically operated hand tool of my invention is indicated as a whole, by the numeral 20.

- 50 The tool 20 shown includes: a handle member generally designated 22; a barrel member generally designated 24; a manually operable air pressure control valve assembly that is removably mounted in said handle portion and is generally designated 26; a composite assembly 28 adapted to automatically effect reciprocations of a slidable piston element 30 in response to manipulations of the pressure control assembly 26; and other associated and incorporated elements that will hereinafter be described.

- 55 The handle member 22 includes a lower hand grip section 32, integrally formed with an upper cylindrical section 34 that is threaded internally as at 36. The barrel member 24 consists of a body portion 38, the right or rear end of which is threaded externally as at 40, for engagement with the threads 36 of the cylindrical section 34. Thus, in the assembled status of

the tool, as shown particularly in Figures 3 and 5, an annular air pressure chamber 42 is provided in the cylindrical section 34 between the solid vertical wall 44 thereof, and the rear face 45 of the barrel member.

The annular air pressure chamber 42 is in fluid communication with the upper end of a passageway 46, the lower end of said passageway being in fluid communication with a smaller annular air chamber 48 that is formed in the hand grip section 32. Chamber 48 is horizontally aligned with an air pressure intake chamber 50 the diameter of which is reduced, whereby to provide an annular shoulder 52 for a purpose to appear.

Numeral 54 designates a passageway formed in grip section 32 to provide a constant supply of air under pressure from a source (not shown) to chamber 50, via inlet 56 and a flexible air line 58, the inlet 56 being threaded for the reception of a suitable fitting such as suggested at 60.

Reverting now to the barrel member 24, the body 38 thereof preferably terminates at its forward end in a nosing 62 of the configuration shown, and has formed therein a longitudinal bore designated 64. Numeral 66 designates a bore of smaller diameter formed in nosing 62 concentric with the bore 64, thus providing an annular shoulder 68 in said barrel body.

As seen to best advantage in Figure 3, a forward small-diametered radial exhaust port 70 leads from bore 64 to atmosphere, it being noted that said port is drilled one quarter of an inch rearwardly of the shoulder 68. A rearward large-diametered radial exhaust port 72 also leads from bore 64 to atmosphere, it being noted that this port is drilled at a point equidistant from the shoulder 68, and from the rear face 45 of the barrel member. In other words, the port 72 is located centrally of the bore 64. The location of port 72 is shown by broken lines also in Figure 5, although it is noted that said port is actually above the plane whereon this view is taken.

With attention directed particularly to Figure 5, the body 38 of the barrel member 24 has also formed therein a pair of diametrically opposed longitudinal air passageways 74, and a pair of radial air passageways 76 in fluid communication therewith. The radial passageways 76 are formed so as to intersect the shoulder 68 as shown, and the outer ends thereof are sealed by means of plug elements 78, pressfitted or otherwise permanently secured therein.

The manually operable valve assembly 26 is illustrated in detail particularly in Figures 9 and 10. This assembly controls the flow of air pressure from intake chamber 50 into the annular chamber 42 of the cylindrical section 34 via passageway 46, and chamber 48.

The assembly 26 includes a finger piece 80 which is cup-shaped as shown, and has an exteriorly rounded bottom wall 82. Rigidly secured centrally of said bottom wall is one end of a valve stem 84, the opposite end of said stem terminating in a conical valve 86. Numeral 88 indicates generally a valve plug member included in the assembly 26.

As viewed in the drawings, the plug member 88 comprises a hollow body 89 that terminates at its right end in a cylindrical portion 90 extending into the intake chamber 50 to provide a seat 92 for the valve 86, and at its left end in a cylindrical portion 94 whereon the finger piece 80 is slidably mounted. Said valve body also has an externally threaded portion 96, a polygonal flange 98, and a circular flange 100 formed thereon, and concentric longitudinal bores 102 and 104 formed therein. As shown in the drawings, the diameter of the bore 104 is smaller than that of the bore 102, thus providing an annular shoulder 106 that serves as a seat for one end of a compression spring 108. Said spring is interposed in the bore 104 about a portion of the valve stem 84 between said shoulder and the bottom wall 82 of the fingerpiece, whereby as should be clear from an

inspection of Figure 9, the assembly 26 constitutes a self-contained unit.

Leftwardly thereof, the bore which defines chamber 48 in handle section 32 is threaded internally as at 110 for engaging the portion 96 of the valve body, so that the self-contained assembly 26 may be removably inserted by means of an appropriate tool applied to the polygonal flange 98, as is understood. With the assembly 26 in position, the circular flange 100 bears against the shoulder 52, thus sealing the intake chamber 50 against leakage of air pressure when the conical valve is in the normal or closed disposition thereof demonstrated in Figure 9.

Intermediate the threaded portion 96 and the circular flange 100, the body 89 has a cylindrical segment 112 that extends through chamber 48, and is provided with one or more radial ports 114 leading from the bore 104 into said chamber.

As hereinbefore noted, the composite assembly 28 which effects reciprocal movements of the piston element 30 responsive to air pressure supplied to the chamber 42 by manipulations of the control valve assembly 26, forms per se, no part of the present invention, and is not structurally claimed herein. This assembly has however been illustrated in the accompanying drawings and will now be described, inasmuch as a clear understanding of the operation of the present invention is thus afforded without the necessity of recurrent reference to my said patent. In the interest of simplicity and clarity, the reference numerals employed in the patent will also be employed herein.

Thus, the assembly 28 comprises a pair of complementary disk members 134 and 138 that are maintained in peripherally aligned relation by means of dowel pins, and are confined concentrically within pressure chamber 42 between the rear face 45 of the barrel member, and the wall 44 of cylindrical section 34, as demonstrated in Figures 3 and 5. The rearward disk member 134 has formed therein a central longitudinal bore 144, that is in fluid communication with a pair of diametrically opposite transverse passageways 146. The passageways 146 are in communication with a pair of longitudinal bores 148 formed on a radius concentric with bore 144, as seen for example in Figure 7.

At right angles to passageways 146, the disk 134 is provided with two diametrically opposite passageways 150, each of which opens into the annular chamber 42. Intersecting each passageway 150 is a longitudinal bore 152, that is also formed on a radius concentric with the said central bore 144. As best seen in Figure 12, the left hand face of disk member 134 has a circular recess 154 formed centrally therein, and is further provided with a circular flange 156 that surrounds the bore 144. Two short longitudinally extending ports 158 lead from each passageway 150 into the recess 154.

The forward disk member 138 as seen for example in Figures 3, 5, and 14, has formed centrally therein a longitudinal through bore or passageway 160; a pair of longitudinal through bores 162 formed on a radius concentric with bore 160; a pair of diametrically opposite bores 164 each of which opens into chamber 42; a pair of longitudinal bores 166 that intersect the bores 164 and are formed on a radius concentric with bore 160; a first circular recess 168 formed in the right end face of said disk; a second smaller recess 170 concentric with recess 168; a first circular flange 172 surrounding the recess 170; a second similar flange 174 surrounding passageway 160; and a pair of short longitudinal ports 176 leading from the bores 164 to the recess 170.

Obviously, means for maintaining a complementary disposition of the disks 134 and 138 relatively to one another and to the barrel member 24 must be provided. To this end, a pair of diametrically oppositely disposed dowel pins 178 is provided. The pins 178 extend through

holes 180 provided therefor in the disk 138, and project beyond both sides thereof to enter into sockets 182 and 184 formed respectively, in the adjacent end of the barrel 24, and in the disk member 134, as best demonstrated in Figure 11.

A metallic wafer 194, the periphery of which is slightly smaller than that which defines the circular recess 168 of disk 138, is free to vibrate or fluctuate from a position that seals bore 144 to a position that seals the rearward end of bore 160, and vice versa.

The piston element 30 includes integrally an elongated body portion 116 that is slidable in the bore 64, and a cylindrical extension or tap stem portion 118 of reduced diameter, that is slidable in the nosing bore 66. The tap stem 118 terminates at its forward end in a rounded tip segment 120, and merges at its rear end into a conically contoured or tapered segment 122 that constitutes the forward end segment of the elongated piston body portion 116. It is to be noted that the over-all length of the body portion 116 is slightly smaller than half that of the bore 64, and that the length of the stem portion 118 is slightly larger than that of the bore 66.

In accordance with the concepts of my invention, the reciprocatory movements of the piston element 30 are slight, so that a tapping action may be produced in contradistinction to the power blow delivery action ordinarily produced by pneumatic hammers. Therefore, with attention directed to Figures 3 and 5, it is to be observed that when the forward vertical face 124 of the piston body 116 is in contact with the annular shoulder 68, the rearward vertical face 126 of said piston body occupies a position located within the confines of the large exhaust port 72. In other words, the maximum movement of the piston element, either forwardly or rearwardly, is approximately one quarter of an inch, and is not variable, as will appear.

Operation

In describing the manner in which the invention operates and may be employed, it will be assumed that air under pressure is constantly supplied to the intake chamber 50 from a source not shown, delivery being via flexible line 58 and passage 54.

It will also be assumed that the air control assembly 26 is in the normal or closed position thereof exhibited in Figures 3 and 9. In this status, the conical valve 86 is automatically maintained against the seat 92 by the expansive force of compression spring 108, so that the air pressure is confined in chamber 50.

It will further be assumed that it is desired for example, to raise a depression or dent in a piece of material to a plane corresponding to that of the body of the material surrounding said dent.

Directing the tap stem against the underside of the depressed or dented surface, the operator now applies slight manual pressure to the fingerpiece 80, thus moving the conical valve 86 slightly off its seat 92. In consequence, a flow of compressed air from chamber 50 to annular chamber 42 is inaugurated, the air proceeding into said chamber via bore 104, radial ports 114, chamber 48, and passageway 46.

Assuming now that as the air pressure enters said chamber, the piston element 30 occupies the rearward broken line position thereof illustrated in Figures 3 and 5, the wafer 94 of the composite assembly 28 will be momentarily in the position thereof portrayed on a large scale in Figures 4 and 6, thus sealing the port 144. Consequently, the air pressure passes from chamber 42 through bores 164 and ports 176 into the recesses 170 and 168, thence through bore 160 into longitudinal bore 64 of the barrel member 24. As a result, piston element 30 moves forwardly from its broken line to its full line position, whereby a tap is directed against the dented surface of the material by the rounded tip 120 of the tap stem 118.

It is noted that the forward movement of the piston element is limited by the internal shoulder 68, and further that the air pressure force exerted against the rear face 126 of the piston member diminishes as the piston body 116 uncovers the inner end of the large exhaust port 72.

In other words, immediately following the forward actuation of said piston member, the air pressure exhausts to atmosphere via said port 72, and the piston completes its forward movement by momentum, thus delivering a "soft," although effective blow, to a small area of the dented surface of material, as should now be understood.

The full line disposition of the piston member 30 is of course a momentary one, inasmuch as in consequence of the uncovering of exhaust port 72, a vacuum condition obtains to the left of the confined but otherwise unsupported wafer element 194, which element automatically controls the reversal of air pressure application to opposite ends of the piston body 116.

Thus, as the rear end face 126 of the piston body 116 places the exhaust port in fluid communication with the bore 64, the pressure supply in chamber 42 is exerted against the right hand surface of the wafer 194 via passageways 150, ports 158, and circular recess 154, whereby to force said wafer leftwardly to the position thereof illustrated in Figures 3 and 5.

As a result, the bore 160 becomes sealed, and simultaneously, the air pressure flows into the barrel member passageways 74 via circular recess 154, bore 144, transverse ports 146, longitudinal bores 148, and through bores 162. From the passageways 74, the air pressure passes into the radial passageways 76 and is directed against the tapered segment 122 and the vertical face 124 of the body 116, whereby to move the piston element 30 rearwardly to the illustrated broken line position thereof. Just as soon as the rear face 126 of the piston body passes the large exhaust port 72, the wafer 194 moves to the right for a repetition of the cycle described.

From the foregoing description and reference to the drawings, it should be manifest that my invention provides a tool that is adapted to attain its objectives in a highly efficient manner. Because of the "soft" blows deliverable by the rounded tip of the tap stem, even minute indentations may be raised out of sheet or body metal without danger of simultaneously damaging the surrounding surfaces thereof.

The precise location of the rearward large-diametered exhaust port 72 relatively to the length of bore 64 and piston body 116, insures gentle, smooth performance at all times. In other words, with this arrangement, the piston movements are positively controlled by the air pressure, and are in no wise dependent upon piston recoil or rebound, as is the case in known pneumatic hammer constructions. It should also be noted that the reciprocal movements of the piston element are uniform in both directions, irrespective of the rapidity thereof in response to manipulations of the control assembly 26.

It is of course obvious that the reciprocal movements of the piston element continue so long as the control valve assembly 26 is in open disposition, and that these movements terminate immediately whenever the operator ceases to apply manual pressure to the fingerpiece 80. It should further be apparent that because of the conical configuration of the valve 86, the volume of air pressure deliverable to the annular chamber 42 is variable, so that the succession of taps administered by the tip 120 may be accelerated or decelerated at the will of the operator, without however, varying the impact force thereof. Thus, in the fully open disposition of the control valve assembly 26 portrayed in Figure 10, the tapping action would be extremely rapid, so that a depressed region of a piece of material could be quickly raised to the desired plane.

Although the foregoing description has been directed to, and the drawings illustrate the preferred embodiment thereof, it is to be understood that the invention contemplates any variations of construction that may fall within the scope of the claims hereunto appended.

What I claim is:

1. In a pneumatically operable hammer of the character described, said hammer including a handle member having a hand grip section integral with an internally threaded cylindrical section; a barrel member comprising a hollow cylindrical body terminating at its forward end in a nosing, and at its rearward end in an externally threaded portion in engagement with the internally threaded cylindrical section of the handle member, said body having formed therein a first longitudinal bore extending therethrough from the rearward end thereof to a point adjacent the nosing thereof; a second longitudinal bore of smaller diameter than that of the first bore extending through said nosing and merging into said first bore thus to provide an annular internal shoulder at the point of merger; a forward small-diametered radial exhaust port rearwardly located approximately one quarter of an inch from said shoulder to provide fluid communication between said first bore and atmosphere; a rearward larger-diametered radial exhaust port located precisely equidistantly from said shoulder and from the rearward end of said first bore to also provide fluid communication between said bore and atmosphere; a pair of diametrically opposite longitudinal air pressure passageways and a pair of similarly disposed radial air pressure passageways each longitudinal passageway communicating at its forward end with one of said radial passageways and extending from that point to the rearward end of the barrel body, each radial passageway intersecting the internal annular shoulder aforesaid and communicating at its inner end with both said first and second longitudinal bores, and being plugged at its outer end; a piston slidable in said first bore and having an integral extension slidable in said second bore; an annular air chamber in said cylindrical section; a manually operable control assembly in the hand grip section for supplying air under pressure to said chamber; and a composite assembly in said chamber operatively disposed relatively to said first bore and said longitudinal passageways to alternately direct the flow of air pressure from the chamber into said bore and said passageways.

2. A pneumatic hammer for delivering tap blows to sheet metal and the like including in combination: a handle member having a lower hand grip section integrally formed with an upper internally threaded cylindrical section; a barrel member having a cylindrical body terminating at its forward end in a nosing, and at its rearward end in an externally threaded portion engaging the internally threaded cylindrical section of the handle member; an annular air chamber provided in said cylindrical section between a vertical wall thereof and the threaded portion aforesaid of the barrel body; means provided in the handle member to establish fluid communication between said chamber and a supply of air under pressure; a first longitudinal bore formed in the barrel body and extending from the rear face thereof to an annular shoulder formed therein adjacent the nosing thereof; a second longitudinal bore of smaller diameter formed in the nosing of the barrel member and merging into the first bore at said shoulder; a piston element comprising integrally an elongated body portion having a conical forward end segment slidable in said first bore and a tap stem portion having a rounded tip segment slidable in said second bore, the length of the body portion being slightly smaller than one half that of said first longitudinal bore and the length of the stem portion being slightly larger than that of said second longitudinal bore; a forward small-diametered radial exhaust port that leads from said first longitudinal bore to atmosphere provided in the barrel body at a point located approximately one quarter of an

inch rearwardly of the annular shoulder therein; a rearward large-diametered radial exhaust port that leads from said first bore to atmosphere provided in the barrel body at a point equidistant from said shoulder and from the rear end face of said body; a pair of diametrically opposed longitudinal air passageways, and a pair of radial air passageways in fluid communication therewith provided in the barrel body, said radial passageways being formed so as to intersect said shoulder; plug means for sealing the outer ends of said radial passageways; a composite assembly associated with said passageways for intermittently and automatically reversing the application of air pressure to the opposite ends of the elongated body thereof to reciprocate said piston a specific distance forwardly and rearwardly, said assembly being rigidly mounted in said air chamber between the rear end of the barrel body and the vertical wall of the cylindrical section aforesaid of the handle; and a manually operable valve assembly mounted in the grip section of the handle for controlling the volume of air flowing to said air chamber whereby to selectively accelerate and decelerate the reciprocations of the piston.

3. In a pneumatically operable hammer of the character described: a handle member including a lower hand grip section integrally formed with an upper internally threaded cylindrical section; a barrel member having a cylindrical body terminating at its forward end in a nosing, and at its rearward end in an externally threaded portion engaging the internally threaded cylindrical section of the handle member; a first longitudinal bore in the barrel body extending from the rearward end to a point adjacent the nosing thereof; a second longitudinal bore having a smaller diameter than the first bore but concentric therewith provided in the barrel body and extending through said nosing; an annular internal shoulder formed in the barrel body by the merge of said first and second bores; a forward small-diametered radial exhaust port in the barrel body approximately one quarter of an inch rearwardly from said shoulder establishing fluid communication between the first bore and atmosphere; a rearward larger-diametered radial exhaust port formed in said body equidistantly from said shoulder and from the rearward end of the first bore also establishing fluid communication between said bore and atmosphere; a pair of diametrically opposite radial air pressure passageways intersecting the internal shoulder aforesaid whereby to communicate at their inner ends with both said first and second longitudinal bores; a plug sealing the outer end of each radial passageway; a pair of diametrically opposite longitudinal air pressure passageways each communicating at its forward end with one of said radial passageways and extending therefrom to the rearward end of the barrel body; a piston element slidable in said first bore and including a tap stem slidable in said second bore; an annular air chamber in the cylindrical section of the handle member and means for supplying said chamber with air under pressure; and a composite assembly in said chamber operatively disposed relatively to said first bore and said longitudinal passageways to alternately direct the flow of air pressure from the chamber into said bore and said passageways.

4. In a pneumatically operable hammer of the character described: a barrel member; a handle member including a lower hand grip section having an upper cylindrical section integral therewith, the rear end of said barrel member being mounted in and supported by said cylindrical section; a first cylindrical bore in the barrel member extending from the rearward end thereof to a determined point remote therefrom; a second cylindrical bore of reduced diameter extending from said point to the front end of the barrel member, said first and second bores being concentric whereby to provide an annular internal shoulder in said barrel body at the merge of said bores; a piston element slidably disposed in said first bore and having a forwardly projecting stem

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of reduced diameter slidably disposed in said second bore; a small radial exhaust port in the barrel body leading from said first bore to atmosphere, said port being formed a determined distance rearwardly from the annular shoulder aforesaid; a larger radial exhaust port in the barrel body leading from said first bore to atmosphere, said larger port being formed a determined distance rearwardly from said small radial port; a pair of diametrically opposite radial air pressure passageways intersecting the annual internal shoulder whereby to communicate at their inner ends with both said first and second cylindrical bores, the outer ends of said radial passageways being sealed; a pair of diametrically opposite longitudinal air pressure passageways each in communication at its forward end with one of said radial passageways and extending therefrom to the rearward end of the barrel member; an annular chamber in the cylindrical section

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of the handle member and means for supplying said chamber with air under pressure; a composite assembly in said chamber operatively disposed relatively to said first bore and said longitudinal passageways to alternately direct the flow of air pressure from the chamber into said bore and said passageways; and a manually operable valve assembly mounted in the hand grip section of the handle for controlling the supply of air under pressure to said chamber.

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