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(73) Patenthaver: **Chou, Wen-San, No. 1-25, Kangwei , An-Din District, Tainan City, Taiwan**

(72) Opfinder: **Chou, Wen-San, No. 1-25, Kangwei , An-Din District, Tainan City, Taiwan**

(74) Fuldmægtig i Danmark: **Chas. Hude A/S, H.C. Andersens Boulevard 33, 1780 København V, Danmark**

(54) Benævnelse: **FORBEDRET LUFTKOMPRESSOR**

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DESCRIPTION

(a) Technical Field of the Invention

[0001] The present invention relates to an air compressor and, more particularly, to an improved air compressor which includes a cylinder being fitted with a piston body and defining a plurality of exit holes regulated by a control mechanism that includes a resilient sheet, wherein the resilient sheet has a root and a plurality of branches extending from the root and corresponding to the exit holes, the root and branches being attached to a top wall of the cylinder at separate points, so that each of the branches of the resilient sheet can be moved individually by compressed air without affecting movements of the other branches; therefore, the piston body can conduct reciprocating motion more smoothly, and thus the performance of the air compressor can be increased.

(b) Description of the Prior Art

[0002] Currently, an air compressor basically has a cylinder which allows a piston body to conduct reciprocating motion therein to produce compressed air which can overcome a valve mechanism, so that the compressed air can flow through an exit hole of the cylinder to enter the inner space of an air storage container or an air tank. The air storage container is provided with outlets for delivering the compressed air to an object to be inflated.

[0003] In conventional air compressors, there is only one exit hole defined at the cylinder for communicating with the air storage container. The exit hole of the cylinder is controlled by a valve mechanism, which generally includes a plug and a compression spring, so that the exit hole can be opened or closed properly according to the pressure of the compressed air. In operation, the compressed air produced in the cylinder can overcome the compressive force of the compression spring to enter the inner space of the air compressor. However, the compressed air stored in the air storage container can exert a back force on the plug, thus restraining the plug from being moved away from the exit hole. As a result, the piston body, which conducts reciprocating motion in relation to the cylinder, will be subjected to greater resistance. Therefore, the piston body may not move smoothly in relation to the cylinder, and thus the speed of inflating an object will become slow. Furthermore, the motor of the air compressor may become too hot, thus decreasing the performance of the motor. Even worse, the motor may be under the risk of burning out. Document US 2003/185695 A1 discloses another structure of a conventional air compressor, wherein a plurality of exit holes are defined at a top wall of the cylinder, wherein all the exit holes are regulated by a single control mechanism to be opened or closed, wherein said control mechanism includes a resilient sheet having a root and a plurality of branches extending from the root and corresponding to the exit holes, wherein the resilient sheet is attached to the top wall only at a central point through a positioning hole formed on the root and for that reason still has several shortcomings.

[0004] In view of the foregoing, the applicant intends to develop an improved air compressor which can solve the shortcomings of conventional air compressors.

SUMMARY OF THE INVENTION

[0005] One object of the present invention is to provide an improved air compressor, wherein a cylinder thereof defines a plurality of exit holes, through which a large amount of compressed air produced in the cylinder may enter an air storage container in a short time.

[0006] Another object of the present invention is to provide an improved air compressor, wherein a cylinder thereof is fitted with a piston body and defines a plurality of exit holes regulated by a control mechanism to be opened or closed. The control mechanism includes a resilient sheet having a root and a plurality of branches extending from the root and corresponding to the exit holes, wherein the root and branches of the resilient sheet are attached to a top wall of the cylinder at separate points, whereby each of the branches of the resilient sheet can be moved individually by compressed air without affecting movements of the other branches, so that the piston body can conduct reciprocating motion more smoothly, and thus the performance of the air compressor and the speed of inflating an object can be increased.

[0007] Other objects, advantages, and novel features of the present invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

FIG. 1 shows a 3-dimensional view of an air compressor according to one embodiment of the present invention.

FIG. 2 shows an exploded view of the air compressor.

FIG. 3 shows a plan view of the air compressor, wherein a plurality of equal-diameter exit holes defined at a cylinder thereof are revealed.

FIG. 4 shows a plan view of the air compressor, wherein a resilient sheet being used to seal the exit holes is revealed.

FIG. 5 shows an enlarged plan view of the resilient sheet being used in the present invention.

FIG. 6 shows an enlarged plan view of another embodiment of the resilient sheet being used in the present invention.

FIG. 7 shows a plan view of the air compressor, wherein an air storage container is assembled onto the cylinder.

FIG. 8 shows a sectional view of the air compressor taken along line A-A in FIG. 7.

FIG. 9 shows a plan view of the air compressor, wherein a gear and a piston body used in the air compressor are revealed.

FIG. 10 shows a plan view of an air compressor according to another embodiment of the present invention, wherein a modified embodiment of the resilient sheet is used to seal the exit holes of the cylinder.

FIG. 11 shows a plan view of an air compressor according to a further embodiment of the present invention, wherein a cylinder thereof defines a plurality of unequal-diameter exit holes.

FIG. 12 shows a plan view of the air compressor, wherein a resilient sheet is used to seal the unequal-diameter exit holes shown in FIG. 11.

FIG. 13 shows an exploded view of an air compressor according to a still further embodiment of the present invention, wherein compression springs are not included.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0009] Referring to FIGS. 1 and 2, an improved air compressor according to one embodiment of the present invention is shown, which generally comprises a main frame 11 for mounting a motor 12, and a cylinder 2 fitted with a piston body 14. The motor 12 can rotate a gear 13 to drive the piston body 14 to conduct reciprocating motion in relation to the cylinder 2 so as to produce compressed air, which can enter an air storage container 3 provided with one or more outlets, wherein, for example, the outlet 31 can be connected with a pressure gauge 30; the outlet 33 can be connected with a relief valve 32; the outlet 34 can be connected with a hose (not shown) for inflating an object.

[0010] As shown in FIGS. 2 through 8, the cylinder of the present invention is designed in a way different from conventional technology, wherein the cylinder 2 defines a plurality of exit holes at its top wall 21, and the cylinder 2 is formed integrally with the main frame 11 by plastic material. In this embodiment, the exit hole 4 is defined to have a diameter of X, the exit hole 5 is defined to have a diameter of Y, and the exit hole 6 is defined to have a diameter of Z, wherein X = Y = Z is fulfilled (see FIG. 3); namely, the exit holes 4, 5, 6 are equal in diameter. The exit holes 4, 5, 6 are regulated by a control mechanism to be opened or closed, wherein the control mechanism includes O-rings 41, 51, 61, compression springs 42, 52, 62, and a resilient sheet 7. The O-rings 41, 51, 61 can be placed around the exit holes 4, 5, 6 respectively. The resilient sheet 7 has a root 70 and three branches including a first branch 72, a second branch 73, and a third branch 74, which correspond to the exit holes 4, 5, 6 respectively. The root 70 of the resilient sheet 7, which is substantially located at a center of the resilient sheet 7, defines a central positioning hole 71. The three branches 72, 73, 74 extend from the root 70 to appear as a star configuration. The first branch 72 has a first neck portion 722 extending from the root 70 and terminating at a first leaf 721, and defines a first positioning hole 723 at one end of the first neck portion 722 close to the root 70. The second branch 73 has a second neck portion 732 extending from the root 70 and terminating at a second leaf 731, and defines a second positioning hole 733 at one end of the second neck portion 732 close to the root 70. The third branch 74 has a third neck portion 742 extending from the root 70 and terminating at a third leaf 741, and defines a third positioning hole 743 at one end of the third neck portion 742 close to the root 70. Furthermore, as shown in FIG. 5, the first neck portion 722 is configured to have a predetermined width L1 being transverse to the extending direction of the first branch 72; the second neck portion 732 is configured to have a predetermined width L2 being transverse to the extending direction of the second branch 73; the third neck portion 742 is configured to have a predetermined width L3 being transverse to the extending direction of the third branch 74; wherein L1 = L2 = L3 is fulfilled. The central positioning hole 71 of the root 70 can be fitted over a main boss 24 provided at the top wall 21 of the cylinder 2, wherein the main boss 24 is located at a central point (P). The first positioning hole 723 of the first branch 72 can be fitted over a first boss 241 provided at the top wall 21 of the cylinder 2, wherein the first boss 241 is located at a peripheral point (P1) close to the central point (P). The second positioning hole 733 of the second branch 73 can be fitted over a second boss 242 provided at the top wall 21 of the cylinder 2, wherein the second boss 242 is located at a peripheral point (P2) close to the central point (P). The third positioning hole 743 of the third branch 74 can be fitted over a third boss 243 provided at the top wall 21 of the cylinder 2, wherein the third boss 243 is located at a peripheral point (P3) close to the central point (P). The first, second and third leaves 721, 731, 741 of the branches are configured to have sizes sufficient for covering the exit holes 4, 5, 6, and thus can seal the exit holes. Thus, the branches 72, 73, 74 are attached to the top wall 21 of the cylinder 2 at separate points (P1, P2, P3), and placed in tight contact with the O-rings 41, 51, 61 to seal the exit holes 4, 5, 6 (see FIGS. 2 and 4). The air storage container 3 is provided with two opposite coupling means 35 at its outer surface (see FIG. 9). The cylinder 2 has a tubular projection 22 formed on the top wall 21. The tubular projection 22 is provided at its outer surface with a circular flange 221 and defines an annular groove 222 between the circular flange 221 and the top wall 21 for allowing the two coupling means 35 of the air storage container 3 to be inserted into the annular groove 222 and engaged with the circular flange 221. The air storage container 3 is provided at an inner surface thereof with three columns 37, 38, 39 corresponding to the branches 72, 73, 74 of the resilient sheet 7. Each of the compression springs 42, 52, 62 has one end forcing against one of the branches 72, 73, 74 of the resilient sheet 7, and has another end being fitted at one end of one of the columns 37, 38, 39, wherein the columns 37, 38, 39 are respectively located above the branches 72, 73, 74 of the resilient sheet 7 at predetermined heights to limit the movements of the branches 72, 73, 74 so that the resilient sheet 7 can be prevented from elastic fatigue. As such, the compression springs 42, 52, 62 can urge the branches 72, 73, 74 of the resilient sheet 7 against the O-rings 41, 51, 61 to seal the exit holes 4, 5, 6, respectively (see FIGS. 2 and 8)

[0011] Referring to FIGS. 7 and 8, when the piston body 14 conducts reciprocating motion, the compressed air produced in the cylinder 2 can overcome the force of the compression springs 42, 52, 62 exerted on the branches 72, 73, 74 of the resilient sheet 7, thus pushing the branches 72, 73, 74 away from the equal-diameter exit holes 4, 5, 6, respectively, so that the compressed air can flow into the inner space 36 of the air storage container 3. Initially, since the compressed air can flow into the inner space 36 of the air storage container 3 simultaneously via the exit holes 4, 5, 6, the air storage container 3 can be filled with a large amount of air in a short time. Later, since there is a large amount of air having entered the inner space 36 of the air storage container 3, the air contained in the air storage container 3 can exert a greater back force on the branches 72, 73, 74 of the resilient sheet 7 compared to the initial air contained in the air storage container 3. In other words, the piston body 14 may experience greater resistance in conducting reciprocating motion, and this may cause the exit holes 4, 5, 6 more difficult to be opened. However, upon a decrease of the pressure of the air contained in the air storage container 3, the back force exerted on the branches 72, 73, 74 of the resilient sheet 7 will decrease and this allows the compressed air produced in the cylinder 2 to quickly enter the inner space 36 of the air storage container 3. Besides, the first neck portion 722, the second neck portion 732, and the third neck portion 742 are attached to the top wall 21 of the cylinder 2 at separate fixed points, so that each of the branches 72, 73, 74 of the resilient sheet 7 can be moved individually by compressed air without affecting movements of the other branches, so that the piston body 14 can conduct reciprocating motion more smoothly and thus the performance of the air compressor and the speed of inflating an object can be increased.

[0012] FIG. 6 shows another embodiment of the resilient sheet, wherein the first leaf 721, the second leaf 731, and the third leaf 741 are configured to have sizes sufficient for covering the exit holes 4, 5, 6; the first neck portion 724, the second neck portion 734, and the third neck portion 744 are configured to have different widths. Specifically, the first neck portion 724 is configured to have a predetermined width K1 being transverse to the extending direction of the first neck portion, the second neck portion 734 is configured to have a predetermined width K2 being transverse to the extending direction of the second neck portion, and the third neck portion 744 is configured to have a predetermined width K3 being transverse to the extending direction of the third neck portion, wherein $K1 > K2 > K3$ is fulfilled. Thus, the branches 72, 73, 74 of the resilient sheet 7 provide different elastic forces, wherein the first branch 72 can provide a largest elastic force for sealing the exit hole 4 while the third branch 74 can provide a smallest elastic force for sealing the exit hole 6. As such, the compressed air in the cylinder 2 pushes the third branch 74 away from the exit hole 6 more easily than the other branches of the resilient sheet 7, so that the compressed air enters the inner space 36 of the air storage container 3 via the exit hole 6 as a top priority. Considering the operation of the air compressor as a whole, the piston body 14 can conduct reciprocating motion more smoothly, so that the performance of the air compressor and the speed of inflating an object can be increased.

[0013] FIG. 10 shows another embodiment of the air compressor of the present invention, wherein a modified embodiment of the resilient sheet is used to seal the exit holes of the cylinder. The resilient sheet 8 includes a first branch 82, a second branch 83, and a third branch 84, which correspond to the equal-diameter exit holes 4, 5, 6. The branches 82, 83, 84 extend upwardly from the root 80 to appear as a dendritic configuration. Specifically, the first branch 82 has a first neck portion 822 extending from the root 80 and terminating at a first leaf 821. The second branch 83 has a second neck portion 832 extending from the root 80 and terminating at a second leaf 831. The third branch 84 has a third neck portion 842 extending from the root 80 and terminating at a third leaf 841. The first, second and third leaves 821, 831, 841 of the branches 82, 83, 84 are configured to have sizes sufficient for covering the exit holes 4, 5, 6. In particular, the neck portions 822, 832, 842 of the branches 82, 83, 84 can be configured to extend at different lengths, wherein the first neck portion 822 extends at a predetermined length H1; the second neck portion 832 extends at a predetermined length H2; the third neck portion 842 extends at a predetermined length H3; wherein $H1 > H3 > H2$ is fulfilled. Thus, the branches 82, 83, 84 of the resilient sheet 8 provide different elastic forces, wherein the second branch 83 provides a largest elastic force for sealing the exit hole 5 while the first branch 82 provides a smallest elastic force for sealing the exit hole 4. As such, the compressed air in the cylinder 2 pushes the first branch 82 away from the exit hole 4 more easily than the other branches of the resilient sheet 8, so that the compressed air enters the inner space 36 of the air storage container 3 via the exit hole 4 as a top priority. Considering the operation of the air compressor as a whole, the piston body 14 can conduct reciprocating motion more smoothly, so that the performance of the air compressor and the speed of inflating an object can be increased.

[0014] FIG. 11 shows a further embodiment of the air compressor of the present invention, wherein the cylinder 2 defines at its top wall 21 three exit holes 43, 53, 63 having different diameters. As shown, the exit hole 43 is defined to have a diameter of A; the exit hole 53 is defined to have a diameter of B; the exit hole 63 is defined to have a diameter of C; wherein $A > B > C$ is fulfilled. The exit holes 43, 53, 63 are regulated by a control mechanism to be opened or closed. The control mechanism includes a plurality of O-rings, a plurality of compression springs, and a resilient sheet 9 (see FIG. 12), wherein the resilient sheet 9 includes a first branch 92, a second branch 93, and a third branch 94, which correspond to the exit hole 43, 53, 63. The branches 92, 93, 94 extend upwardly from the root 90 to appear as a dendritic configuration. The first branch 92 has a first neck portion 922 extending from the root 90 and terminating at a first leaf 921. The second branch 93 has a second neck portion 932 extending from the root 90 and terminating at a second leaf 931. The third branch 94 has a third neck portion 942 extending from the root 90 and terminating at a third leaf 941. The first, second and third leaves 921, 931, 941 of the branches 92, 93, 94 are configured to have sizes sufficient for covering the exit holes 43, 53, 63. In particular, the first neck portion 922, the second neck portion 932, the third neck portion 942 can be configured to extend at different lengths. The root 90 and the neck portions 922, 932, 942 each define their positioning holes for being individually attached to the top wall 21, wherein the positioning hole of the root 90 can be fitted over a main boss 25 provided at the top wall 21 of the cylinder 2; the positioning hole of the first branch 92 can be fitted over a first boss 251 provided at the top wall 21 of the cylinder 2; the positioning hole of the second branch 93 can be fitted over a second boss 252 provided at the top wall 21 of the cylinder 2; the positioning hole of the third branch 94 can be fitted over a third boss 253 provided at the top wall 21 of the cylinder 2. As such, the first branch 92, the second branch 93, and the third branch 94 can seal the exit holes 43, 53, 63 respectively.

[0015] In the previous embodiment, as shown in FIG. 2, the branches 72, 73, 74 of the resilient sheet 7 are respectively subjected to the compressive forces of the compression springs 42, 52, 62, so that the branches 72, 73, 74 can seal the exit holes 4, 5, 6 more quickly. Nevertheless, in a still further embodiment of the air compressor, as shown in FIG. 13, the compression springs 42, 52, 62 can be dispensed with; namely, the branches 72, 73, 74 can provide compressive forces by themselves without additional springs to be in tight contact with the O-rings 41, 51, 61, thus sealing the exit holes 4, 5, 6.

[0016] As a summary, the air compressor of the present invention has a breakthrough over the prior art in that the top wall 21 of the cylinder 2 defines a plurality of exit holes, which are controlled by the corresponding branches of a resilient sheet to allow the compressed air produced in the cylinder 2 to quickly enter the inner space 36 of the air storage container 3. In addition, since the neck portions 722, 732, 742, 822, 832, 842, 922, 932, 942 of the branches of the resilient sheet are fixed to the top wall 21 at separated points, so that each of the branches of the resilient sheet can be moved individually by compressed air without affecting movements of the other branches, so that the piston body 14 can conduct reciprocating motion more smoothly and thus the performance of the air compressor can be increased. These features render the air compressor of the present invention useful and inventive.

REFERENCES CITED IN THE DESCRIPTION

Patent documents cited in the description

- US2003185695A1 [0003]

Patentkrav

1. Luftkompressor der indbefatter en hovedramme (11) til at montere en motor (12) og en cylinder (2), der er udstyret med et stempellegeme (14), hvilken motor (12) er i stand til at drive stempellegemet (14) i en frem- og tilbagebevægelse for at fremstille komprimeret luft inde i cylinderen (2), hvilken luft kan komme ind i en lagerbeholder til luft (3) via et udgangshul, der er defineret ved en øverste væg (21) af cylinderen (2), hvilken øverste væg (21) af cylinderen (2) definerer et yderligere udgangshul, hvilke udgangshuller alle reguleres af en styremekanisme, der skal åbnes eller lukkes, hvilken styremekanisme indbefatter en fjedrende plade (7)(8)(9), der har en rod (70) (80) (90) og et antal grene (72, 73, 74) (82, 83, 84) (92, 93, 94), som strækker sig fra roden (70)(80)(90) og svarer til udgangshullerne, hvor hver gren (72, 73, 74) (82, 83, 84) (92, 93, 94) har en halssektion (722, 732, 742) (822, 832, 842) (922, 932, 942), der strækker sig fra roden (70)(80)(90) og slutter i et blad (721, 731, 741) (821, 831, 841) (921, 931, 941), der er konfigureret til at have størrelser som er tilstrækkelige til at dække udgangshullerne, hvilken rod (70) (80) (90) af den fjedrende plade definerer et positioneringshul (71), som er fastgjort til den øverste væg (21) ved et centralt punkt (P),

kendetegnet ved, at

hver af grenene (72, 73, 74) (82, 83, 84) (92, 93, 94) af de elastiske plader definerer et positioneringshul (723, 733, 743) ved den ene ende af deres halssektion (722, 732, 742) (822, 932, 942) (822, 932, 942) tæt på roden (70)(80)(90), hvilke positioneringshuller af grenene (72, 73, 74) (82, 83, 84) (92, 93, 94) er fastgjort til den øverste væg (21) på respektive punkter (P1, P2, P3), der er placeret i periferien af det centrale punkt (P), hvortil roden (70) (80) (90) af den fjedrende plade er fastgjort således, at hver af grenene (72, 73, 74) (82, 83, 84) (92, 93, 94) af de elastiske plader kan bevæges individuelt af komprimeret luft uden at påvirke bevægelser af de andre grene, således at stempellegemet (14) kan udføre den frem- og tilbagegående bevægelse mere jævnt og således at ydeevnen af luftkompressoren kan forøges, og

hvilken styringsmekanisme yderligere indbefatter et antal O-ringe (41, 51, 61) (43, 53, 63), hvilke O-ringe (41, 51, 61) (43, 53, 63) er anbragt omkring udgangshullerne, hvilke grene (72, 73, 74) (82, 83, 84) (92, 93, 94) af den fjedrende plade (7)(8)(9) har tilstrækkelige elastiske kræfter til at muliggøre en tæt kontakt med O-ringene (41, 51, 61) (43, 53, 63) til at tætne udgangshullerne.

2. Luftkompressoren ifølge krav 1, hvor cylinderen (2) der definerer udgangshullerne, er udformet integreret med hovedrammen (11) af plastmateriale.

3. Luftkompressoren ifølge krav 1, hvor udgangshullerne er defineret til at være omtrent ens i diameter.

4. Luftkompressoren ifølge krav 1, hvor styringsmekanismen yderligere omfatter et antal O-ringe (41, 51, 61) og et antal trykfjedre (42, 52, 62), hvilke O-ringe (41, 51, 61) er anbragt omkring udgangshullerne, hvilke trykfjedre (42, 52, 62) trykker på grenene (72, 73, 74) (82, 83, 84) (92, 93, 94) af den fjedrende plade mod O-ringene (41, 51, 61) for at tætne udgangshullerne; hvor cylinderen (2) har et rørformet fremspring (22), der er dannet på den øverste væg (21), hvilket rørformede fremspring (22) er tilvejebragt ved sin ydre overflade med en cirkulær flange (221) og definerer en ringformet rille (222) mellem den cirkulære flange (221) og de øverste væg (21); hvor lagerbeholderen til luft (3) er tilvejebragt ved en ydre overflade deraf med to koblingsmidler (35) og er tilvejebragt ved en indvendig overflade deraf med et antal søjler (37, 38, 39) der svarer til grenene (72, 73, 74) (82, 83, 84) (92, 93, 94) af den fjedrende plade (7) (8) (9); hvilke to koblingsmidler (35) er i stand til at blive indsat i den ringformede rille (222) og i indgreb med den cirkulære flange (221) af cylinderen (2); hvor hver af trykfjedrene (42, 52, 62) har en ende, der trykker mod en af grenene af den fjedrende plade (7) (8) (9) og har en anden ende, der er monteret i den ene ende af en af søjlerne (37, 38, 39), hvor hver af søjlerne (37, 38, 39) er anbragt i en forudbestemt højde over den tilsvarende gren af den fjedrende plade (7) (8) (9) for at begrænse bevægelsen af den tilsvarende gren således at den fjedrende plade (7) (8) (9) kan forhindres i elastisk træthed.

5. Luftkompressoren ifølge krav 4, hvor roden (70) i det væsentlige er anbragt i midten af den fjedrende plade (7) og definerer et centralt positioneringshul (71); hvor grenene (72, 73, 74) strækker sig fra roden (70) for at fremstå som en stjernekonfiguration og omfatter en første gren (72), en anden gren (73) og en tredje gren (74), hvilken første gren 72) har en første halssektion (722), der strækker sig fra roden (70) og slutter ved et første blad (721) og definerer et første positioneringshul (723) i den ene ende af den første halssektion (722) tæt på roden (70), hvilken anden gren (73) har en anden halssektion (732), der strækker sig fra roden (70) og slutter ved et andet blad (731) og definerer et andet positioneringshul (733) ved den ene ende af den anden halssektion (732) tæt på roden (70), hvilken tredje gren (74) har en tredje halssektion (742), der strækker sig fra roden (70) og slutter ved et tredje blad (731) og definerer et tredje positioneringshul (743) ved den ene ende af den tredje halssektion (742) tæt på roden (70), hvilket centrale positioneringshul (71) af roden (70) er monteret over en hovedbøsning (24), der er tilvejebragt ved den øverste væg (21) af cylinderen (2), hvilket første positioneringshul (723) af den første gren (72) er monteret over en første bøsning (241), der er tilvejebragt ved den øverste væg (21) af cylinderen (2), hvilket andet positioneringshul (733) af den anden gren (73) er monteret over en anden bøsning (242), der er tilvejebragt ved den øverste væg (21) af cylinderen (2), hvilket tredje positioneringshul (743) af den tredje gren (74) er monteret over en tredje boss (243), der er tilvejebragt ved den øverste væg (21) af cylinderen (2); hvorved grenene (72, 73, 74) er i tæt kontakt med O-ringene (41, 51, 61) for at tætne udgangshullerne.

6. Luftkompressoren ifølge krav 5, hvor den første halssektion (722) er konfigureret til at have en forudbestemt bredde L1, som er tværgående til udstrækningsretningen af den første gren (72), hvor den anden halssektion (732) er konfigureret til at have en forudbestemt bredden L2, som er tværgående til udstrækningsretningen af den anden gren (73), og hvor den tredje halssektion (742) er konfigureret til at have en forudbestemt bredde L3, som er tværgående til udstrækningsretningen af den tredje gren (73), hvor L1 = L2 = L3 er opfyldt.

7. Luftkompressoren ifølge krav 5, hvor den første halssektion (722) er konfigureret til at have en forudbestemt bredde K1, der er tværgående til udstræknings-retningen af den første gren (72), hvor den anden halssektion (732) er konfigureret til at have en forudbestemt bredde K2, der er tværgående til udstrækningsretningen af den anden gren (73), og hvor den tredje halssektion (742) er konfigureret til at have en forudbestemt bredde K3, der er tværgående til udstrækningsretningen af den tredje gren (74), hvor K1> K2 > K3 er opfyldt, hvorved den komprimerede luft i cylinderen (2) skubber den tredje gren (74) væk fra det tilsvarende udgangshul lettere end de øvrige grene af den fjedrende plade (7), således at den komprimerede luft kommer ind i det indre rum (36) af lagerbeholderens til luft (3) via det tilsvarende udgangshul i den tredje gren (74) som en højeste prioritet.

8. Luftkompressoren ifølge krav 4, hvor grenene (82, 83, 84) (92, 93, 94) strækker sig opad fra roden (80) (90) for at fremstå som en dendritisk konfiguration og indbefatter en første gren (82) (92), en anden gren (83) (93) og en tredje gren (84) (94), som svarer til udgangshullerne.

9. Luftkompressoren ifølge krav 8, hvor den første gren (82) har en første halssektion (822), der strækker sig fra roden (80) og slutter ved et første blad (821), hvor den anden gren (83) har en anden halssektion (832), der strækker sig fra roden (80) og slutter ved et andet blad (831), og hvor den tredje gren (84) har en tredje halssektion (842), der strækker sig fra roden (80) og slutter ved et tredje blad (841), hvilke første, anden og tredje blade (821, 831, 841) af grenene er konfigureret til at have størrelser, der er tilstrækkelige til at dække udgangshullerne, hvilke grene (82, 83, 84) er anbragt i tæt kontakt med O-ringe (41, 51, 61) for at tætne udgangshullerne,
hvilken første halssektion (822) strækker sig til en forudbestemt længde H1,
hvilken anden halssektion (832) strækker sig til en forudbestemt længde H2,
hvilken tredje halssektion (842) strækker sig til en forudbestemt længde H3,
hvor H1> H3> H2 er opfyldt,
hvorved den komprimerede luft i cylinderen (2) skubber den første gren (82) væk fra det svarende udgangshul lettere end de øvrige grene af den fjedrende plade (8), således at komprimeret luft kommer ind i lagerbeholderen til luft (3) via det tilsvarende udgangshul i den første gren (82) som en højeste prioritet.

10. Luftkompressoren ifølge krav 1, hvor udgangshullerne er defineret til at have forskellige diametre.

DRAWINGS

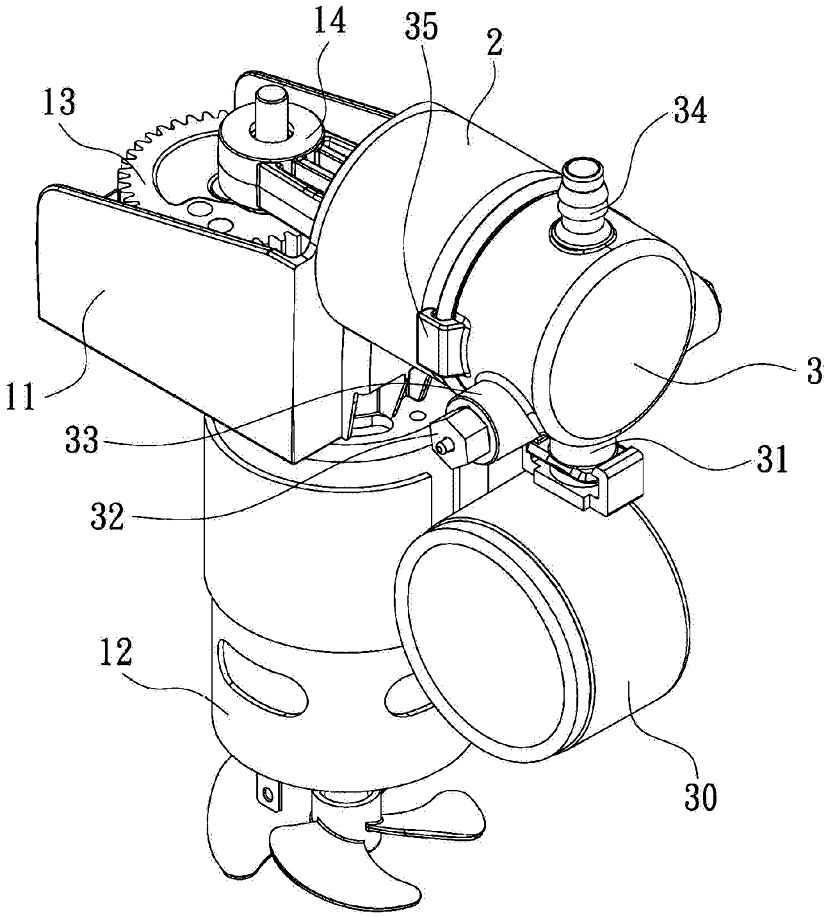
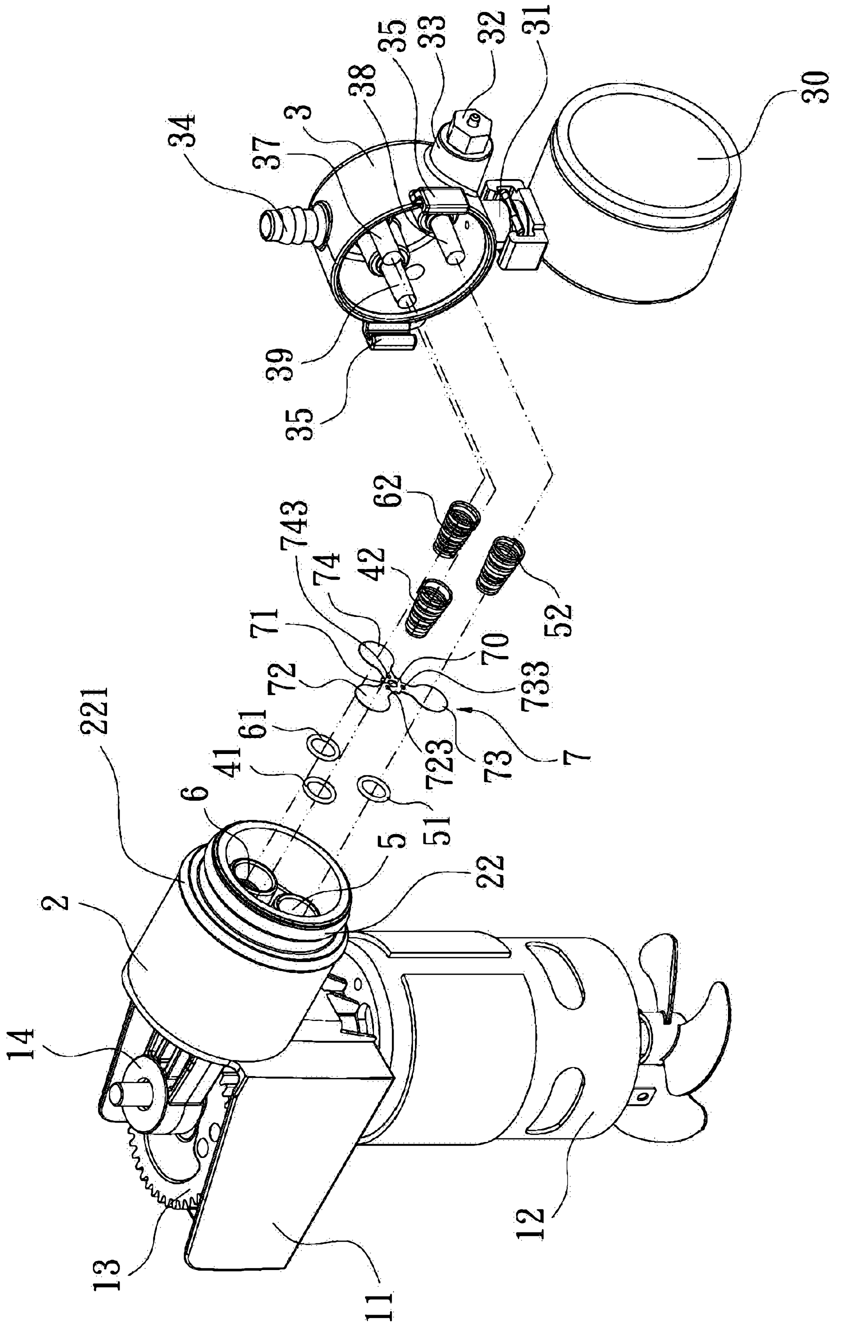


FIG. 1


34
37
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32
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62
743
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71
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73
7
51
5
22
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14
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12

FIG. 2

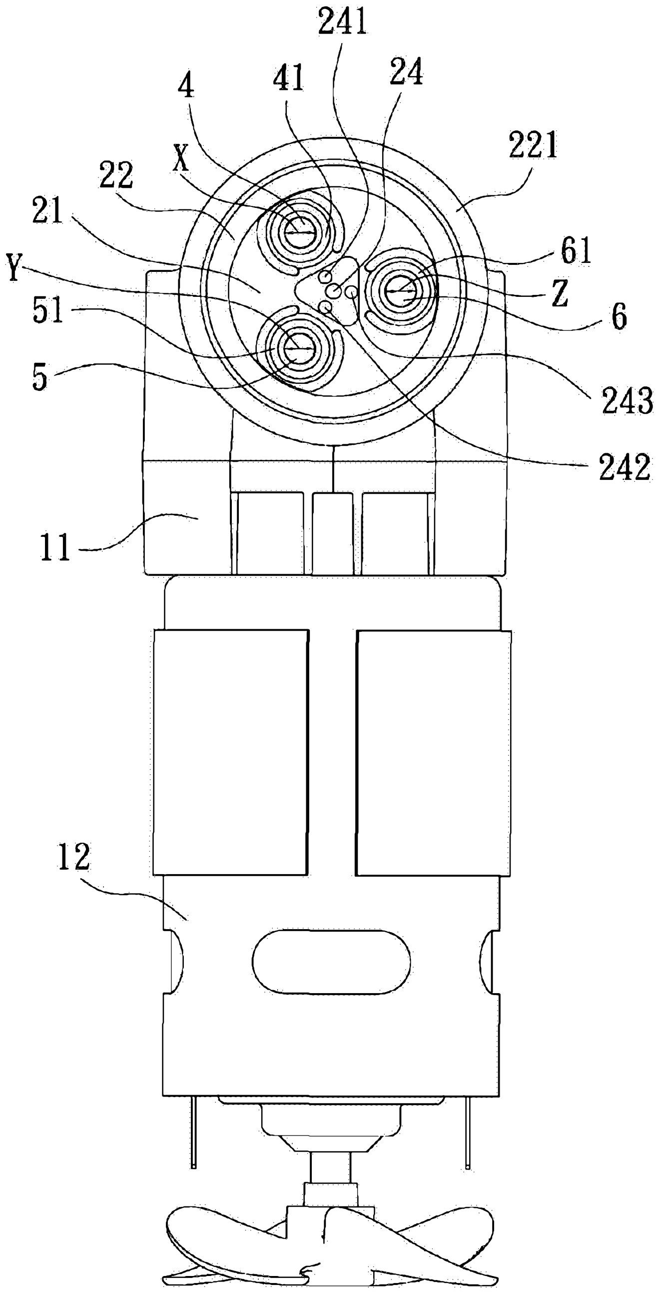


FIG. 3

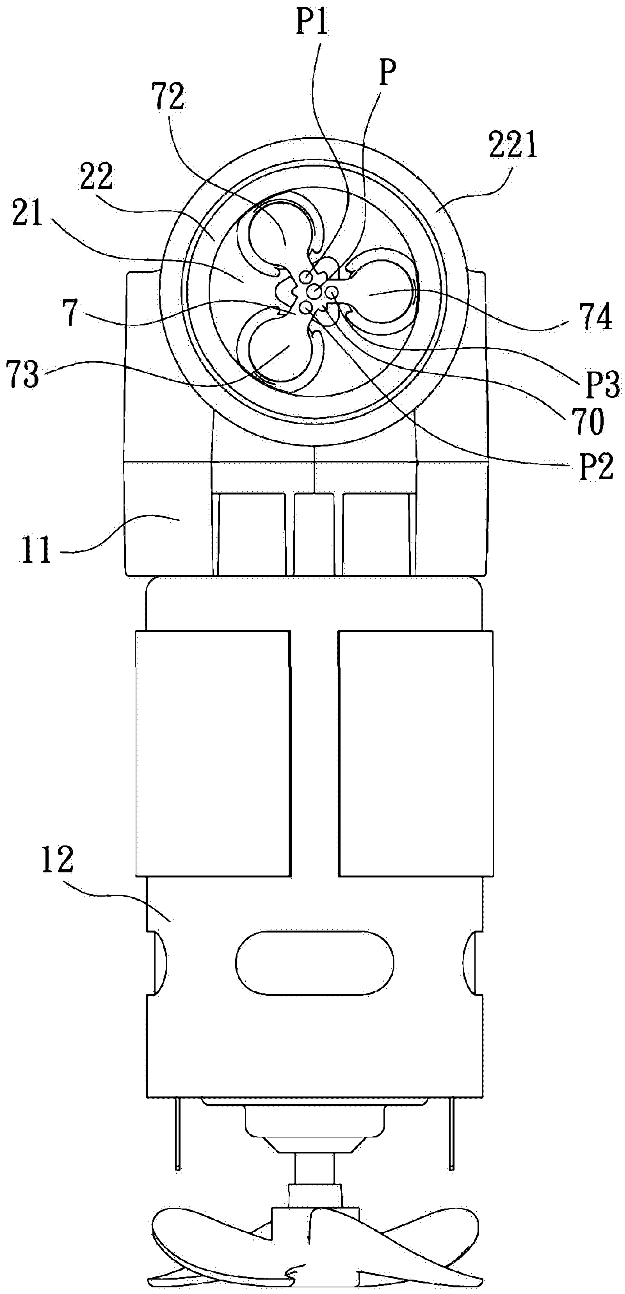
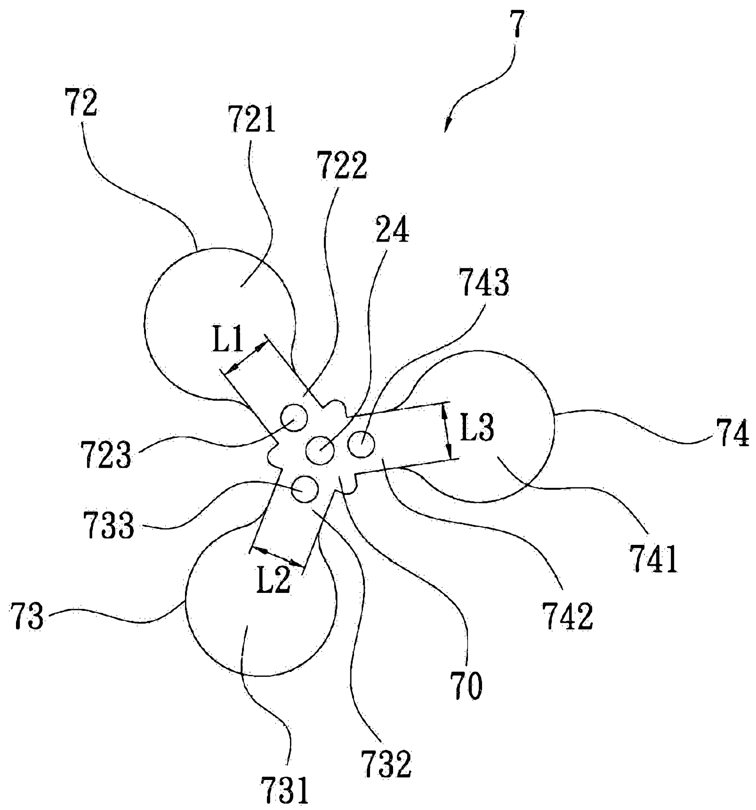


FIG. 4



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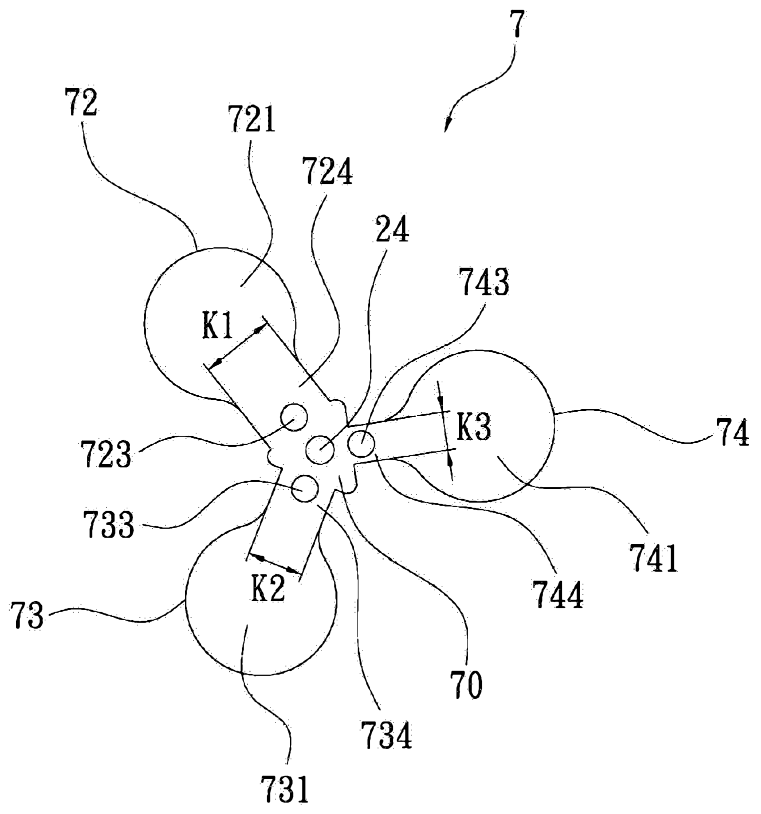

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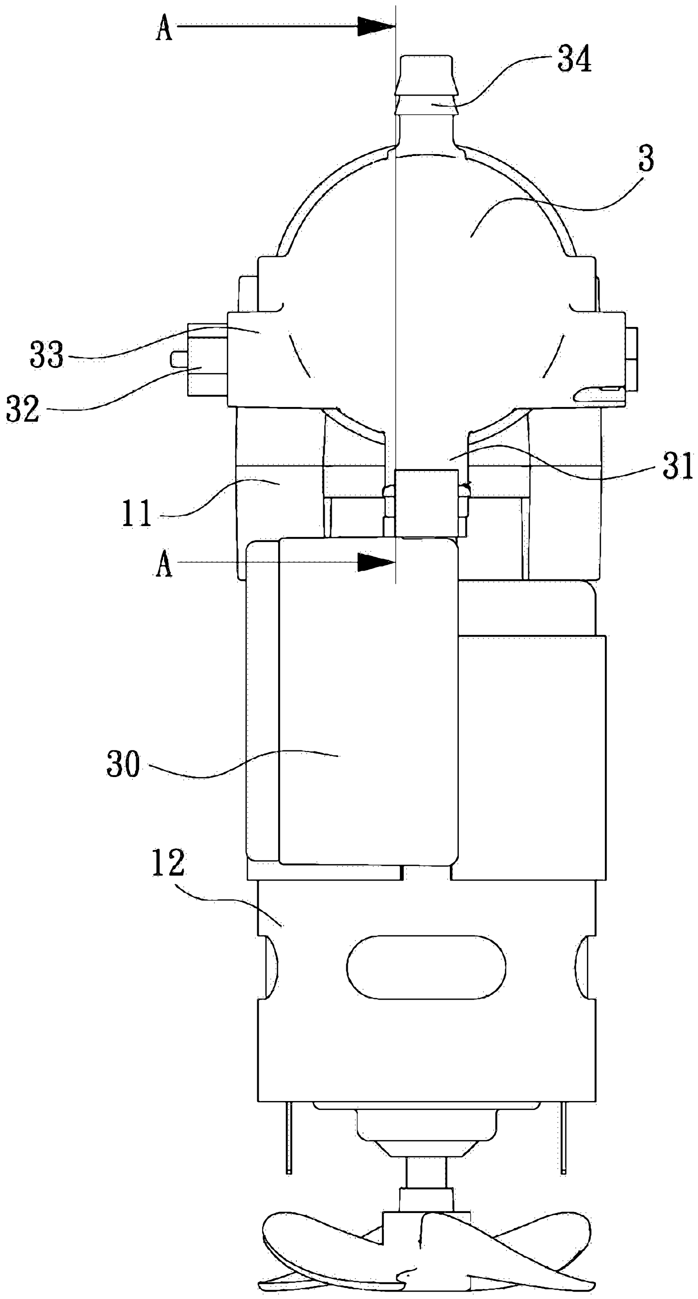

FIG. 7

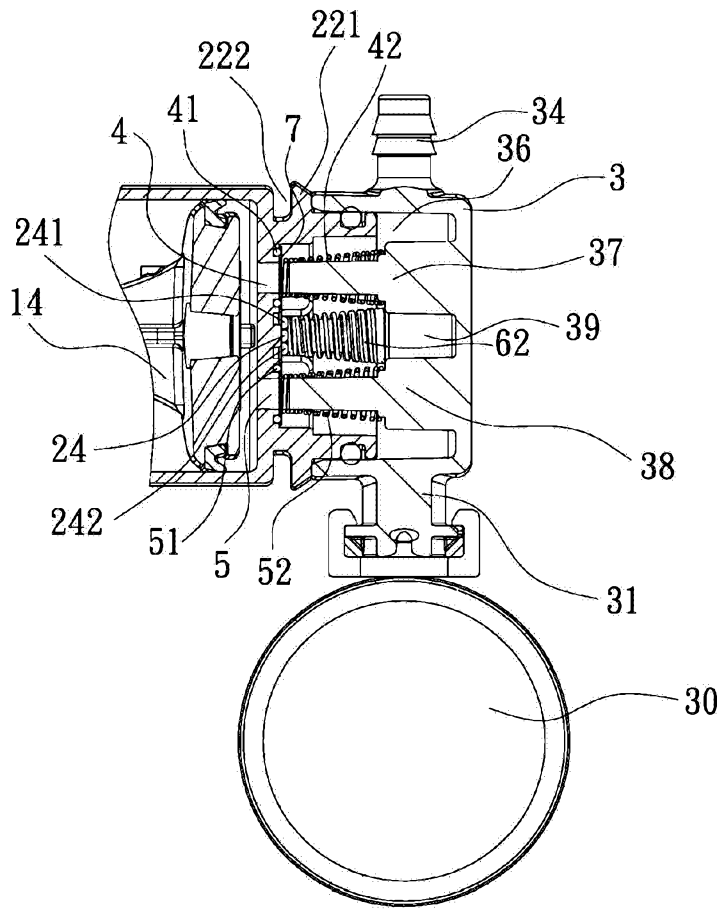

FIG. 8

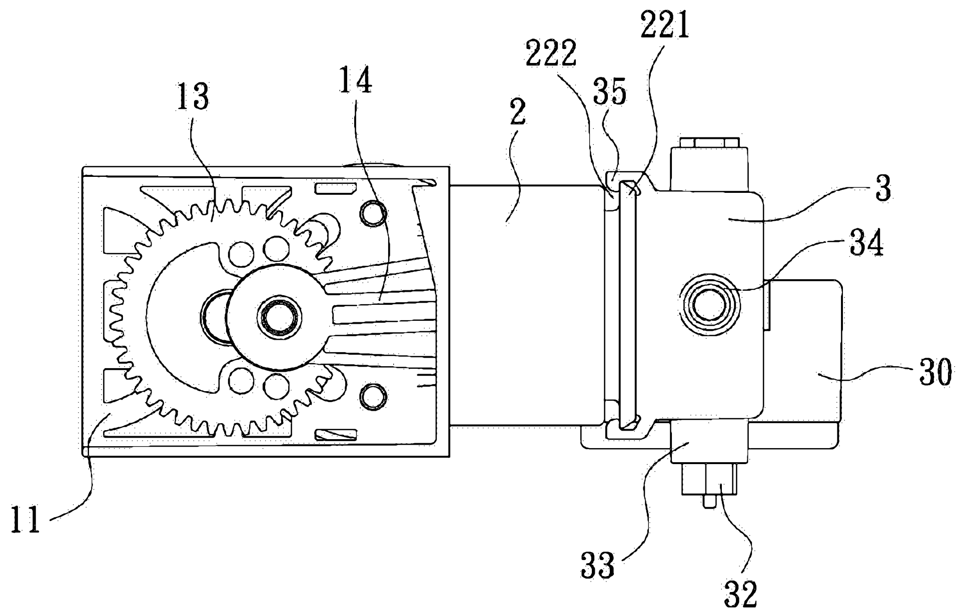

FIG. 9

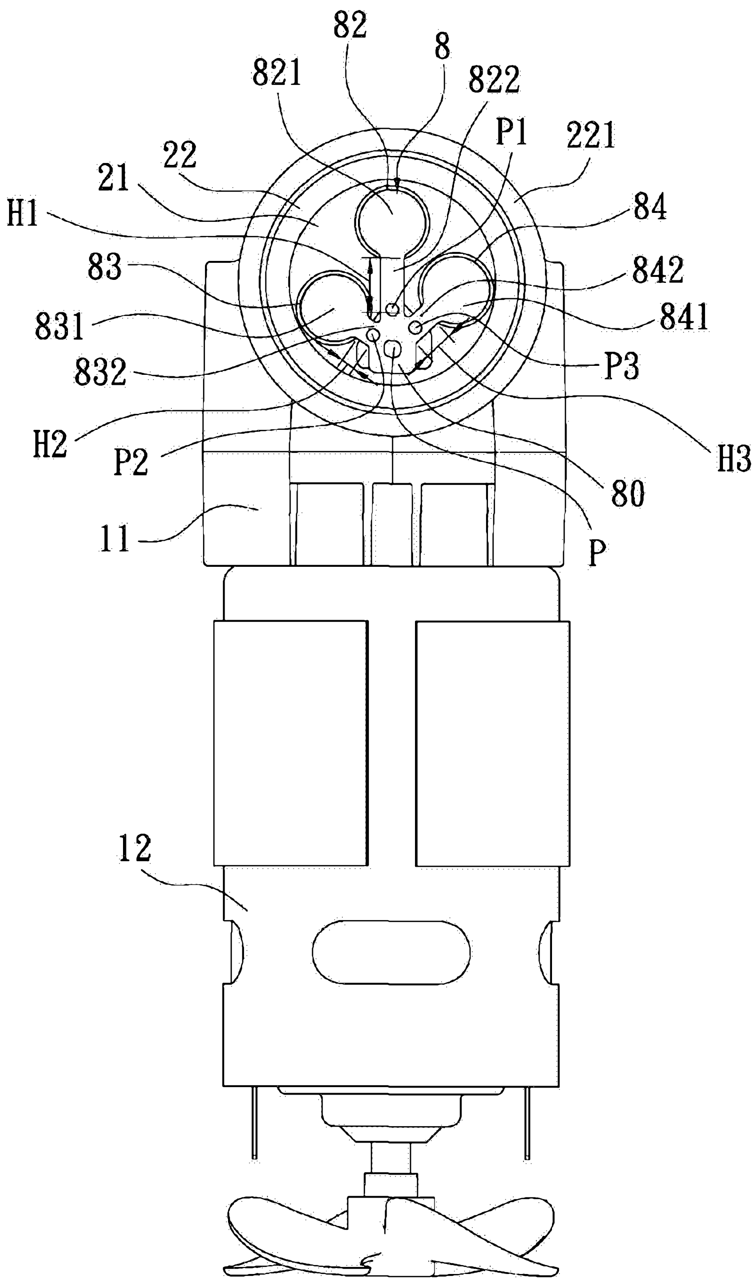
82
8
821
822
P1
221
22
21
H1
84
83
842
831
841
832
P3
H2
P2
H3
80
11
P
12

FIG. 10

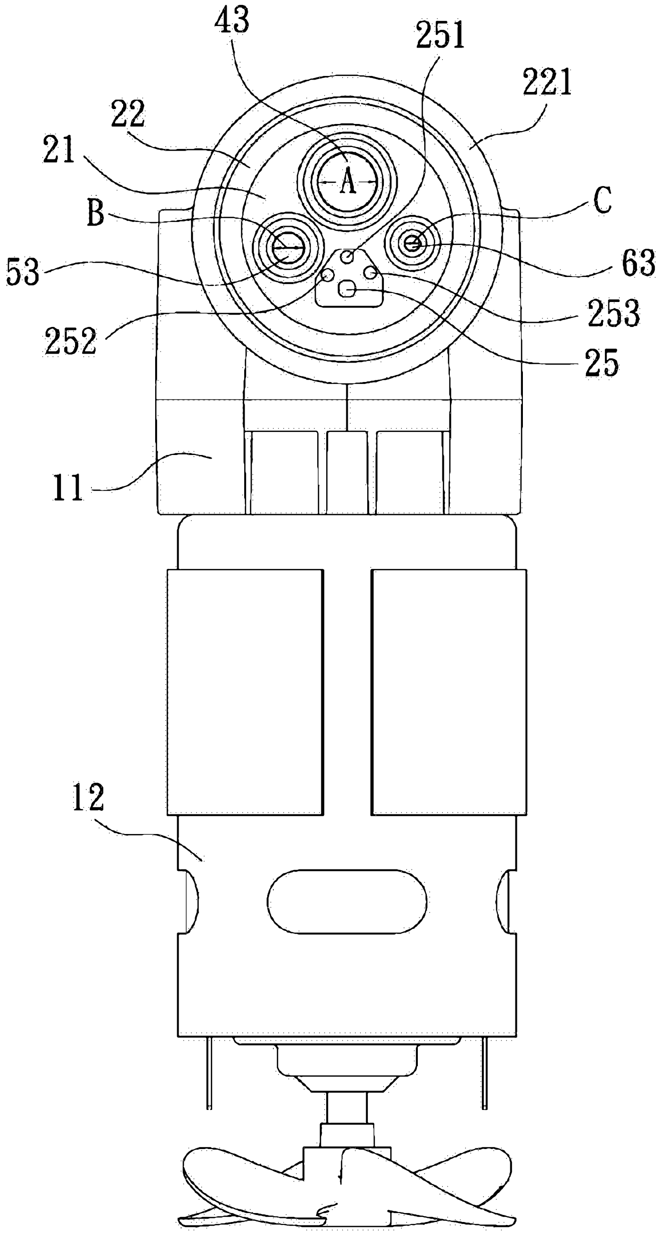

FIG. 11

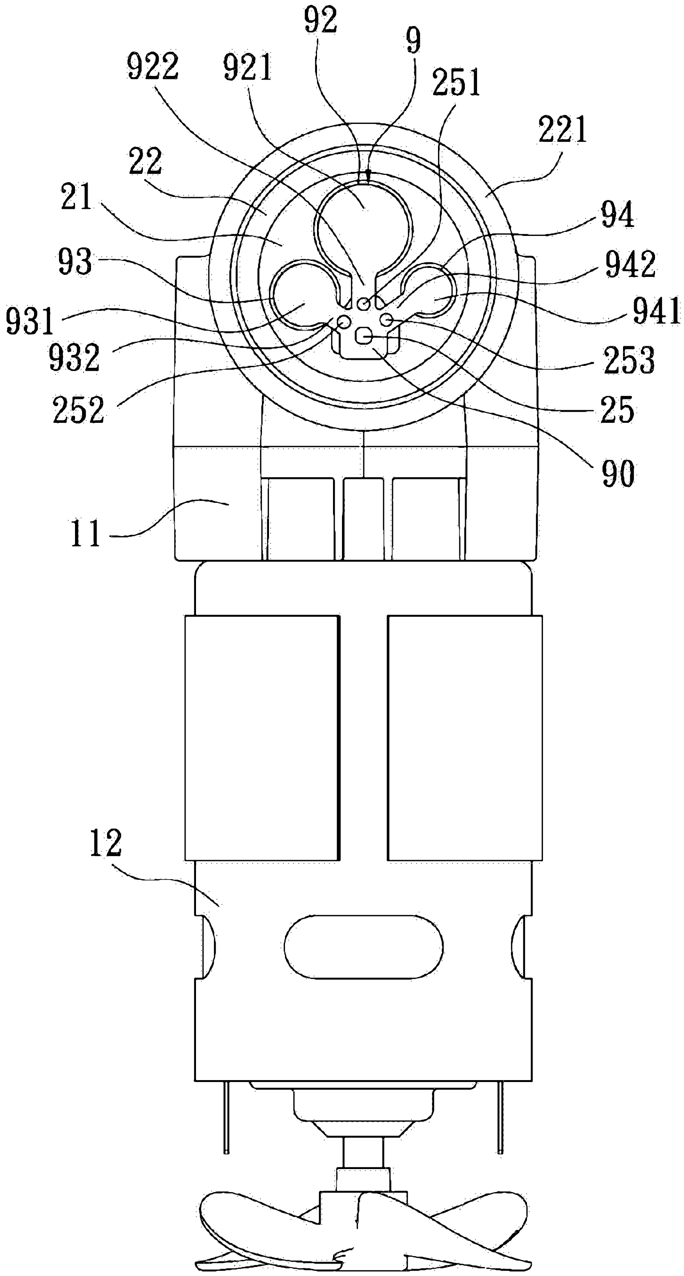

FIG. 12

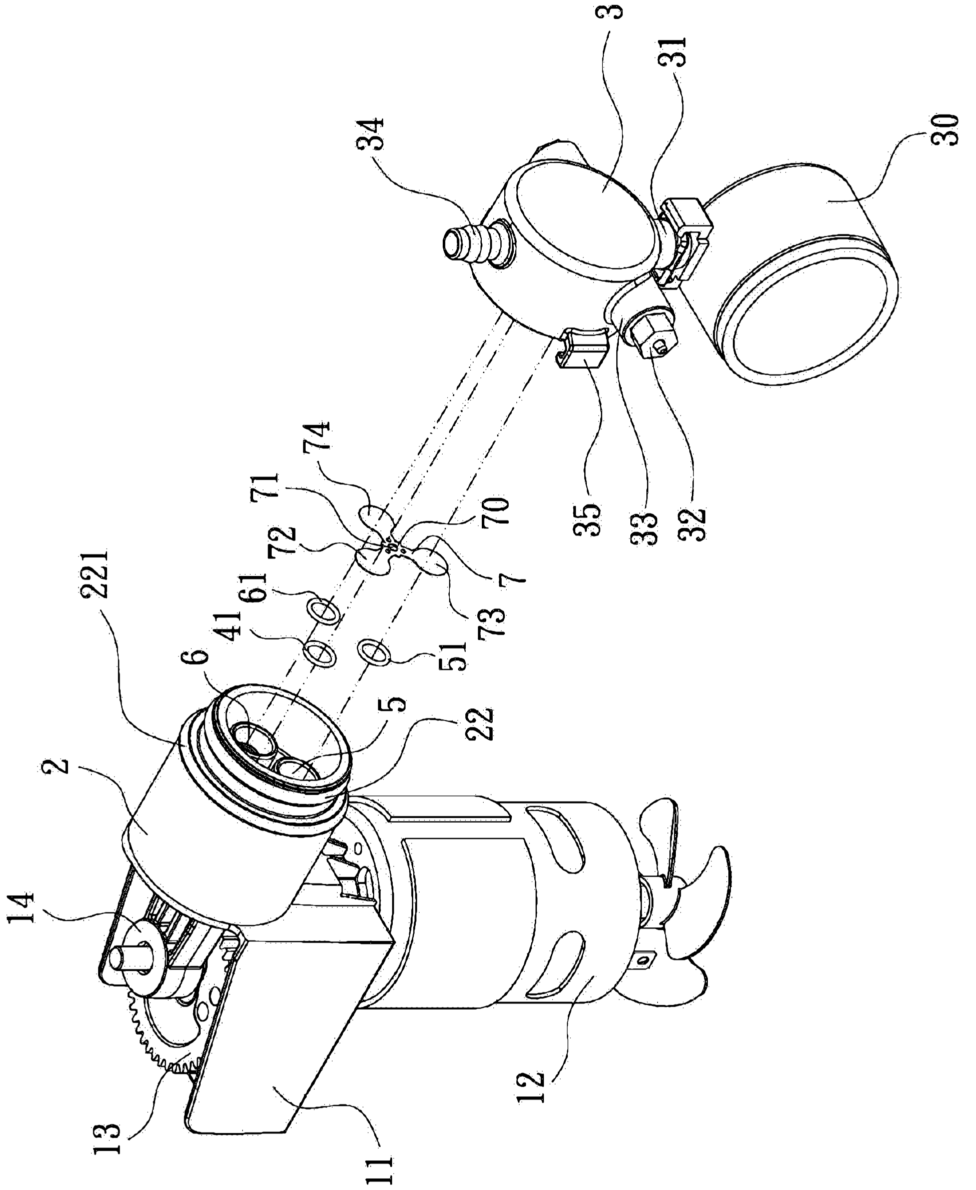

FIG. 13