B. K. DOSTERSCHILL.

DOUBLE STREAM DRAFT ARM.

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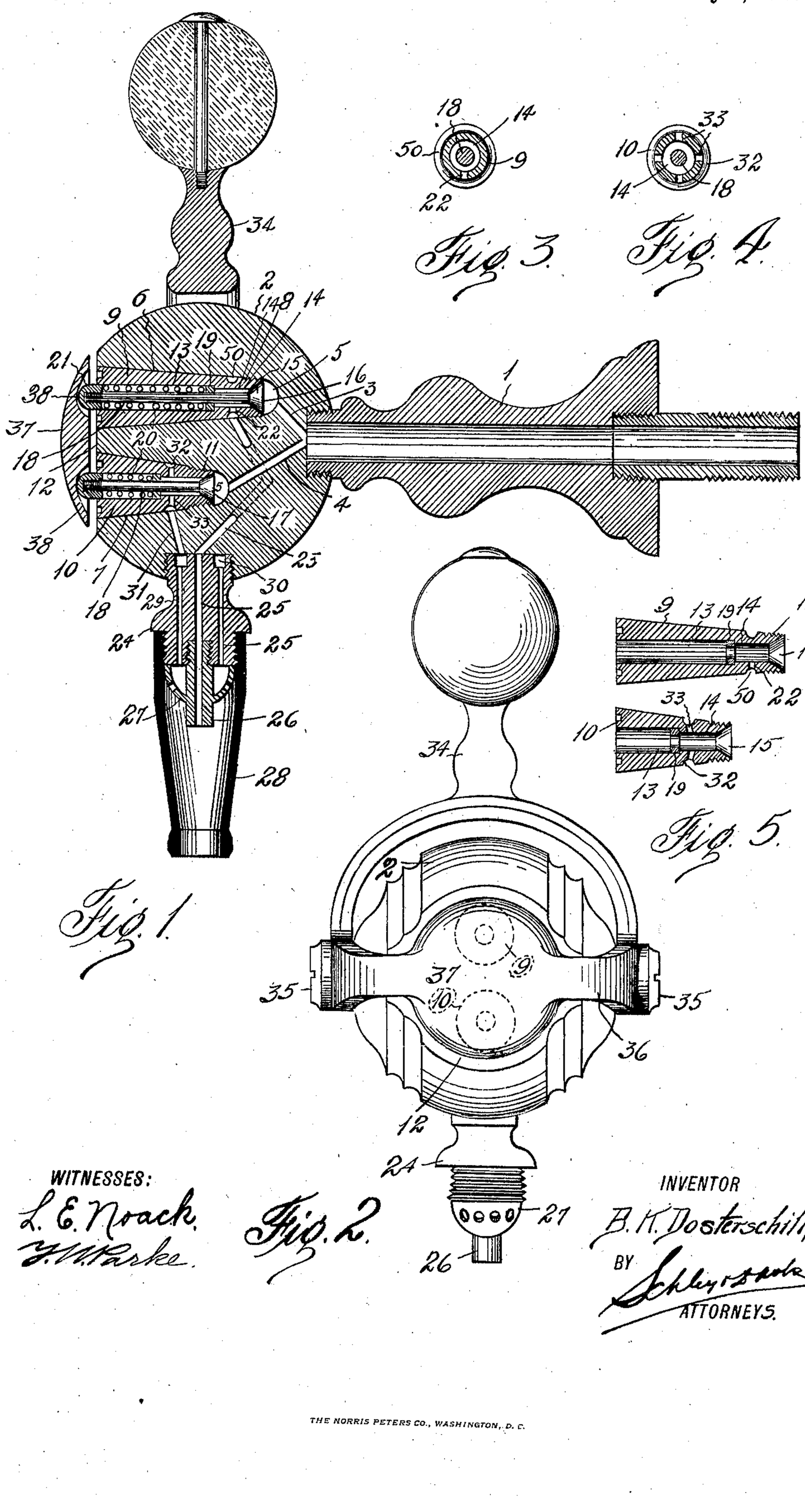

Fig. 1.

Fig. 3.

Fig. 4.

Fig. 2.

Fig. 5.

WITNESSES:

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DOUBLE-STREAM DRAFT-ARM.

963,530. Specification of Letters Patent. **Patented July 5, 1910.**

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To all whom it may concern:

Be it known that I, BERNHARD K. DOSTERSCHILL, citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Double-Stream Draft-Arms, of which the following is a specification.

This invention has relation to double stream draft arms for soda fountains.

The object of the invention is to provide the use of washers and packings at parts through and about which the fluid flows.

Another feature is the use of ground joints whereby the wear of the parts is reduced to a minimum; and the arrangement whereby access may be readily had to the various parts for the purpose of cleansing and inspection.

Finally the object of the invention is to provide means of the character described that will be strong, durable, efficient, and easy of operation, simple and comparatively inexpensive to construct, and also in which the several parts will not be likely to get out of working order.

With the above and other objects in view, the invention has relation to certain novel features of construction and operation, an example of which is described in this specification and illustrated in the accompanying drawings, wherein:

Figure 1. is a vertical sectional view of the arm, Fig. 2. is a front elevation, Fig. 3. is a transverse section of one of the conical shells, Fig. 4. is a similar view of the other shell, and Fig. 5. is a detail in section of the shells removed from the head.

In the drawings the numeral 1, designates a bracket sleeve which is adapted to be attached to the soda fountain and connected with the source of fluid supply. At its outer end this sleeve is threaded into the rear side of a head 2 at the central portion thereof and communicates with diverging passages 3 and 4 formed in the head. These passages terminate respectively at the rear chambered portions 5 of tapered and conical bores 6 and 7 extending transversely inward in the head from the front side, and arranged one above the other. These bores taper inward and their peripheries are ground to a fine degree. At their rear ends, each bore is provided just forward of the chamber 5, with internal and projecting screw threads 8. An elongated valve shell 9 is tapered to fit snugly in the bore 6, while a similar shell 10, shorter in length is fitted in the bore 7. These shells are each provided at their rear ends with a counter-sunk screw threaded portion 11 adapted to engage the threads 8 whereby the shells are fastened in the bores. These shells also have their peripheries ground to frictionally engage the peripheries of the bores and form gas and water tight joints. The face of the head is formed with a vertical flat portion 12 with which the outer ends of the shells terminate, flush. Each shell has a central longitudinal and cylindrical opening 13 extending from its forward end and terminating at the forward end of a smaller opening 14 which latter terminates in a conical valve seat 15 at the rear end of the shell. A conical valve 16 engages in the seat of the shell 9, while a similar valve 17 engages in the seat of the shell 10. The seats as well as the valves are ground so that when the valves engage the seats the passage of fluid into the openings 15 from the chambers 5 will be prevented and an efficient cut-off provided. From each valve, a valve stem 18 extends forward through the openings 13 and 14, passing through and snugly fitting a packing 19 preferably of soft metal and disposed at the intersection of the openings 13 and 14. These packings are the only ones used in the entire construction. Each stem 18 is surrounded in the opening 13 by a coiled spring 20 bearing against the packing at its inner end and impinging the inner side of a cap 21 threaded on the outer end of the valve stem. The caps 21 project from the ends of the shells and a portion extending into the openings 13. It is obvious that by pressing either cap inward, the valve is moved inward and unseated permitting the fluid from the chamber 5 to pass into the opening 14. The means for depressing the caps will be hereinafter described.

The two valves and shells are, one for supplying a "sharp stream" and the other for supplying a "spray stream." The shell 9 and valve 16 control the "sharp stream", while the shell 10 and the valve 17 control the "spray stream." Intermediate the ends of the opening or passage 14, a port 22 extends transversely through the shell 9 to a circumferential duct 50 in the periphery which registers with a passage 23 extending through the head to the lower end, the passage being offset to avoid the passage 4. At the lower end of the passage 23 a draft sleeve

24 is screwed into the head. This sleeve has a central passage 25 registering with the passage 23 and this passage 25 is continued in a discharge tip 26 screwed into the lower end of the sleeve. The tip 26 carries a perforated cup 27 fitting up close against the sleeve and through which the "spray stream" is discharged into a nozzle 28 screwed onto the lower end of the sleeve. On opposite sides of the passage 25, passages 29 extend to an annular channel 30 in the upper end of the sleeve. This channel communicates with a passage 31 extending up to the bore 7 of the shell 10 where it registers with a peripheral duct 32 formed on the shell. From the opening or passage 14 of the shell 10 a plurality of radial ports 33, as shown in Fig. 4, extend transversely through the shell to the duct 32, permitting the passage of the fluid in a greater quantity than the single port of the shell 9.

For alternately depressing the valve stems and unseating the valves, a handle 34 is pivoted on the head 2 by trunnion screws 35. The handle comprises a yoke member 36 normally disposed horizontally about the central front side of the head. At its central portion the yoke member has a boss 37 provided on its inner side with rounded recesses 38 receiving the caps 21. These recesses as well as the caps are disposed above and below the horizontal center of the head on which the handle is pivoted; thus by pulling the handle forward, the valve 17 will be depressed and the "spray stream" given from the nozzle, while by pushing the handle rearward, the valve 16 is depressed and the "sharp stream" given from the nozzle.

It will be observed that only a slight movement of the handle is necessary to depress the valves as they need be only moved a short distance to permit a free passage of the fluid. While the springs 20 will return the valves to their seats, the pressure of the fluid against the valves will hold them in their seats and obviate leakage.

What I claim is:

1. The combination in a double stream draft arm, of a head having a fluid inlet, tapered bores and a discharge, the head also having passages leading from the inlet to the bores and other passages leading from the bores to the discharge, a tapered shell fitting in each bore and provided with a conical valve seat, a conical valve engaging each seat, a stem extending from each valve through its respective shell, a resilient member associated with each stem, and means pivoted on the head for alternately depressing the valve stems and unseating the valves.

2. The combination in a double stream draft arm, of a head having a fluid inlet, tapered bores and a discharge, the head also having passages leading from the inlet to the bores and other passages leading from the bores to the discharge, tapered shells fitting in the bores, each shell having its periphery ground and provided at its rear end with a ground conical valve seat, conical valves, each valve having its conical surface ground and engaging in the ground conical valve seat, valve stems, each stem extending from one of the valves through the shell thereof, a coiled spring surrounding each valve stem in its respective shell, caps, each cap projecting beyond the shell and engaging the end of one of the valve stems, and a handle pivoted on the head and having a portion engaging with the caps for depressing the valve stems and unseating the valves.

3. In a double stream draft arm, a head having an inlet and an outlet and fluid passages, shells fitting in the head, each shell having its periphery tapered and provided with a conical valve seat and a fluid passage, each shell also having a port in communication with one of the passages of the head, valves, each valve having a conical surface engaging in the valve seat of one of the shells, a valve stem extending from each valve through the fluid passage of the shell, means for depressing each valve stem and its valve, and means for returning each valve stem and its valve to their normal positions.

4. The combination in a double stream draft arm, of a head having a fluid inlet, tapered bores and a discharge, the head also having passages leading from the inlet to the bores and other passages leading from the bores to the discharge, a tapered shell fitting in each bore and provided with a conical valve seat, each shell having its outer end terminating flush with the face of the head and its peripheral surface tapered inwardly from the extreme outer end of the shell, a conical valve engaging each seat, a stem extending from each valve through its respective shell, a resilient member associated with each stem, and means pivoted on the head for alternately depressing the valve stems and unseating the valves.

5. The combination in a double stream draft arm, of a head having an inlet opening and a discharge opening and provided with passages establishing communication between the inlet and the discharge opening, the head also having inwardly tapered bores arranged one above the other and intersecting the passages, screw threads projecting into the bores near their inner ends, a tapered shell fitting in each bore and having a conical valve seat at its rear end and longitudinal opening extending through the shell from the seat, counter-sunk screw threads on the rear end of each shell engaging the threads of the bore whereby the peripheries of the shell and the bore are frictionally engaged, each shell having a circumferential duct and a port leading from

the longitudinal opening to the duct, a valve engaging in each valve seat of the shells, a stem extending from each valve through the opening of the shell and having its outer end screw threaded, a cap engaging on each screw threaded end of the stems, a coiled spring surrounding each stem in the opening of the shell and bearing against the cap, and a handle straddling the head and pivoted on each side thereof, the handle having a member engaging the caps of the stems.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BERNHARD K. DOSTERSCHILL.

Witnesses:

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