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3,259,132

AIR-ACTIVATED UTENSIL

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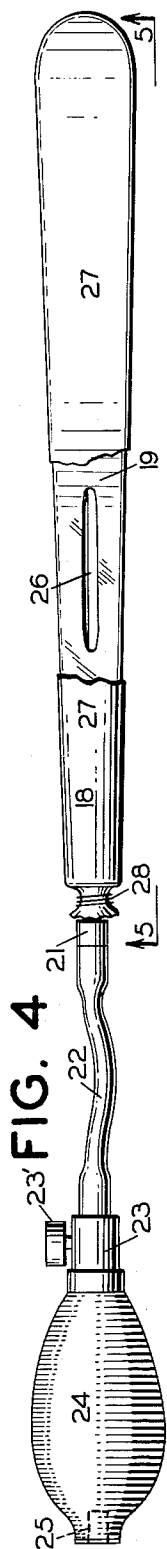


FIG. 5

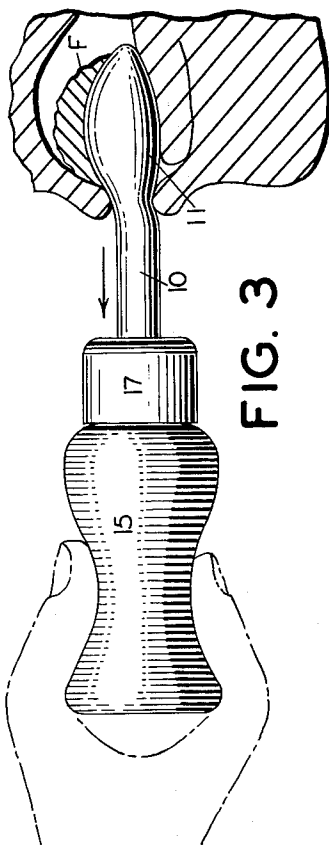
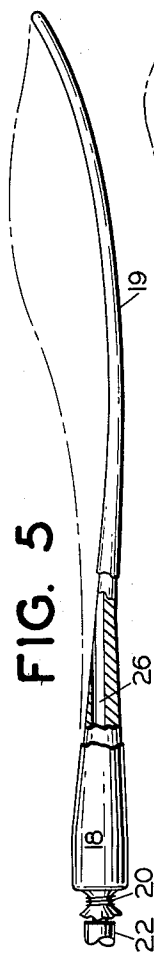


FIG. 3

FIG. 1

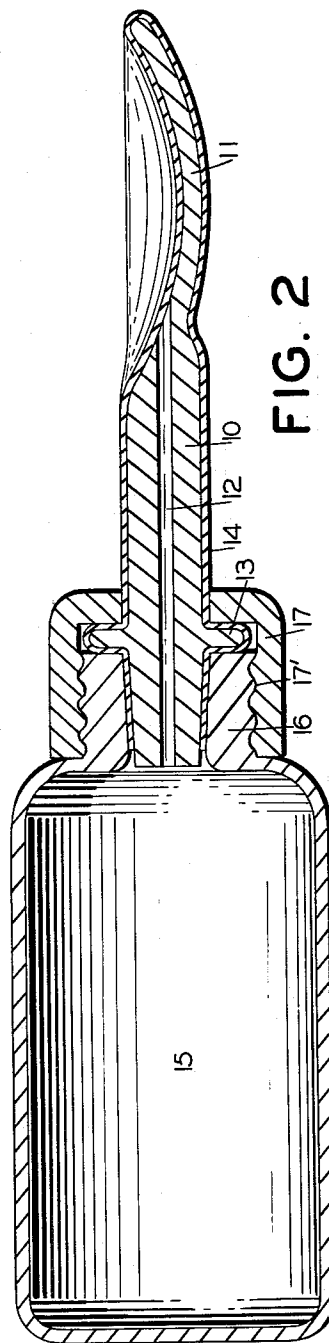
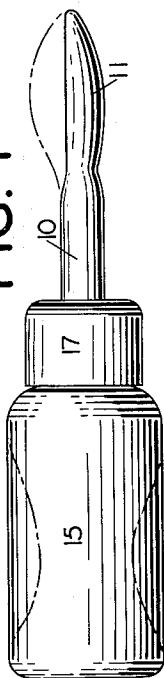


FIG. 2

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AIR-ACTIVATED UTENSIL

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This invention relates in general to utensils in which a delicate thrust is required to be imparted through the medium of such utensil.

More specifically, the invention is concerned with such utensils as infant feeding spoons and certain types of surgical probing lifts.

In the spoon-feeding of very young infants it is generally necessary, when the baby spoon, with the food in the bowl of the spoon, is inserted in the infant's mouth, to raise the handle of the spoon upwardly, or otherwise manipulate the spoon, in order to get the food off from the bowl of the spoon and in place in the infant's mouth, inasmuch as infants at first are not apt to cooperate in getting the food from the spoon. As a result, the hand feeding of infants at the early stage is a slow laborious process.

An object of the present invention is to provide an approved spoon or similar utensil, in which a thin envelope or sheath of rubber or other suitable flexible expandable material, can be made to expand under air pressure from an external source so as to furnish a gentle thrust on the working end of the utensil.

More specifically, one of the objects of this invention is to provide a novel spoon for use in feeding infants by means of which the squeezing of an air bulb in the handle portion of the spoon will cause a flexible covering or sheath on the bowl of the spoon to lift the bowl contents up from the spoon so as to cause their removal from the spoon without further manipulation or effort.

A related specific object is to provide a surgical probing lifter or similar surgical implement or utensil in which the forcing of air into the working end of the implement will similarly cause the expansion of a thin flexible sheath in such a manner as to produce a desired lifting pressure by the placed implement.

The means by which the above objects are attained, and the manner in which such means are employed will be readily understood from the following brief description in which reference is made to the accompanying drawings.

In the drawings:

FIG. 1 is a side elevation of an infant's feeding spoon embodying the present invention, the full lines indicating the normal outline of the composite spoon and the broken lines indicating the outline of the bowl when the spoon is caused to assume discharging position by pressure on the bulb forming the handle for the spoon;

FIG. 2 is a sectional side elevation of the same spoon in normal position, drawn to a larger scale;

FIG. 3 is a corresponding sectional side elevation showing the same spoon in discharging position and illustrating the operation of delivering food into the mouth of the infant;

FIG. 4 is a plan view of a surgical utensil embodying the present invention; and

FIG. 5 is a side elevation of the blade of such utensil, with portion broken away and shown in section for clarity.

Referring first to FIGS. 1, 2 and 3, the infant's spoon illustrated includes a stem 10 and the customary integral bowl-shape portion 11, the stem and bowl being formed of any suitable spoon material such as silver, silver plated metal, or hard plastic. An air channel 12 extends entirely through the stem 10 and terminates in the bowl portion 11. The stem 10 is formed with an annular flange 13 near its outer end.

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A thin envelope or sheath 14 of rubber or similar flexible and expandable material entirely covers the stem and spoon, and, in normal position, conforms exactly to the exterior surface of the spoon bowl. The end of this sheath, after being stretched around the flange 13, terminates approximately at the outer end of the stem 10.

A bulb 15, preferably of semi-flexible plastic, or of any other material suitable for ordinary compressible air bulbs, has a reduced diameter end portion 16 of increased thickness and rigidity adapted to be pressed tightly over the end of the stem 10 and the covering sheath 14. The end portion is formed with external threads and a metal cap 17, shaped as shown in FIGS. 2 and 3, having corresponding internal threads 17' is screwed tightly on the bulb end 16, the inturned end of the cap pressing against the flange 13 and the interposed portion of the sheath. This arrangement provides a strong hold between the bulb 15 and the spoon stem 10 as well as a tight air seal between the bulb and the sheath.

Manual squeezing of the bulb 15 forces air from the bulb to pass through the channel 12 and to be delivered beneath the sheath in the spoon bowl. As a result the sheath is forced upwardly from the bowl, as indicated in the drawing, and remains in this position until the squeezing pressure on the bulb 15 is released, whereupon the bulb 15 returns to normal position, drawing the air back from the spoon bowl into the bulb and causing the sheath at the bowl to drop down to normal position.

In employing this spoon for feeding an infant, the food is placed in the bowl of the spoon as usual, the sheath being uninflated, and the bowl of the spoon is inserted into the infant's mouth. Then pressure on the bulb 15 is caused to lift the sheath above the bowl, and, when the spoon is pulled out with the sheath still in inflated position, the food will be drawn off from the raised sheath as the spoon is pulled out past the upper gum and lip of the infant. It will be obvious that the feeding operation is accomplished more simply and easily in this manner than with the heretofore customary practice of tipping the spoon upwardly with the bowl of the spoon in the infant's mouth and manipulating the spoon while endeavoring to get the food out of the bowl.

In the embodiment of the invention in the form of a surgical implement, as illustrated in FIGS. 4 and 5, a blade of steel, or plastic, or other suitable material, has a rounded stem portion 18 which is then reduced in thickness and increased in width to form the desired working portion 19 of the blade, the working portion of the blade having a rounded tip and also preferably having a curvature as illustrated in the drawings.

The blade stem 18 has a neck 20 of reduced diameter which carries a suitable coupling 21 for an air tube 22. The air tube 22 is connected with a bulb 24 through a control valve 23, which control valve may be closed by a thumb screw 23'. The bulb 24, which is similar to bulbs for atomizers and syringes, has the customary end valve 25 allowing rapid inlet and slow outlet of air.

An air channel 26 extends through the stem portion 18 of the blade and terminates in the working portion 19, the air channel being connected with the air tube 22. The entire blade is covered with a sheath 27 of thin surgical rubber or other suitable flexible and stretchable material, like the sheath 14 for the baby spoon of FIGS. 1, 2 and 3. The end of the sheath is secured about the neck 20, either by having a cord wound around the same, or by a suitable removable clamping band, in such manner as to prevent any leakage of air around the secured end of the sheath.

When the blade of this implement is inserted in the desired location and position the bulb 24, with the valve 23 opened, is given a succession of squeezes to inflate the sheath to the extent desired. If the sheath is to remain in the inflated position the valve 23 is closed by turning

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the thumb screw 23'. The inflating of the sheath 27 cause the sheath on the flat curved working portion of the blade to assume some such position as indicated by the broken lines in FIG. 5, thus enabling a gentle lifting pressure to be exerted by the sheath.

The fact that the working portion of the blade is wider and curved in such a manner that the air channel 26 terminates on the working portion of the blade causes the expansion of the sheath as a result of the induced air pressure to take place on this working face portion of the blade in the same manner as the expansion of the sheath of the spoon takes place over the bowl of the spoon. This is an important feature in both embodiments of the invention.

Obviously other shapes of blades or implements might be used in place of the particular blade illustrated.

I claim:

1. An air-activated utensil including an integral body of rigid material having a stem portion and an outer end working portion, said outer end working portion formed with a concave working face and a correspondingly convexly curved back face, an air channel extending longitudinally along through the stem portion and terminating on said concave working face of said working portion, a sheath of thin flexible stretchable water proof material extending entirely over said body and normally conforming closely to said body, the end of said sheath secured to the end of said stem portion opposite from said outer end working portion with an air tight seal, and a squeezable bulb connected with said latter mentioned end of said stem portion and with said air channel for delivering air under pressure beneath said sheath at the outer terminal of said air channel and in said concave working face of said working portion of said body, whereby to cause said sheath temporarily to be lifted from said concave working face of said outer end working portion when said bulb is squeezed while said sheath continues to conform closely to said convex back face

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and said stem portion of said body, said bulb enabling said air to exhaust from beneath said sheath for returning said sheath to normal position on said concave working portion when squeezing pressure on said bulb is released.

2. An instant feeding spoon consisting of an integral body of rigid material having a stem portion and an end working portion, said end working portion constituting the bowl of the spoon and formed with a concave top face in the shape of a rounded concavity and a correspondingly shaped convex bottom face, an air channel extending longitudinally along through said stem portion and terminating in said rounded concavity of said top face of said spoon bowl, a sheath of thin flexible stretchable water proof material extending entirely over said stem portion and spoon bowl and normally conforming closely to said stem portion and said top and said bottom faces of said spoon bowl, the end of said sheath secured to the end of said stem portion opposite from said spoon bowl with an air tight seal, and a squeezable bulb connected with said latter mentioned end of said stem portion and with said air channel for delivering air under pressure beneath said sheath in said top face of said spoon bowl, whereby to cause said sheath temporarily to be lifted from said top face of said spoon bowl when said bulb is squeezed while the remaining portion of said sheath remains closely conforming to said stem portion and to said bottom face of said bowl, said bulb enabling said air to exhaust from beneath said sheath to return said sheath to normal position when squeezing pressure on said bulb is released.

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