

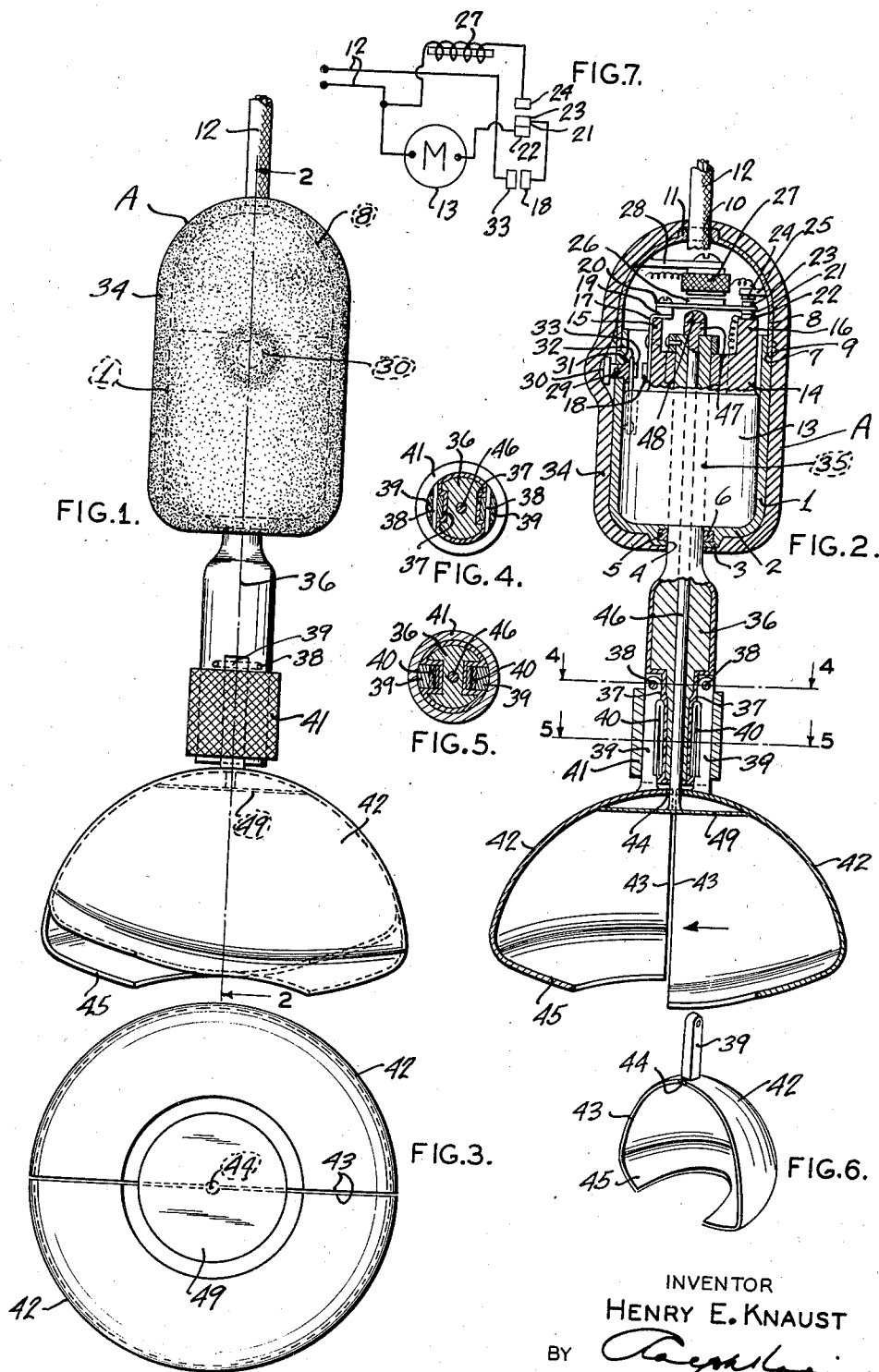
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ICE-CREAM SCOOP

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ICE-CREAM SCOOP

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This invention relates to a certain new and useful improvement in ice-cream scoops and has for its primary objects the provision of a unique ice-cream dispensing scoop or serving implement, which is capable of gathering or taking up a serving portion or so-called predetermined load of ice cream or the like without compacting the same or otherwise materially affecting or altering its normal density, which is power-driven and conveniently usable without producing undue fatigue, which is durable and substantially unbreakable during the course of normal use, which will produce successive serving or load portions of the cream or confection having substantial constant or uniform shape, density, and homogeneity, and which is speedy in operation, economical in cost of construction and maintenance, and efficient in the performance of its intended functions.

And with the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawing—

Figure 1 is an elevational view of an ice-cream scoop constructed in accordance with and embodying my invention;

Figure 2 is a longitudinal view of the scoop, taken approximately along the line 2—2, Figure 1;

Figure 3 is an inverted plan view of the scoop;

Figures 4 and 5 are transverse sectional views of the scoop, taken approximately along the lines 4—4 and 5—5, respectively, Figure 2;

Figure 6 is a reduced perspective view of one of the jaws or segments of the scoop; and

Figure 7 is a schematic wiring diagram of the electrical connections of the scoop.

Referring now more in detail and by reference characters to the drawing, which illustrates a preferred embodiment of my invention, A designates the ice-cream scoop generally, which includes an open-top cylindrical shell or housing 1 having an end or bottom wall 2 centrally enlarged or thickened in the provision of a bearing boss 3 transversely apertured, as at 4, and annularly grooved, as at 5, for receiving a bearing ring 6 of "Oilite" or other suitable preferably antifriction material.

At its open-end peripheral margin, the shell 1 is rabbeted, as at 7, for receiving a dome-shaped closure cap 8, which is preferably detachably secured to the shell 1 by screws or other suitable fastening means 9 and preferably apertured, as

at 10, and suitably formed or provided with a retention ring 11 for receiving a conventional two-wire electrical conduit or cord 12, all as best seen in Figure 2 and for purposes presently fully appearing.

Suitably disposed and mounted in the shell or casing 1, is a prime mover in the form preferably of a compact high-speed electric motor 13 preferably of the conventional A. C.-D. C. type, having a projecting auxiliary block 14 of dielectric material providing opposed lugs or contact-supports 15, 16.

Fixed upon the lug 15, is a conductive connector strip 17 provided at its one or so-called inner end with a suitable contact button 18 and at its other or so-called outer end with a radially inwardly presented flange 19 to which is suitably fixed one end of a spring-leaf circuit breaker arm or blade 20 provided at its free swingable end with a contact button 21 for circuit-completing or closing engagement with a fixed contact 22 securely mounted on the opposed lug 16 and an opposed contact 23 for circuit-making engagement with an auxiliary fixed contact 24 mounted on a support or bracket 25, in turn, fixed upon the inner face of the end cap 8.

Intermediate its ends, the blade 20 is provided with a magnetic plug or insert 26 for electro-magnetic co-operation with a small circuit-breaking electro-magnet or solenoid 27 suitably secured to a supporting bracket 28, in turn, also fixed within and upon the end cap 8, all as best seen in Figure 2 and for purposes presently fully appearing.

Shiftably mounted in and extending through the side wall of the casing or shell 1, is a preferably dielectric switch actuator 29 provided at its outer end with a preferably rounded finger button 30 and at its inner end with a diametrically enlarged abutment 31 for engagement with the free swingable end of a spring-leaf switch plate 32 fixed at its lower end to the shell 1 and provided at its free end with a contact button 33 for circuit-completing or closing engagement with the contact 18, all as best seen in Figure 2.

Suitably disposed around the outer face of the shell 1 and cap 8, is a relatively heavy overall sheath 34 preferably of vulcanized rubber or other suitable dielectric material for insulating the operator or user from accidental shock or injury due to leakage of electric currents and also for preventing the ingress of water, moisture, or other deleterious agents to the motor and electrical parts within the casing or shell 1.

The motor 13 has a tubular or quill-type shaft

35, which is preferably equipped with an over-all molded sheath of Bakelite or other suitable dielectric substance and extends axially outwardly from the shell 1 through the end-wall aperture 4 and bearing ring 6 and at its outer extremity is diametrically enlarged in the provision of a cylindrical shank 36 having a pair of diametrically opposed longitudinal slots 37.

Swingably attached as by pins or the like 38 and normally disposed lengthwise within the slots 37, is a pair of suitably elongated arms 39 normally urged to project obliquely outwardly relatively to the shank 36 by means of inverted V-shaped leaf-springs 40 operably mounted within and at the base of the slots 37, the arms 39 being normally retained in the slots 37 against the bias of the springs 40 by means of a thimble 41 mounted on the shank 36 for axially shiftable movement into and out of embracing engagement with the arms 39, as best seen in Figure 2.

Welded or otherwise fixed upon the respective free ends of the arms 39, is a companion pair of co-operable scoop segments or bowls 42 preferably in the form of quarter spheres having opposed matching margins 43 semi-circular in contour in end elevation, as best seen in Figure 6, and centrally recessed in the provision of a clearance aperture 44 and preferably integrally formed at their lower open end with inwardly presented helically shaped cutting flanges or blades 45 disposed in opposite non-matching directions somewhat after the manner of a propulsion screw, all as best seen in Figures 1, 2, and 6.

Slidably mounted in and extending through the bore of the tubular or quill-type motor-shaft 35, is a push rod 46 diametrically enlarged at its one or inner end in the formation of a stop shoulder 47 and provided with a cap or button 48 preferably of any suitable dielectric material. Welded or otherwise fixed upon the opposite or outer end of the push rod 46 and extending symmetrically thereabout for more or less snug-fitting engagement at its periphery with the respective inner faces of the segments or bowls 42, is a relatively thin flexible metallic disk or plate 49, all as best seen in Figure 2 and for purposes presently appearing.

By reference to the wiring diagram, Figure 7, it will be seen that one of the electrical leads in the cord 12 is connected directly to the solenoid or magnet 27 and the motor 13, and that the other electrical lead of the cord 12 is connected to the switch-leaf 32. The circuit breaker blade 20 is electrically connected to the contact button 18, the other pole of the solenoid 27 being connected to the contact button 24 and the other pole of the motor 13 being connected to the contact button 22.

In operation and use, the thimble 41 is normally shifted axially on the shank 36 into embracing engagement around the arms 39, the bowls or segments 42 being hence in closed or ice-cream scooping position, as shown in Figure 2, and the circuit to the motor 13 broken, the contact 33 being out of electrical engagement with the contact 18.

Upon the finger button 30 being depressed, the switch actuator 29 will be shifted inwardly and contact 33 shifted into circuit-making or closing engagement with the contact 18. By reason of the fact that the flexible metallic plate 49 is in straight or undeformed position, the push rod 46 will be held in outwardly shifted position with its dielectric knob or button 48 out of en-

gagement with the circuit breaker blade or arm 20, the contacts 21 and 22 being hence in circuit-closing engagement and the circuit to the motor 13 being thus completed.

Upon being energized, the motor 13 rapidly rotates the shaft 35 and the associated segments or bowls 42, and when the rotating segments or bowls 42 are lowered into the ice cream or other like frozen confection, the helical cutting flanges or blades 45, co-operatively acting in the manner of a propulsion screw, will very rapidly gather and feed a continuous stream of ice cream into the segments or bowls 42 with a very slight compacting force sufficient to render the contents of the bowls homogeneous and uniform, but insufficient to alter the density of the ice cream or other confection. As the bowls 42 become filled, the scooped or gathered ice cream or other confection presses against and upsets or deforms, as it may be said, the flexible metallic plate 49, the push rod 46 being thereby shifted longitudinally and the dielectric end knob 48 thereof engaged with the circuit breaker arm 20 and the contact 21, in turn, being shifted out of circuit-making engagement with the contact 22. The circuit to the motor 13 is thus immediately broken and rotation of the bowls 42 discontinued. As the circuit breaker arm 20 is deflected upwardly by such movement of the push rod 46, the contact 23 is brought into circuit-making engagement with the contact 24, completing the circuit to the solenoid 27, which thereupon becomes energized and magnetically holds the circuit breaker blade 20 in upwardly deflected position, maintaining interruption of the circuit to the motor 13 even though the operator has neglected or inadvertently omitted to remove his finger from the switch button 30. On the other hand, in the event the operator removes circuit-closing finger-pressure on the button 30, then the circuit will be immediately broken both to the motor 13 and solenoid 27, any necessity then for maintaining the circuit breaker blade 20 in upwardly deflected position being eliminated.

When the so-called predetermined amount or load of ice-cream has been gathered by and into the bowls 42 and the motor 13 is automatically shut off, the thimble 41 may be shifted retrogressively along the shank 36, whereupon the arms 39 and the associated bowls 42 will be shifted angularly outwardly under influence of the springs 40 for releasing or discharging the gathered ice-cream load, ready automatic removal of the load being assisted by spring tension availably presented by the disk 49.

The sheathed casing 1 and its cap 8 provide a convenient manipulating handle for the scoop, and as will be obvious, the scoop may be readily and economically constructed and efficiently fulfills in every respect the objects stated.

It should be understood that changes and modifications in the form, construction, arrangement, and combination of parts of the scoop may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—
1. An ice-cream scoop comprising, in combination, a pair of companion bowls co-operably shiftable for closing and opening for receiving and discharging a quantity of ice cream, each of said bowls being provided with inwardly extending helical flanges co-operably positioned with

respect to each other for propelling said quantity of ice cream into the bowls.

2. An ice-cream scoop comprising, in combination, a shaft, a pair of companion bowls co-operably hinged on the shaft for swingably opening and closing for receiving and discharging a quantity of ice cream, spring means for yieldingly actuating the bowls to open position, and a thimble shiftable on the shaft for bowl engagement for retaining the bowls in closed position against the tension of the spring means.

3. An ice-cream scoop comprising, in combination, a pair of companion relatively shiftable rotary bowls normally closed for gathering and holding a quantity of ice cream, each of said bowls being provided with inwardly extending helical flanges co-operably positioned with respect to each other for propelling said quantity of ice cream into the bowls upon rotation thereof.

4. An ice-cream scoop comprising, in combination, a rotary shaft having a pair of diametrically opposed recesses opening upon the side and end face of the shaft, an arm swingably mounted in each of said recesses and projecting outwardly at an end from the end face of the shaft, and a pair of companion bowls co-operably mounted on the projecting ends of the arms, and rotatable with the shaft.

5. An ice-cream scoop comprising, in combination, a rotary shaft having a pair of diametrically opposed recesses opening upon the side and end face of the shaft, an arm swingably mounted in each of said recesses and projecting outwardly at an end from the end face of the shaft, a pair of companion bowls co-operably mounted on the projecting ends of the arms, and rotatable with the shaft, and means for releasably retaining the bowls in closed load gathering and holding relation.

6. An ice-cream scoop comprising, in combination, a rotary shaft having a pair of diametrically opposed recesses opening upon the side and end face of the shaft, an arm swingably mounted in each of said recesses and projecting outwardly at an end from the end face of the shaft, a pair of companion bowls co-operably mounted on the projecting ends of the arms, and rotatable with the shaft, and means operably mounted for movement on the shaft for releasably retaining the bowls in closed load gathering and holding relation.

7. An ice-cream scoop comprising, in combination, a rotary shaft having a pair of diametrically opposed recesses opening upon the side and end face of the shaft, an arm swingably mounted in each of said recesses and projecting outwardly at an end from the end face of the shaft, a pair of companion bowls co-operably mounted on the projecting ends of the arms, and rotatable with the shaft, and means for releasably retaining the bowls in closed load gathering and holding relation, the bowls being provided with blade means for gathering the load into the bowls.

8. An ice-cream scoop comprising, in combination, a rotary shaft, a pair of companion bowls co-operably hinged on, and rotatable with, the shaft, and means for releasably retaining the bowls in closed load gathering and holding relation, the bowls being provided with helically shaped co-operable cutting flanges for gathering the load into the bowls.

9. An ice-cream scoop comprising, in combination,

a rotary shaft, a pair of normally closed companion bowls co-operably hinged on, and rotatable with, the shaft, co-operable blades on the bowls for gathering the load into the bowls during rotary actuation thereof, electrically operable means for rotarily actuating the shaft and bowls, and means for automatically disconnecting the shaft and driving means upon the gathering into the bowls of a predetermined load.

10. An ice-cream scoop comprising, in combination, a rotary shaft, a pair of normally closed companion bowls co-operably hinged on, and rotatable with, the shaft, co-operable blades on the bowls for gathering the load into the bowls during rotary actuation thereof, power-operated driving means for actuating the shaft and bowls, and means including a push-rod for automatically disconnecting the driving means and shaft upon the gathering into the bowls of a predetermined load.

11. A scoop comprising a hollow handle, an electric motor operably mounted in the handle, circuit-breaking means mounted in series with the motor, a shaft drivingly connected to the motor and extending axially from the handle, load gathering and holding bowls operably mounted on the shaft, and means for actuating the circuit-breaking means for interrupting the current to the motor upon the gathering into the bowls of a predetermined load.

12. A scoop comprising a hollow handle, an electric motor operably mounted in the handle, a swingable circuit-breaker arm mounted in series with the motor, a quill-shaft drivingly connected to the motor and extending axially from the handle, a pair of companion bowls co-operably hinged on the shaft, a push-rod shiftable mounted in the quill-shaft, said rod having one end disposed within the bowls and its other end disposed for abuttingly engaging said arm, and means within the bowls for shifting said rod outwardly with respect to the bowls for causing said arm to interrupt the current to the motor.

13. A scoop comprising a hollow handle, an electric motor operably mounted in the handle, a swingable circuit-breaker arm mounted in series with the motor, a switch in series with said arm, a quill-shaft drivingly connected to the motor and extending axially from the handle, a pair of companion bowls co-operably hinged on the shaft, a push-rod shiftable mounted in the quill-shaft, said rod having an end disposed within the bowls and its other end disposed for abuttingly engaging said arm, means within the bowls for shifting said rod outwardly with respect to the bowls for causing said arm to interrupt the current to the motor, and electro-magnetic means for holding said arm in current interrupting position while said switch is closed.

14. An ice-cream scoop comprising, in combination, a supporting member, a pair of normally closed companion bowls co-operably hinged on the supporting member, each of the bowls being provided with inwardly extending blade-like flanges for gathering and holding a quantity of ice cream in the closed bowls, and a flexible member operatively mounted in the bowls and extending transversely across the line of separation therebetween in opposed juxtaposition to the bowl flanges for forcing the gathered ice cream out of the bowls upon separation thereof.

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