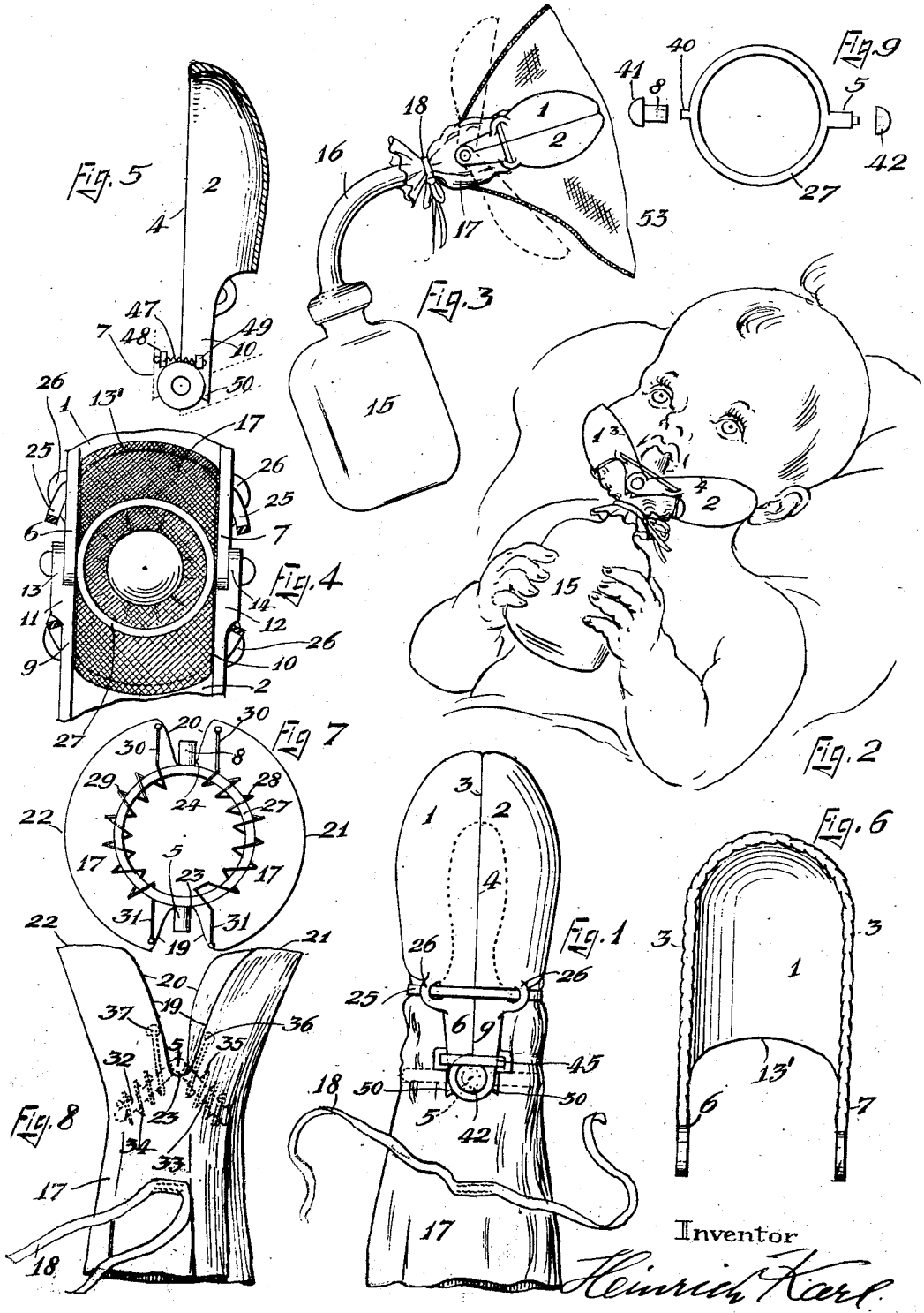
June 22, 1937. H. KARL 2,084,689

NIPPLE PROTECTOR

Filed Oct. 23, 1934 2 Sheets-Sheet 1



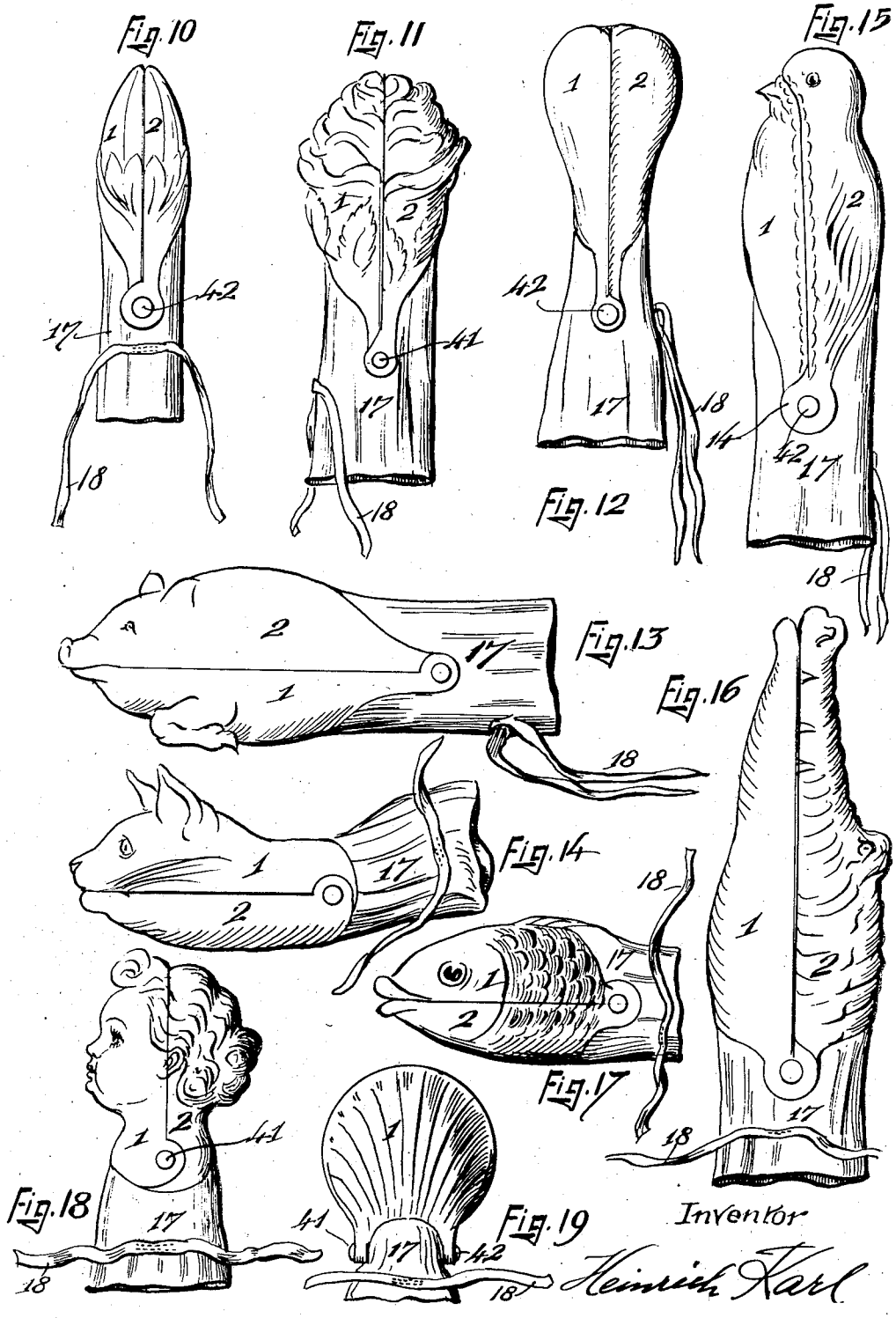
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NIPPLE PROTECTOR

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NIPPLE PROTECTOR

Heinrich Karl, Jersey City, N. J.

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6 Claims. (Cl. 128—252)

This invention relates to improvements in protective devices for various kinds of eating utensils, such as baby nipples, spoons, forks, knives and the like, and has particular reference to a device adapted for application to the implement to protect the same, while not in use, against contamination by dirt, insects, or otherwise.

It is known that flies or other insects are the transmitters of deadly diseases and numerous other ailments internal and external of the human body. In this respect it is of great importance to keep the flies and other insects as well as dirt and other impure substances away from a baby's mouth since the tender organism of the child is more liable to succumb to the attack of bacteria or other toxins than that of grownups.

More particularly the device is so constructed that a nipple which might be fastened or attached to a rubber pipe or directly on the neck of the milk bottle will be completely covered and thereby protected from contamination by dirt or insects. When the nipple is to be put into the baby's mouth the protector for the nipple is to be opened by turning outward the two halves that form the protecting hull which always tend to close upon themselves through a slight pressure exerted upon them by resilient means connecting the same. The two hull-halves are then so placed that they bear against the baby's cheeks but since the pressure is only light there will not be a feeling of discomfort. Whenever the baby should fall asleep or under other circumstances should let the nipple slip out of its mouth the two hull-halves automatically enclose the nipple by being pulled simultaneously one against the other as soon as the nipple leaves the mouth of the baby.

The parts that constitute the nipple protector are illustrated by the drawings of which

Figure 1 is a side elevation of the protector device as used in conjunction with a nursing nipple, the device being shown in its closed position as when the nipple is not in use.

Figure 2 is a perspective view illustrating the use of the device, the same being shown attached to a bottle and the protecting hull sections engaging against the cheeks of the infant.

Figure 3 is a side elevation showing the application of the device to a flexible hose carried by a nursing bottle.

Figure 4 is a fragmentary top view of the completely opened hull of the nipple protector of Figure 1.

Figure 5 is a longitudinal section through a modification of one of the hull sections in which a spring is substituted for one of the elastic bands shown in Figure 1.

Figure 6 is a side elevation of one of the hull sections in which the edges thereof are provided with a lining of soft material acting as a cushioning means for contact with the cheeks of an infant.

Figure 7 is a view in end elevation showing a modification in which light springs are employed instead of the rubber bands of Figures 1, 2, 3 and 4.

Figure 8 is an elevation of another form of protector made of fabric or rubber which is to be used on all of the modifications, and illustrates a further modification of the detail in which springs are employed instead of the rubber bands.

Figure 9 shows some of the parts in connection with the ring employed in the modifications of Figures 1, 2, 3, 4, 5 and 7 and for completing the hinge mechanism shown also in Figure 8.

Figures 10 to 19, inclusive, show the stiff part of the hull of the protector shaped into objects taken from the animal- as well as from the vegetable-world for making it more interesting to the baby; more particularly Figure 10 represents a bud of a flower, Figure 11 a flower, Figure 12 a pear, Figure 13 a little pig, Figure 14 a cat's head, Figure 15 a bird, Figure 16 an alligator, Figure 17 a fish, Figure 18 a doll's head and Figure 19 a sea shell.

The two hull-halves indicated by **1** and **2** respectively are complemental hollow bodies formed of a stiff or somewhat pliable substance and are hingedly connected to each other so that their meeting edges **3**, **4** will engage when the protector is closed. While the borders or edges of the open sides of said halves or sections may be of any suitable shape, I prefer to make them in the plane of a straight line that is directed so that its continuation will extend through the center of the pivots **5**, **8**. The hull-half **1** has downwardly directed extensions **6**, **7** whose lowermost parts each have a hole through which the pivots **5**, **8**, respectively, are passed. The hull-half **2** has also downwardly directed extensions **9**, **10** each having a hole in the lower part thereof, and these holes align with the holes in the extensions **6**, **7**, respectively. The pivot **5** is then passed through the holes of the exten-

sions 6, 9 and the pivot 8 through the holes of the extensions 7, 10. In order to align the borders 3 and 4 and because the two hinge parts 13, 14 must extend farther outside than the others (see Figure 4) the parts 11, 12 above these nearly circular hinge parts 13, 14 are somewhat thickened.

While I have shown the borders 3 and 4 flat in their profile, it is understood that any suitable profile can be chosen which permits the border 3 to fit upon the border 4 and to make a closure tight enough to prevent any insect from passing through. The hull-halves 1, 2 may have any convenient shape and while I have given them the shape of a closed bud when the two halves are closed they may be formed as objects from the animal- as well as vegetable-world, such for instance as heads of animals or of reptiles, birds, or of fruits, etc. and the outside thereof may be painted with vivid colors in accordance with their shape and this will make them attractive to the baby. They may be made from a transparent material such as pyroxyline, celluloid, cellophane, etc., and even of glass, but it may suffice to use stiffened cloth or paper that will be pressed into the correct shape.

It is advantageous to have the lower border 13' (see Figure 6) spaced sufficiently from the hinge part of the device so that said part will not engage the neck of the milk bottle, etc. when the two halves 1 and 2 are moved to open position. The part 17 that serves for affixing the whole device to the neck of the milk bottle 15 or to the rubber pipe 16 (see Figure 3) consists preferably of cloth or of rubber and is so shaped that its lowermost part forms a hood to which may be sewn a band 18 that serves for tying that part to the neck of the milk bottle 15 or to the rubber pipe 16. Instead of the cord or band 18 there may be a rubber band employed. The upper part of said hood 17 is slitted as at 19 and 20 so that the hood adjusts itself to the shape of the lower part of the hull halves 1, 2 and the extensions 6, 9, 7, 10 and allows these parts to be moved about their pivots to open and closed positions. The upper ends or borders 21, 22 are pasted with a suitable adhesive or mucilage (viscose, etc.) or they may be otherwise affixed to the inside surface of the hull-halves 1, 2 near the border 13' as best seen in Figure 4, while the borders of the slits 19, 20 are similarly affixed to the inner sides of the extensions 6, 9 and 7, 10, respectively, and even the lowermost parts 23, 24 of the slits 19, 20 may be pasted to the pivots 5, 8, respectively. It is thus seen that a perfect closure is obtained that will not permit even a gnat to penetrate when the part 17 is tied close with the band 18 to the bottle's neck or to the rubber pipe or tied so as to enclose the nipple that is not secured to a bottle nor to a pipe and while the two hull-halves 1, 2 are in closed position.

The means for automatically closing the hull-halves 1, 2 that is, moving and holding them against each other consists of the rubber band 25 that is passed through rings 26 of which two are provided on each of the two hull-halves 1, 2. The tension of the rubber band should be such that it will not produce too strong a pressure of the two hull-halves upon the baby's cheeks. It is also of importance that no sharp edges are left on such parts of the device that might come in contact with the baby's skin. Instead of the rubber band, however, there might be springs employed and these again might be arranged in various ways as will be shown subsequently. The hull halves or sections need no further means to hold the same in cooperative relation to the pivots 5 and 8, especially when the rubber band 25 is employed. In order, however, to insure a tight and correct closure of the borders 3 and 4, I prefer to employ a stabilizing ring 27 (see Figures 4, 7 and 9) and arrange the pivots thereon and unite them therewith. This ring 27 might then serve for holding coiled springs 28, 29 and the ends 30, 31 of the latter may be so shaped as to bear against the outer edge of the extensions 6, 7, 9, 10, respectively, and thereby force the hull-halves 1, 2 to the closed position.

The part 27, however, does not need to be exactly in ring form but it might just as well be square, triangular or rectangular and as shown by the dotted lines in Figure 8 it might be bent in the middle where the pivots are situated so that on each side thereof two bars 32, 33 will extend which are then obliquely and downwardly directed and around which there will be arranged the coiled springs 34, 35 and the ends 36, 37 of the latter will similarly engage the edges of the extensions 6, 9 as has been explained in connection with the springs 28, 29 of Figure 7. On the other side where the pivot 8 is located the arrangement is repeated so that, in all, four springs are employed, while there are only two employed in the modification of Figure 7. If the pivots 5, 8 are to be secured to a stabilizing ring 27 or to a bent rectangular part, as partly shown in Figure 8, it will be necessary to have at least one pivot, say, that indicated by 8 detached from the ring 27, etc. before the hull-halves 1, 2 are put in place. This is necessary when the material of which the hull-halves are made does not permit enough bending of the parts 6, 7 and 9, 10 for their insertion upon the pivots 5, 8. In this event one of the pivots (8) (see Figure 9) must be inserted into the holes of the extensions 7, 10 and screwed on a small projection 40 or otherwise affixed thereto. The pivot 8 may then have its cap 41 already formed thereon while the cap 42 that is to appear on the outer end of the pivot 5 must be separated therefrom until the whole device is assembled.

In its operation it is desirable to exercise as little pressure as possible upon the cheeks of the baby and for this reason the following arrangement is made. The rubber band 25 is comparatively slackened when the hull-halves 1, 2 are closed and is chiefly employed for giving the two hull-halves 1, 2 the first though slight impulse to move against each other when closing. This gives only a very light pressure upon the cheeks of the baby. It is, however, necessary to continue the pressure and even increase it the nearer the hull-halves 1, 2 come toward each other. For this reason two supplemental bands 45, 46 shorter and tighter than belt 25 are arranged so near to the pivots 5, 8 respectively that their pressure upon the extensions 6, 9 and 7, 10 will be directed upon these pivots which lie in the center line of the pressure thereof when the two hull-halves 1, 2 are as much separated from each other to the extent that their borders 3, 4 form a very obtuse angle similar to that shown in Figure 2 or by the dotted lines in Figure 3. If, however, the two hull-halves 1, 2 get nearer to each other, the bands 45, 46 (the latter is not shown in Figure 1 but is similarly arranged as is the band 45) will be moved in respect to the pivots 5, 8 and consequently the line of pressure will be offset relative to the pivots 5, 8 and against the

extensions 6, 9 and 7, 10 whereby the hull-halves 1, 2 will be moved towards each other. This takes place with such rapidity as to prevent any insect to gain access to the nipple in the meantime.

Instead of the rubber bands 45, 46 there can be used a spring 47 (Figure 5) of certain tension either inside or outside the parts 6, 9 and 7, 10 and held thereto as at 48 and 49, and the position of said spring corresponds to that which would be occupied by the rubber bands 45, 46. An arrangement of this character is seen in Figure 5 in which also the stop 50 is shown which limits excessive turning of the hull-halves 1, 2 to their open positions and prevents them from moving beyond the horizontal plane extending through the pivots 5, 8. This, however, will not happen when the springs 28, 29 or 34, 35 are employed.

It is also contemplated to make the borders 3, 4 of very soft material or to cover them with such material as, for instance, soft fur or cotton, etc. as illustrated in Figure 6, in order to make the contact of them with the baby's cheeks as soft as possible. It is also shown thereby that while the baby sucks on the nipple the two hull-halves 1, 2 lie close to the cheeks of the baby whereby the interior sides of them are covered up and no insect nor dust can settle on that side and consequently no such insect etc. will be closed up together with the nipple when the two hull-halves (or sections) 1, 2 are automatically moved toward each other and held in closed position.

I am aware that still more modifications may be made that, however, will be in the spirit and scope of the invention. There might be, for instance, the hull-halves 1, 2 formed of more sections than only two (1 and 2) and there might be a cover for the whole face (as indicated by 53 in Figure 3) made of gauze or similar open fabric and brought in connection with the nipple protector so that no flies or other insects may disturb the baby while sucking on the nipple.

What I claim is:

1. In a nipple protector, a hull, a hose-like part of fabric attached to said hull, and a band sewn on said hose-like part of fabric for fastening said nipple protector to a rubber hose, said band being adapted for fastening said protector also to the neck of a bottle and for simply closing up the nipple.

2. In a nipple protector, a hull consisting of two parts movable to open and closed positions, flexible means, some of which are arranged for exerting a slight pressure upon said parts to initiate their movement towards each other from an open position, said pressure decreasing as said two parts are nearing the closed position, and others of said flexible means arranged to exert an increasing pressure upon said parts as the pressure of the first-named means decreases.

3. In a nipple protector of the character described, a hull adapted to enclose said nipple automatically and consisting of sections arranged on a stabilizing part, pivots on said stabilizing part and said stabilizing part being bent at the point where the pivots are located and springs arranged around the parts of said stabilizing part that are next to the point where the pivots are arranged and being so adjusted as to thrust against said sections and always tend to bring them together to form said hull.

4. A protective device utilized for the prevention of contamination of feeding utensils of the kind described, said device comprising a sectional hull the sections of which are pivotally connected at adjacent ends for movement to closing and open positions about at least a portion of a utensil, and means connecting said sections between the ends thereof to pull the same together when they are not forcibly held apart.

5. In a nipple protector designed for the protection of the baby using the nipple, said protector consisting of sections hinged together and constituting a hull having edges fitting one upon the other when said hull is in closed position, means so assembled and coacting as to automatically move said sections toward each other to enclose and protect the nipple therein, and means consisting of a pliable material secured on the lower portion of said hull and forming part of said protector for tying said sections, the latter being formed so that the hull, in closed position, represents an object of interesting and pleasing appearance to the baby.

6. In a nipple protector for nipples used by babies, a hull formed by two hingedly connected sections having edges which engage each other when the hull is in closed position and which engage the cheeks of a baby when the hull is open and the nipple is being used, said edges being rounded and lined with a soft material for contact with the baby's cheeks, and means for automatically closing said hull to enclose said nipple as soon as the latter is withdrawn from the mouth of the baby, the last-named means being disposed relative to said hull in such manner as to exert only slight pressure upon said sections when the latter lie against the baby's cheeks and to increase said pressure when said sections approach each other.

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