

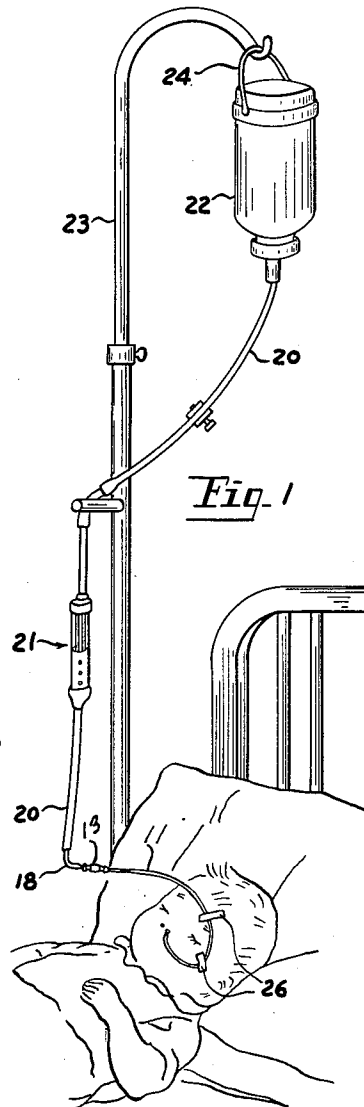
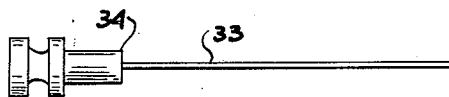
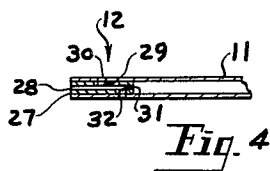
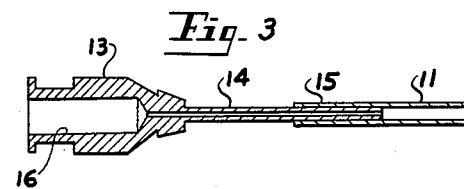
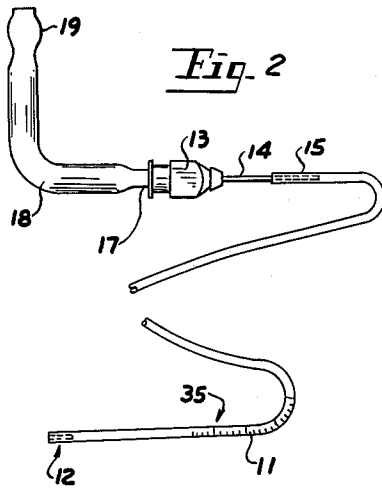
May 13, 1952

H. TURKEL

2,596,947

INFANT NASAL FEEDING TUBE

Filed Feb. 9, 1950



INVENTOR.
HENRY TURKEL.

BY

Robert A. Sloman
ATTORNEY.

UNITED STATES PATENT OFFICE

2,596,947

INFANT NASAL FEEDING TUBE

Henry Turkel, Detroit, Mich.

Application February 9, 1950, Serial No. 143,307

4 Claims. (Cl. 128—348)

1

This invention relates to apparatus for permitting the introduction of food into the stomach of an infant such as an incubator baby through the nasal passage.

Heretofore in the case of small infants or incubator babies, it has been difficult to introduce food directly into the stomach due to the smallness of size of the various organs involved.

It is the object of the present invention to provide an apparatus which will facilitate the introduction of food into the stomach of an infant or an incubator baby by employing a flexible plastic non-collapsible tube of very small diameter, which may be readily inserted through the nasal passage and the esophagus and down into the stomach.

It is the further object of the invention to provide a feeding tube which will not clog or collapse and which will be very light in weight.

These and other objects will be seen from the following specification and claims in conjunction with the appended drawing in which:

Figure 1 is a fragmentary perspective view illustrating the present feeding device and its attachment to a source of fluid or liquid food.

Figure 2 is an enlarged fragmentary view showing the feeding tube and a glass adaptor at one end.

Figure 3 is an enlarged section of the upper end of the tube illustrating the hollow needle which is mounted and secured thereto.

Figure 4 is a fragmentary enlarged section of the lower end of the feeding tube showing a plurality of outlet openings; and

Figure 5 is an elevational view of the stylet adapted for insertion within the needle shown in Figure 3.

It will be understood that the above drawing illustrates merely a preferred embodiment of the invention and that other embodiments are contemplated within the scope of the claims hereafter set out.

Referring to the drawing there is shown in Figure 2 applicant's flexible plastic non-collapsible tube 11 which is provided at its lower end at 12 with a plurality of fluid outlets, any one or more of which would be usable in the event one or more of said outlets should become clogged.

The opposite end of applicant's open-ended tube 11 has projected therein at 15 the lower end of the hollow fluid delivery needle 14 with hollow head 13 whereby said tube may be adapted in the manner hereafter described to the diameter of a larger tube from which the liquid is to be supplied, it being remembered that ap-

2

plicant's tube preferably does not exceed one-sixteenth of an inch in diameter.

As illustrated in Figure 3, the tubular needle 14 is shown on an enlarged scale with its outer end projected into and suitably secured within the upper end of the flexible feeding tube 11 as at 15. The opposite end of the needle 11 terminates in the hollow enlarged head 13 which has an inwardly tapered opening 16.

There is employed preferably a right angle glass adaptor 18 one of whose reduced tapered ends 17 is adapted for projection into the corresponding tapered opening of needle handle 13, such as shown in Figures 1 and 2.

The other end 19 of said adaptor projects up into and is secured within the lower end of the enlarged rubber tube 20 which extends downwardly from the drip chamber 21. The rubber tube 20 also joins the upper end of said chamber as shown in Figure 1, and the upper end of said tube is suitably secured to the inverted fluid container 22 which by means of the hanger 24 is supported upon the upright standard 23. Thus fluid or liquid food under the force of gravity may be supplied through a substantially large tube 20, and by means of the adaptor 18 and the needle 13—14 may be directed into the interior of the present small diameter feeding tube 11.

Applicant's flexible tube 11 as shown in Figure 1 is projected inwardly through the nasal passage of the infant or incubator baby and is taped at 25 to the side of the face or head so as to be immovably anchored. Applicant's tube is very light and may be left in its inserted position for as long as five or six weeks without any apparent discomfort to the user.

Referring to Figure 4 there is shown an enlarged view of the lower end of the feeding tube which would project into the infant's stomach for supplying food therinto. A metallic cylindrical tube 27 or tip having a longitudinal channel 28 is projected up into the lower outlet end of the tube 11 and suitably secured in position, whereby fluid food may be directed into the infant's stomach from tube 11 through the longitudinal passage 28 in the tip 27.

In addition to the outlet 28 at the lower end of tube 11 there is also provided a pair of transverse outlet openings 29 and 31 within the tube 27, said openings being longitudinally spaced and preferably arranged upon opposite sides of said tube. Corresponding transverse outlet openings 30 and 32 are formed within the lower end of the tube 11 in registry with the tip openings 29 and 31.

By this construction it is unlikely that there would be complete interruption in the flow of food through the tube 11 due to the clogging of an opening in its lower end. By the provision of the three outlets 28, 30 and 32 there is thus an assurance that if one or even two openings of outlets should become clogged that there will still be another outlet available through which the fluid food may be delivered.

Referring to Figure 5 there is shown a needle stylet 33 with a handle 34, said needle stylet being adapted for introduction through the upper end of the needle and handle 14—13 to thereby effectively close off the upper end of the tube 11.

The stylet shaft 33 snugly projects down into the tubular needle 14 whereas the corresponding portion 34 of the stylet handle projects within the tapered opening 16 of stylet handle 13. Thus with the adaptor disconnected, the feeding tube may be effectively closed off and sealed substantially at its upper end, to thus prevent the accidental introduction of any particle of dust or other substance.

When the feeding tube is to be used, the stylet is merely removed manually and the end 17 of the adaptor 13 projected into the tapered opening 16 in the handle of said needle, after which said adaptor is joined to a conventional fluid supply device such as shown in Figure 1 of the drawing.

The tube is preferably constructed of a plastic substance and is non-collapsible. When not in use the tube may be simply coiled into a very small space for storage.

While the present invention and feeding device may be introduced into the stomach through the nasal passage of the infant it is contemplated that if desired said device could be introduced rectally, inasmuch as the diameter of the tube is preferably less than a sixteenth of an inch thereby minimizing possible irritation.

When not in use the flexible tube 11 is preferably filled with water and the stylet 33 inserted within the needle 14. On the other hand the adaptor 13 could be left in position as shown in Figure 2 and with the upper end 19 of said adaptor properly stoppered.

As shown in Figure 2 there are provided upon the tube 11 a series of spaced markings or indicia 35 preferably in centimeters which would indicate the depth of insertion of said tube into the infant's stomach.

While the container 22 has been shown as a preferred method of supplying fluid through the feeding tube 11 it is also contemplated that fluid could be supplied to the upper end 19 of the adaptor 13, or directly to the tapered opening 16 of the needle head by means of a suitable syringe.

Applicant's tube 11 has been described as being plastic and non-collapsible. It is contemplated that a plastic material be employed which is chemically inert with respect to stomach acids. As to being non-collapsible the inventor has in mind a collapse of the tubular wall at right angles to its longitudinal axis.

Having described my invention reference 65

should now be had to the claims which follow for determining the scope thereof.

I claim:

1. A device adapted to permit the introduction of liquids into the stomach of an infant through the nasal passage comprising a flexible open-ended tube, the lower end of said tube having a pair of longitudinally spaced transverse outlets formed therein upon opposite sides thereof, and a hollow fluid delivery needle projected down into and secured within the upper end of said tube, said needle having an enlarged handle portion with an internal inwardly tapered bore in communication with the interior of said needle.

2. A device adapted to permit the introduction of liquids into the stomach of an infant through the nasal passage comprising a flexible open-ended tube, the lower end of said tube having a pair of longitudinally spaced transverse outlets formed therein upon opposite sides thereof, a hollow fluid delivery needle projected down into and secured within the upper end of said tube, said needle having an enlarged handle portion with an internal inwardly tapered bore in communication with the interior of said needle, and an adaptor with one end inserted and secured within said handle.

3. A device adapted to permit the introduction of liquids into the stomach of an infant through the nasal passage comprising a flexible open-ended tube, the lower end of said tube having a pair of longitudinally spaced transverse outlets formed therein, and a hollow fluid delivery needle projected down into and secured within the upper end of said tube, said needle having an enlarged handle portion with an internal bore in communication with the interior of said needle.

4. A device adapted to permit the introduction of liquids into the stomach of an infant through the nasal passage comprising a flexible open-ended tube, the lower end of said tube having a pair of longitudinally spaced transverse outlets formed therein, a hollow fluid delivery needle projected down into and secured within the upper end of said tube, said needle having an enlarged handle portion with an internal bore in communication with the interior of said needle, and an open ended tubular metallic element inserted and secured within the lower end of said tube and having transverse openings in the wall thereof in registry with said tube openings.

HENRY TURKEL.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
402,902	Chapman	May 7, 1889
1,661,494	Nielsen	Mar. 6, 1928
2,230,218	Asche	Feb. 4, 1941
2,464,933	Kaslow	Mar. 22, 1949