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2017-18

**Paper II – Practical
(Exploitation of Patents – Drafting, Specification & Patent Writing)**

Time: 2 ½ hours.

TOTAL MARKS: 100

INSTRUCTIONS TO CANDIDATES

- 1. The question paper to be interpreted as given and no clarification can be sought from the invigilator.**
- 2. Attempt only one choice – either A or B**
- 3. Answers in illegible handwriting will not be taken into consideration.**

You are required to draft a complete specification containing; a.) Title of the Patent b.) Background of the Invention c.) Summary of the Invention d.) Claims e.) Abstract of the invention. (Do not write a detailed description or draw figures.)

The Claims in the patent draft carries 50 marks and remaining specification carries 50 marks.

Note:

The answer guidelines contain some points (non-exhaustive) that could be covered in the answer to the Paper.



US006932368B1

OPTION - A

(12) **United States Patent**
Zam

(10) **Patent No.:** **US 6,932,368 B1**
(45) **Date of Patent:** **Aug. 23, 2005**

(54) **APPARATUS FOR HARNESSING WIND TO DRIVE A BICYCLE**

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(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 17 days.

(21) Appl. No.: **10/816,446**

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(51) Int. Cl.⁷ **B62J 11/00**

(52) U.S. Cl. **280/213**

(58) Field of Search 280/213, 214,
280/810, 212, 288.4; 114/43, 102, 103, 102.1,
114/102.16, 102.29

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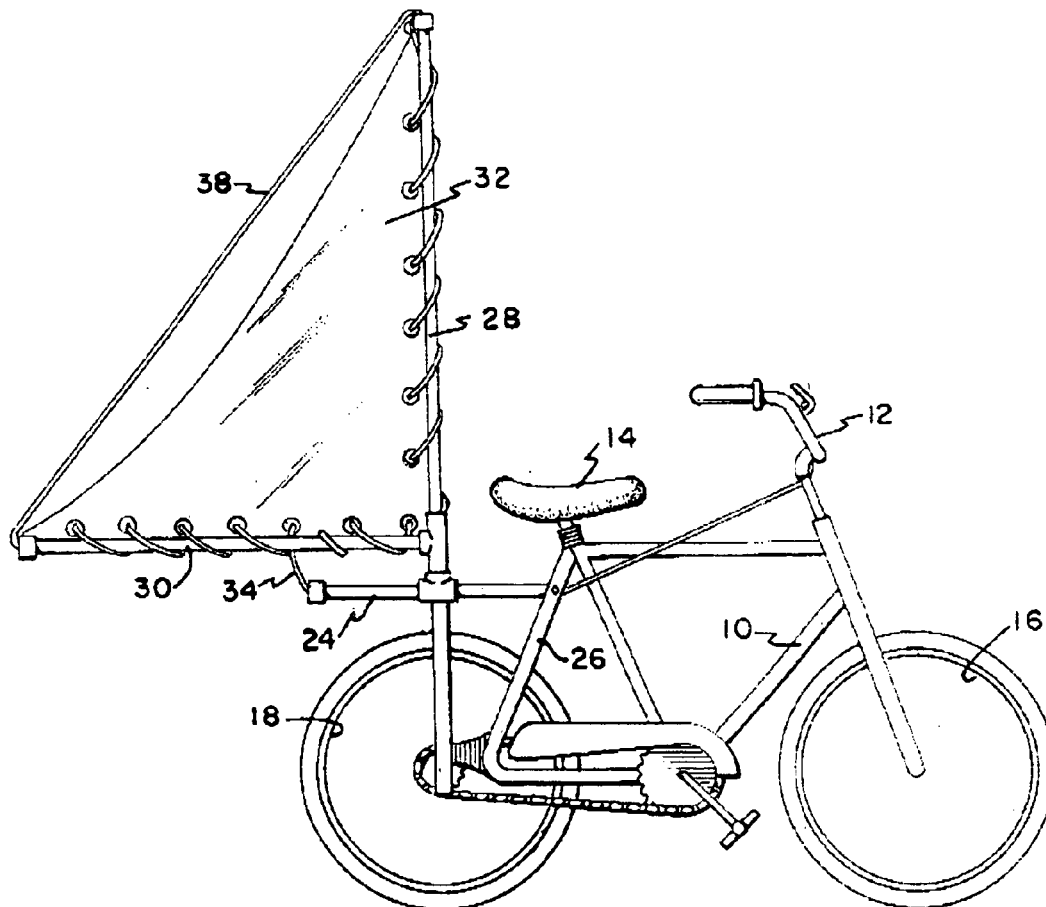
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Primary Examiner—Anne Marie Boehler

(57) **ABSTRACT**

A sail attachment which when connected to the bicycle harnesses wind to drive the bicycle forward. The attachment is adapted to fit on the rear of the bicycle above its rear wheel and is securable to the bicycle seat. The attachment is provided with a wind receiving sail which when attached to the bicycle can harness wind 45 degrees from either the left or right side of the bicycle, 90 degrees from either the side of the bicycle and at the rear of the bicycle to power the bicycle.

4 Claims, 2 Drawing Sheets



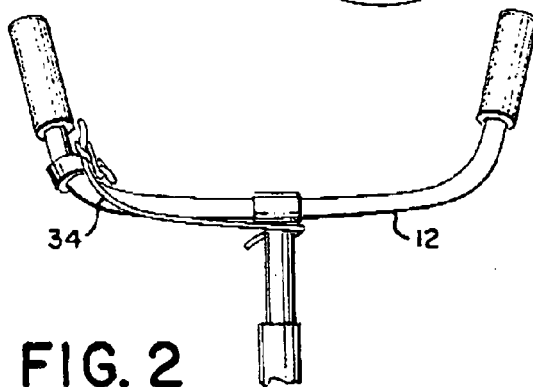
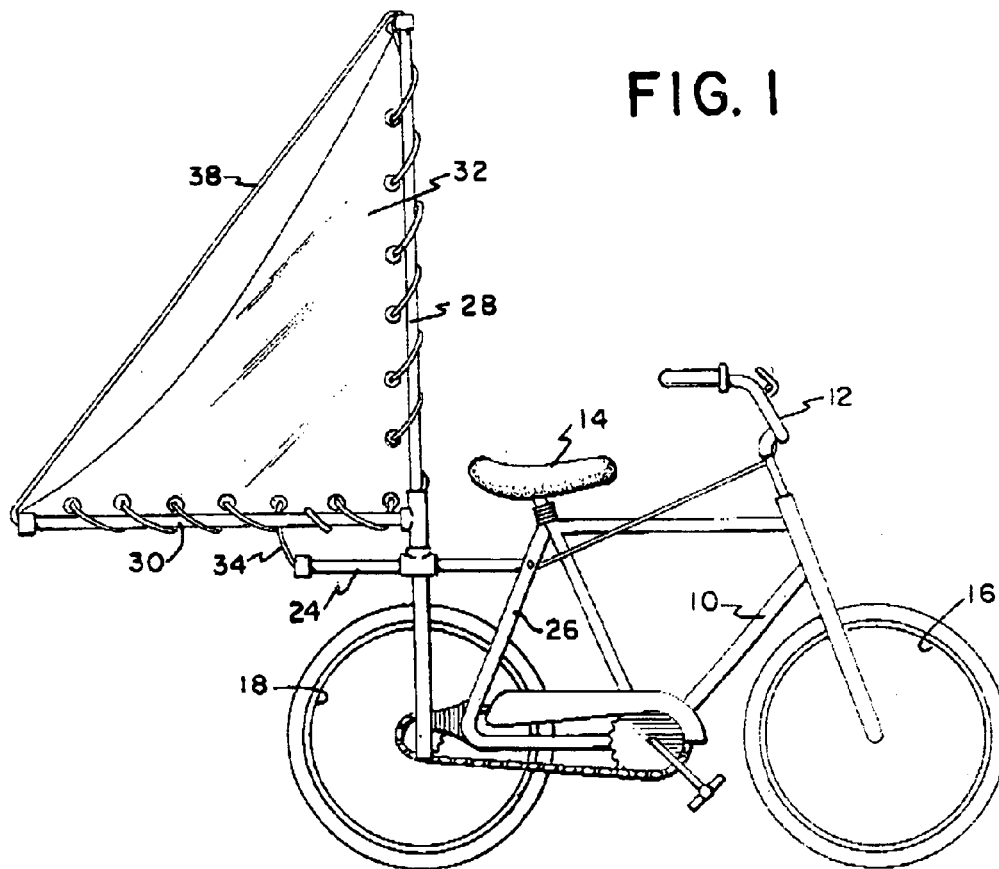
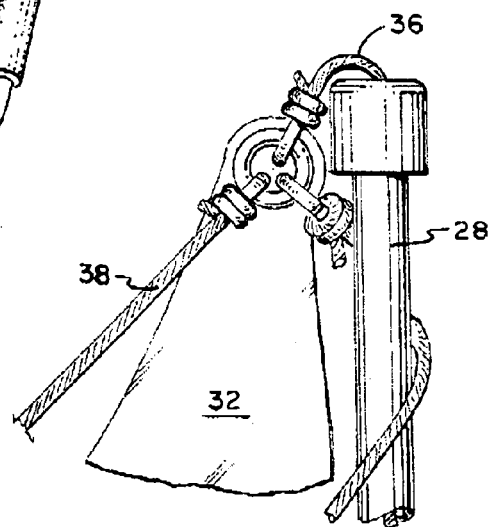
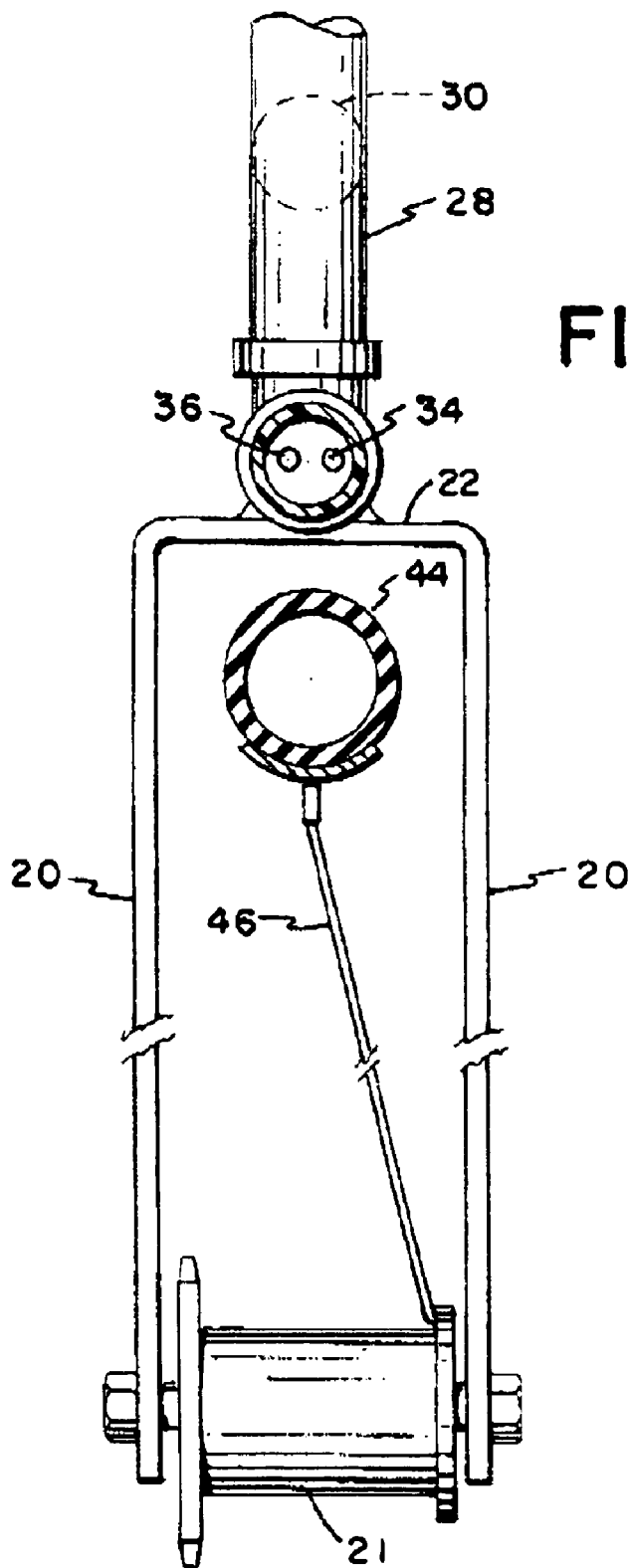


FIG. 3





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APPARATUS FOR HARNESSING WIND TO DRIVE A BICYCLE

FIELD OF THE INVENTION

This invention generally relates to apparatus which when connected to a vehicle adapted for land travel utilizes the force of wind to drive such vehicle in a controlled manner and more specifically relates to apparatus including a sail attachment connectable to a bicycle for harnessing wind to drive the bicycle forward.

BACKGROUND OF THE INVENTION

Sail boats which harness wind to provide motive power have been used for centuries. Vehicles having runners secured to their bottom surfaces and having sails have utilized wind to cause the vehicles skate over surfaces of solid ice. However, while wheeled bicycles have been powered by human operators or by detachable motors, no one prior to applicant has succeeded to devising apparatus including a sail attachment connectable to a bicycle for harnessing wind to drive a bicycle forward in a controlled manner.

SUMMARY OF THE INVENTION

In accordance with the principles of this invention, apparatus is provided which is detachably connectable to a bicycle. The bicycle has a frame with front mounted handle means and rear mounted seat means. The bicycle has front and rear wheels secured thereto, the front wheel extending in front of the handle means, the rear wheel extending rearward from the seat means. Each wheel has a corresponding axle extending therethrough.

The apparatus includes a sail attachment which when connected to the bicycle harnesses wind to drive the bicycle forward. The attachment is adapted to fit on the rear of the bicycle above the rear wheel and securable to the seat means.

The apparatus employs a U shaped member having two downwardly extending legs and an upper horizontal element extending therebetween. The legs are securable non-rotatably to the rear wheel axle. A horizontal hollow tube open at both ends is secured to said element, said tube being disposed at right angles to said element. A vertical hollow mast is secured to the tube and extends upwards therefrom. A horizontal boom is secured at one end to the mast adjacent the lower end of the mast. A rectangularly shaped sail having an elongated vertical leg is secured rotatably to the mast and a short horizontal leg secured rotatably to the boom. A boom haul extends along the hypotenuse of the sail and is spaced therefrom, the boom haul being connected between the other end of the boom and the upper end of the mast.

When the attachment is attached to the bicycle, its sail can harness wind 45 degrees from either the left or right side of the bicycle, 90 degrees from either the side of the bicycle and at the rear of the bicycle to power the bicycle at speeds much faster than can be obtained when the bicycle is ridden in conventional manner.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side view of the attachment as secured to a bicycle.

FIG. 2 is a detail front view of the handle bars of the bicycle showing connections to lines of the attachment operable by a rider of the bicycle.

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FIG. 3 is a detail view of the top of the mast as connected to the sail.

FIG. 4 is a detail rear view of the structure shown in FIG. 1.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Referring now to FIGS. 1-4, a bicycle 10 has a frame with front mounted handle bars 12 and a rear mounted seat 14. The bicycle has front and rear wheels 16 and 18 secured thereto, the front wheel 16 extending in front of the handle bars, the rear wheel 18 extending rearward from the seat, each wheel having a corresponding axle 21 extending there-through. Rear wheel has a tire 44 and a spoke 46.

A sail attachment which when connected to the bicycle harnesses wind to drive the bicycle forward. The attachment includes a U shaped member having two downwardly extending legs 20 and an upper horizontal element 22 extending between the legs. The lower ends of the legs are securable non-rotatably to the rear wheel axle;

A horizontal hollow tube 24 open at both ends is secured to element 20 and extends at right angles thereto. One end of the tube is secured to a seat support 26 to provide a stabilizing action to prevent vibration of the attachment when in use.

A vertical hollow mast 28 is secured to the tube and extends upwards therefrom.

A horizontal boom 30 is secured at one end to the mast adjacent the upper end of the mast. The boom and mast support a rectangularly shaped sail 32. The sail has an elongated vertical leg secured rotatably to the mast and a short horizontal leg secured rotatably to the boom.

A boom haul 38 extends along the hypotenuse of the sail and is spaced therefrom. The boom haul is connected between the other end of the boom and the upper end of the mast. A first line 34 has a free end releasably connectable to the handle bars and extends through the tube for connection to the boom. The rider of the bicycle uses the line to manipulate the boom.

A second line 36 has a free end releasably connectable to the underside of the bicycle seat and extends through the tube and up the mast for connection to the sail so that the rider can raise or lower the sail.

While the invention has been described with particular reference to the detailed description and the drawing, the protection solicited is to be limited only by the terms of the claims which follow.

What is claimed is:

1. Apparatus detachably connectable to a bicycle, said bicycle having a frame with front mounted handle means and rear mounted seat means, the bicycle having front and rear wheels secured thereto, the front wheel extending in front of the handle means, the rear wheel extending rearward from the seat means, each wheel having a corresponding axle extending therethrough, said apparatus comprising:

a sail attachment which when connected to the bicycle harnesses wind to drive the bicycle forward, said attachment adapted to fit on the rear of the bicycle above the rear wheel and securable to the seat means, said attachment being provided with a triangular wind receiving sail which when attached to the bicycle can harness wind 45 degrees from either the left or right

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side of the bicycle, wind 90 degrees from either side of the bicycle and at the rear of the bicycle to power the bicycle;

a U shaped member having two downwardly extending legs and an upper horizontal element extending therebetween with the legs being securable non-rotatably to the rear wheel axle;

a horizontal hollow tube open at both ends secured to said element, said tube being disposed at a right angle to said element;

a vertical hollow mast secured to the tube extending upwards therefrom;

a horizontal boom secured at one end to the mast adjacent the lower end of the mast;

said sail having an elongated vertical leg that is secured rotatably to the mast and a short horizontal leg secured rotatably to the boom; and

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a boom haul extending along the hypotenuse of the sail and spaced therefrom, the boom haul being connected between the other end of the boom and the upper end of the mast.

2. The apparatus of claim 1 wherein one end of the tube is secured to the seat means to stabilize the structure when the apparatus is connected to the bicycle.

3. The apparatus of claim 2 further including a first line having a free end releasably connectable to the handle means and extending through the tube and connected to the boom.

4. The apparatus of claim 3 further including a second line having a free end releasably connectable to the seat means and extending through the tube and up the mast for connection to the sail.

* * * * *

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3,299,891

**HYPODERMIC SYRINGES AND ATTACHMENTS
THERETO PLEASING TO CHILDREN**

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Filed Dec. 9, 1963, Ser. No. 329,173

8 Claims. (Cl. 128—218)

This invention relates to modifications in the casing or barrel of a disposable type hypodermic syringe and also to attachments for use on conventional glass syringes and on syringes having a metallic plunger and barrel to hold a disposable cartridge unit containing medication and to administer it.

Disposable plastic syringes are being used more and more by the medical profession because such syringes are used only once and discarded, thereby avoiding the time and expense of resterilizing required for conventional syringes. Nevertheless, patients still have fear and apprehension of a hypodermic syringe regardless of whether the syringe is of a disposable type or conventional type. Such fear and apprehension are particularly prevalent among children.

As physicians and dentists well know, it is important to prevent fear of injections by hydrodermic syringes on the part of patients, especially children. Preventing such fear or apprehension will elevate the standards and quality of work of the medical and dental fields, thereby improving the overall health standards of our nation. Also, the patient who has no fear or apprehension of an injection by a hypodermic syringe makes it much easier for the physician or dentist to perform his professional services.

To help avoid such fear and apprehension in patients from a hypodermic syringe, my invention involves redesigning a disposable type hypodermic syringe by forming the casing or barrel of the syringe into the shape and appearance of an attractive object or animal pleasing to children. My invention also includes an attractive attachment in the form of an object or animal pleasing to children, which can be placed around the barrel of a metallic type syringe as well as the barrel of a conventional type glass syringe. Proper use of these improvements will materially decrease fear or apprehension of hypodermic syringes on the part of children.

It is, therefore, an object of my invention to provide a disposable hypodermic syringe having a casing or barrel formed into the shape of an attractive animal or object pleasing to patients, particularly children.

Another object of my invention is to provide an attachment in the form of an attractive animal or object pleasing to children for use in conjunction with the barrel of conventional metallic syringes of the type using a cartridge filled with medication.

A further object of my invention is to provide an attachment in the form of an attractive animal or object pleasing to children for use in conjunction with the casing or barrel of a conventional type glass syringe.

These and other objects will be more readily understood by reference to the following description and claims, taken in conjunction with the accompanying drawings forming a part hereof, in which

FIG. 1 is a side elevational view of an attachment in the form of an animal shape for a conventional casing or barrel of hypodermic syringe.

FIG. 2 is a conventional hypodermic syringe.

FIG. 3 is a front elevational view of FIG. 1 partly cut away to show the detail of FIG. 1.

FIG. 4 is a side elevational view of the attachment of FIG. 1 in place on the hypodermic syringe of FIG. 2.

FIG. 5 is a side elevational view of an attachment in the form of an animal shape for the barrel of a conventional

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metallic syringe of the type using a cartridge filled with medication.

FIG. 6 is a conventional metallic syringe of the type using a cartridge filled with medication.

FIG. 7 is a front elevational view of FIG. 5 partly cut away to show the detail of FIG. 5.

FIG. 8 is a side elevational view of the attachment of FIG. 5 in place on the metallic hypodermic syringe of FIG. 6.

FIG. 9 is a front elevational view of a disposable syringe casing or barrel formed into an animal shape.

FIG. 10 is a side elevational view of FIG. 9 with a plunger inserted and needle attached.

FIG. 11 is a plan view of FIG. 10.

With reference to the drawings, the attachment 10 in FIG. 1 has a longitudinal bore 12 registerable with the outer circumference of the casing or barrel 14 of the syringe 16, and has an outer circumference formed into an attractive animal shape as shown in FIG. 1. The attachment 10 may have other animal shapes and may also be formed into the shape of any object pleasing to children. The attachment 10 is maintained in position on the barrel 14 by friction fit and may be made from any suitable material such as various plastics, rubber, metals, or glass, having the required qualities. The attachment 10 may be provided with a longitudinal slot 18 in its base extending up to the bore 12 which permits expansion of the bore 12 to fit any size circumference of conventional syringes.

The attachment 10 may be made of clear or opaque material. When an opaque material is used, the plunger 20 of the syringe 16 should be calibrated instead of the barrel 14 to permit volume measurements of the amount of medication to be administered to the patient. The attachment 10 may be provided with a longitudinal cavity 22 shaped to receive a stick member, made of wood or other suitable material, having its outer end covered with an absorbent swab, such as cotton or the like, which is commonly referred to as a Q-tip 24. The Q-tip 24 may or may not serve as part of the shape of the object or animal as desired.

The attachment 10 may be formed into a single unitary piece, or it may be made from several pieces assembled or joined together in various conventional manners. For example, the attachment 10 may be made from two sections or halves which are clamped together around the barrel 14 of the syringe 16, with or without the longitudinal slot 18 in the base.

Similarly, the attachment 26 in FIG. 5 has a longitudinal bore 28 registerable with the outer circumference of the barrel 30 of the metallic syringe 32 of the type using a cartridge or carpule 34 filled with medication. The outer circumference of the attachment 26 is formed in the shape of an animal pleasing to children. The attachment 26 may be formed in other animal shapes or in the shape of any object pleasing to children. The attachment 26 is maintained in position on the barrel 30 by friction fit and may be made of any suitable material such as various plastics, rubber, metals, or glass, having the required qualities. The attachment 26 may be provided with a longitudinal slot 36 in its base extending up to the bore 28 which permits expansion of the bore 28 to fit other standard sizes of metallic syringes of the carpule type.

Since the metallic type syringe 32 generally uses a carpule 34 having a measured volume of medication to be administered, whether the attachment 26 is made of clear or opaque material should make no difference in use, in contrast to the first mentioned type syringe. Like attachment 10, however, attachment 26 may be provided with a longitudinal cavity 38 shaped to receive a Q-tip 24, which may or may not serve as part of the shape of an object or animal as desired.

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Just as the attachment 10, the attachment 26 may be formed into a single unitary piece, or it may be made from several pieces assembled or joined together in various conventional manners. Also, the attachment 26 may be made with or without the longitudinal slot 36.

With reference to the disposable type hypodermic syringe illustrated in FIGS. 9, 10, and 11, the barrel 40 of such a syringe is itself formed into the appearance of a pleasing animal shape, while maintaining an interior bore 42 registerable with the outer circumference of the plunger 44. It is of course obvious that any type of object or animal attractive to children may be employed.

Any suitable material may be used to make the animal-shaped barrel 40, such as plastics, rubber, metals, or glass, having the required qualities. The animal-shaped barrel 40 may be made of clear or opaque material, although when the materials used to construct the animal-shaped barrel 40 are opaque, the plunger 44 should be calibrated instead of the barrel to permit volume measurements of medication to be administered. In the case where the materials used to construct the animal-shaped barrel 40 are sufficiently clear, calibrations of volume of medication to be administered may be made on the inside wall of the bore 42, or on the plunger 44.

The barrel 40 may also be provided with a longitudinal cavity 46 shaped to receive a Q-tip 24 as previously described, which may or may not serve as part of the shape of the object or animal as desired.

In the operation of my invention various methods of use may be employed. For example, the disposable type syringe illustrated in FIGS. 9, 10 and 11, may be used in a dental office. Where the patient is a child or an extremely apprehensive adult, the disposable syringe having a barrel formed in a pleasing shape, such as a rabbit or other attractive object, is shown to the patient. The child's attention is directed to the bunny-shaped syringe barrel as well as the Q-tip 24 where the Q-tip is part of the tail of the rabbit.

The Q-tip 24 is then removed and the child is told that the bunny's tail will be applied to the particular area of the child's gum intended to be injected. The Q-tip 24 is dipped into a topical anesthetic solution and then applied to the child's gum to deaden pain sensitivity to the forthcoming injection.

Meanwhile, the dentist or his nurse fills the syringe with medication. While keeping the child's attention on bunnies and speaking to the child in a soft tone, the dentist tells the child that the bunny will touch or "kiss" the child's gum and make the gum feel funny and go to sleep. Then the dentist injects the medication. Thereafter, the child is told that he may have the animal-shaped barrel after it is cleansed, with a new Q-tip inserted, as a token for being a good patient, or being a big boy or girl. Except for the animal-shaped barrel, the remaining parts of the disposable type syringe are discarded.

A somewhat similar technique may be used in a medical office where medication is to be injected somewhere on the patient's body or limbs with a disposable type syringe. Again, a disposable type syringe having a barrel formed in a shape of an object or animal pleasing to a child is shown to the patient first. The child's attention is directed to the attractively shaped syringe barrel and the Q-tip, if the Q-tip is part of the barrel shape. At all times, the child is spoken to in a soft tone. The child may be told either by the physician or his nurse that the magic bunny or other animal or object will help cure him or help him become stronger. A Q-tip may be then dipped into an alcohol or other germicidal solution and then applied to the area to be injected. Meanwhile, the disposable syringe is filled with the medication to be administered. While keeping the child's attention on animals or attractive objects, the physician or his nurse tells the child that the animal or object, as the case may be, will touch or "kiss" the child in the particular area of the injection. Then the child is told

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that he may have the attractive barrel after it is cleansed, with a new Q-tip inserted if it happens to be part of the barrel, as a token for being a good patient or being a big boy or girl. All other parts of the disposable syringe are discarded, except the barrel.

A medical or dental office may have disposable syringes with barrels shaped in the form of many different animals or other objects pleasing to children. The child patient may then be offered his choice which animal or object he prefers to touch or "kiss" him.

Similar techniques are used where attachments to a conventional syringe are employed. Again, a medical or dental office may have many differently shaped attachments of animals, or other objects pleasing to children. The child may be shown the various available attachments so that he may decide for himself which type should be used.

The attachment is then slipped on the barrel of the syringe or clamped thereon as the case may be. The injection is then made in the manner previously described in a dental office or in a medical office as the case may be. After the injection of medication, the attachment may be slipped off or unclamped as the case may be, cleansed, and given to the child as a token for being a good patient or being a big boy or girl.

Although I have described my invention in detail with reference to the accompanying drawings illustrating preferred forms of my invention, it is understood that numerous changes in the details of construction and arrangement of parts may be made, and of the methods of use, without departing from the spirit and scope of the invention as hereinafter claimed.

I claim:

1. A disposable hypodermic syringe comprising a barrel with a longitudinal bore and having its outer circumference formed into the shape of an object pleasing to children, said barrel having a longitudinal cavity shaped to receive a stick member having its outer end covered with an absorbent swab, and a plunger insertable in said bore and slidable longitudinally up and down in said barrel.

2. A disposable hypodermic syringe according to claim 1 in which the outer circumference of the barrel is formed into the shape of an animal pleasing to children.

3. In a hypodermic syringe of the type having a plunger inserted into one end of a barrel with a hypodermic needle placed at the other end of the barrel, an attachment member for the barrel having a central longitudinal bore registerable with the outer circumference of the barrel and slidable thereon, the outer circumference of said attachment member being formed into the shape of an object pleasing to children and having a longitudinal cavity shaped to receive a stick member having its outer end covered with an absorbent swab.

4. A hypodermic syringe according to claim 3 in which the outer circumference of said attachment member is formed into the shape of an animal pleasing to children.

5. In a hypodermic syringe of the type having a plunger inserted into one end of a barrel with a hypodermic needle placed at the other end of the barrel, an attachment member for the barrel having a longitudinal bore registerable with the outer circumference of the barrel and slidable thereon, the outer circumference of the attachment member being formed into the shape of an object pleasing to children and having a longitudinal cavity shaped to receive a stick member having its outer end covered with an absorbent swab, and means for adapting the attachment member to fit various sizes of syringe barrels.

6. A hypodermic syringe according to claim 5 in which the outer circumference of said attachment member is formed into the shape of an animal pleasing to children.

7. In a hypodermic syringe of the type having a plunger inserted into one end of a barrel with a hypodermic needle placed at the other end of the barrel

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ment member for the barrel having a longitudinal bore registerable with the outer circumference of the barrel and slidable thereon, the outer circumference of said attachment member being formed into the shape of an object pleasing to children and having a longitudinal cavity shaped to receive a stick member having its outer end covered with an absorbent swab, and having a longitudinal slot in its base extending up to said bore to provide an expandable friction fit of the attachment member on various sizes of syringe barrels.

8. A hypodermic syringe barrel according to claim 7 in which the outer circumference of said attachment member is formed into the shape of an animal pleasing to children.

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10 ROBERT E. MORGAN, *Acting Primary Examiner.*

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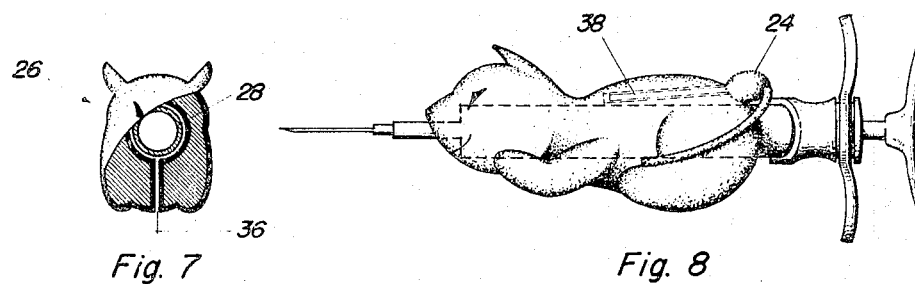
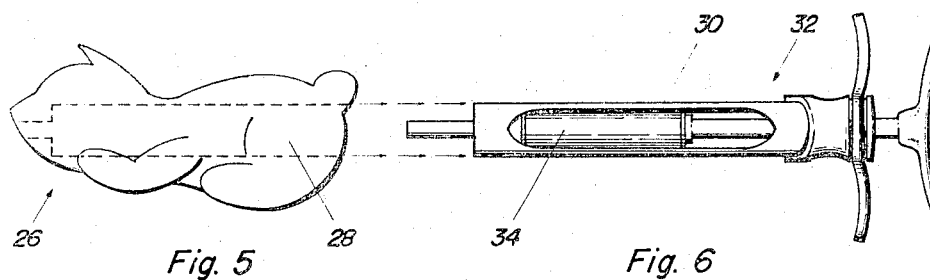
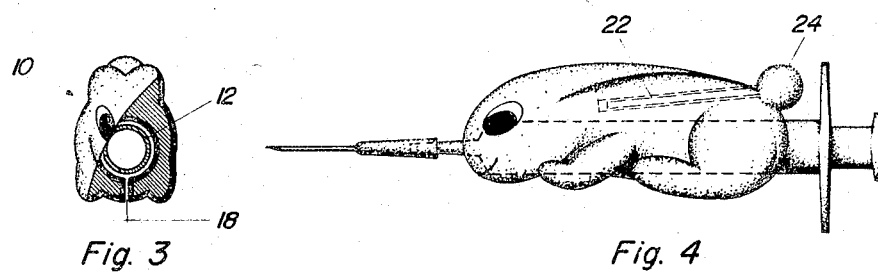
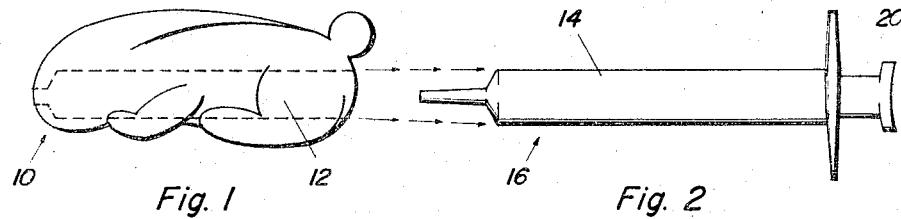
Jan. 24, 1967

R. L. SMETON
HYPODERMIC SYRINGES AND ATTACHMENTS THERETO
PLEASING TO CHILDREN

3,299,891

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

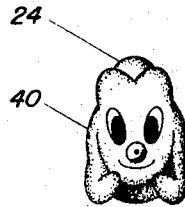


Fig. 9

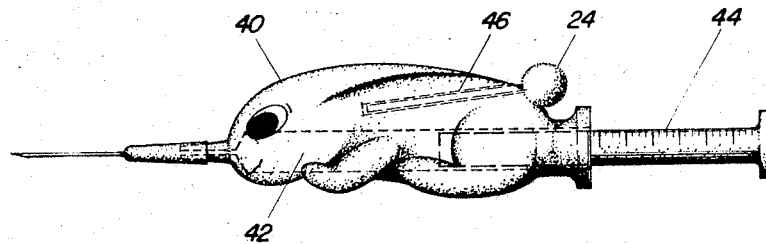


Fig. 10

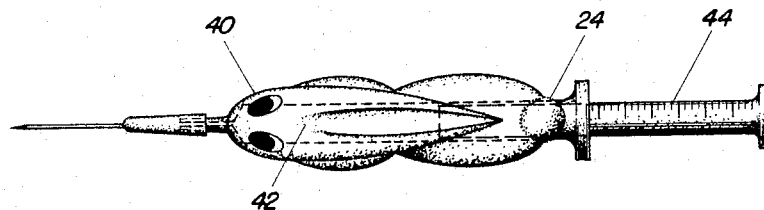


Fig. 11

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