

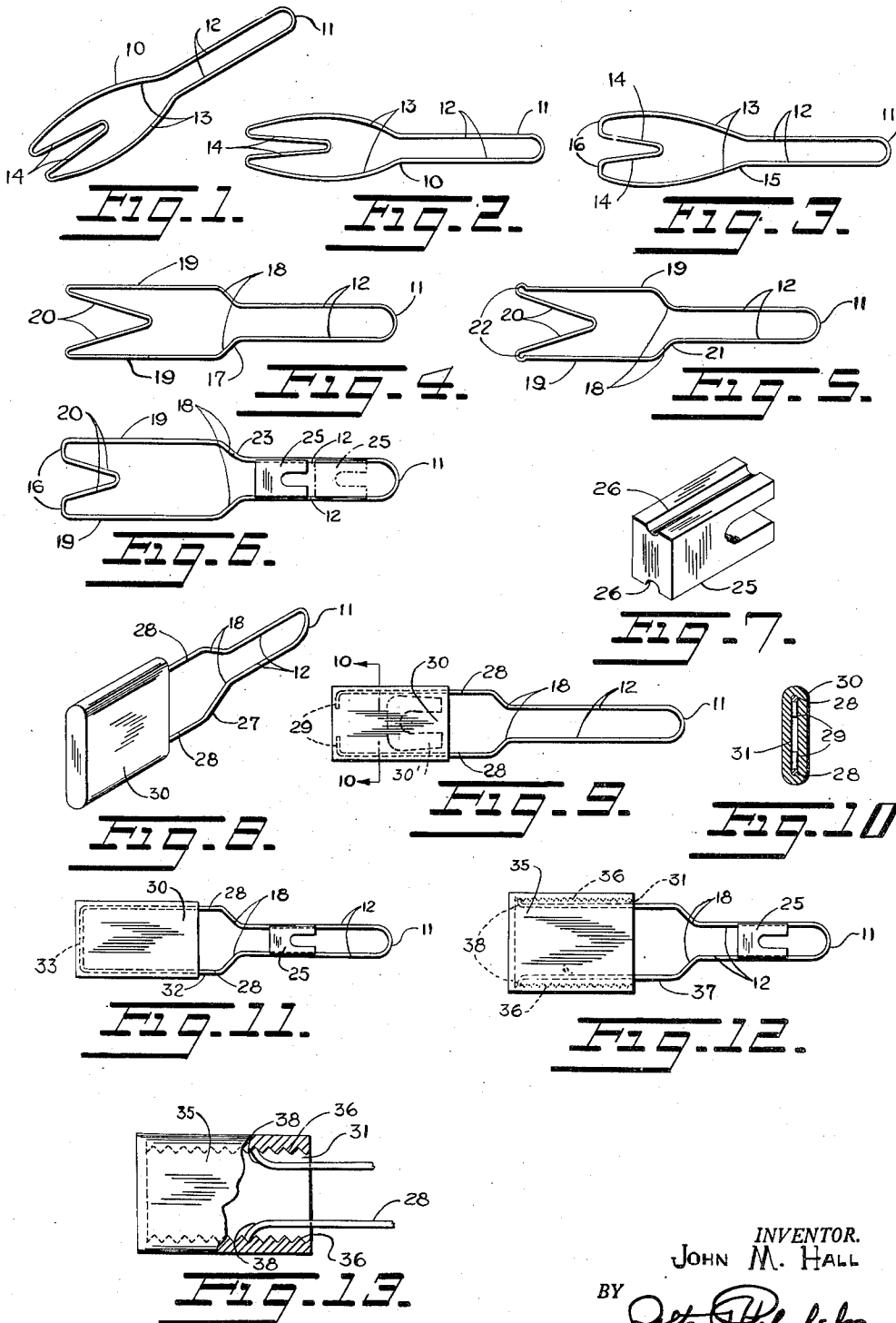
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EAR CLEANING INSTRUMENT

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EAR CLEANING INSTRUMENT

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5 Claims. (Cl. 128—304)

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This invention relates to ear cleaning instruments and pertains particularly to ear cleaning instruments of wire construction.

One object of the present invention is to provide an ear cleaning instrument of a one-piece wire construction which includes a portion insertable into an ear cavity or passage for cleaning purposes and a grasping portion whereby the whole construction may be held for manipulating the cleaning portion.

Another object of the present invention is to provide an ear cleaning instrument including a one-piece wire construction having an ear cleaning portion and resilient end portions, and an instrument grasping element for fitting slidably over said end portions and being thereby held extensively and frictionally on said construction.

Another object of the present invention is to provide in an ear cleaning instrument including a one-piece wire construction having a cleaning portion and resilient end portions, and a grasping element fitted on said end portions, means whereby said grasping element may be detentedly extended on said resilient end portions.

Another object of the present invention is to provide in an ear cleaning instrument having an elongated wire looped portion adapted for insertion into an ear cavity, a magnetic element slidably and retainably carried between the sides of the looped portion and thereby positionable selectively with respect to the end of said looped portion for assisting in the extraction of steel or like foreign obstructions from ear passages.

Still another object of the present invention is to provide ear cleaning instruments of one-piece stainless steel wire constructions which may include ear cleaning portions of varied size, each size being adapted for insertion in and the cleaning of a particular size ear passage.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is an isometric view of one embodiment of the invention.

Fig. 2 is a front elevational view of the embodiment of Fig. 1.

Fig. 3 is a front elevational view of a modification of the first embodiment.

Fig. 4 is a front elevational view of another modification of the first embodiment.

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Fig. 5 is a front elevational view of still another modification of the first embodiment.

Fig. 6 is a front elevational view of a second embodiment of the present invention.

Fig. 7 is an enlarged isometric view illustrating the magnetic element.

Fig. 8 is an isometric view illustrating a third embodiment of the present invention.

Fig. 9 is a front elevational view of the third embodiment.

Fig. 10 is a sectional view taken along the lines 10—10 of Fig. 9.

Fig. 11 is a front elevational view of a modification of the third embodiment.

Fig. 12 is a front elevational view of another modification of the third embodiment.

Fig. 13 is an enlarged fragmentary and broken away view illustrating the interior of the grasping element seen in Fig. 12.

With reference to the drawings in more detail, and particularly to Figs. 1 and 2, it will be seen that one form of the invention may be of a one-piece wire instrument 10. Said instrument is preferably of stainless steel but may be of any like material and is configured to provide an elongated looped portion 11 having parallelly extending coplanar side portions 12 which continue into opposed arcuately bent grasping portions 13, and coplanar end portions 14 formed off said grasping portions and bent as to be directed inwardly and convergently toward said looped portion 11. The just described form is provided for the cleaning of small ear passages, such as infants. The looped portion 11 is adapted for insertion into the ear cavity or passage and for getting behind and extracting ear obstructions, such as wax globules, etc. The grasping portions 13 and the additional grasping substance provided by end portions 14 permit the instrument to be manipulated freely. This device is preferably made of magnetized metal to be able to pick up metallic substances.

In Fig. 3 is shown a modification of the just described form or embodiment which provides an instrument 15 including a looped portion 11, parallel side portions 12, arcuate grasping portions 13, and inwardly and convergently directed end portions 14. In this modification, however, are included squared portions 16 which are formed between the arcuate and the end portions. This inclusion of squared portions renders that part of the instrument which is adapted to be grasped somewhat larger and thereby facilitates the manipulation of the instrument as a whole. This device is also magnetized.

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A somewhat larger instrument 17, adapted for older child use, is seen in Fig. 4 and is configured to provide also a looped cleaning portion 11 and parallel extending coplanar side portions 12. The configuration of the present instrument differs, however, in that it includes shoulder portions 18, parallel extending coplanar grasping portions 19 coextensive with said side portions, and inwardly and convergently directed coplanar end portions 20. As in the above described modification, the end portions herein also provide more grasping substance between said grasping portions. The modification of Fig. 5, being somewhat larger than those previously described, is adapted particularly for adult use, and provides an instrument 21 similar to that seen in Fig. 4 but differing therefrom in that it provides grasping loops 22, which also add to the grasping substance of the instrument and thereby facilitates the manipulation thereof.

The modification of the invention shown in Figs. 6 and 7 includes a one-piece wire instrument 23 having a looped portion 11, parallel side portions 12, shoulder portions 18, parallel grasping portions 19, inwardly directed end portions 20, and squared portions 16; and a magnet or magnetic element 25. Said magnetic element, as seen better in Fig. 7, is of the horseshoe variety and includes on the opposed sides thereof longitudinal grooves 26. Said grooves permit the magnet to be retained slidably between the parallel side portions 12, and further permit said magnet to be positionable selectively relative to the end of the looped portion 11, as seen in dot and dash lines. This arrangement is provided for removing steel or like foreign objects from ear passages and is adapted for sliding the magnet 25 to a rearward ineffective position when the instrument is to be used for cleaning ear passages of ordinary obstruction, such as wax.

Now, as seen in Figs. 8, 9 and 10, a third embodiment of the invention includes a wire instrument 27 having a looped portion 11, parallel and coplanar side portions 12, shoulders 18, resilient portions 28, and inwardly directed tips 29; and a flat grasping element 30 having a flat elongated cavity or recess 31. In this arrangement the resilient portions 28 of the wire instrument are fitted into the said recess 31 of the grasping element 30, and the resilience thereof maintains the instrument in association with the element 30 while also permitting it to be slidably extensible therefrom.

A magnet 36' is also included within the grasping element 30. This magnet 36' also serves to securely hold the resilient portions 28 within the grasping element 30.

A modification of the just described embodiment is seen in Fig. 11 and is similar thereto in that it too includes a grasping element 30 having a recess 31. It differs, however, in that the instrument 32 hereof includes a cross portion 33 interconnecting the portions 28, and therefore is press fitted into the recess 31 of the grasping element 30. Also, the present arrangement includes a magnetic element 25 which was hereinbefore described.

Another modification is seen in Figs. 12 and 13 and provides a grasping element 35 which, like the element 30, includes a flat recess 31, but also has detent teeth 36 formed in the side edges of said recess 31; and a modified wire instrument 37 including a looped portion 11, parallel side portions 12, shoulder portions 18, resilient portions 28, and outwardly extending tips 38. Said

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resilient portions 28 are adapted to be squeezed together and inserted in the recess 31 and the tips 38 thereon are adapted, when said resilient portions are released, to cooperate selectively with said detent teeth 36 according to the desired degree of extension of said wire instrument 37. The present arrangement also includes a magnetic element 25 which need not be again described.

The said magnetic element 25 is of such construction that it is equally applicable to any of the hereinabove described wire instruments.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. An ear cleaning instrument comprising a one-piece wire construction configured to provide an elongated looped cleaning portion, the ends of said looped portions being bent to provide parallel grasping portions, the ends of said grasping portions being directed inwardly and toward the said cleaning portion, whereby more grasping substance is provided between said grasping portions, and a magnetic element carried in said looped portion and being slidably positionable selectively relative to the end thereof.

2. An ear cleaning instrument of a one-piece wire construction comprising, an elongated looped cleaning portion having parallel extending coplanar sides, parallel grasping portions at the ends of said sides and being coplanar therewith, coplanar end portions of said grasping portions being directed inwardly and convergently toward the said cleaning portion, whereby more grasping substance is provided between said grasping portions, and a magnetic element having opposed grooved sides and thereby retained between said parallel extending arms for being slidably and selectively positionable relative to the end of the said looped cleaning portion.

3. An ear cleaning instrument, comprising a continuous loop of wire bent to provide parallel extending side portions, said side portions continuing into spaced parallel grasping portions on the same plane as said side portions, said grasping portions continuing remote from said side portions into an inwardly directed portion disposed centrally between said grasping portions for adding substance to said grasping portions, and a magnet disposed between said side portions, said magnet having grooves in its sides in which said side portions are engaged for frictionally maintaining said magnet in desired shifted positions between said side portions.

4. An ear cleaning instrument, comprising a continuous loop of wire bent to provide parallel extending side portions, said side portions continuing into spaced parallel grasping portions on the same plane as said side portions, said grasping portions continuing remote from said side portions into an inwardly directed portion disposed centrally between said grasping portions for adding substance to said grasping portions, and a magnet disposed between said side portions, said magnet having grooves in its sides in which said side portions are engaged for frictionally maintaining said magnet in desired

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shifted positions between said side portions, said magnet being of horseshoe shape with the face ends of the side arms of said magnet extended toward the ends of said side portions remote from said grasping portions.

5. An ear cleaning instrument comprising a continuous loop of wire bent to provide parallelly extending side portions, said side portions continuing into spaced parallel grasping portions on the same plane as said side portions, said grasping portions continuing remote from said side portions into an inwardly directed portion disposed centrally between said grasping portions for adding substance to said grasping portions, said inwardly directed portion being on the same plane with said grasping portions and the junction of said grasping portions with said

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inwardly directed portion being flattened to extend at right angles to said grasping portion.
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