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 [45] Patented **June 1, 1971**
 Continuation-in-part of application Ser. No.
 641,816, May 24, 1967, now Patent No.
 3,489,151, dated Jan. 13, 1970.

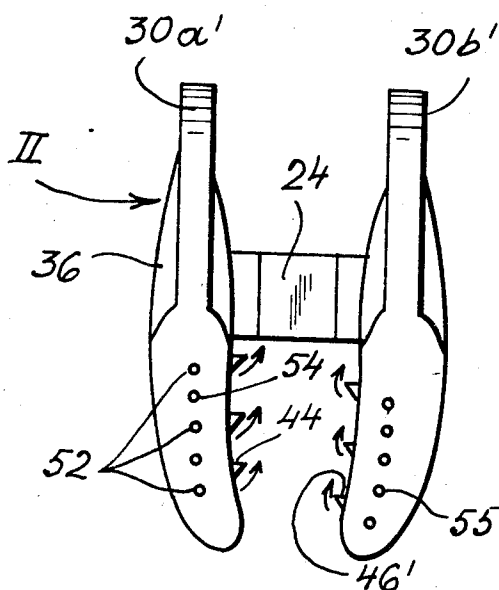
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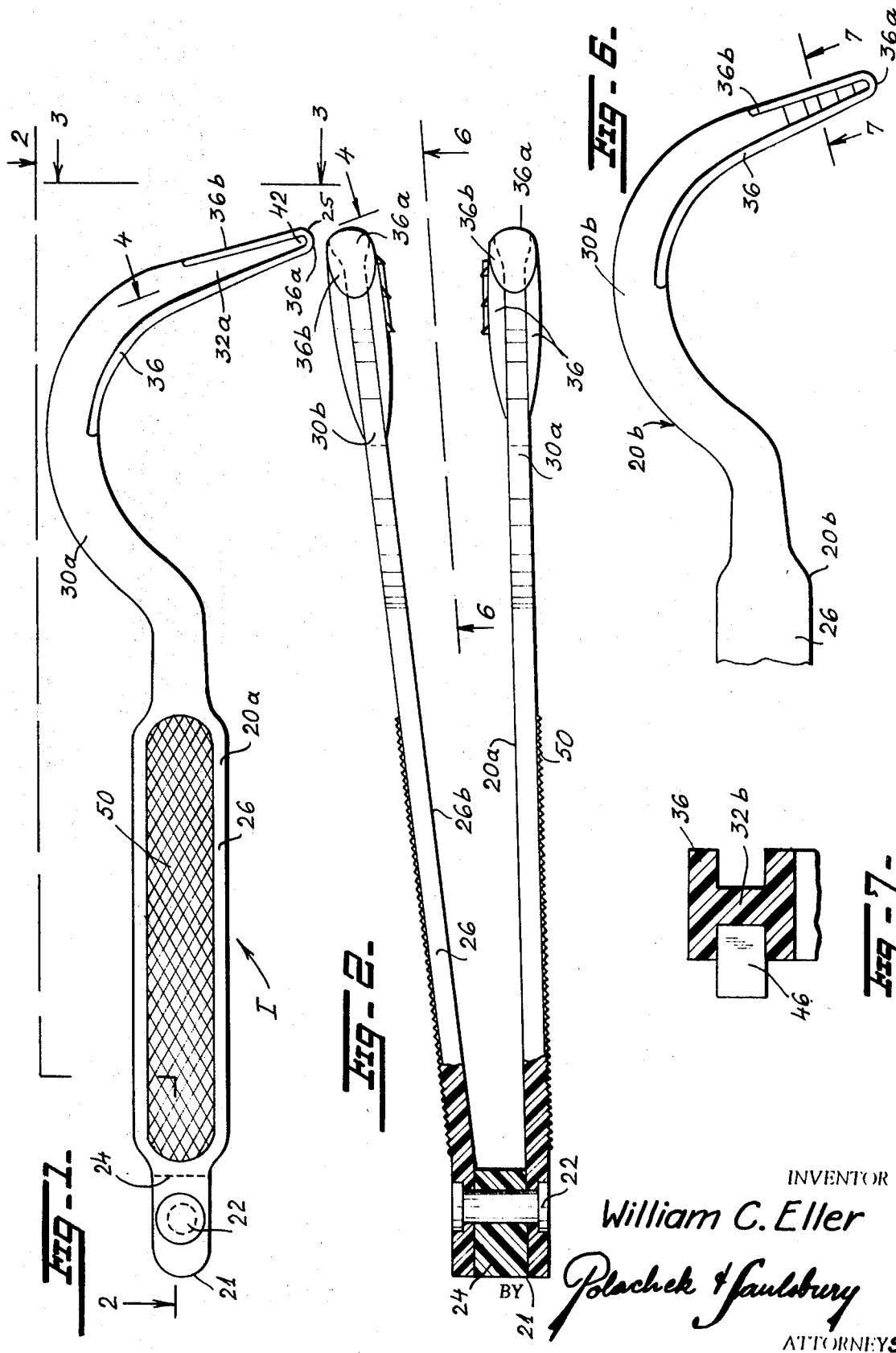
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[54] **INSTRUMENT FOR REMOVING OBSTRUCTIONS
 FROM THE THROAT**
 4 Claims, 14 Drawing Figs.

[52] U.S. Cl. **128/356,**
 81/43, 128/321, 128/354, 294/99
 [51] Int. Cl. **A61b 17/24,**
 A61b 17/28
 [50] Field of Search..... **128/356,**
 354, 321, 322, 346; 294/99; 81/43

ABSTRACT: A generally U-shaped instrument for removing obstructing objects from the throat and organs associated therewith has spaced arms which can be squeezed together. The arms are formed with curved hooklike ends having lateral flanges to protect the tongue and parts of the throat when the instrument is inserted in the throat. Wedge-shaped spurs extend laterally from inner sides of the arms to interfit with each other for engaging the obstruction. The spurs can be pivotally mounted.





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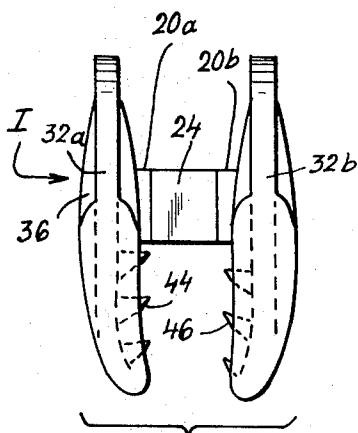


Fig. 3.

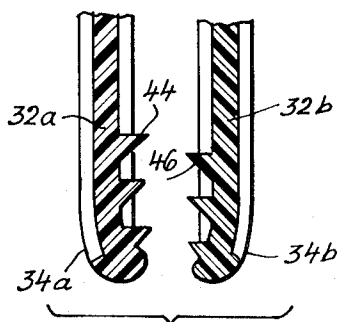


Fig. 4.

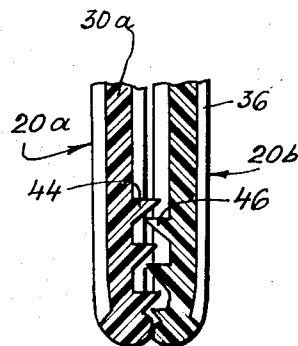


Fig. 5.

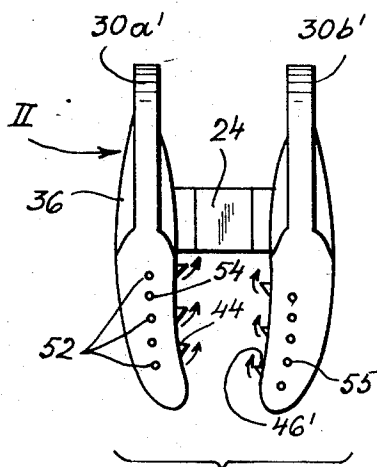


Fig. 8.

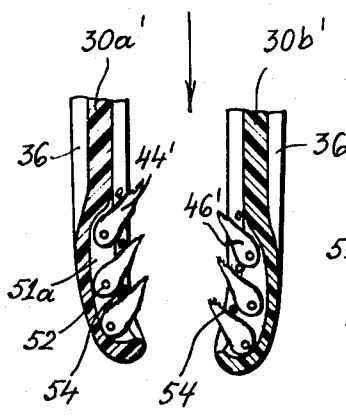


Fig. 9.

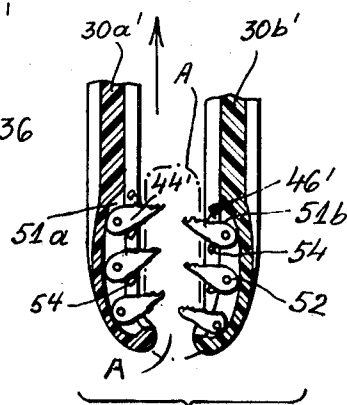


Fig. 10.

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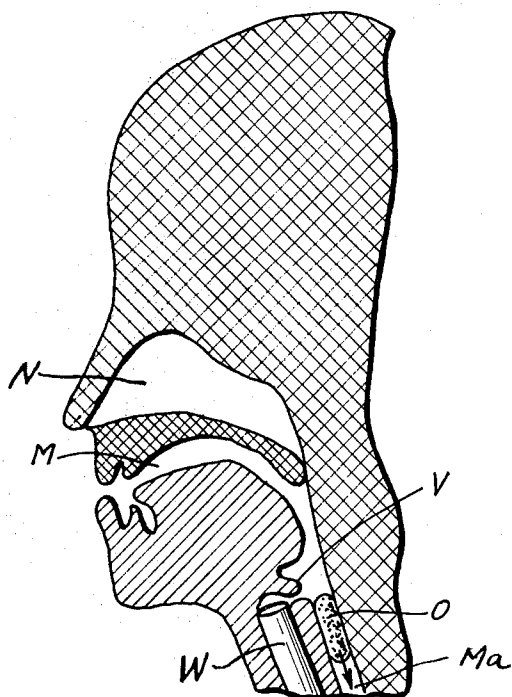


Fig. 11.

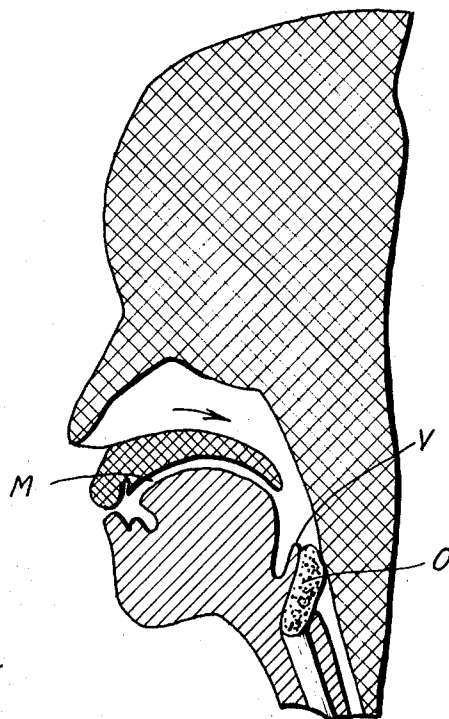


Fig. 12.

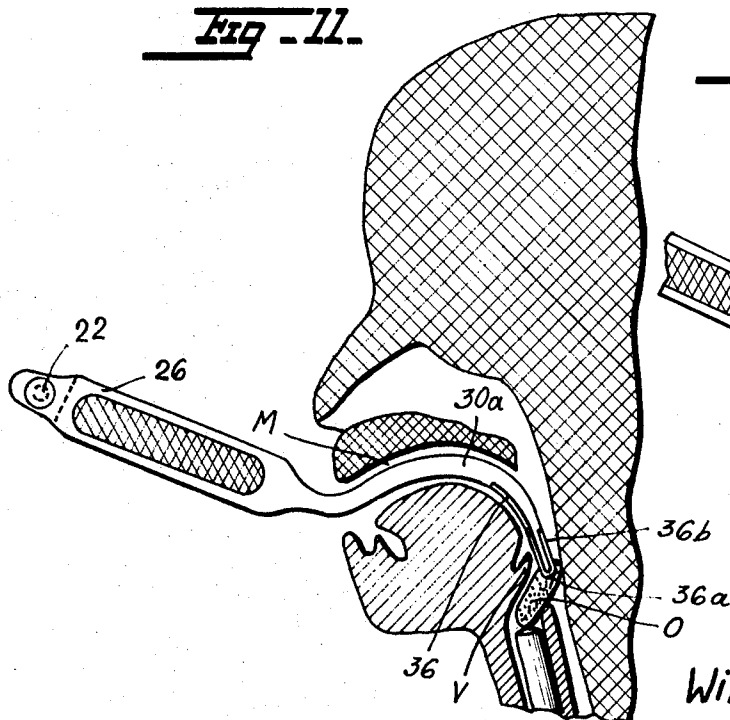


Fig. 13.

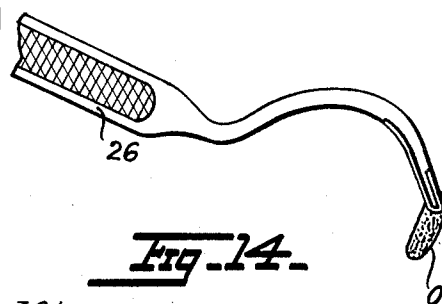


Fig. 14.

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INSTRUMENT FOR REMOVING OBSTRUCTIONS FROM THE THROAT

This application is a continuation-in-part of my copending patent application, Ser. No. 641,816, filed May 29, 1967, now U.S. Pat. No. 3,489,151 issued Jan. 13, 1970.

The present invention involves improvements in an instrument for removing obstructing articles which may be chunks of solid food, from the organs associated with the throat.

In my copending application above mentioned, I have described an instrument which can be used safely by laymen such as restaurant personnel in an emergency to remove a large piece of meat or other food obstructing a person's throat, and save the person's life. The instrument described in that application has a bifurcated structure with two arms curved at the ends and provided with narrow teeth. The present invention involves improvements to make the instrument easier and safer to insert in a person's throat, and easier to operate. The improved instrument has improved teeth or spurs for gripping the obstructions in the person's throat. The spurs can be pivotable to turn away from the direction of insertion in a person's throat so that the spurs move easily along opposite sides of an obstruction and then turn to grip the obstruction when the instrument is pulled out of the throat.

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 a side view of an instrument embodying the invention.

FIG. 2 is a bottom view of an instrument embodying the invention.

FIG. 3 is a front end view taken on line 3-3 of FIG. 1.

FIG. 4 is a fragmentary sectional view taken on line 4-4 of FIG. 1, through ends of the arm shown in open position.

FIG. 5 is a sectional view similar to FIG. 4, showing the arms in closed position.

FIG. 6 is a fragmentary side elevational view of part of one arm taken on line 6-6 of FIG. 2.

FIG. 7 is an enlarged cross-sectional view taken on line 7-7 of FIG. 6.

FIG. 8 is an end view similar to FIG. 3, showing parts of another instrument embodying another form of the invention.

FIG. 9 is a sectional view similar to FIG. 4, showing the arms of the instrument of FIG. 8 in open position with teeth or spurs, retracted position, for insertion in a person's throat.

FIG. 10 is a sectional view similar to FIG. 9, showing the teeth or spurs extended position for engaging any food obstruction in a person's throat.

FIG. 11 is a diagrammatic sectional view showing the swallowed food passing through the food passage in the throat.

FIG. 12 is a similar view showing the food obstructing or blocking the air passage in the throat.

FIG. 13 is another view similar to FIG. 12 showing the instrument in actuating position and in engagement with the food obstacle.

FIG. 14 is a side view of the instrument with the removed food.

Referring first to FIGS. 1-7, the instrument I includes two generally coextensive flexible arms 20a and 20b joined at their rear ends 21 by a rivet 22 to a hinge block 24 for hingelike movement at their free front ends 25. The arms 20a and 20b may be formed of any suitable springy material preferably stainless steel, plastic or composition material. Adjacent the hinge block 24, the arms 20a and 20b are formed with wider handle portions 26 which are grippable for squeezing the arms toward each other. Beyond the intermediate handle portions 26 are hooklike end portions 30a, 30b. The end portions 30a and 30b are to be inserted through a person's mouth to extend passed over the tongue and down into the throat area. The end portions 30a, 30b are similarly smoothly curved downwardly each in the general plane of its associate arms 20a and 20b.

Adjacent their free to lower ends 32a, 32b, the insertable portions are curled inwardly toward each other transversely to the planes of the arms as best shown in FIGS. 4 and 5 at points 34a, 34b.

The curved ends 30a and 30b of the arms are formed with laterally extending flanges 36 which extend along the bottom surface of the arm ends and then around the tips 42 and part way up the front or upper surface of the tips. This arrangement increases the rigidity of the tip by defining an I-beam type of structure as clearly shown in FIG. 7. The flanges 36 make insertion and positioning of the instrument quicker and safer by sliding over the person's tongue pushing it down and forwardly to enter the throat without injuring any parts or organs at the back of the throat.

Instead of pointed teeth provided in the instrument described in my prior application above mentioned, I provide rather wide wedge-shaped spurs or teeth 44 and 46 at inner sides of the respective arm ends. The spurs are spaced apart and staggered to tend to interfit with each other as clearly shown in FIG. 5.

The construction is such that the end portions 30a and 30b may readily be passed conjointly into the person's mouth and slid over the tongue and extended to the back of the throat.

The curves in the insertable portions enable them to move smoothly, easily and naturally downwardly to reach the critical throat area so that the spurs 44 and 46 will be positioned on opposite sides of a removable obstruction such as a large piece of meat or other food. By squeezing the arms together the obstruction will be engaged and it can then be quickly and safely drawn out of the throat. The instrument is so constructed that almost any person upon inspection will recognize the proper manner of use and can apply it to a victim of throat obstruction in an emergency without any previous instruction.

Sides 50 of the arms at the handles can be scored or knurled to provide a firm frictional grip when grasped by the user. The optimum dimensions of parts of the instrument may be as described in my copending application above mentioned.

In FIGS. 8, 9 and 10 are shown hook-shaped end portions 30a' and 30b' of another instrument II which is generally similar to instrument I and corresponding parts are identically numbered. In instrument II, spurs 44' and 46' are pivotally mounted in recesses 51a, 51b of portions 30a' and 30b'. The spurs are pivotable on pins 52. The base ends of the spurs are formed with points which engage inner sides of the recesses when the wedge-shaped spurs are extended toward each other as shown in FIG. 10 for engaging an article A therebetween. The spurs are shown in turned up retracted position in FIG. 9. The spurs 44', 46' respectively turn clockwise and counterclockwise from the position of FIG. 9 to the position of FIG. 10. When the spurs are in the position of FIG. 9, they will be turned in the direction opposite to the direction of insertion into a person's throat to insure quick and safe passage of hooklike portions 30a', 30b' along opposite sides of obstruction A. Then when the instrument is pulled out of the person's throat, the spurs turn and dig into the obstructing article to engage it securely so that it will be drawn out of the person's throat quickly and surely. Supplementary pins 54 are provided below the upper spurs to serve as abutments and hold the spurs in extended position shown in FIG. 10. Pins 52 and 54 extend through apertures 55 formed in the end portions 30a' and 30b' of the instrument as shown in FIG. 8.

FIG. 11 is a diagrammatic sectional view of a person's head and throat showing the normal passageway 10 of the food 0 through the mouth and the esophagus (food passage tube) Ma. In this normal process the trachea (wind pipe) W is covered and closed by the epiglottis V to prevent passage of food into the trachea.

In FIG. 12, the epiglottis V has failed to close over the trachea W and the chunk of food completely obstructs the airway. This obstruction causes death of the victim in a few minutes.

FIG. 13 shows the instrument I in actuating position, lowered into the throat and ready to grip the obstructing food

O and thereafter to be pulled out from its air blocking position.

FIG. 14 is a side elevational view of the instrument holding the removed food obstacle.

What I claim is:

1. A forcepslike instrument for removing obstructions from inside the throat by an unskilled person comprising two generally coextensive laterally spaced flexible arms joined to hinge means at one end and respectively having intermediate handle portions grippable manually for moving the arms toward each other in a direction transverse to the longitudinal direction of extent of the arms, the other ends of the arms having harmless hooklike portions similarly curved in the planes of the arms for conjoint self-guided insertion through a person's mouth into his throat on opposite sides of a removable obstruction therein, said hooklike portions of the arms having inner sides facing each other; and a plurality of spaced wedge-shaped spurs on each of said inner sides, the spurs on said two inner sides extending toward each other for gripping said obstruction on opposite sides thereof when the hooklike portions of the arms are moved toward each other and means pivotally supporting the wedge-shaped spurs on the hooklike portions of the arms, so that the spurs turn in one direction opposite to

the direction of insertion of the hooklike portions of the arms into a person's throat to facilitate the sliding of the hooklike portions along opposite sides of the obstruction, and whereby the wedge-shaped spurs turn inwardly toward each other to engage in said obstruction when the hooklike portions move in said one direction while drawing obstructions out of the person's throat.

2. A forcepslike instrument as defined by claim 1, wherein the arms and hinge means are arranged to define a generally U-shaped structure, said hinge means forming the bight of said U-shaped structure, so that the arms can be brought together in generally parallel disposition on opposite sides of said obstruction.

3. A forcepslike instrument as defined by claim 2, wherein the arms and hinge means are formed as one integral structure.

4. A forcepslike instrument as defined by claim 1, wherein said hooklike portions of the arms have flange extending laterally thereof along inner bottom edges of the hooklike portions around the tip ends thereof and along upper edges thereof to facilitate entry of the hooklike portions over the person's tongue, under the uvula and down into the throat.

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