

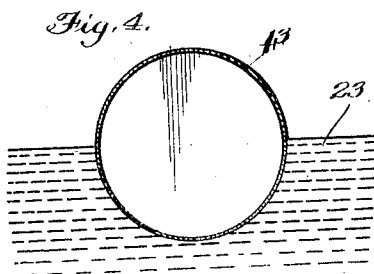
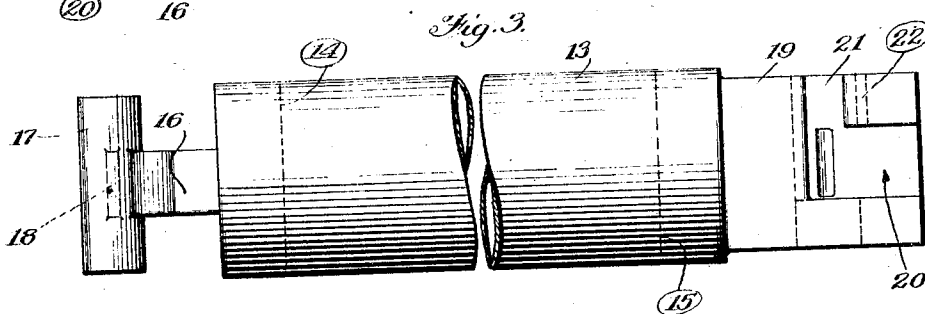
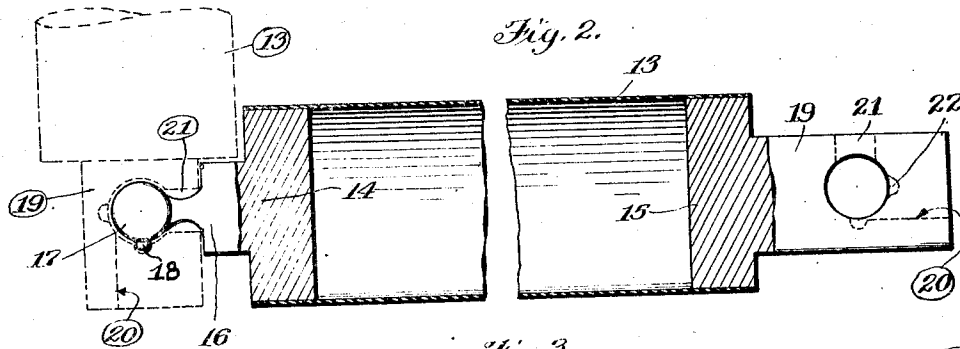
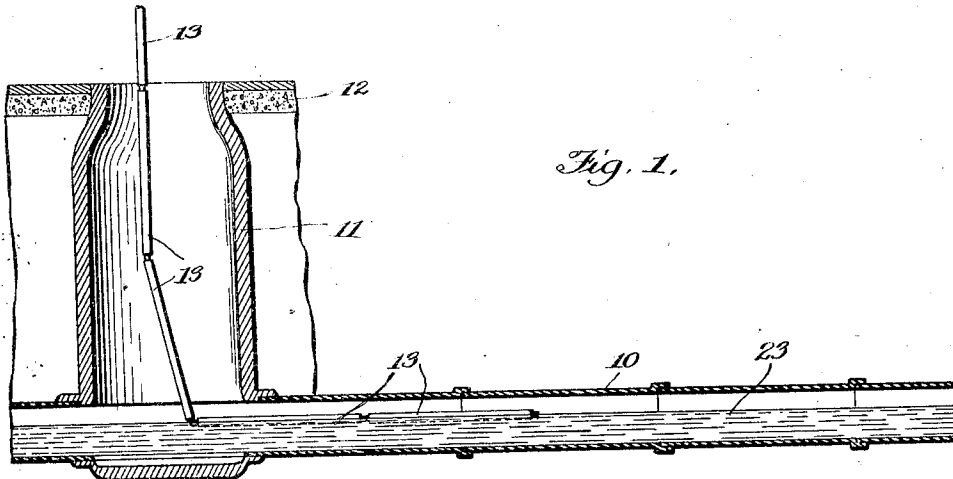
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G. L. LUCK

SECTIONAL ROD

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UNITED STATES PATENT OFFICE.

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SECTIONAL ROD.

Application filed November 10, 1925. Serial No. 68,248.

This invention relates to improvements in sectional rod construction particularly adapted though not necessarily limited in its use, for sewer cleaning for threading a cable or chain through a sewer from one manhole to another, and one of the objects of the invention is to provide an improved rod of this character formed of a plurality of sections arranged end to end, the proximate ends of adjacent sections being detachably connected; each section embodying a hollow metallic rod having its ends closed and being of such a diameter that the rod section will be rendered buoyant so that it will float upon the water in the sewer while being threaded through the sewer pipe to the next manhole.

Heretofore sectional rods of this character have been used but the sections thereof have been solid and constructed of wood and it has been found that with the solid wood rod sections, in order to cause them to float, they must be of a comparatively small diameter or thickness, with the result that they soon become warped or broken and unfit for use. If, on the other hand the wooden rod sections are constructed of material heavy enough and of sufficient thickness or diameter to cause them to withstand the stress and strain of the twisting and forcing necessary to cause them to pass through the partially filled sewer pipe, they will sink and become embedded in the deposits and refuse in the pipe.

By providing closed hollow metallic rod sections constructed of metal of a comparatively small gage and of a comparatively large internal diameter, all of these difficulties and objections will be overcome as such a rod section will float upon the water in the pipe, with the result that their passage through the pipe will not be impeded and with the further result that considerable time and labor will be saved.

Furthermore a rod constructed in accordance with the principles of this invention will result in a much lighter rod to handle and at the same time the strength and durability of the rod will be materially increased.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawing illustrating this invention, and in which

Figure 1 is a view of a portion of a sewer and a manhole, showing several rod sections connected together and the manner of use thereof.

Figure 2 is an enlarged view partly in elevation, partly in longitudinal section and partly broken away of one of the rod sections and showing in dotted lines a portion of another rod section.

Figure 3 is a top plan view of Figure 2.

Figure 4 is an enlarged transverse sectional view of one of the rod sections showing the manner in which the section will float upon the water in the sewer pipe.

Referring more particularly to the drawing the numeral 10 designates generally a sewer pipe of the ordinary and well known construction, and 11 designates a manhole the top of which is substantially flush with the top of the street or road bed 12.

The rod is formed by arranging a plurality of sections end to end and connecting the proximate ends of adjacent sections in a manner that they may be attached and detached when desired, but in order to prevent the rod sections from becoming detached while in the sewer pipe the connecting members on the adjacent ends of the respective sections are so formed that it is necessary to hold the adjacent rod sections in predetermined initial positions one with respect to the other to permit of the coupling and uncoupling of the sections.

As each of the rod sections is the same the description of one will apply to them all.

The numeral 13 designates the body portion of the section which is constructed of metal and of a comparatively small gage, shaped to form a tube of a comparatively large diameter which is uniform throughout substantially the length of the section and each section is of a somewhat extended length. The ends of the tube are closed by means of coupling members 14-15 which project beyond the ends of the section. The coupling member 14 is provided with an extension 16 having a head 17 thereon which extends transversely thereof and projects beyond the sides of the extension. Carried by the member 17 and projecting therefrom intermediate and spaced from the extremities thereof, is a lug or projection 18.

The coupling member 15 is provided with

an extension 19 which is bifurcated as at 20, the bifurcation extending through the free extremity of the extension. The extension 19 is also provided with a slot 21 opening through one of the walls of the bifurcation and having communication with the bifurcation 20. The slot 21 is provided with a reduced opening which is of a width slightly greater than a portion of the extension 16 that is in proximity to the head 17, and the wall of the slot 21 is provided with a recess 22 communicating therewith. This recess 22 and the lug 18 on the head 17 are so disposed with respect to the reduced portion of the extension 16 that when it is desired to couple or uncouple the proximate ends of adjacent rod sections the rod sections must be held in a predetermined initial position with respect to each other and as indicated in dotted lines in Figure 2. This position will be such that the reduced portion of the extension 16 will then enter the slot 21 and the lug or projection 18 on the head 17 will enter the recess 22.

After the rod sections have been thus coupled the sections may be pivotally moved one with respect to the other to cause the extension 16 to enter the bifurcation 20 of the extension 19. This will lock the rod sections together and the bottom of the bifurcation 20 will prevent a further pivotal movement of the rod sections in one direction.

The rod sections are coupled together in the manhole 11 as the rod is advanced through the pipe 10 and inasmuch as the rod sections thus constructed will be buoyant it will be manifest that they will float upon the water 23 in the pipe 10.

It will also be manifest that with this construction of coupling the stress exerted upon the rod to force it through the pipe will be distributed equally throughout the area of the ends of the adjacent rod sections, and furthermore the rods will not be uncoupled accidentally while they are in the pipe even if the rod should become axially rotated.

Any number of these rod sections may be coupled together according to the length of the pipe between manholes and the rod sections may be of any desired length which will permit them to be coupled together in the manholes, the manholes being generally constructed with a comparatively small diameter.

While the preferred form of the invention has been herein shown and described it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. A sewer rod constructed of a plurality of rod sections hollow throughout substan-

tially their entire length and closed at the ends thereof, said sections adapted to be arranged end to end, and means detachably connecting the proximate ends of adjacent sections.

2. A sewer rod constructed of a plurality of rod sections hollow throughout substantially their entire length and closed at the ends thereof, said sections adapted to be arranged end to end, and means detachably connecting the proximate ends of adjacent sections, the said means embodying co-operating formations necessitating a predetermined initial relative positioning of adjacent sections to permit coupling and uncoupling thereof.

3. A sewer rod construction embodying a plurality of metallic rod sections hollow throughout substantially their entire length and closed at the ends thereof, said sections adapted to be arranged end to end, and means detachably connecting the proximate ends of adjacent sections.

4. A sewer rod construction embodying a plurality of extended metallic rod sections hollow throughout substantially their entire length, and closed at the ends thereof and of comparatively large internal diameter, said sections being adapted to be arranged end to end, and co-operating and separable coupling members connected to the proximate ends of adjacent sections for detachably securing the said ends of adjacent sections together.

5. A sewer rod construction embodying a plurality of extended sections hollow throughout substantially their entire length and closed at the ends thereof, said sections being of comparatively large internal diameter and each formed of metal of a comparatively small gage, whereby said sections will be rendered buoyant, and means for detachably connecting together proximate ends of adjacent sections.

6. A sewer rod construction embodying a plurality of closed sections hollow throughout substantially their entire length, each formed of comparatively thin metal whereby they will be rendered buoyant, and means detachably connecting together proximate ends of adjacent sections, the said means embodying co-operating formations necessitating a predetermined initial relative positioning of adjacent sections to permit coupling and uncoupling thereof.

7. A sewer rod constructed of a plurality of extended rod sections hollow throughout substantially their entire length, and closed at the ends thereof, the hollow portions of the sections being of a substantially uniform diameter throughout the length thereof, said sections adapted to be arranged end to end, and means detachably connecting the proximate ends of adjacent sections.

8. A sewer rod constructed of a plurality

of extended rod sections hollow throughout substantially their entire length, and closed at the ends thereof, the hollow portions of the sections being of a substantially uniform diameter throughout the length thereof, said
5 sections adapted to be arranged end to end, and means detachably connecting the proximate ends of adjacent sections, each of the

sections being adapted to be advanced through a pipe by the next adjacent sections 10 in rear thereof exerting pressure against the proximate end thereof.

In testimony whereof I have signed my name to this specification, on this 7th day of November, A. D., 1925.

GEORGE L. LUCK.