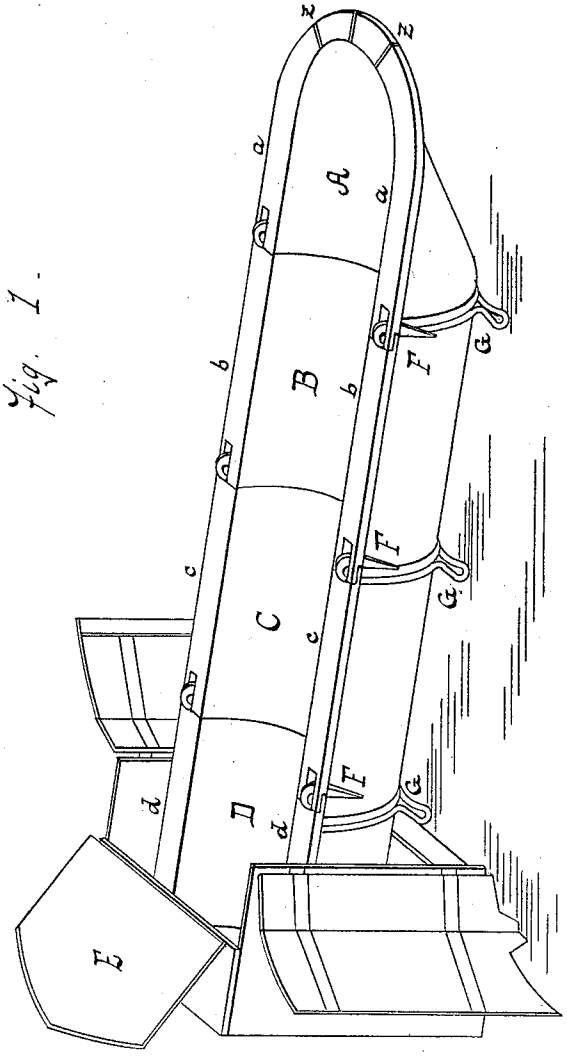
(No Model.) 2 Sheets—Sheet 1.

M. S. FRENCH.

SECTIONAL BATH TUB.

No. 351,103. Patented Oct. 19, 1886.

Fig. 1.



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M. S. FRENCH.

SECTIONAL BATH TUB.

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Fig. 2.

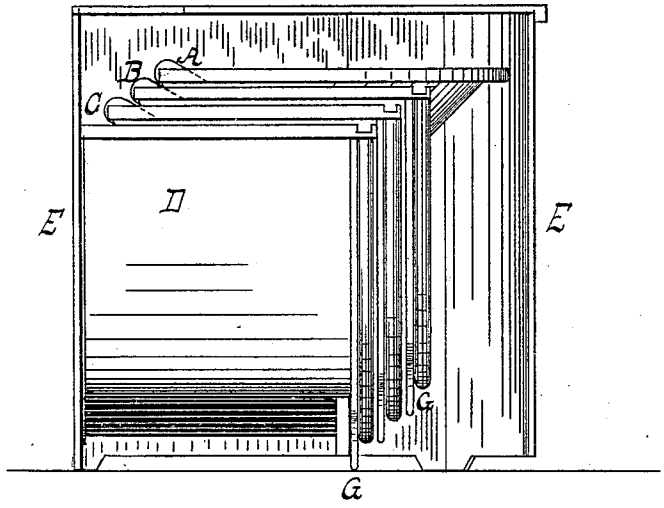


Fig. 3.

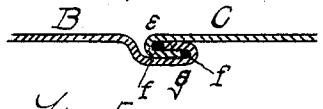


Fig. 4.

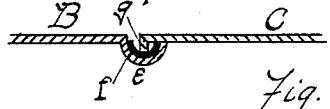


Fig. 5.

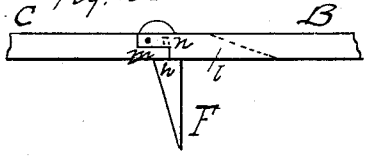


Fig. 6.

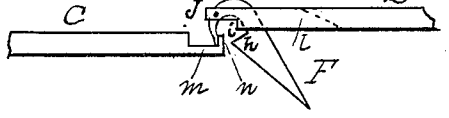
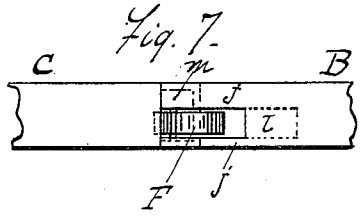


Fig. 7.



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UNITED STATES PATENT OFFICE.

MENZELL S. FRENCH, OF NASHUA, NEW HAMPSHIRE.

SECTIONAL BATH-TUB.

SPECIFICATION forming part of Letters Patent No. 351,103, dated October 19, 1886.

Application filed February 27, 1886. Serial No. 193,471. (No model.)

To all whom it may concern:

Be it known that I, MENZELL S. FRENCH, of Nashua, in the county of Hillsborough and State of New Hampshire, have invented an Improved Sectional Bath-Tub; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

The object of this invention is to furnish a bath-tub of such construction that when arranged for use it shall possess the firmness and stability, and be in all respects similar to the stationary bath-tub of ordinary construction, and at the same time capable of being conveniently packed away so as to occupy but little space when not in use.

Bath-tubs have heretofore been made in such a manner that the whole tub may be raised bodily by cord and pulley or other equivalent mechanism, so as to stand upon its end when not in use in a cabinet arranged for the purpose. The only advantage gained by this arrangement is that the tub occupies less floor-space when thus swung up than if allowed to remain in the same position as when in use. The tub does not occupy less space, but only a different position.

For the purpose of enabling the tub to be packed into less space when not in use, flexible materials—such as rubber, cloth made water-proof by the application of any preparation impervious to water, &c.—have been used for forming the body of the tub, so arranged that when not in use the whole may be rolled or folded into smaller space; but tubs made of such materials lack the stability possessed by tubs made of metal, and are objectionable for the reason, among others, that the weight of the body causes the material to sag in some places, and, consequently, to draw against the person, making its use very uncomfortable.

My improved bath-tub is constructed of the same materials as are ordinarily used in the manufacture of the stationary tubs in common use, being made preferably of sheet metal—as zinc, copper, tin, or any suitable material for the purpose—and may be made of any convenient form or size.

The main feature of the invention consists in making the body of the tub in several cross-sections, having packed interlocking joints, and suitable devices for locking and retaining the sections closely and firmly together, such that when the sections are joined together end to end the whole will form a tub of the size and form desired, and the parts be so rigidly and closely joined together that for all practical purposes the result is the same as if the whole tub were composed of one piece of metal, or as if the parts were permanently united. The several sections are adapted to telescope or slide one within another, so that the whole may be inclosed in a cabinet suitable for the purpose, and thus occupy but little room when not in use.

The method of construction may be most clearly seen by reference to the accompanying drawings, in which—

Figure 1 represents a perspective view of my improved sectional bath-tub, the sections being united and in position for use. Fig. 2 represents a side view of the sections telescoped together and inclosed in a cabinet, the side of the cabinet being removed in order to show the manner in which the sections slide together. Fig. 3 is a cross-section of one of the interlocking joints between two adjacent sections in a plane lying in the direction of the length of the tub. Fig. 4 is a similar view, showing a modification of the joint between adjacent sections. Fig. 5 is a side view of the fastening device with adjacent parts, showing the manner in which the sections are locked together and retained in position. Fig. 6 is a side view of the fastening device, showing the manner in which the fastener comes into position for locking when the sections are drawn apart. Fig. 7 is a top view of the parts shown in Fig. 5.

Like letters designate corresponding parts in all of the figures.

The parts of which the tub is composed consist of head-section A, foot-section D, and intermediate sections, B C, of such a form that when joined together at the ends the combination will form a tub of the ordinary form for stationary tubs, and which is too well known to require description here.

E is a cabinet of suitable form for inclosing the sections when they are packed together. This cabinet may be constructed with doors opening in front, and with a cover which can be raised, so as to leave the whole of the tub

open for use. The back of the cabinet may be permanently fastened to or may be a part of the wall of the room in which the tub is placed, or the cabinet and the tub therein contained may be portable, or the tub may be used without the cabinet. The foot-section D may be and preferably is permanently secured to the back of the cabinet, and the cabinet serves as a support for the section. When permanently secured to the wall of the room, this section may contain all the desired arrangements for the introduction and removal of water, since this will not in any manner interfere with the packing of the other sections within the foot-section.

Upon the outer and upper side edge of each section is a rave, as *a b c d*, of any suitable material, of sufficient size and strength to give the requisite stiffness to the sides of the tub and to form an appropriate finish therefor. These raves are each of the same length as the section to which they are attached, less that part of the end edges of the different sections which overlaps the adjacent section to form the joint, and form, when the sections are united, a continuous rail along the sides and around the end of the head-section of the tub.

The top of the head-section is preferably semi-elliptical (approximately) in form, the end sloping from the top to the bottom of the tub, and being bent so that its curvature will conform to the curvature of the rave. Upon the ends of the raves are attached the fastening devices F, which lock the ends of the raves together, thereby securing the end of each section to the end of the adjacent section.

The general appearance of the tub when the sections are locked together is shown in Fig. 1, and the manner in which the parts are united and retained in place will be hereinafter described. To pack the several sections together it is only necessary to disengage the fastener on the end of one rave from the catch on the end of the adjacent rave, when the sections will readily slide one within another, the other sections all being retained within the foot-section when packed. Thus the section A slides into section B, section B slides into section C, and all together slide into section D, or foot-section. It will be seen that when the sections are thus packed, the whole tub will require but little more room than a single section—say, one third or one-fourth as much room as when extended, according to the number of sections. The sections being thus packed together, the whole may conveniently be inclosed in a cabinet, which requires but little extra room, and the article then becomes a much less unsightly object. The position of the parts when packed as above described is shown in Fig. 2.

Though the sections are all of the same size in cross-section, yet the material of which they are made will have sufficient flexibility to permit one section to slide within another by slightly compressing the sides. The head-section, having a rave around the whole top, is the only one that will not easily collapse sufficiently for this purpose. Since it is necessary that the head-section should be compressed more than any of the rest of the sections, as it has to slide within all the others, it may be necessary to make the rave of the head-section capable of being bent slightly. To accomplish this the rave may be divided in one or more places without impairing its efficiency, as shown at *z*, Fig. 1, so that the main portion of the section is allowed to bend in line with the places where the rave is divided; or the rave may be constructed with any suitable kind of a joint for the purpose. Any convenient means may be used for rendering the rave of the head as flexible as required.

For the purpose of joining the sections together so that the joint will be water-tight, the following-described arrangement is made use of, as shown in Fig. 3. B and C are two adjacent sections. One end edge of the section C is turned over outwardly around the whole end of the section, the turned-over part being U-shaped in cross-section, as shown at *e*, and the opposite end of section B is turned inwardly along its edge in similar form, as at *g*. Any suitable packing material, *f*, is placed within the recess formed by the turned-over portion of one or both of the sections. When the two sections are brought together, the two U-shaped portions interlock, and the end edge of one section pressing closely against the packing in the recess formed on the edge of the other section, a perfectly water-tight joint is formed. The turned-over portion of each section is of sufficient width, so that the parts lock firmly together, and thus prevent any liability of the separation of the sections by reason of any strain caused by a weight within the tub, even though the sections are not locked together.

Another form of joint, which is perhaps more simple, but on the whole less satisfactory than the form just described, being more liable to be affected by a strain from a weight within the tub, is shown in Fig. 4. In this form of joint a groove or depression, *e*, is formed around the end edge of section B on the inside and packing *f* placed therein. Upon the end of section C is formed an outwardly-projecting ridge or lip, *g*, which, when the parts are brought into position for locking, sets against the packing *f* in the groove *e*, and the parts are kept closely in place by means of the locking device to be described. This joint answers every purpose, but in general use is not quite as satisfactory as the form first described, since the latter is more dependent upon the locking device to hold the two sections closely together. The same arrangement of joints is used between each of the several sections.

For convenience in packing and taking apart, the sections overlap each other from the foot to the head of the tub—that is, as in the drawings, Fig. 1, the end edge of section C overlaps the end edge of section D, the end edge

of section B overlaps the end edge of section C, and the end of the head-section overlaps the end edge of the next section toward the foot of the tub. This arrangement is made simply for convenience in adjusting the parts, since it is only necessary to draw out the sections from one another to bring them into proper position.

Underneath the end of each section, as nearly as possible to the point where it is overlapped by the adjacent section, are placed suitable supports, G G, which serve to sustain not only the end of the section to which they are attached, but also support the end of the overlapping section, so that but one set of supports is necessary for each section. By placing the support close under the place where the sections are joined, all liability of the straining apart of the sections is obviated, and it is also necessary that there should be no obstruction to the sliding of one section within another, as would be the case were the support to be placed in any other position. Any suitable style of support may be used, the one shown consisting of a wire or strip of metal of sufficient strength to support the tub and weight within it, passing around the end of the section from one rave to the other on the opposite side, and having a loop formed in it on each side of the bottom of the tub for a leg, answering every purpose.

In Figs. 5, 6, and 7 is shown the device by means of which the different sections are locked together. This locking device consists of a fastener, F, which is made of substantially the form shown in the drawings. The upper end of this fastener is curved in the form of a hook, with a pointed end having a slight outward curvature. The other arm extends downward, and is wedge-shaped, preferably, for the reasons which will be hereinafter stated. The apex of the wedge points downward from the hook, and the base of the wedge-shaped part forms a shoulder or projection, *h*, leaving a recess, *i*, between the projection and the inner curvature of the hook-shaped portion. The fastener is pivoted through the hook-shaped part upon a pin or rivet, which passes through two arms, *j j*, one on each side of the end of the rave *b* of section B, which is the overlapping section, the said arms projecting beyond the end of the rail to which they are fixed; or, instead of arms, the fastener may be pivoted in a slot cut in the end of the rail itself. In either case a wedge-shaped recess is formed in the under side of the end of the rave carrying the fastener, behind the fastener and into which the latter is adapted to fit when the sections are packed, in order to allow the sections to fit closely together. When the fastener is thus received within the recess, its lower edge is flush with the under surface of the rave. On the end of the rave of the adjacent section is formed a catch in the form of a rectangular loop, *m*, having an upward projection, *n*, upon the side of the loop next to the other section, within which loop the hooked portion of the fastener is adapted to engage, the point of the hook passing down through the aperture within the loop, thus bringing the projection *n* into the inner curvature of the hook. The shoulder or projection *h* then engages underneath the under side of the loop, and thus holds the ends of the two raves, and, consequently, the ends of the two sections, closely and firmly together. When the sections are packed together, and the fastener is pressed back within the recess *l*, in the under side of the rave, the point of the hook of the fastener F projects slightly below the plane of the under side of the rave, so that when the sections are drawn apart the point catches upon the upward projection, *n*, upon the end of the loop, and the further action of drawing apart the sections causes the point to pass downward through the aperture within the loop. By reason of the slight outward curvature of the end of the hook, it passes under the end of the rave at the back of the loop, and when pressure is brought to bear upon the lower wedge-shaped part of the fastener as a lever this outwardly-curving portion acts to lift the rave into position so that the shoulder *h* may engage underneath the end of the loop *m*. The sections cannot be separated as long as the shoulder is underneath the loop, and the elastic nature of the packing material between the end edges of the sections, as well as the friction of the parts themselves, prevents the fastener from becoming disengaged.

The devices shown and described, or any other suitable kind, may be used for locking the sections without departing from my invention.

The same or any similar device being used for locking the ends of the raves of each of the sections, the parts as so united constitute a tub which for practical use is the same as if the parts were permanently joined, and which may in a moment be packed together so as to occupy but a small space.

Aside from the advantages previously mentioned, this improved sectional tub can be adjusted to any convenient size by using any desired number of the sections. Thus all the intermediate sections may be omitted, and only the head and foot sections used, since the locking arrangements permit any section to be joined to any other, and the tub is then suitable for a foot-bath or for bathing children.

I claim as my invention—

1. A bath-tub composed of two or more cross-sections, the ends of the said sections being adapted to interlock each with its adjacent section around the whole length of the end of the section, substantially as set forth.

2. A bath-tub composed of two or more cross-sections, the ends of the said sections being adapted for removably interlocking each with its adjacent section around the whole length of the end of the section, elastic packing suitably interposed between said interlocking portions, and a fastening device upon the end of the rave of each section, substantially as described, whereby any two adjacent

sections may be united and locked rigidly in place.

3. A bath-tub composed of two or more cross-sections, each section having a groove or depression around the inside of the end edge of the section, said groove containing elastic packing, and an outwardly-projecting lip at the edge of the other end of the section, the said lip upon the end edge of one section being adapted to fit within the groove or depression around the opposite end of the adjacent section, and fastening devices for locking and retaining the sections rigidly together, substantially as and for the purpose herein set forth.

4. In a bath-tub composed of two or more cross-sections, a fastener pivoted in a slot or recess formed at or in the end of the rave of one of the sections, said fastener having its upper end bent in the form of a hook, said hook being adapted to engage with a catch formed at or upon the end of the rail of the adjacent section, and a shoulder formed upon the side of the lower portion of the fastener which engages underneath the end of the catch, and an upward projection upon the end of the said catch, substantially as and for the purpose herein described.

5. In a bath-tub composed of two or more cross-sections, which may be removably joined together at the ends of the sections, the said sections being adapted to slide one within another, a catch upon one end of the raves of each section, in combination with a fastener pivoted upon the opposite end of the rave, the fastener upon the end of one rave being adapted to engage with the catch upon the opposite end of the rave of the adjacent section, and a recess in the end of the rave behind the fastener, into which the said fastener is received when the sections are packed or slid together, substantially as and for the purpose herein set forth.

6. A bath-tub composed of two or more cross-sections having means for removably attaching one to another at the opposite ends thereof, the said sections being adapted to slide one within another, in combination with a flexible rave around the section forming the head section of the tub, as and for the purpose described.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

MENZELL S. FRENCH.

Witnesses:

J. B. PARKER,

ALFRED LUSIER.