J. B. WISE.

COMBINED WASTE AND OVERFLOW.

APPLICATION FILED JUNE 3, 1908.

917,395. Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

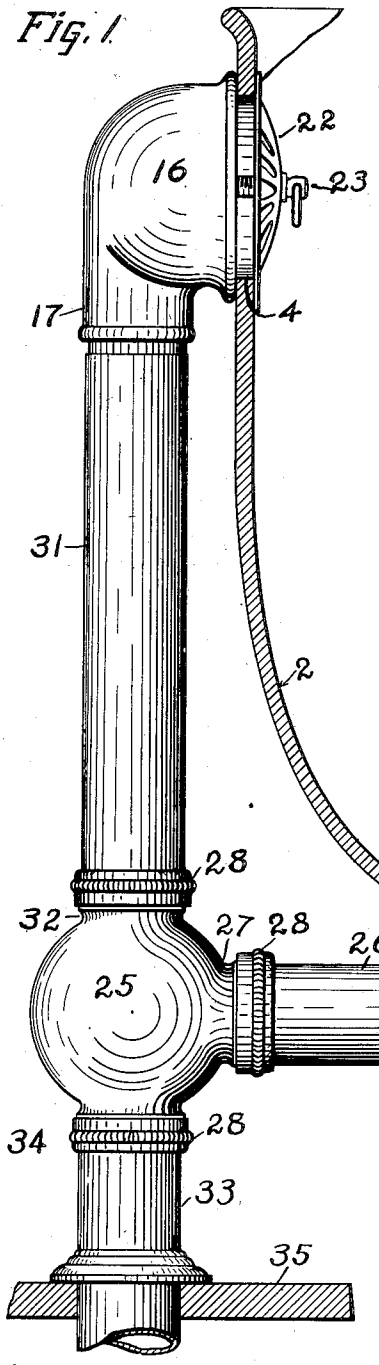


Fig. 2.

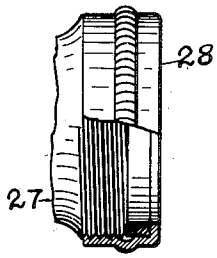
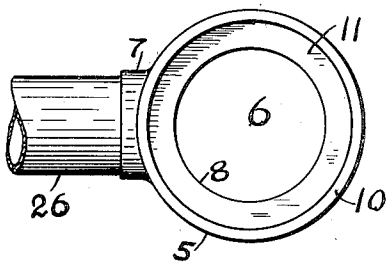
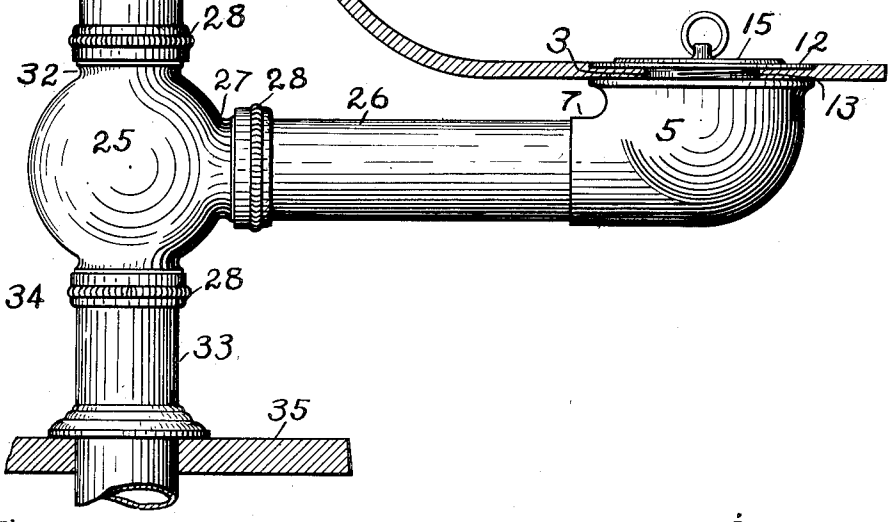


Fig. 3.





WITNESSES
Chas. H. Hughes.
R. L. Wallace.

INVENTOR.
James B. Wise.
BY
Harry D. Wallace,
ATTORNEY

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2 SHEETS—SHEET 2.

Fig. 4.

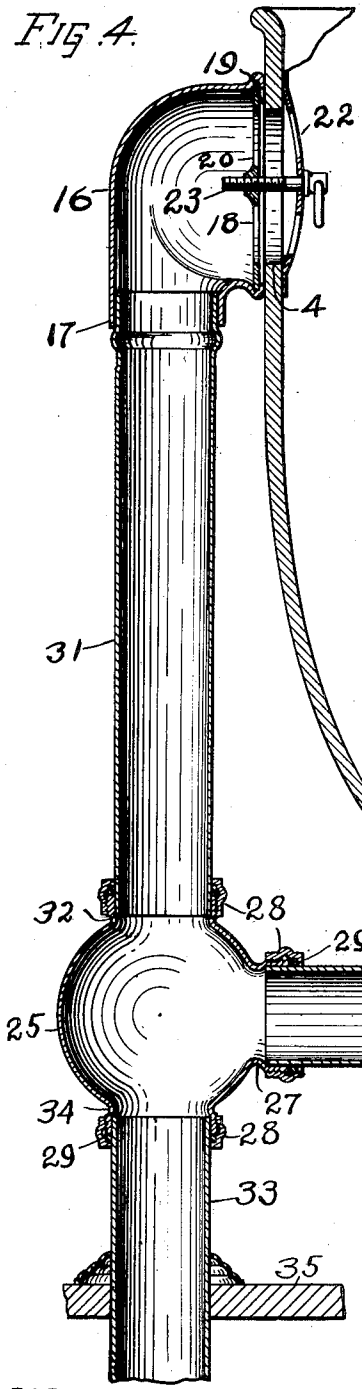


Fig. 5.

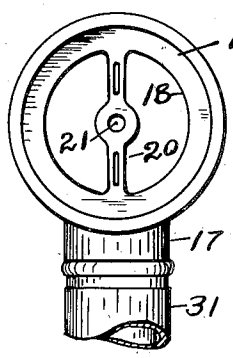


Fig. 6.

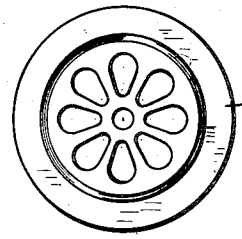


Fig. 7.

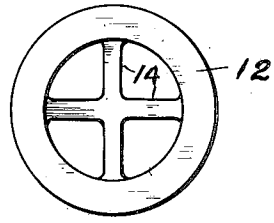


Fig. 10.

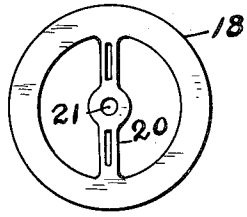


Fig. 8

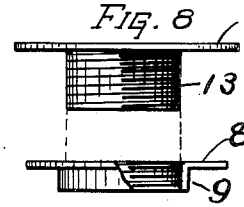
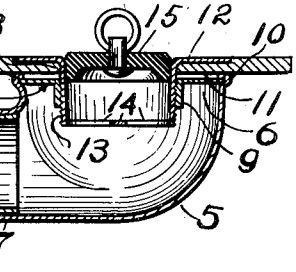


Fig. 9.



WITNESSES
Chas. H. Hughes.
R. L. Wallace.

INVENTOR
James B Wise.
BY
Harry D. Wallace
ATTORNEY

UNITED STATES PATENT OFFICE.

JAMES B. WISE, OF WATERTOWN, NEW YORK.

COMBINED WASTE AND OVERFLOW.

No. 917,395. Specification of Letters Patent. Patented April 6, 1909.

Application filed June 3, 1908. Serial No. 436,368.

To all whom it may concern:

Be it known that I, JAMES B. WISE, a citizen of the United States, residing at Watertown, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in a Combined Waste and Overflow, of which the following is a specification.

This invention relates to improvements in combined waste and overflow fixtures, designed for use in connection with bath-tubs and the like, and the invention relates particularly to a combined fixture of the class in which all of the parts are made of sheet metal.

The object of this invention is to provide a waste and overflow fixture of simple, strong and inexpensive construction, wherein all of the parts of the device are made from sheet metal of suitable gage, and formed up in a manner to facilitate combining the parts into a single fixture of convenient form and novel and ornamental design.

A further object is to eliminate all of the rough and heavy cast parts formerly employed in fixtures of the class, and substitute therefor parts made from smooth finish sheet metal, which requires no grinding or other tedious and expensive labor to make them ready for use.

A further object of the invention is to provide a combined article of the class, in which, owing to the character of the material, and the novel and improved methods employed for making the individual members, fewer parts and less labor and expense are required for producing the combination, than have heretofore been employed in making either cast or sheet metal fixtures.

The invention consists principally of two ells of peculiar and novel design, one for employment at the bottom of a bath-tub to receive the waste water, the other to be attached to the top of the bath-tub to receive the overflow to prevent the water from escaping over the top of the tub. Both of said ells are substantially alike and made out of sheet metal, by use of dies and other processes, into the forms as shown.

The invention further consists of a tee-body made of sheet-metal, which is connected to the waste and overflow ells by means of separate pipes, the said tee-body connecting with a common waste-pipe, through which the water from both of the ells is carried away. The invention further consists in providing simple sheet-metal bushings and strainers for the waste and overflow ells, by means of which the ells are attached to the walls of the bath-tub.

Other features and objects of the invention will be understood from the detail description which follows, and by reference to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation of the combined fixture, showing the same applied to a bath-tub. Fig. 2 is a detail view of one of the sheet-metal gland-nuts, showing its construction and application to a threaded neck of the tee. Fig. 3 is a plan view of the waste ell, showing the sheet-metal bushing which receives the waste strainer. Fig. 4 is a vertical section through the center of the fixture, showing the construction and arrangement of the principal parts, and the manner of connecting and combining them into one part; also showing the manner of connecting the waste and overflow ells to the wall of the bath-tub. Fig. 5 is a plan view of the overflow ell showing the disposition and form of the sheet-metal bushing. Fig. 6 is a face view of the overflow strainer. Fig. 7 is a plan view of the waste strainer. Fig. 8 is a side elevation of the waste strainer. Fig. 9 is an elevation and part section of the threaded bushing which receives the waste strainer. Fig. 10 is a plan view of the bushing carried by the overflow ell.

Similar numerals of reference are assigned to corresponding parts throughout the several views.

Heretofore, the waste and overflow ells, and certain of the related parts employed in connection with bath-tubs, have been largely made from brass castings in various forms. These castings when received from the foundry invariably had rough inner and outer surfaces and other imperfections, which necessitated considerable labor and expense to prepare and finish them ready for use.

It is a particular object of the present invention to eliminate all castings, such as were formerly employed for fixtures of the class, and to substitute therefor, a full complement of parts made from smooth finish sheet-metal, pressed and formed into suitable shapes for conveniently combining and attaching the whole to a bath-tub, and to pro-

vide a fixture in which the whole interior, as well as, exterior of all the parts are clear and smooth, and which may be produced in less time, and at less cost, than like fixtures have heretofore been made.

In the drawings, 2 represents a portion of a bath-tub, having a perforation 3 in the bottom, through which the waste-water may be drawn off, and a perforation 4 near its top through which the water may escape, to prevent the overflowing of the tub. To carry the water away from the waste port 3 in the bottom of the tub, in a safe and sanitary manner, I provide an ell 5, preferably made of sheet-metal in one part, in the form and manner shown in Figs. 1, 3 and 4. This ell has a large circular flaring mouth 6, and a laterally extending tubular neck 7.

8 represents a sheet-metal bushing having an integral central sleeve 9, the latter being internally threaded. The bushing 8 is fitted into the mouth of the ell with the sleeve 9 facing inwardly, and the metal comprising the rim or edge of the mouth is spun, or otherwise folded inwardly, as at 10, to hold the bushing rigidly in place, (as shown in Fig. 4). Bushing 8 is applied to the mouth of ell 5 in a manner to provide a shallow annular recess 11.

12 represents a waste strainer made of sheet-metal in the form shown in Figs. 1, 4, 7 and 8. The central portion of strainer 12, is drawn by suitable dies to form a cup 13, which is externally threaded for attaching the strainer to bushing 8. The bottom of the cup 13 is perforated as shown in Fig. 7 in a manner to leave a number of integral strainer-bars 14. A rubber plug 15 is employed for closing the strainer and preventing the waste of the water.

16 represents an overflow ell which is preferably formed of sheet-metal in one part, substantially like ell 5, and having a tubular neck 17.

18 represents a bushing made of sheet-metal and rigidly secured in the mouth of ell 16, in the same manner as the bushing 8. The bushing 18 is preferably formed and applied in a manner to provide an annular recess 19, which corresponds to the recess 11.

20 represents an integral bridge extending across the center of bushing 18, which is perforated centrally at 21, and the said perforation is threaded.

22 represents a perforated sheet-metal strainer for overflow ell 16. And 23 represents an eye-bolt which passes through strainer 22 and is threaded into perforation 21 of bridge 20, to hold the strainer in place.

To attach the ell 5 to the bottom of a bath-tub, so as to make a water tight closure of the joint between the ell and the tub, the recess 11 is filled with putty or like plastic substance (not shown). The mouth of the ell is then placed against the bottom of the tub concentric to the opening 3. The waste strainer 12 is next inserted through opening 3 of the tub, and screwed into bushing 8, until the flange of the strainer bears tightly against the inside of the tub, and the mouth of the ell is drawn tightly against the bottom of the tub, the putty filling the recess 11, cooperating to make a tight seal of the joint, and prevent the escape of water into the room. The provision of the recess 11 serves to confine the putty and prevent it from becoming loosened and detached so as to impair the joint.

The waste ell 16 is applied to the top of the bath-tub in the same manner as ell 5, first, by filling the recess 19 with putty and then placing the mouth of the ell concentric to the opening 4. Overflow strainer 22 is then placed in position on the inner side of the tub opposite the mouth of the ell, and the bolt 23 is inserted through the center of the strainer and screwed into hole 21 of the bridge 20, for drawing and holding the parts tightly together. Fig. 4 shows the method of attaching the two ells to the tub.

The construction of the bushings 8 and 18 and the method shown for attaching them to the ells, and also the putty recesses 11 and 19 constitute important features of the present invention.

The interior of the ells and related parts of my fixture are smooth and free from all obstructions, thus rendering these parts practically self-cleaning, which is an essential and desirable feature of fittings of the class.

25 represents a tee-body made of sheet-metal having a number of threaded necks, disposed in a manner to receive the water from the waste and overflow ells by gravity.

26 represents a horizontal pipe connecting the waste ell 5 with the tee. Pipe 26 is preferably connected to ell 5 by inserting one end in the neck 7 and then brazed or soldered so as to make a rigid or unyielding joint. The opposite end of pipe 26 is preferably joined to the tee by means of a flexible connection, which consists of inserting the end of the pipe into a threaded neck 27 of the tee, and then screwing a gland-nut 28 down on the neck, in a manner to compress a rubber packing-ring 29 between the neck and pipe and the inner end of the nut, thus forming a watertight but flexible joint.

31 represents a vertical pipe employed for connecting the overflow ell 16 to the tee 25. The upper end of pipe 31 is preferably brazed or sweated into the neck of ell 16, and the lower end is connected to neck 32 of the tee by a nut 28, in the same manner as described for pipe 26.

33 represents a waste-pipe connecting with the lower neck 34 of the tee by a nut 28, the said connection also being flexible as for pipes 26 and 31. Pipe 33 is employed for carrying the waste-water away from the

bath-tub and conducting it through the floor and thence to a sewer or other point of discharge.

The pipes or tubes of my combined fixture, as well as, all of the other parts are preferably made of smooth finished sheet brass, as described. The tubes commonly employed for this class of work being what is known as brazed or welded tubing. The several parts of the waste and overflow fixture, excepting the piping, are treated to a series of suitable die, punching and other simple operations, all of which are effected in a rapid and inexpensive manner, and when each part leaves the machine or die, both the interior and exterior surfaces are comparatively smooth, and ready to be assembled without further work.

From the foregoing it will be apparent that the waste and overflow fixture of the present invention possesses many novel and desirable features, is extremely simple in its construction, and owing to the novel designs of the parts and the improved methods employed for making them, I am able to produce a strong, serviceable and ornamental bath fixture, having fewer and simpler parts, and which may be made in less time and at less expense, than any of the old style of fixtures.

It is obvious that the ells and other parts of the fixture may be made up in other forms and by slight variations of the parts may be applied either in the combined form or separately for other uses, and also that some changes or modifications may be made in the parts without departing from the spirit of my invention, and I therefore do not restrict myself to the precise construction, arrangement and application of the same as herein shown and described.

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

1. A waste and overflow fixture, comprising a sheet-metal ell to receive the waste water from the bottom of a bath-tub, the said ell comprising a single shell having an integral laterally disposed neck, and a large circular flaring mouth, a sheet-metal bushing fitting in the mouth of said ell and having a central internally threaded sleeve, the flaring edge of the mouth spun or folded inwardly upon the face of said bushing and securing the bushing to the ell, in a manner to provide a shallow annular recess adapted to be filled with putty for sealing said ell to the bottom of the tub, a waste-pipe having one end rigidly secured in the neck of said ell, and a tee-body having an integral neck to receive the outer end of said waste-pipe.

2. A waste and overflow fixture, comprising a sheet-metal ell to receive the overflow from the top of a bath-tub, the said ell comprising a single shell having an integral laterally disposed neck, and a circular mouth, a sheet-metal bushing fitting in the mouth of said ell and having an integral central bridge, the edge of said mouth spun or folded inwardly upon the face of said bushing and securing the bushing to the ell in a manner to provide a shallow annular recess adapted to be filled with putty for sealing said ell to the wall of the tub, an overflow pipe having one end rigidly secured in the neck of said ell, and a tee-body having an integral neck to receive the outer end of said overflow-pipe.

3. A waste and overflow fixture, comprising an ell made from sheet metal adapted to receive the waste-water from a bath-tub, the said ell consisting of a single shell having a smooth interior and exterior and having a lateral tubular neck, and a flaring circular mouth, a circular metal bushing having a central internally threaded sleeve, the flaring edge of the mouth of said ell spun inwardly upon the face of the said bushing and securing the bushing to the ell in a manner to provide a shallow recess adapted to be filled with putty for sealing said ell to the bottom of a bath-tub, a sheet-metal strainer having a cup-shaped body externally threaded for screwing into the sleeve of said bushing, a plug to close said strainer, a waste-pipe having one end rigidly secured in the neck of said ell, and a tee-body to receive the opposite end of said waste-pipe.

4. A waste and overflow fixture, comprising an ell made from sheet metal adapted to receive the waste-water from a bath-tub, the said ell consisting of a single shell having a smooth interior and exterior and having a lateral tubular neck, and a flaring mouth, a circular metal bushing having a central internally threaded sleeve, the flaring edge of the mouth folded inwardly upon the face of said bushing and securing the bushing to the ell in a manner to provide a shallow recess adapted to be filled with a packing substance for sealing said ell to the bottom of a bath-tub, a sheet-metal strainer having an annular flange and a cup-shaped drawn body externally threaded for screwing into the sleeve of said bushing, the flange of said strainer when connected to said bushing disposed in a plane parallel to the shallow recess, a plug to close said strainer, a waste-pipe having one end rigidly secured in the neck of said ell, and a tee-body to receive the opposite end of said waste-pipe.

5. A combined waste and overflow fixture, comprising a sheet-metal waste ell and a sheet-metal overflow ell, the said ells formed substantially alike, and each consisting of a single shell having a circular flaring mouth and a narrow tubular neck, a sheet-metal bushing for said waste ell having an internally threaded sleeve, a sheet-metal bushing for said overflow ell having an integral bridge provided with a central screw-threaded perforation, the flaring mouths of said ells spun

or folded inwardly upon the faces of said respective bushings and securing the bushings to the ells in a manner to provide shallow annular recesses to be filled with a packing substance, a sheet-metal strainer having a drawn portion adapted to be screwed into the bushing of the waste ell, a sheet-metal strainer for the overflow ell, an eye-bolt adapted to be screwed into the bushing of the overflow ell for holding the overflow strainer in place concentric to said ell, a sheet-metal tee, an overflow-pipe to connect the overflow ell to said tee, and a waste-pipe to connect the waste ell to said tee.

6. A combined plumbing fixture, comprising two ells, one of said ells adapted to be connected to the bottom of a bath-tub for receiving the waste-water, the other ell adapted to connect with the top of a bath-tub to receive the overflow water, each of said ells consisting of a single shell formed out of sheet-metal and having smooth exterior and interior, each of said ells having a circular mouth, and a contracted tubular neck, a bushing for the waste ell, and a bushing for the overflow ell, each of said bushings made from sheet-metal, one of said bushings having an integral sleeve, internally threaded, the other busing have an integral bridge, the said bushings rigidly set in the ells in a manner to provide annular recesses to receive putty for sealing the ells to the walls of the bath-tub, a tee, a pipe to conduct water from each ell to said tee, and a pipe to drain said tee.

7. A waste and overflow fixture, comprising a sheet-metal ell to receive the overflow from the top of a bath-tub, the said ell comprising a single shell having an integral laterally disposed neck, and a circular mouth, a sheet-metal bushing fitting in the mouth of said ell and having an integral central bridge, the edge of the mouth spun or folded inwardly upon the face of said bushing and securing the bushing to the ell in a manner to provide a shallow annular recess, adapted to be filled with a packing for sealing said ell to the wall of the tub, an overflow-pipe having one end rigidly secured in the neck of said ell, and a tee-body having an integral neck to receive the opposite end of said overflow-pipe.

8. A waste and overflow fixture, comprising an ell made from sheet metal adapted to receive the waste-water from a bath-tub, the said ell consisting of a single shell having a smooth interior and exterior and having a lateral tubular neck and a large flaring circular mouth, a circular metal bushing having a central internally threaded sleeve, the flaring edge of the mouth of said ell spun or folded inwardly upon the face of said bushing and securing the bushing in place, and a sheet-metal strainer having an annular flange and a cup-shaped drawn body externally threaded for screwing into the sleeve of said bushing, the flange of said strainer when connected to said bushing disposed in a plane parallel to the shallow recess.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES B. WISE.

Witnesses:
E. G. JOHNSON,
GEO. V. S. CAMP.