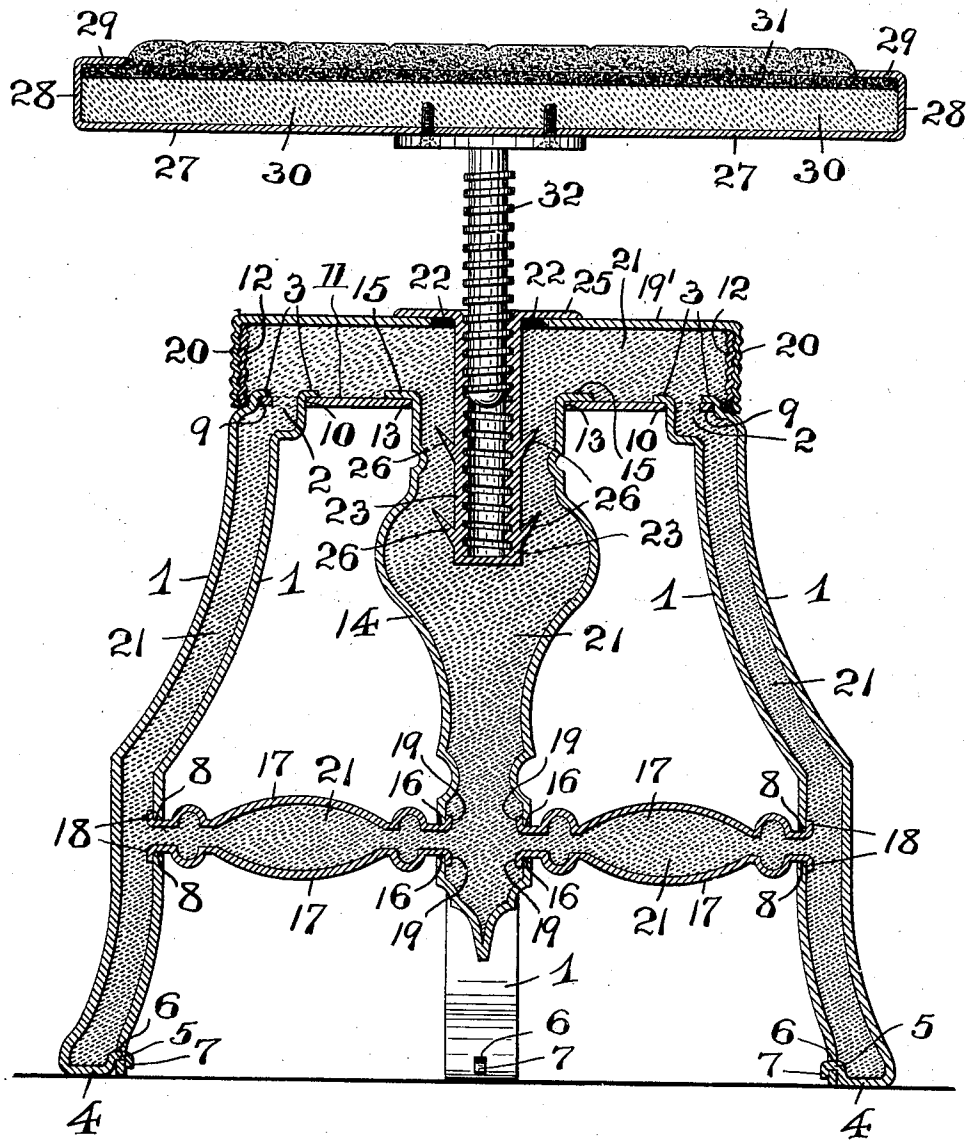
F. B. BURNS.

HOLLOW SHEET METAL FURNITURE.

APPLICATION FILED JUNE 9, 1908.

909,540. Patented Jan. 12, 1909.



WITNESSES:

H. M. Fraentzel

Anna A. Acker.

INVENTOR:

Frank B. Burns,

BY

Fraentzel and Richards

ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANK B. BURNS, OF NEW YORK, N. Y.

HOLLOW SHEET-METAL FURNITURE.

No. 909,540. Specification of Letters Patent. Patented Jan. 12, 1909.

Application filed June 9, 1908. Serial No. 437,499.

To all whom it may concern:

Be it known that I, FRANK B. BURNS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Hollow Sheet-Metal Furniture; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings and to characters of reference marked thereon, which form a part of this specification.

This invention relates to the manufacture of furniture in the form of hollow or chambered elements or members which are suitably connected so as to produce a complete article of furniture, such as a stool, chair, table, and the like; and, the invention relates more particularly to a novel method and the production, as a new article of manufacture, of furniture composed of hollow or chambered elements or members made from sheet-metal of the various conformations according to the desired piece of furniture, the hollow or chambered elements or members being filled with a normally fluid or semi-fluid composition of matter which is allowed to set and harden within the said hollow or chambered elements or members so as to produce great strength and rigidity of the connected parts.

The various objects of my present invention are to enable thin stock of metal to be employed, which is readily formed or forced into any desired ornamental shapes; to secure lightness and cheapness in construction in the substitution of sheet-metal and hollow members for the usual and more expensive woods employed in the manufacture of furniture; to produce perfectly sanitary and fire-proof furniture; to save labor and produce a perfectly formed and ornamental piece of furniture; and, finally, to obtain such other advantages and results as will be more fully brought out in the following description of my present invention.

With the various objects of this invention in view, the said invention consists, primarily, in the novel method of producing hollow furniture, made from sheet-metal; and, the invention consists, furthermore, in the production of hollow sheet-metal furniture of the general character hereinafter set forth; and in the various novel arrangements and combinations of devices and parts which are more fully described in the following specification and then finally embodied in the clauses of the claims which are appended to and which form an essential part of the said specification.

The invention is clearly illustrated in the accompanying drawing which shows one embodiment of this invention in the form of a stool, comprising a number of furniture-members or elements made from sheet-metal, in the form of hollow or chambered elements, which are suitably connected and are filled with a hardened or set composition of matter, such as a normally fluid or semi-fluid cement or other suitable compound.

In the accompanying drawing, the reference-character 1 indicates a suitable number of hollow legs or supports which are made from sheet-metal, and are of any suitable conformation and any desired ornamental configuration. Each leg is hollow or tubular, substantially as shown, the upper end-portions being preferably left open, as at 2, and being provided with suitably shaped clamping or attaching lugs or ears 3. At their lower end-portions the legs are provided with portions, as 4, which are bent at an angle across the opening, so as to form a perfect closure, and each portion 4 being preferably made with a clamping or holding lug 5 which is suitably bent upwardly into the interior of the hollow leg and then passed through a hole or opening 6 in the body of the leg 1, and bent into holding engagement with the said body, as at 7. The said legs or supports 1 are also preferably provided with suitably disposed holes or openings 8, substantially as shown and for the purposes to be presently more fully described. The said previously mentioned attaching lugs or ears 3 of the several legs 1 are inserted through suitably formed holes or openings 9 and 10 in a plate 11 which is made with an upwardly projecting annular flange 12 which in the present instance is made cylindrical. The said plate 11 is also provided with a centrally disposed hole or opening 13, and 14 indicates a downwardly extending tubular and ornamental post which is made from sheet-metal, is closed at its lower end, and is formed at its upper and open end with suitably formed clamping or holding lugs or ears 15. These ears or lugs are inserted through the hole or opening 13 in the plate 11, and are then

bent over into holding engagement with inner surface-portions of the plate 11 which surround the hole or opening 13. The said post 14 is also made with suitably disposed holes or openings 16 in its sides.

Suitably arranged between each leg 1 and the part 14 are horizontally extending and hollow or tubular rod-like members 17, which are made from sheet-metal, each member 17 being made at one end with clamping or holding ears or lugs 18 which extend into and through the holes or openings 8 in each leg and are bent or clamped over upon the inside of the leg, and each member 17 being made at its opposite end with clamping or holding ears or lugs 19 which extend into and through the holes or openings 16 in the post 14. In this manner, all the legs are tied to the post 14, the said members 17 serving to strengthen the structure. As shown, the annular flange 12 of the plate 11 is preferably provided with a screw-threaded part for the reception of a correspondingly formed and downwardly extending flange 20 of another plate-like member 19′, also made from sheet-metal, and adapted to be screwed together, so as to form an upper chambered part, as will be clearly evident.

It will thus be evident, that I have produced an upper chambered or box-like body with which are suitably connected the legs, substantially in the manner shown; and, the chamber formed by the two separably connected plates 11 and 19′ being in communication with the interior of the leg 1, so that any suitable composition of matter, as 21, which has hardening properties, can be flowed in a fluid or semi-fluid condition into the compartment formed by the plate 11 and its annular flange 12, the member or cover 19′ having first been removed, and into the interior of the legs 1, the post 14 and the connecting-members 17. After all the legs, the post 14, the members 17, and the compartment formed by said plate 11 and flange 12 have been completely filled with the fluid or semi-fluid composition or cement, the plate or cover 19′ is again affixed in its closed relation over the flange 12 of the plate 11, and a complete sheet-metal article of furniture, such as a stool, table, taboret, and the lige is the result.

When the structure is to be provided with a screw-supported seat, as here shown, the said plate-like member of cover 19′ is made with a suitable opening, as 22, through which is inserted and forced into the fluid or semi-fluid composition of matter 21, a metal socket 23 which is provided with the internally screw-threaded portion 24, and upon its upper end portion it is made with an annular flange 25. Upon its sides, the socket 23 is made with suitably formed projections or lugs, as 26, or other suitable retaining means, which become thoroughly embedded in the hardened composition of matter 21 and avoid any possibility of the socket becoming accidentally loosened. Of course it will be understood, that the hole or opening 22 is made large enough to permit the passing of the said socket 23 and its projections or lugs 26 through the said hole 22.

The seat proper consists of a sheet-metal base-plate 27, which is made with an upwardly projecting annular wall 28 formed with an inwardly extending flange 29. In this manner, I have provided a suitably chambered seat-body or compartment which can be filled, as shown, to the proper height with a fluid or semi-fluid composition of matter, or cement, as 30, having hardening properties, and upon the upper surface of the hardened composition of matter is arranged, with its marginal edge-portions clamped and held beneath the inwardly extending flanged portion 29, a suitable cushion, leather or other seat-member 31. Extending from the lower surface of the base-plate 27, and suitably secured thereto in any manner, is a downwardly projecting screw-rod 32 which is fitted and turns in the internally screw-threaded socket 23, as shown, and is for the purpose of raising or lowering the seat.

It will be clearly evident from the foregoing description that, by means of my novel method of making hollow sheet-metal furniture, and filling the same with a composition of matter which is allowed to and becomes very hard within the hollow parts, I have provided furniture which is fire-proof, is easily kept clean, so as to have sanitary properties, is light in weight, and is of such firm construction, that the connected parts will not separate at their joints, nor will they break.

Of course it will be understood that the parts may be variously connected, otherwise from the means of connection herein shown, and that the various parts may be of any suitable marginal configurations, and may be variously ornamented, without departing from the scope of the invention as set forth in the foregoing specification and as defined in the appended claims. Hence, I do not limit my invention to the exact arrangements and combinations of the devices and parts as set forth in the said specification, nor do I confine myself to the exact details of the construction of the said parts as shown in the accompanying drawing.

I claim:—

1. As a new article of manufacture, an article of furniture comprising hollow supporting members, a flanged plate connected with said supporting members, a flanged top-plate connected with said first-mentioned plate, said supporting members and said plates being made from sheet-metal, and a normally fluid or semi-fluid composition of

matter entirely filling said hollow supporting members and the chambered space between said connected plates and hardened therein, substantially as and for the purposes set forth.

2. As a new article of manufacture, an article of furniture comprising hollow supporting members, clamping lugs extending from said members, a flanged plate, said plate being provided with openings through which said lugs extend and are fastened to said plate, a flanged top-plate connected with said first-mentioned plate, said supporting members and said plate being made from sheet-metal, and a normally fluid or semi-fluid composition of matter entirely filling said hollow supporting members and the chambered space between said connected plates and hardened therein, subtantially as and for the purposes set forth.

3. As a new article of manufacture, an article of furniture comprising hollow supporting members, a flanged plate connected with said supporting members, a hollow post projecting downwardly from said plate, horizontally extending hollow bars between said supporting members and said post, a flanged top-plate connected with said first-mentioned plate, all of said various elements being made from sheet-metal, and a normally fluid or semi-fluid composition of matter entirely filling all of said hollow elements and the chambered space between said connected plates and hardened therein, substantially as and for the purposes set forth.

4. As a new article of manufacture, an article of furniture comprising hollow supporting members provided with holes in the sides and clamping lugs extending from the upper ends of said members, a flanged plate, said plate being provided with a centrally disposed opening and other smaller openings through which said lugs extend and are fastened to said plate, a hollow post projecting downwardly from said plate, said post being provided with holes in its sides, and clamping lugs on said post, said lugs extending through the centrally disposed opening in said plate and being fastened to said plate, horizontally extending hollow bars between said supporting members and said hollow post, clamping lugs extending from the ends of said bars, said lugs projecting through the openings in said supporting members and said post and being fastened to said supporting members and said post, a flanged top-plate connected with said first-mentioned plate, all of said various elements being made from sheet-metal, and a normally fluid or semi-fluid composition of matter entirely filling all of said hollow elements and the chambered space between said connected plates and hardened therein, substantially as and for the purposes set forth.

5. As a new article of manufacture, an article of furniture comprising hollow supporting members, a flanged plate connected with said supporting members, a hollow post projecting downwardly from said plate, horizontally extending hollow bars between said supporting members and said post, a flanged top-plate connected with said first-mentioned plate, all of said various elements being made from sheet-metal, and a normally fluid or semi-fluid composition of matter entirely filling all of said hollow elements and the chambered space between said connected plates and hardened therein, said top-plate being provided with a centrally disposed hole, a screw-threaded socket piece extending through said hole, said socket piece being embedded in said hardened composition of matter, a screw-threaded post mounted in said socket piece, and a seat upon said screw-threaded post, substantially as and for the purposes set forth.

6. As a new article of manufacture, an article of furniture comprising hollow supporting members, a flanged plate connected with said supporting members, a hollow post projecting downwardly from said plate, horizontally extending hollow bars between said supporting members and said post, a flanged top-plate connected with said first-mentioned plate, all of said various elements being made from sheet-metal, and a normally fluid or semi-fluid composition of matter entirely filling all of said hollow elements and the chambered space between said connected plates and hardened therein, said top-plate being provided with a centrally disposed hole, a screw-threaded socket piece extending through said hole, said socket piece being embedded in said hardened composition of matter, a screw-threaded post mounted in said socket piece, and a seat upon said screw-threaded post, consisting of a sheet-metal plate having an annular wall and an inwardly extending annular flange, a normally fluid or semi-fluid composition of matter hardened upon said plate and within said wall, and a cushion upon said hardened composition of matter and beneath said flange, substantially as and for the purposes set forth.

7. As a new article of manufacture, an article of furniture comprising hollow supporting members provided with holes in the sides and clamping lugs extending from the upper ends of said members, a flanged plate, said plate being provided with a centrally disposed opening and other smaller openings through which said lugs extend and are fastened to said plate, a hollow post projecting downwardly from said plate, said post being provided with holes in its sides, and clamping lugs on said post, said lugs extending through the centrally disposed opening in said plate and being fastened to

said plate, horizontally extending hollow bars between said supporting members and said hollow post, clamping lugs extending from the ends of said bars, said lugs projecting through the openings in said supporting members, and said post and being fastened to said supporting members and said post, a flanged top-plate connected with said first-mentioned plate, all of said various elements being made from sheet-metal, and a normally fluid or semi-fluid composition of matter entirely filling all of said hollow elements and the chambered space between said connected plates, and hardened therein, said top plate being provided with a centrally disposed hole, a screw-threaded socket piece extending through said hole, said socket piece being embedded in said hardened composition of matter, a screw-threaded post mounted in said socket piece, and a seat upon said screw-threaded post, substantially as and for the purposes set forth.

8. As a new article of manufacture, an article of furniture comprising hollow supporting members provided with holes in the sides and clamping lugs extending from the upper ends of said members, a flanged plate, said plate being provided with a centrally disposed opening and other smaller openings through which said lugs extend and are fastened to said plate, a hollow post projecting downwardly from said plate, said post being provided with holes in its sides, and clamping lugs on said post, said lugs extending through the centrally disposed opening in said plate and being fastened to said plate, horizontally extending hollow bars between said supporting members and said hollow post, clamping lugs extending from the ends of said bars, said lugs projecting through the openings in said supporting members and said post and being fastened to said supporting members and said post, a flanged top-plate connected with said first-mentioned plate, all of said various elements being made from sheet-metal, and a normally fluid or semi-fluid composition of matter entirely filling all of said hollow elements and the chambered space between said connected plate, and hardened therein, said top-plate being provided with a centrally disposed hole, a screw-threaded socket piece extending through said hole, said socket piece being embedded in said hardened composition of matter, a screw-threaded post mounted in said socket piece, and a seat upon said screw-threaded post, consisting of a sheet-metal plate having an annular wall and an inwardly extending annular flange, a normally fluid or semi-fluid composition of matter hardened upon said plate and within said wall, and a cushion upon said hardened composition of matter and beneath said flange, substantially as and for the purposes set forth.

9. As a new article of manufacture, an article of furniture comprising hollow supporting members, a flanged plate connected with said supporting members, a hollow post projecting downwardly from said plate, horizontally extending hollow bars between said supporting members and said post, a flanged top-plate connected with said first-mentioned plate, all of said various elements being made from sheet-metal, and a normally fluid or semi-fluid composition of matter entirely filling all of said hollow elements and the chambered space between said connected plates and hardened therein, said top-plate being provided with a centrally disposed hole, a screw-threaded socket piece extending through said hole, projections upon the outer surface of said socket piece, said socket piece and projections being embedded in said hardened composition of matter, a screw-threaded post mounted in said socket, and a seat upon said screw-threaded post, substantially as and for the purposes set forth.

10. As a new article of manufacture, an article of furniture comprising hollow supporting members, a flanged plate connected with said supporting members, a hollow post projecting downwardly from said plate, horizontally extending hollow bars between said supporting members and said post, a flanged top-plate connected with said first-mentioned plate, all of said various elements being made from sheet-metal, and a normally fluid or semi-fluid composition of matter entirely filling all of said hollow elements and the chambered space between said connected plates and hardened therein, said top-plate being provided with a centrally disposed hole, a screw-threaded socket piece extending through said hole, projections upon the outer surface of said socket piece, said socket piece and projections being embedded in said hardened composition of matter, a screw-threaded post mounted in said socket, and a seat upon said screw-threaded post, consisting of a sheet-metal plate having an annular wall and an inwardly extending annular flange, a normally fluid or semi-fluid composition of matter hardened upon said plate and within said flange, and a cushion upon said hardened composition of matter and beneath said flange, substantially as and for the purposes set forth.

In testimony, that I claim the invention set forth above I have hereunto set my hand this eighth day of June—1908.

FRANK B. BURNS.

Witnesses:
EDWARD B. COOKE,
FREDK. C. FRAENTZEL.