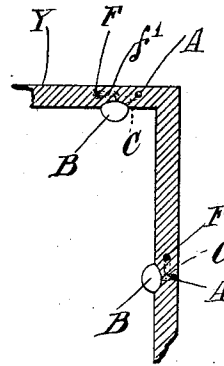


1,009,395.

3 SHEETS—SHEET 1.

Fig. 2.



Attest:

E. B. King
E. B. King

Inventor:
by J. G. Blaine Ewing,
Rogers, Kennedy & Campbell Attys.

J. G. B. EWING.
SANITARY SYSTEM.
APPLICATION FILED AUG. 3, 1911.

1,009,395.

Patented Nov. 21, 1911.

3 SHEETS—SHEET 2.

Fig. 4.

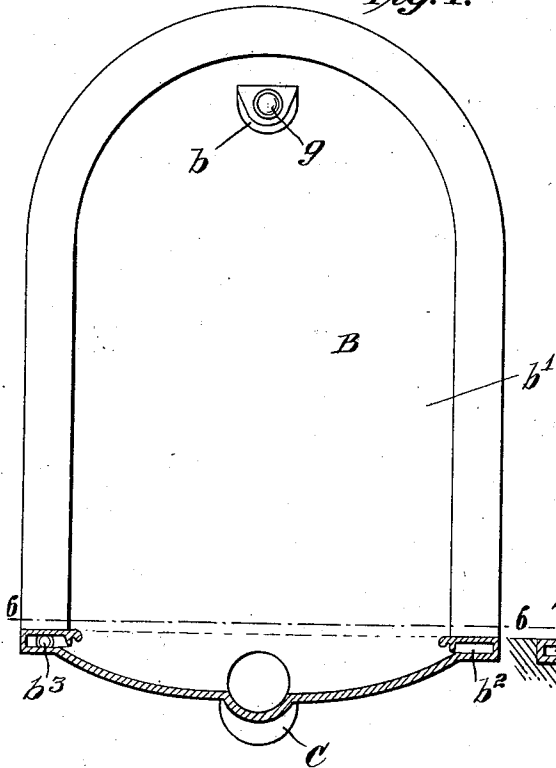


Fig. 5.

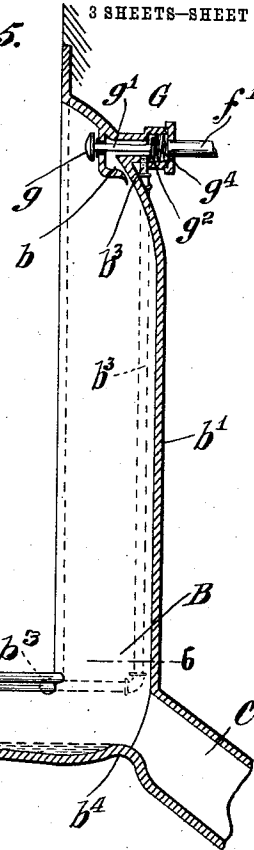
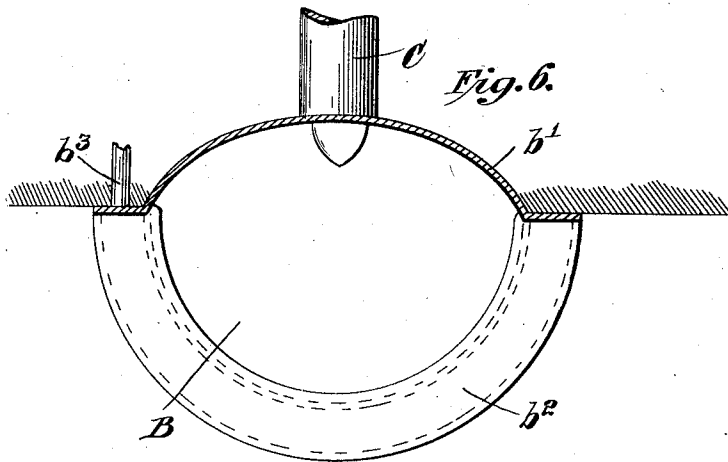


Fig. 6.



Attest:
E. B. King
E. B. King.

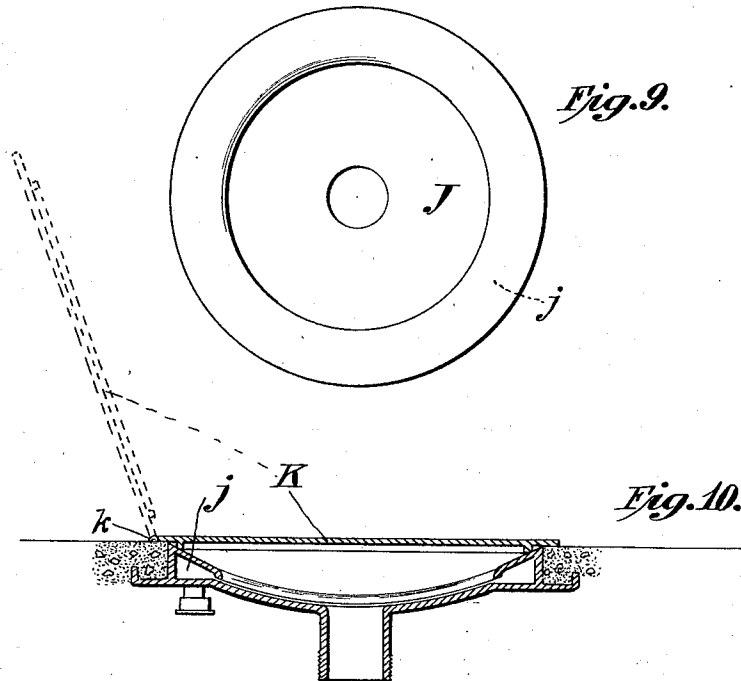
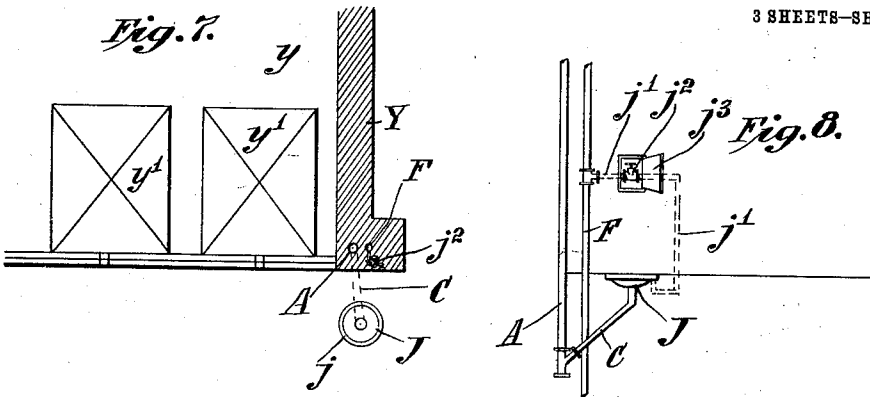
Inventor:
by J. G. Blaine Ewing,
Rogers, Kennedy Campbell/Attys.

J. G. B. EWING.
 SANITARY SYSTEM.
 APPLICATION FILED AUG. 3, 1911.

1,009,395.

Patented Nov. 21, 1911.

3 SHEETS—SHEET 3.



Attest:
E. B. King

Inventor:
 J. G. Blaine Ewing,
 by Rogers, Kennedy & Campbell Attys.

UNITED STATES PATENT OFFICE.

JAMES G. BLAINE EWING, OF NEW YORK, N. Y.

SANITARY SYSTEM.

1,009,395.

Specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed August 3, 1911. Serial No. 642,128.

To all whom it may concern:

Be it known that I, JAMES G. BLAINE EWING, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Sanitary Systems, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to sanitary systems designed for embodiment in edifices of any kind, such for example as office buildings having tile or cement floored hallways.

Among the objects of the present improvements are to afford a sanitary system for certain purposes as will hereinafter appear, whereby the sanitation of a building is improved; to provide such a system which is easily and economically applied in the course of construction of an ordinary type of building; to facilitate the maintenance and operation of the building; to economize in many items of expense including hire, materials, etc.; to improve the appearance of the hallways, etc., of a building; to dispense with the use of cuspidors and other objectionable appurtenances; and such other objects as will appear in the hereinafter following description.

The present improvements consist generally in the combination in a sanitary system of a main pipe extending upwardly and downwardly from the building top to the basement, a stationary fixture in the nature of a receptacle at each floor adjacent to where the main pipe passes, said fixture being inset or flush with the floor and sometimes also inset into the wall, a downwardly extending untrapped pipe connecting each of the receptacle-fixtures to said main pipe, and a trapped outlet in the basement between the main pipe and the sewer. According to the number of receptacle-fixtures that it will be desired to have on each floor, there will be one or two or more vertical main pipes, each with its fixtures being substantially independent of the others above the basement.

The invention also consists in the system recited in the previous paragraph when provided with certain other preferred features, namely, valve controlled water connections for flushing the several receptacle-fixtures; valve controlled water connections for flushing the vertical main pipe; a receiving vessel in the basement into which the main pipe

empties and having a trap outlet to the sewer, the vessel in the form of an open sink; and a removable wire basket or strainer in said sink intermediate the main pipe and the sink outlet.

The invention also consists in such further novel features, elements, combinations and systems as are illustrated and described in the hereinafter specification.

In the figures of the drawings accompanying and forming a part of this specification, one or more forms of embodiment of the present improvements are indicated.

Figure 1 represents more or less diagrammatically a vertical elevation of a sanitary system embodying my improvements. Fig. 2 is a horizontal cross-section looking downwardly on the plane 2—2 of Fig. 1, showing a plurality of fixtures B on one floor. Fig. 3 shows a preferred form of flushing valve for each receptacle-fixture. Fig. 4 is a front view partly in section of a receptacle-fixture detached. Fig. 5 is a central vertical section of the fixture shown in Fig. 4. Fig. 6 is a plan view partly in section on the plane 6—6 of Figs. 4 and 5. Figs. 7 to 10 are views of a modified type of receptacle and system. Fig. 7 is a horizontal section. Fig. 8 is a diagrammatic elevation. Fig. 9 is a top view on an enlarged scale of the fixture J. Fig. 10 is a central vertical section of the fixture of Fig. 9 with cover added.

Similar letters of reference designate corresponding parts in the several figures of the drawings.

Referring first to the main embodiment of Figs. 1 to 6, these illustrate the preferred design of the elements hereinabove recited, there being shown an upwardly and downwardly extending main waste pipe A, a receptacle-fixture B at each floor, a downwardly extending inclined untrapped pipe C from each fixture B to the main pipe A and a receiving vessel D in the basement having a trap *d* between it and the sewer, the sewer of course being understood and not shown.

The several floors of the building are indicated by X, X', X², X¹¹, X¹², and the roof by X¹³. One of the vertical walls of the building in which the main A may be contained is partially indicated at Y, this wall not being fully illustrated in order that the diagram of Fig. 1 may the more clearly show the novel features of the invention.

The above described combination of the main pipe A with the several receptacle-

fixtures B, the several inclined untrapped pipes C connecting each fixture to the main and the trapped receiving vessel D in the basement, affords a very valuable sanitary system and one which readily enables the flushing in a simple manner of the respective fixtures and also of the main pipe by a separate water supply in a very satisfactory manner.

Among other advantages my improved system entirely dispenses with and takes the place of the loose cuspidors usually employed, and substitutes for them a set of fixtures which are built in and therefore more permanent in their character, and incapable of being misplaced or stolen.

The receptacle-fixtures contemplated in the present improvements are more sightly than cuspidors and may be constructed of porcelain to further this end.

The receptacle-fixtures are less in the way of persons passing to and fro because they are flush with the floor or with the floor and wall. By this advantage in some cases narrower hallways might be more practical than would otherwise be the case.

My improved system is more sanitary both in looks and in fact. This quality is aided by the simplicity of the system, and is further materially aided by the entire absence of horizontal pipes in which unsanitary accumulations could be made.

My improved system dispenses with the usual elaborate and time consuming cleansing operations upon cuspidors and a mere flushing effectively accomplishes all the cleansing that is necessary. This flushing is easily rendered automatic by a suitable valve causing a discharge at proper intervals, or otherwise.

The receptacle-fixtures of the present system are more easily kept clean since no brass or metal work is required to be polished, all carrying to and fro is eliminated, and no drying by hand is needed. For these and other reasons very much labor is saved in the management of a building.

With this system there are no moving parts such as belts and no accommodation has to be allowed for them in constructing the building. Space is also saved in the building because no allowance has to be made for a place in which the attendant may handle and clean the ordinary cuspidors.

In the matter of the cleaning of the floors of a building, my system enables a saving and dispenses, for example, with the buckets and wringers usually employed by floor-swallers who have been required to sop up the excess water used for cleaning, and carry it away.

With my system the water in the daily operations of floor cleaning is merely swept into a receptacle-fixture and passes away

without further labor. In this way the maintenance of a building as regards its cleaning is both quickened and simplified, and the cleaning is thereby enabled to be done with minimum interference with the building tenants. In these ways both labor and appliances are saved, and consequently the daily expense of labor and the cost of replacing appliances.

The system is entirely sanitary and complies with the requirements of health. The trapless connection between each fixture and the main is not objectionable in such a system and especially as a trap is provided in the basement which prevents the back passage of sewer gases.

A sanitary system constructed in accordance with my invention takes care not only of waste water, etc., but also odd waste including pieces as large as the butts of cigars, cigarettes, etc., which are able to pass freely down the untrapped connection to the main and through the main to the waste sink in the basement.

A distinct advantage is perceived in the present system in its simplicity of installment. A building during construction is easily equipped with the different elements of the present system. Thus the vertical main is always easily accommodated alongside of the vertical columns of the building and no trouble would be experienced in locating a main in substantially any desired position.

The straight untrapped connection from each fixture to the main is easily inserted, largely on account of its having no trap. It may indeed be a straight pipe which is put in and taken out with a minimum of labor and trouble.

No between-floor space has to be allowed for the accommodation of traps or other part of the present system. This is a particularly important advantage because owing to it buildings having extremely thin floors may be equipped with the system.

The forms of receptacle-fixture illustrated are simply constructed and afford no difficulty in installing them at suitable points in hallways, etc.

The system is not only easy to thoroughly clean out whenever desired, but permits no obstruction in its interior and constitutes no exterior obstruction.

I will now describe the further details of the system illustrated in the drawings and not heretofore referred to in detail.

The upper end of the pipe A is shown as continued beyond the roof of the building in the form of a vent A', the latter being open at the top and preferably of at least four inch diameter, the pipe A beneath said vent being of a smaller diameter, for example two inches.

A valve controlled water connection for

flushing each of the several fixtures B may comprise a water supply pipe therefor, such for example as the uptake or riser F having a valve f in the basement for opening and closing it. Extending from the riser F to each of the receptacle-fixtures, for example that on the twelfth floor, X^{12} , is a short connection f' , leading to a valve device G which may be operated at will from each fixture for flushing the same.

The riser F may be connected with the ordinary water supply of the building or to a roof tank, for example through the downwardly extending connection F' .

A valve controlled connection for flushing the pipe A may or may not be employed, and when employed may comprise a connection E from the upper end of the riser F to a convenient point in the main waste pipe A. A valve e in connection E may be opened at will for supplying large quantities of water to the waste pipe A for the purposes stated. The operation of valve e might be made intermittently automatic but no means have been indicated for that purpose.

Coming back to the connections for flushing the individual fixtures B (which are shown as non-automatic, for simplicity and convenience of illustration), the valve G may be of any desired type, whether key operated by a removable key, or having a permanent device such as a button g which may be pressed inwardly for flushing the fixture, see Fig. 3. The details of the illustrated valve are as follows: The button g is on a shaft g' which may slide inwardly and outwardly and said shaft has a disk g^2 which normally seats against a seat g^3 , there being a spring g^4 tending to keep the disk seated and the parts so arranged that a pressure on the button g forces the disk away from its seat in opposition to the spring, thus admitting the flow of water from pipe f' through the valve and into a spreader or distributing recess b formed in the receptacle-fixture B. The nature and form of the walls forming the distributing recess b will be well understood and the action thereof need not be further described.

The preferred form of the receptacle-fixture B is clearly seen in Figs. 4, 5 and 6, it being constituted of porcelain or porcelain covered walls b' of the requisite shape, they being inset into both the floor and the wall so as to lie flush with both the floor and the wall as clearly indicated.

In the floor portion of the receptacle-fixture D may be a flushing recess b^2 extending semi-circularly around the fixture and having water supplied thereto, for example at b^3 , in any well known manner controlled for example by the same button g which causes the supply of water to the recess b .

The untrapped outlet C from the fixture

B to the main A may be formed integral with the fixture or may consist of separate piping as desired, and its location will preferably be as best indicated in Figs. 5 and 6.

The lower extremity of the main pipe A preferably does not connect immediately with a trap, but on the contrary as shown its outlet leads to vessel D, and this vessel is preferably in the form of an open sink between which and the sewer is the trap d as already explained. In conjunction with the sink D may be employed a faucet d' .

In order to prevent the fouling of the trap d it is preferred to provide the sink D with a strainer, for example in the form of a wire basket H which is merely set into the sink and is whenever desired lifted out so as to enable its contents to be removed and deposited with other refuse.

This substantially completes the description of the embodiment of Figs. 1 to 6, although it should be stated that the valve f of the up-take pipe F might be automatically operated at intervals so that by keeping open all the connections f' and the valves G, the fixtures would be flushed without the attention of the attendant.

The operation of the above described system has been sufficiently set forth during the description and will be so well understood as to need no further explanation.

Figs. 7 to 10 illustrate a modification embodying the same principles of operation as the system of Figs. 1 to 6. Thus we have the vertical wall Y which may for example be one of the walls bounding an elevator shaft y in which elevators y' ascend and descend. Within the wall Y is the up-take pipe F, the main pipe A as before, and the downwardly extending connection C from the receptacle-fixture to the main pipe. The fixture itself in this instance is inset not into the wall but only into the floor, and takes the form of a circular basin J having a central outlet at the bottom and having a flushing recess j which may be supplied by water from the up-take F by means of connecting pipe j' controlled by a valve j^2 inclosed for convenience in a box j^3 inset into the wall a convenient height above the floor. Opening the valve j^2 will serve to flush the fixture J at will.

In any embodiment of my improvements the receptacle-fixture might be provided with a swinging or removable cover such for example as the cover K hinged at k , Fig. 10.

The floor portion of each receptacle-fixture B may have a hump formed at b^4 as clearly seen in Fig. 5 so that a slight amount of standing water will be maintained in the bottom of the fixture; or the same result could be otherwise attained.

It will thus be seen that I have provided a sanitary system comprising certain combined elements or fixtures, which system is

easy and inexpensive to install, is effective and satisfactory in operation, is easily kept in order, is readily cleaned out in every part, is simple, and is a source of great economy in the maintenance of a building.

What I claim and desire to secure by Letters Patent is:

1. The combination, in a sanitary system, of a waste pipe from building top to bottom, a receptacle-fixture at each floor built into and flush with its floor and affording a recess below the floor's level, a downward untrapped pipe forming a direct connection from each of said fixtures to said waste pipe, and a trapped outlet at the bottom, adapted to be extended to a sewer.

2. The combination, in a sanitary system, of a waste pipe from building top to bottom, a receptacle-fixture at each floor built into and flush with its floor and affording a recess below the floor's level, a downward untrapped pipe forming a direct connection from each of said fixtures to said waste pipe, and a trapped outlet at the bottom, adapted to be extended to a sewer; together with an open receiving vessel at the bottom intermediate said trapped outlet and the waste pipe, and said waste pipe being untrapped above said vessel.

3. The combination, in a sanitary system, of a waste pipe from building top to bottom, a receptacle-fixture at each floor built into and flush with its floor and affording a recess below the floor's level, a downward untrapped pipe forming a direct connection from each of said fixtures to said waste pipe, a trapped outlet at the bottom, adapted to

be extended to a sewer; a valve-controlled water connection to said waste pipe above the highest receptacle-fixture, and connections for flushing the several fixtures.

4. The combination, in a sanitary system, of a waste pipe from building top to bottom, a receptacle-fixture at each floor built into and flush with its floor and affording a recess below the floor's level, a downward untrapped pipe forming a direct connection from each of said fixtures to said waste pipe, a trapped outlet at the bottom, adapted to be extended to a sewer; together with an open receiving vessel at the bottom, and a removable strainer intermediate said vessel and said waste pipe.

5. The combination, in a sanitary system, of a waste pipe from building top to bottom, a receptacle-fixture at each floor built into and flush with its floor and affording a recess below the floor's level, a downward untrapped pipe forming a direct connection from each of said fixtures to said waste pipe, a trapped outlet at the bottom, adapted to be extended to a sewer; together with an open receiving vessel at the bottom, a removable strainer intermediate said vessel and said waste pipe, and water connections for flushing said waste pipe above the highest fixture and for flushing the several fixtures.

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

J. G. BLAINE EWING.

Witnesses:

WM. J. DOLAN,
JOHN K. M. EWING.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."