(No Model.)

C. HERSCHER.

ATOMIZER.

No. 495,735. Patented Apr. 18, 1893.

Fig. 1

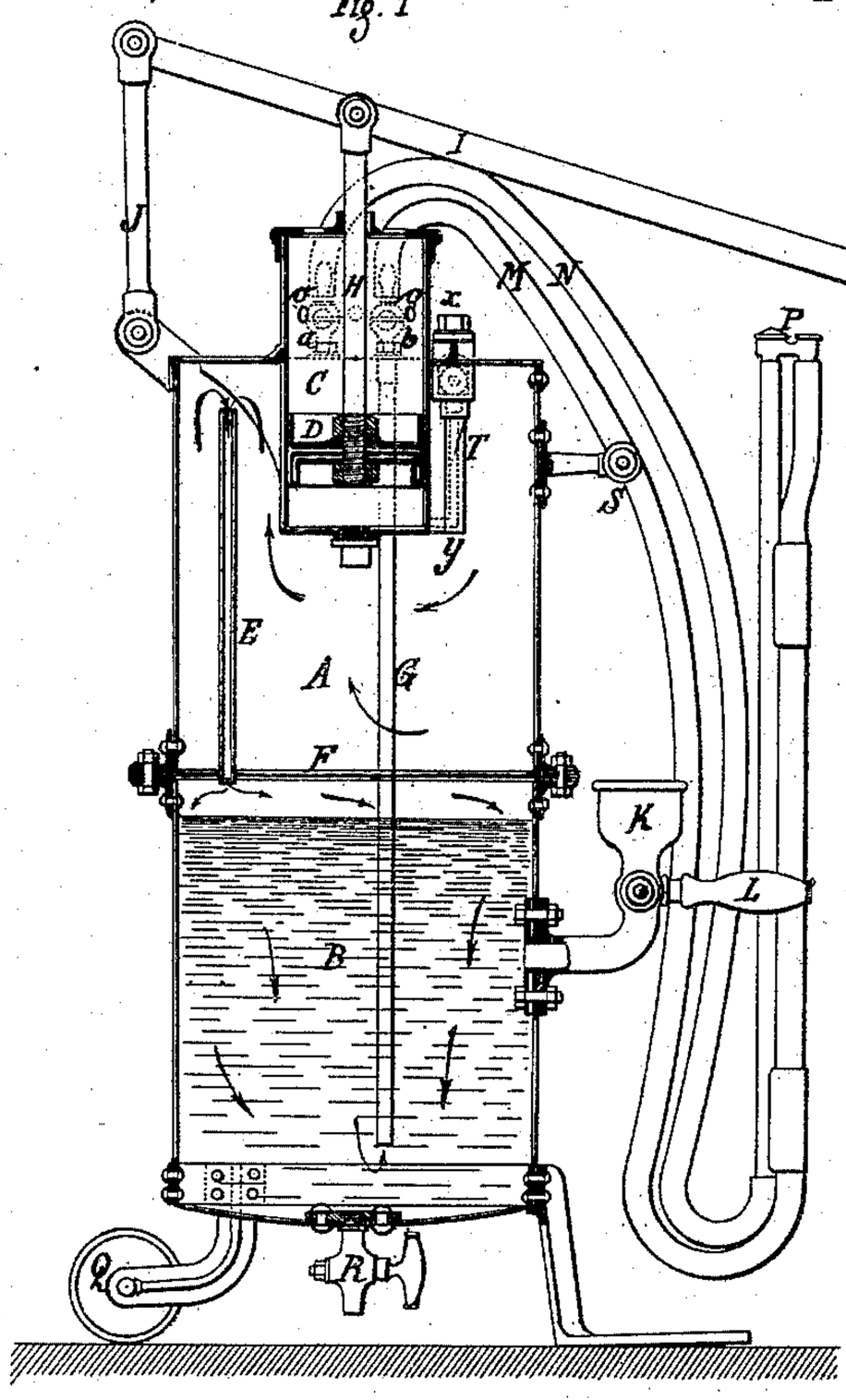


Fig. 3.

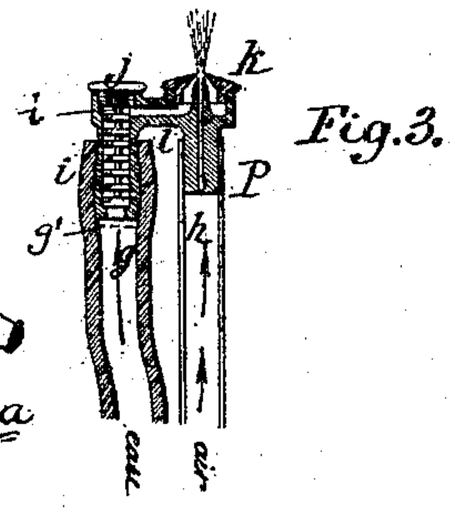


Fig. 3a

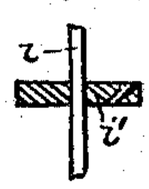


Fig. 2

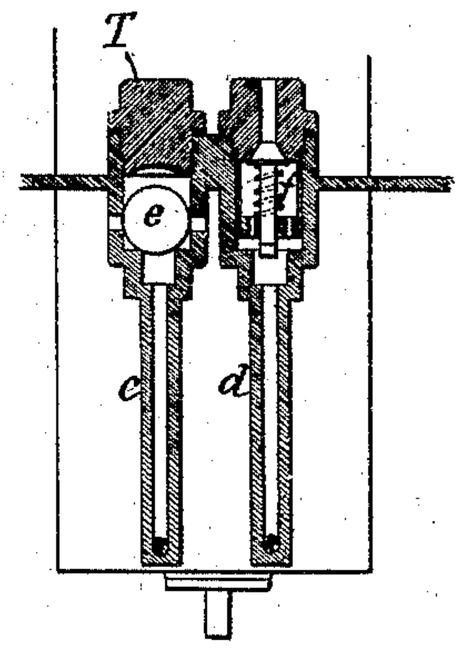
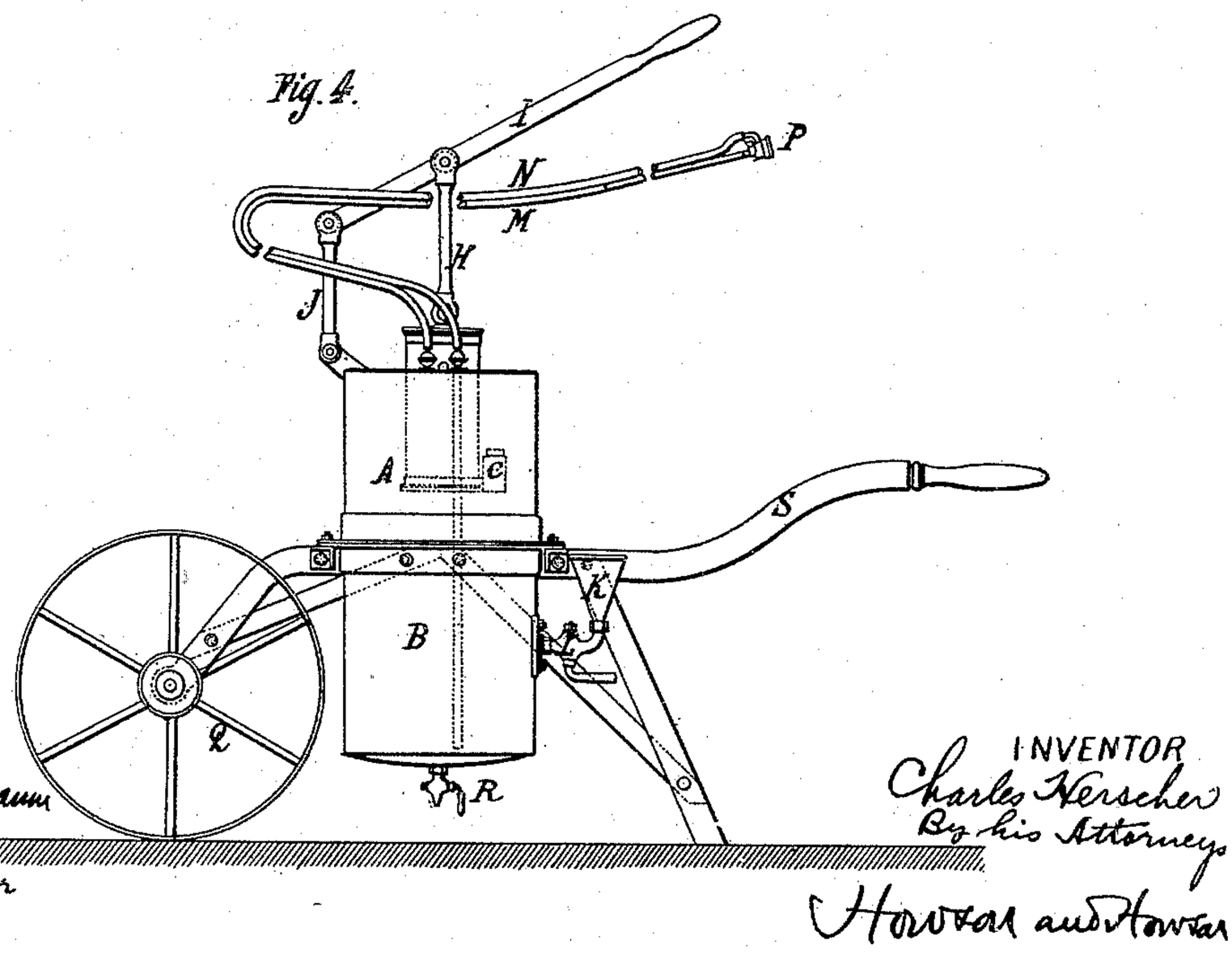


Fig. 4.



WITNESSES.
George Baumann
James Gracin

INVENTOR
Charles Herscher
By his Attorneys
Howson and Howson

UNITED STATES PATENT OFFICE.

CHARLES HERSCHER, OF PARIS, FRANCE.

ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 495,735, dated April 18, 1893.

Application filed November 23, 1892. Serial No. 452,934. (No model.) Patented in France April 29, 1889, No. 197,829; in Belgium May 1, 1889, No. 86,061; in Italy May 11, 1889, No. 25,453; in Spain July 1, 1889, No. 9,599; in Switzerland February 8, 1892, No. 4,643, and in England February 9, 1892, No. 2,549.

To all whom it may concern:

Be it known that I, CHARLES HERSCHER, of the firm of Geneste, Herscher & Co., a citizen of the Republic of France, residing at Paris, in the Republic of France, have invented certain new and useful Improvements in Atomizers, (for which I have obtained Letters Patent in France, No. 197,829, dated April 29, 1889; in Belgium, No. 86,061, dated May 1, 1889; in Italy, No. 25,453, dated May 11, 1889; in Spain, No. 9,599, dated July 1, 1889; in Great Britain, No. 2,549, dated February 9, 1892, and in Switzerland, No. 4,643, dated February 8, 1892,) of which the following is a specification.

This invention has for its object a disinfecting apparatus which by atomizing an antiseptic liquid, will disinfect those places which have become contaminated by a sick person, or from any other cause.

To attain the desired object it must not be thought that it will suffice to employ heat alone, or even superheated vapor which in ordinary apartments would seriously spoil the wall papers, paintings, &c. The action of the gaseous disinfectants is not sufficiently efficacious, and when such is employed, all openings have to be carefully stopped up, the operation is also a prolonged one and the parts must be subsequently exposed to the open air for twelve hours at least before the rooms can be again occupied.

A much preferable method is that which consists in sprinkling the walls, ceilings and floorings with a disinfecting solution, but subject to the condition that all points of the contaminated parts are thoroughly reached and that with the least possible quantity of antiseptic solution. We attain this double object by means of the apparatus forming the subject of the present invention, and by the use of which the liquid discharged into an atomizer escapes with force, mixed with compressed air and in the form of very fine spray.

The invention will be best understood by reference to the accompanying sheet of illustrative drawings on which—

Figure 1 is a vertical section of the apparatus. Fig. 2 is a section across the suction and discharge conduits of the air pump. Fig. 3 is a section on an enlarged scale of the atomizer, and Fig. 3ª is a detail view thereof. Fig. 4 is an exterior view of the apparatus mounted on a truck.

The apparatus is composed of a reservoir generally of a cylindrical form having two compartments A and B formed by a horizontal partition F. A tube E places these two compartments in communication with each other.

To the cover of the compartment A an air pump C is fitted, the piston D of which is formed preferably of a cover of leather drawn between two metallic parts. This piston is actuated by hand by means of the lever *l*, one extremity of which is hinged to the end of the support J and the piston rod H is jointed to this lever *l*. The device T comprising the suction and discharge conduits is shown in detail in Fig. 2 which is a section on the line *x y* of Fig. 1. The suction conduit *d* has an orifice closed by a spring valve *f*, which is capable of being regulated. The discharge conduit *c* contains a ball valve *e* which opens at the desired moment the side orifices, whereby communication with the reservoir A is established. In addition to the air drawn in through the suction tube *d* when the piston rises, the openings *o*, formed in the body of the pump allow air to enter the same below the piston, when the piston is at its highest position.

A tube G, up through which the liquid passes leads from the bottom of the reservoir B and terminates outside the cover in a cock *b* with a nipple. Through another cock *a*, also provided with a nipple an amount of air is taken from the upper reservoir A. On the nipples of these two cocks, two flexible pipes are fitted, one M, on cock *b* for the liquid, and the other N, on cock *a* for the compressed air. These tubes lead to an atomizer P.

The atomizer P shown in detail in Fig. 3, comprises a tube *g* (furnished at its bottom with a metallic cloth *g'*) in which there is a rod *i* carrying a series of disks *i'*. Each of these disks is pierced with a conduit of very small diameter placed in an oblique direction so that they can easily be got at with a needle. The tube *g* is closed by a screw stopper J.

The antiseptic liquid which is brought through this tube traverses in a zig-zag direction through the conduits in the disks *i'*, and is obliged to pass successively through all the inclined conduits before arriving by means of conduit *l* to the atomizer *k*. In practice there will result by this arrangement a great economy in the quantity of liquid injected and a remarkable facility in rendering that quantity sufficient without being excessive. The compressed air enters by the tube *h* and gushes out by the convergent orifice of the cap *k*, thereby atomizing the liquid contained in the part around the fitting.

On the wall of the reservoir B a tubular funnel K is fitted with a tap operated by a handle L. The reservoir is provided with a slightly rounded bottom at the lowest point of which is inserted an emptying tap R. Finally, the apparatus may be transported from one place to another by holding the handle S so that it can then rest on two wheels Q. Fig. 4 shows the same apparatus hung in a framework of a two-wheeled truck Q.

My apparatus may be applied for disinfecting the walls of private houses, of public establishments, of barracks, of hospitals, of ships, as well as those of stables, stalls, &c., and also vehicles which are used for transporting wounded or sick persons, it may also be used for disinfecting railway upholstery, &c., fittings, sanitary establishments, contaminated dwellings, &c.

I claim as my invention—

1. An apparatus comprising two reservoirs communicating with each other by a tube, one of the reservoirs for compressed air and the other for a liquid in combination with an atomizer and two pipes or passages leading thereto, one from the compressed air reservoir, and the other from the bottom of the liquid reservoir, the said atomizer comprising a tube for the escape of the compressed air, with a cap having a convergent orifice, and a closed tube provided with disks having oblique conduits therein, and with a channel leading to the convergent orifice of the first named tube, all substantially as set forth.

2. An atomizer consisting of a tube *h* provided with a conical nozzle and a cap forming with the nozzle a convergent orifice, in combination with a closed tube *g* provided with disks, pierced with oblique conduits and a channel leading from the tube *g* to the cap on the nozzle, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES HERSCHER.

Witnesses:

JOSEPH DELAGE,

ROBT. M. HOOPER.