No. 838,712. PATENTED DEC. 18, 1906.

S. HERSEY.

APPARATUS FOR WASHING AND SCRUBBING GAS.

APPLICATION FILED AUG. 28, 1905.

3 SHEETS—SHEET 1.

Fig. 2.

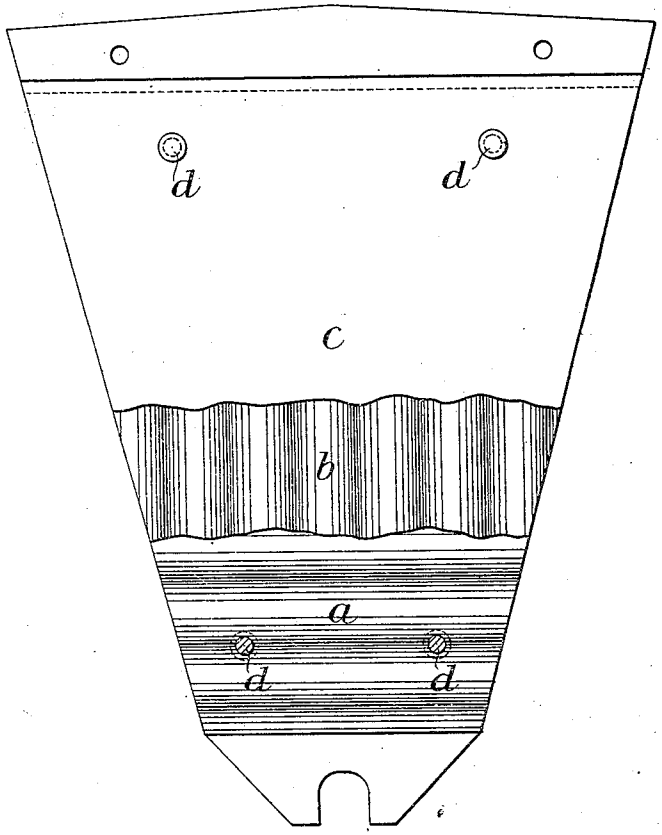


Fig. 1.

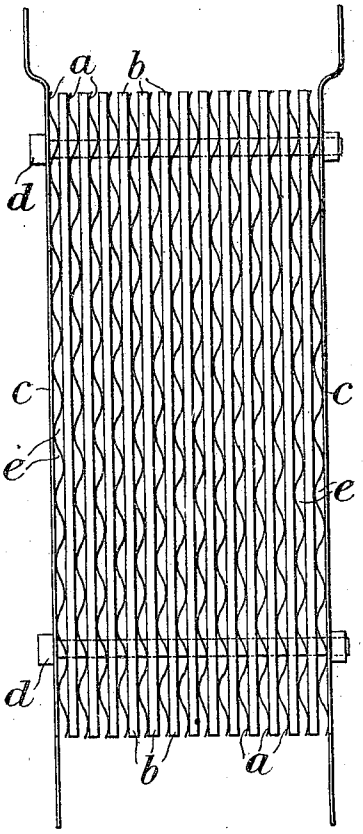
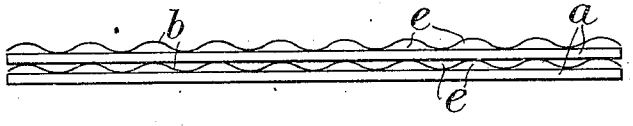


Fig. 3.



Witnesses:

C. G. Redfern

A. J. Stuart.

Inventor:

Sidney Hersey

No. 838,712. PATENTED DEC. 18, 1906.

S. HERSEY.

APPARATUS FOR WASHING AND SCRUBBING GAS.

APPLICATION FILED AUG. 28, 1905.

3 SHEETS—SHEET 2.

Fig. 5.

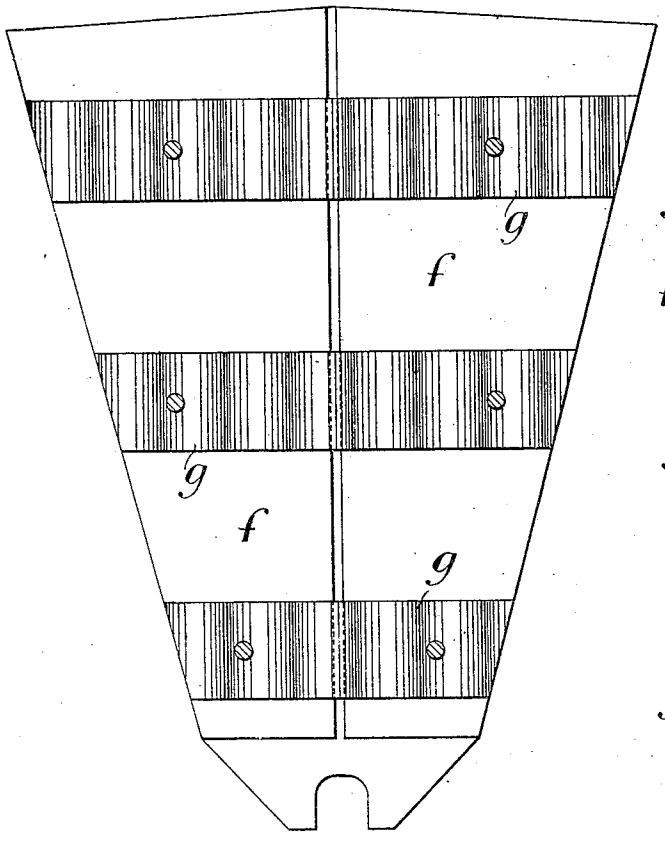


Fig. 4.

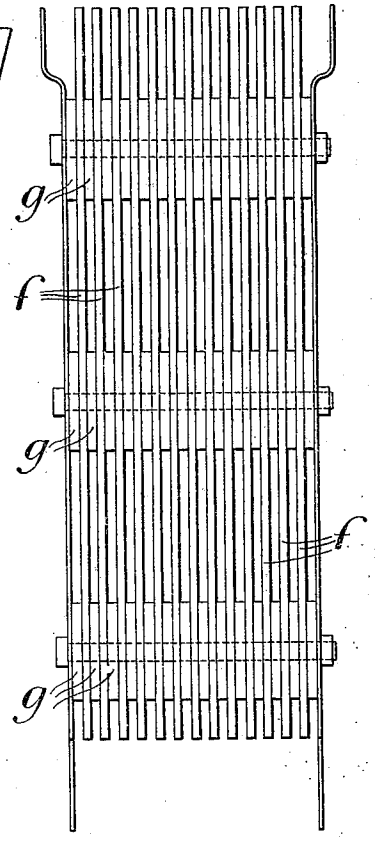
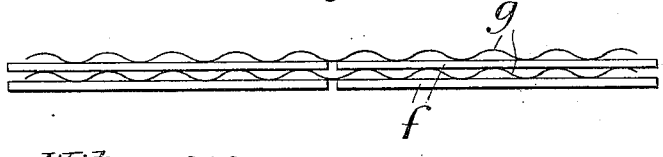


Fig. 6.



Witnesses:

C. G. Redfern

A. J. Watts

Inventor:

Sidney Hersey

No. 838,712. PATENTED DEC. 18, 1906.

S. HERSEY.

APPARATUS FOR WASHING AND SCRUBBING GAS.

APPLICATION FILED AUG. 28, 1905.

3 SHEETS—SHEET 3.

Fig. 7.

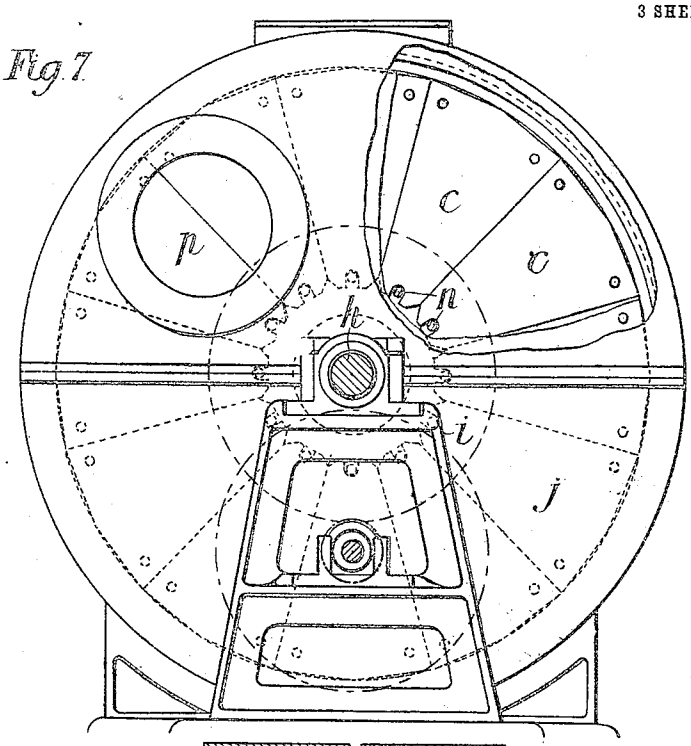
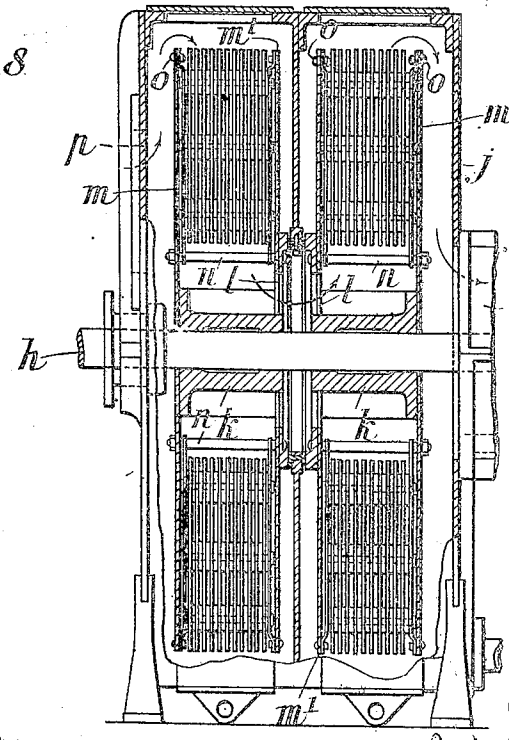


Fig. 8.



Witnesses.
E. H. Hubbard
J. K. Moore.

Inventor.
Sidney Hersey
By Whittemore & Prevost
Attys.

UNITED STATES PATENT OFFICE.

SIDNEY HERSEY, OF LONDON, ENGLAND, ASSIGNOR TO KIRKHAM, HULETT & CHANDLER LIMITED, OF WESTMINSTER, LONDON, ENGLAND.

APPARATUS FOR WASHING AND SCRUBBING GAS.

No. 838,712. Specification of Letters Patent. Patented Dec. 18, 1906.

Application filed August 28, 1905. Serial No. 276,143.

To all whom it may concern:

Be it known that I, SIDNEY HERSEY, a subject of the King of Great Britain, residing at 141 Palace Chambers, Bridge street, Westminster, London, England, have invented new and useful Improvements in Apparatus for Washing and Scrubbing Gas, of which the following is a specification.

This invention relates to gas washing and scrubbing apparatus of the kind wherein a series of disks rotating in bays or tanks and each composed of a series of "bundles" or segments of material which afford a large wetted area is employed, the said invention comprising a novel construction of the bundles or segments whereby the area of wetted surface is increased and an equal spacing apart of the washing-surfaces provided for.

According to this invention I make use of sheets of corrugated metal or wire-gauze, which may be laid one against the other or against flat boards or other surfaces for separating the corrugated portions in the novel manner hereinafter described, the channels always insuring free passage for the gas and ready admission and escape of water into and from the interior of the bundles, whereby not only will the surfaces of the latter be constantly maintained in a wet condition, but a minimum of resistance offered to the rotation of the disks.

To enable the invention to be fully understood, I will describe the same by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a bundle or segment built up of sheets of corrugated metal, and Fig. 2 is a sectional side elevation of the same. Fig. 3 is an edge view of a portion of the bundle or segment. Figs. 4, 5, and 6 are views similar to Figs. 1, 2, and 3, respectively, but showing an arrangement wherein a series of corrugated strips are placed between a series of boards or flat plates. Fig. 7 is a sectional elevation showing one of the supporting-brackets for the main shaft; and Fig. 8 is a longitudinal section through Fig. 7, the supporting-bracket being omitted.

In the arrangement of the invention shown in Figs. 1 to 3 the bundle is built up of two series of corrugated plates *a a* and *b b*, the plates *a a* having their corrugations running approximately in the circumferential direction of the bundle, so as to afford as little resistance as possible to the rotation of the disk through the water, and the plates *b b* having their corrugations running substantially in the radial direction of the bundle, so as to facilitate the flow of the gas.

c c are plates between which the corrugated plates are clamped and which are adapted for supporting the segments in the wheel or frame in which they are carried when a series of them are placed together, and *d d* are the bolts for clamping the several parts of the bundle together. With this arrangement it will be readily seen that in both directions of the bundle series of passages *e e* are formed through which the gas to be washed has free passage, while at the same time a very large surface is afforded with which the gas will come into contact. As shown in the drawings the corrugations of the sheets *a a* and *b b* are substantially at right angles to each other. It is to be understood, however, that the corrugations may be arranged at any other angle, it being only necessary that they should cross to a sufficient extent to prevent the plates from fitting closely one against the other.

In the modification of the invention shown in Figs. 4 to 6 a series of boards or flat plates *f f* are separated by a series of corrugated plates *g g*. As shown, the corrugations of these plates are substantially in the direction of the radius of the bundle; but they may be arranged at any other suitable angle. The corrugated plates or the boards, or both, can be perforated, if desired.

As hereinbefore set forth, the bundles or segments described are adapted to be mounted in a wheel or frame to form a revoluble disk, and in Figs. 7 and 8 I have illustrated a disk or wheel comprising a number of bundles or segments.

In Figs. 7 and 8, *h* indicates the main shaft, which is supported on brackets, one of which is indicated at *i*, and *j* is the casing inclosing the disk, the same being partially broken away in Fig. 7 to show the disk. Each disk is built upon a boss *k*, secured to the shaft *h*, the said boss having on one side a series of openings *l* in one of the flanges, through which the gas passes. To the flanges of the bosses circular plates *m m'* are riveted or otherwise secured, and *n n* designate a series of trans-

verse bolts extending through the inner flange of the boss *k* and circular plates *m* and *m'*. The plates *c c* of the bundles are provided at their inner ends with notches adapted to fit onto the transverse bolts *n n* and are secured at their outer ends to the plates *m m'* by bolts *o o*. *p* is an aperture formed in the casing through which the gas to be washed enters the first bay of the casing, the gas passing down through the first disk and thence escaping through the apertures *l* to the second disk, through which the gas passes radially outward into the second bay of the casing, whence it passes through the central passage *q* around the shaft into the next bay, and so on. Although I have here shown two disks in one casing, it is perfectly obvious that more than two or only one disk may be placed in a single casing.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In apparatus for washing and scrubbing gas, the combination with a pair of revoluble disks, of corrugated plates interposed between and parallel with said disks and perpendicular to the axis thereof, and means for securing said corrugated plates to said disks, substantially as described.

2. In apparatus for washing and scrubbing gas, a revoluble disk comprising bundles, each of said bundles comprising segmental side plates parallel with the sides of said disk and perpendicular to the axis thereof and corrugated plates interposed between and parallel with said side plates and means for securing said corrugated plates to said side plates of said bundles, substantially as described.

3. In apparatus for washing and scrubbing gas, a bundle comprising segmental side plates, corrugated plates interposed between and parallel with said side plates and means for securing said corrugated plates to said side plates, substantially as described.

4. In apparatus for washing and scrubbing gas, the combination with a pair of revoluble disks, of corrugated plates interposed between said disks, the corrugations of adjacent plates being angularly disposed to one another and means for securing said plates to said disk, substantially as described.

5. In apparatus for washing and scrubbing gas a bundle comprising a series of plates, said plates having corrugations angularly disposed to one another and means for securing the plates together to form a series of separate passages for the gas and water, substantially as described.

6. In an apparatus for washing and scrubbing gas, a bundle comprising a series of plates provided with radially-disposed corrugations and plates interposed between said former plates and provided with corrugations extending at right angles to the radially-disposed corrugations and means for securing said plates together to form a series of separate passages for the water and gas, substantially as described.

SIDNEY HERSEY.

Witnesses:
C. G. REDFERN,
A. ALBUTT.