G. PARKER.

Middlings-Purifiers.

No. 157,416. Patented Dec. 1, 1874.

Fig: 1.

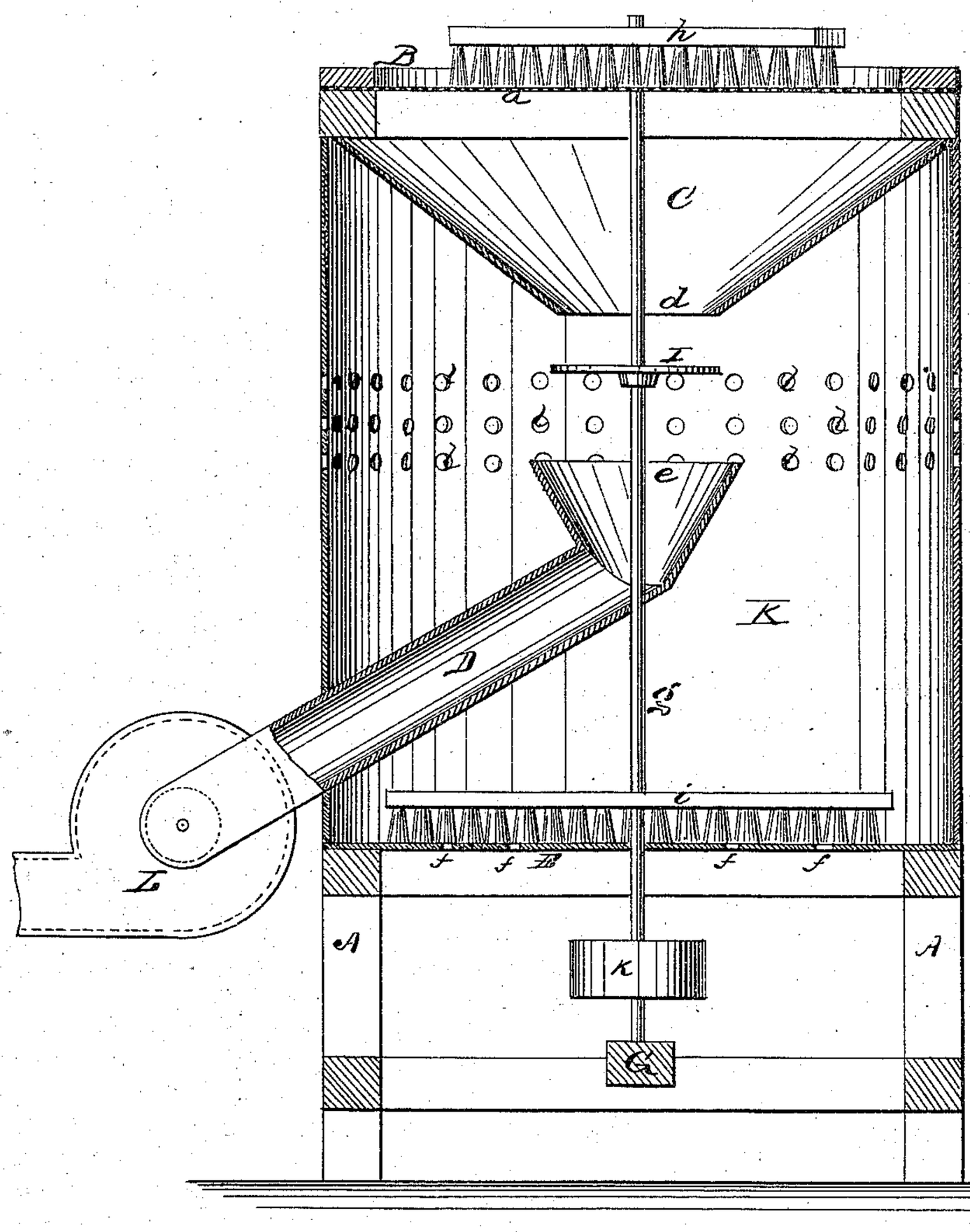
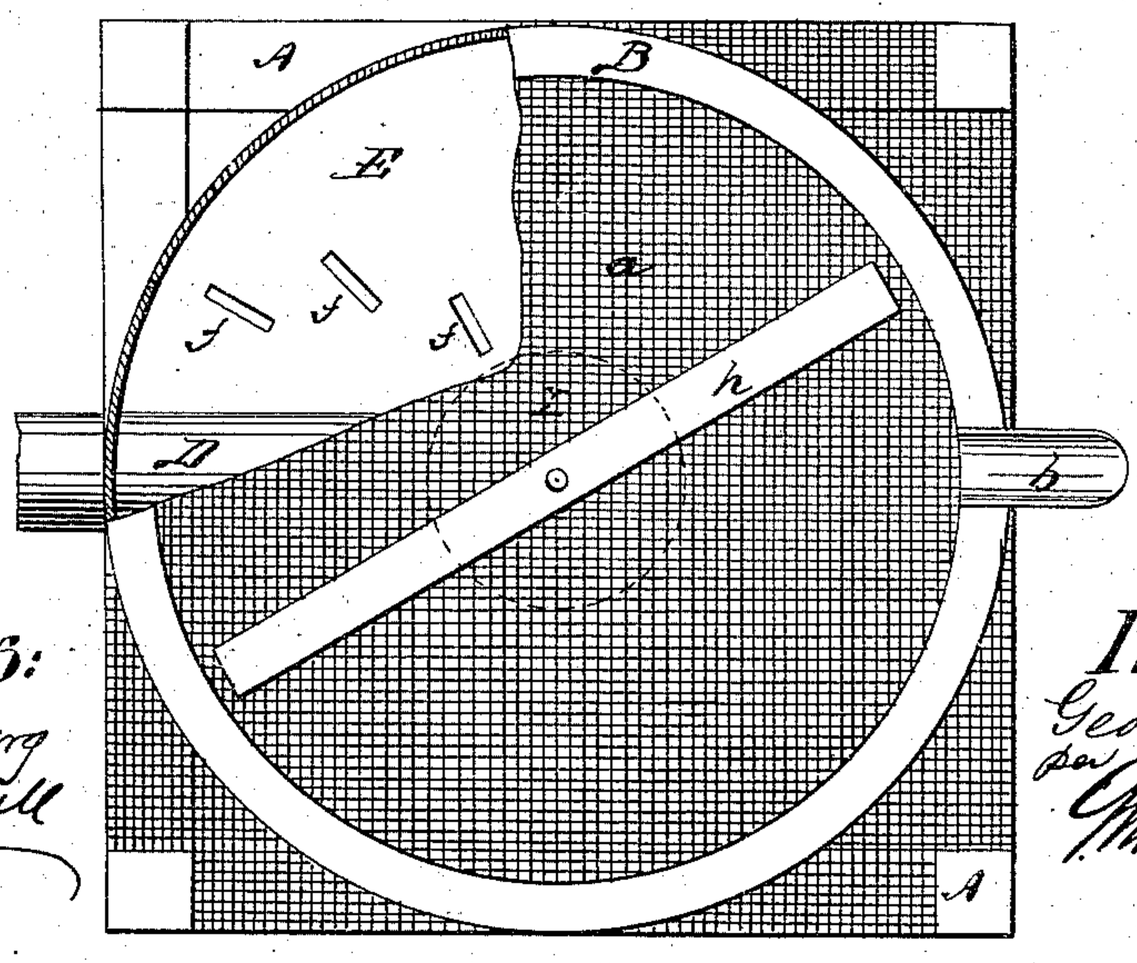


Fig: 2



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UNITED STATES PATENT OFFICE.

GEORGE PARKER, OF POUGHKEEPSIE, NEW YORK.

IMPROVEMENT IN MIDDLINGS-PURIFIERS.

Specification forming part of Letters Patent No. **157,416**, dated December 1, 1874; application filed June 30, 1874.

To all whom it may concern:

Be it known that I, GEORGE PARKER, of Poughkeepsie, in the county of Dutchess and State of New York, have invented a new and Improved Middlings-Purifier; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

This invention is in the nature of an improvement in middlings-purifiers.

It is well known that middlings-purifiers, as ordinarily constructed, consist, principally, of a series of bolts or screens, the series being graduated as to fineness, so that as the middlings pass through the series they are reduced from coarse to fine, depending entirely upon the screens to reduce the middlings to the proper degree of fineness, and to free them from the woody particles of chaff, &c. Such machines are not only expensive, but cumbersome.

To produce a simple and efficient purifier, that shall not depend upon screens and other expensive appliances to produce the desired result, is the principal object of my invention.

In the accompanying sheet of drawings, Figure 1 is a transverse section of my middlings-purifier; and Fig. 2, a plan or top view of same, partly in section.

Similar letters of reference indicate like parts in the several figures.

A represents the frame-work of my middlings-purifier, which may be of any suitable material and size. Over and covering the top of the frame A is placed a wire netting, *a*, inclosed within a curb, B, this curb having an opening on one of its sides fitted with a spout, *b*. Immediately beneath the netting or gauze *a* is a funnel-shaped hopper, C. This hopper is open at its apex *d*. A short distance below the apex *d* of the hopper C is fixed a tubular passage, D, with a flare or bell-mouth, *e*, at its inner end. At any suitable distance below the tubular passage, D, is a floor, E, with a series of slots, *f*, cut therein. Passing through the netting or gauze *a*, and extending through the hopper C, and through the mouth *e* of the tube D, and through the flooring E, is a shaft, *g*, which rests upon a suitable bearing, G, at its lower end. Secured to the shaft *g*, at its upper end, is a brush, *h*, which extends across the curb B and bears upon the surface of the netting or gauze *a;* and secured to the shaft, immediately below the apex *d* of the hopper C, is a disk or scattering-plate I, and also secured to the said shaft G is a brush, *i*, extending across the floor E and bearing upon the floor. Within the frame A, and surrounding the several parts of the purifier above described, is a shell, K. This shell may be of any desired material, and may be so constructed that one-half of it will remain fixed, while the other half can be removed, as convenience or necessity may require, to get at the interior of the purifier. The outer end of the tubular passage D passes through the side of the drum K, and to the outer end of this passage is attached a suction-fan, L. Into the shell K, and in the same horizontal plane as the apex of the hopper and the mouth of the tubular passage, are formed a series of perforations, *l*.

My purifier being constructed substantially as above described, its operation is as follows: The middlings to be purified are thrown upon the surface of the netting or gauze *a* in any desirable way or manner. Power then being applied to the shaft *g*, by means of a belt passing around the pulley-wheel *k*, or otherwise, the brush *h* is revolved, and in its revolution forces the middlings through the netting or gauze, the dirt and foreign matter remaining on the surface, and being thrown out through the spout *b*. The middlings that pass through the netting or gauze *a* fall into and are guided by the hopper onto the disk or scattering-plate I, whence they are thrown by centrifugal force around the interior of the shell K, so that the finer middlings are in a state of suspension, more or less, and, a vacuum being formed in the tubular passage D by the operation of the suction-fan L, these finer particles enter the mouth *e* of the tubular passage D, and so outward to be barreled for use. The coarser and heavier particles fall by gravity onto the floor E, where they are swept up by the brush *i* as it revolves with the shaft *g*, and forced, by the action of the slots or apertures *f*, out of the machine. As the vacuum is formed within the shell of the purifier the external air enters through the openings *l*, and these openings

being on the same level with the scattering-plate I and the mouth *e* of the tubular passage, the incoming currents assist in keeping the particles of the middlings in a state of suspension, and thereby facilitates the operation.

From the foregoing description of the construction and operation of my middlings-purifier it will be seen that the middlings are purified in a simple and efficacious manner, wholly without the assistance of screens or bolts, excepting the coarse netting or gauze at the top of the machine, the office of which is mainly to prevent dirt and other extraneous matter from entering, and also to cause the middlings to fall in a shower on the scattering-plate rather than in a mass.

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

1. The combination of the netting or gauze *a*, brush *h*, funnel-shaped hopper C, scattering-plate I, exhausting apparatus *e* D L, and perforated shell K, substantially as and for the purpose specified.

2. The combination of the netting or gauze *a*, brush *h*, funnel-shaped hopper C, scattering-plate I, exhausting apparatus *e* D L, brush *i*, slotted floor E, and perforated shell K, substantially as and for the purpose specified.

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