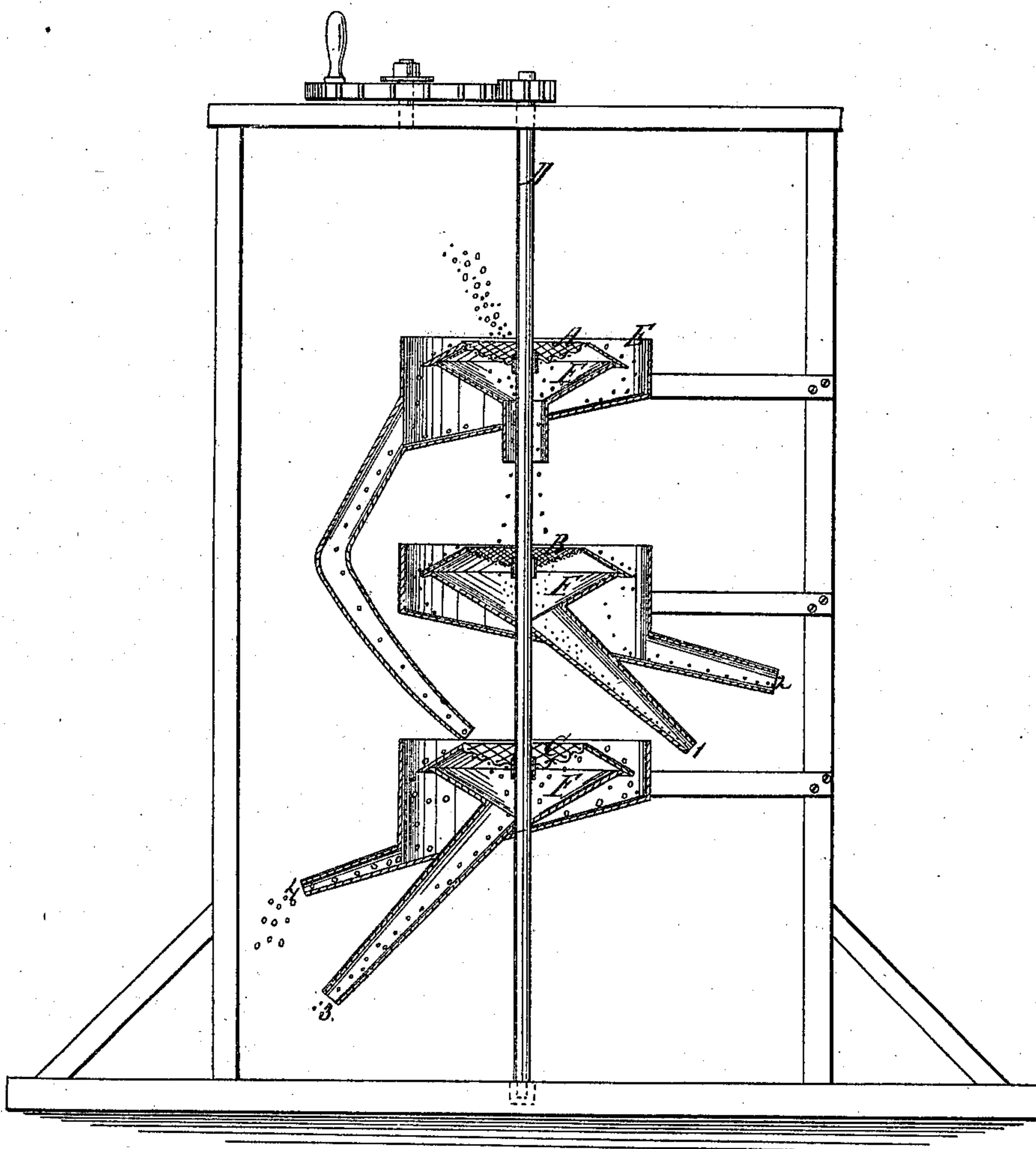


S. T. Pearce.
Ore Separator.

N^o 87,361.

Patented Mar. 2, 1869.



Witnesses
Wm A Morgan
G Leighton

Inventor:
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United States Patent Office.

S. T. PEARCE, OF NEW YORK, N. Y.

Letters Patent No. 87,361, dated March 2, 1869; antedated February 18, 1869.

IMPROVED MACHINE FOR SEPARATING ORES AND OTHER GRANULAR SUBSTANCES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, S. T. PEARCE, of the city, county, and State of New York, have invented a new and useful Improvement in Machinery for Separating Ores and other Granular Substances; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming a part of this specification.

This invention relates to improvements in machinery for sifting or screening pulverized ores and other granular substances, for the purpose of sizing them.

It consists of an improved method of constructing rotating screens, whereby advantage is taken of centrifugal force to facilitate the operation.

It also consists of an improved order of arrangement of the screens, whereby the labor is materially lessened.

The drawing represents a sectional elevation of one arrangement of apparatus according to my invention.

A, B, and C, represent rotating sieves, arranged on the vertical shaft D, into which the material to be separated may be discharged, so as to fall at the central part, near the shaft. They are designed to be of such a degree of concavity, that the centrifugal action imparted to the particles by the rotation of the sieves, will readily cause the finer particles to pass through the meshes, while the coarser portion will be forced up over the top, into the outer receptacles E.

F represents the receptacles into which the finer portions fall after passing through the sieves, and from which they may be conveyed by spouts, as desired.

By this arrangement it is believed that a material economy will result, both in respect of power and the amount of work accomplished; as by the action of the particles, under the effect of the centrifugal force imparted to them, they will spread evenly over all the surface of the screens, thereby bringing the whole surface into constant and uniform action; whereas, in the action of the cylindrical, rotating, or flat reciprocating screens, as now commonly used, only a part of the surface is in labor during the reciprocation or rotation, thereby necessitating the employment of a much greater area of surface and expenditure of power.

It is often necessary to separate ores into a great number of divisions or degrees of fineness, and the common method is to pass the mass through an equal number of screens, varying in the degree of their reticulation, according to the required degree for the ores, each sieve separating from the mass a succeeding finer or coarser degree of ore.

To economize the labor of this process, I propose to arrange the screens in the order represented in the drawings, the operation of which is as follows:

If it be desired to separate a quantity of ore or other substance into four grades, the sieve A, into which it is first discharged, should be of the proper size of reticulation to divide the mass into two equal parts, one of which, the finer, will be discharged into the sieve B, and the coarser, into the sieve C, which are, in turn, of such a degree as to divide the part received by them into equal parts, thus resulting in the four divisions required, as numbered in the drawing. These, again, may, in like manner, be passed into screens of the proper degree of fineness to separate them equally, and so on to any extent.

The advantage of this arrangement is, that each screen, after the first one, is burdened with a much smaller portion of the mass than is the case according to the old method as above described; also, that the particles acted upon by each screen are more nearly of the size of the meshes of the screens, rendering the action of the same more natural and uniform.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. A rotating sieve, arranged to impel the substance to be sifted, over its surface, by centrifugal force, imparted by the rotation of the sieve, substantially as and for the purpose described.

2. The arrangement of a series of sieves, in the order herein described, substantially as and for the purpose set forth.

The above specification of my invention signed by me, this 28th day of July, 1868.

S. T. PEARCE.

Witnesses:

FRANK BLOCKLEY,
ALEX. F. ROBERTS.