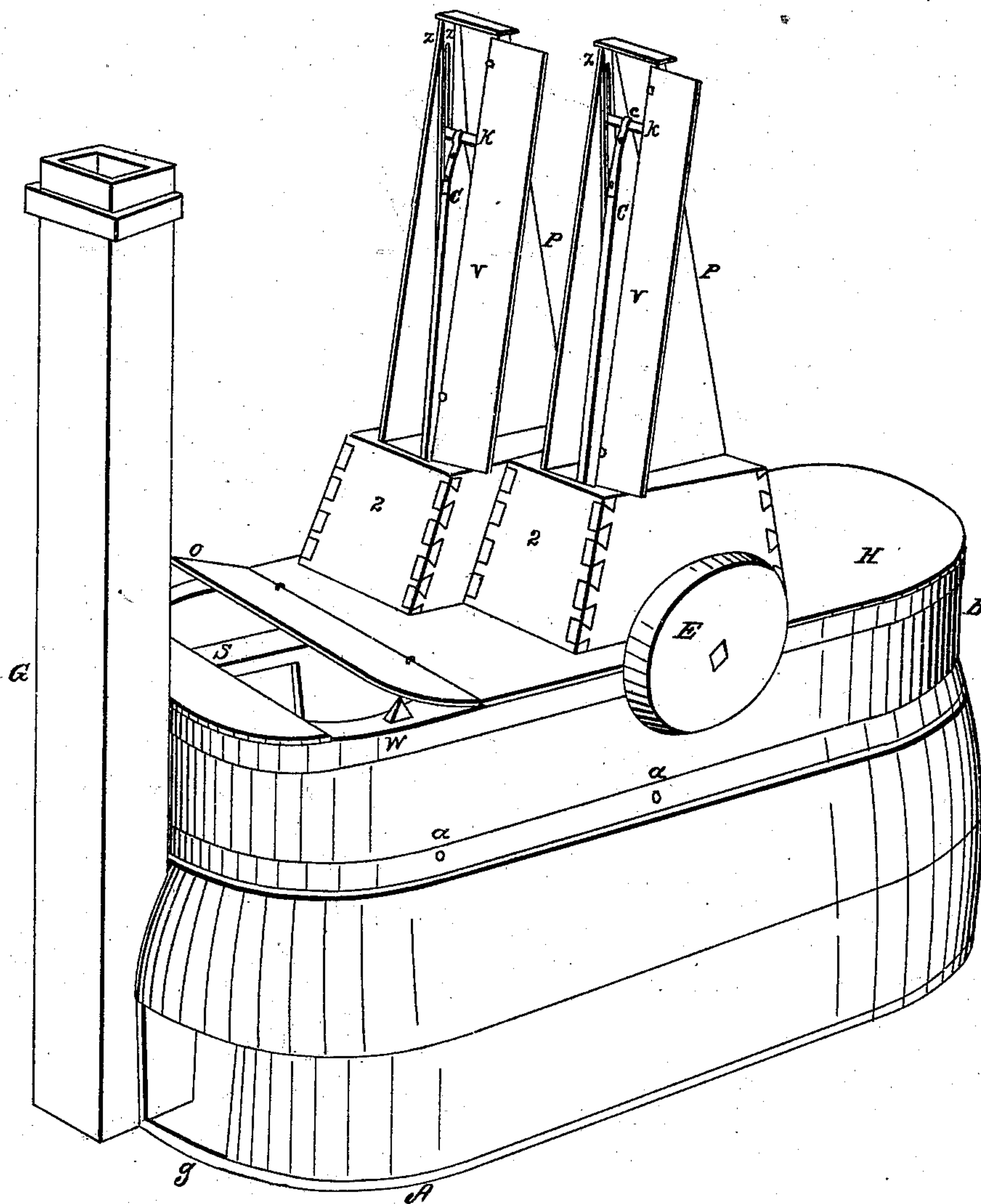


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Machine for Manufacturing Oakum.

No. 3,163.

Patented July 8, 1843.



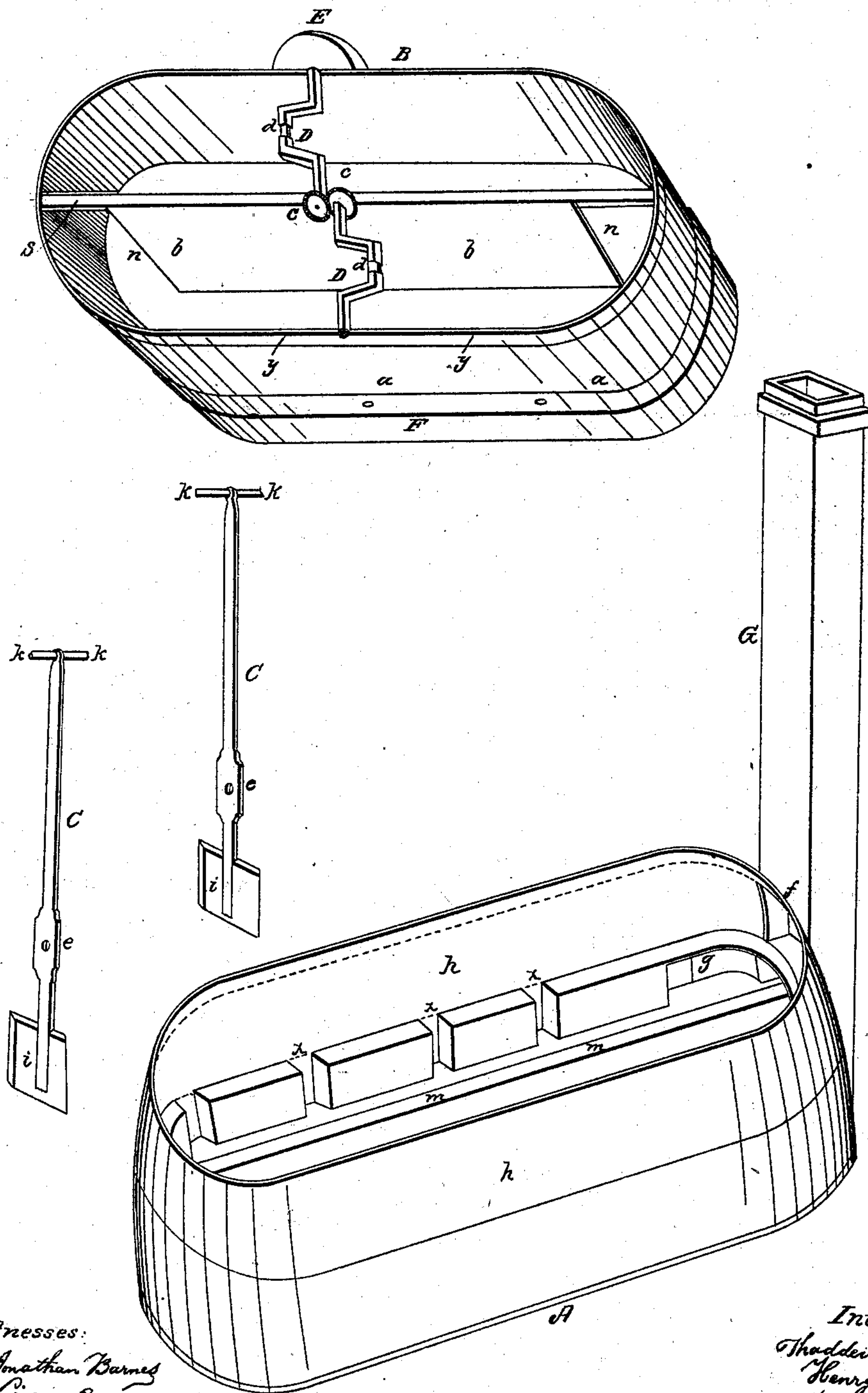
Witnesses:
Jonathan Barnes
Lewis Coe.

Inventors:
Thaddeus Tibbals
Henry Tibbals
Daniel Tibbals

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UNITED STATES PATENT OFFICE.

THADDEUS TIBBALS, HENRY TIBBALS, AND DANIEL TIBBALS, OF CHATHAM, CONNECTICUT.

IMPROVEMENT IN MACHINERY FOR THE MANUFACTURE OF OAKUM.

Specification forming part of Letters Patent No. **3,163**, dated July 8, 1843.

To all whom it may concern:

Be it known that we, THADDEUS TIBBALS, HENRY TIBBALS, and DANIEL TIBBALS, all of Chatham, in the county of Middlesex and State of Connecticut, have invented a new and useful Improvement in Machinery for the Manufacture of Oakum; and we do hereby declare that the following is an exact description of the same as invented or improved by us, and for clearness we refer to the drawings annexed to this specification, and declare them to be a part thereof.

Figure A, Plate I, represents a brick furnace of an elliptical form, which may be made of any convenient dimensions; but we make it about twelve feet long and six feet wide in the clear and about four feet high. On the bottom of this furnace, in order to furnish a rest for the boiler hereinafter to be described, we make a continuous wall two bricks wide and about eighteen inches high, passing through the longer axis *m m* from side to side, and a wall, *g g*, extending quite around the furnace, not continuous, but having openings *x x x*, each about eight inches wide, at intervals of about two feet around the side. These openings are left for the purpose of conducting the heat to the sides of the boiler. Above these walls the sides of the furnace are made to incline gradually inward to the top about six inches in the whole from a perpendicular, so as to furnish space for the heat to pass around the sides of the boiler, the two upper courses of bricks being laid close to the boiler and properly secured against the sides of the boiler, so as to prevent the escape of heat by the sides. At one end of this furnace are two openings or mouths to receive the fuel, one on each side of the said wall, passing through the longer axis, of the same height as that wall and about sixteen inches wide, (represented by *g*, Plate II.) At the same end of the furnace is the chimney *G*, with its flue at *f f*.

The boiler (represented by Fig. F, Plate I,) is of an elliptical form, about three feet and eight inches deep in the clear, made of cast-iron or any other suitable metal, and constructed of such size in reference to the furnace as to pass into the same and to rest on the said walls at the bottom thereof. If preferred, the whole of that part of the boiler

above the top of the furnace may be made of wood, if care is taken so to adapt it to the metallic part that there shall be no leakage of water and no danger of fire; but in either mode of constructing the boiler the cover thereof *H*, Plate II, should be of wooden plank at least two inches thick, to avoid warping, and should rest on and be secured to a beam, *W*, about five inches wide and four inches deep, having a groove in the under side thereof about half an inch deep, and so fitted as to receive the rim of the boiler whether of wood or metal. Toward one end of the cover is the lid *O*, over an opening, which is left for receiving the junk and removing the oakum. If the boiler is made of metal to the top of the furnace and the residue of wood, then a beam, *a a*, will be required about five inches wide and about four inches deep, with a groove on the under side about half an inch deep to receive the rim of the metallic part of the boiler, and a similar groove on the upper side to receive the lower rim of the wooden part of the boiler. A beam, *s*, of the same dimensions as the beam running round the rim, passes from end to end of the boiler, serving as a support to the cover and to the cranks hereinafter described. The lower side of this beam has a groove about half an inch deep cut therein through the whole length, except about three feet, *n n*, at each end, to receive the partition *b b*, extending to the bottom of the boiler.

The figures *D D* represent two cranks resting on the said center-beam, one on each side thereof, and *C C* represent two cog-wheels, each twelve inches in diameter, one whereof is attached to each crank. In the cranks are turned the bearings *d d*, to receive the pitmen *e e*. These pitmen are made of wood, each about four inches wide and two and a half inches thick, with paddles *i i* about eighteen inches square and about an inch thick, attached to their lower ends, so as to stand in relation thereto at an angle of about fifty degrees.

The letters *k k k k* represent axles grooved at their respective ends, having bearings in their centers to receive the tops of the pitmen, and running on rods *Z Z*, attached to the sides of uprights in the boxes *P P*, Plate II. The boxes *2 2* are so constructed of two-inch plank

and placed one forward of the other as to cover their respective cranks when in operation, and are made tight to prevent the escape of steam. The said boxes P P stand directly over the centers of the respective boxes 2 2, and are made of two-inch plank, having the doors V V, for the purpose of inspecting the machinery.

E represents a wheel twenty-four inches in diameter, placed on the end of one of the cranks to receive a band, by which to connect the machinery with any suitable propelling power.

Water is introduced into the boiler in any mode which is most convenient, according to the situation of the machinery, either by a pipe leading into the boiler, or through the aperture in the top, and it may be drawn off by a cock or tap inserted at the lower part of the boiler.

It is obvious that when the machinery is put in operation the paddles move in such a manner as to keep the heated water with the junk or rope therein in a continued circular motion, by means whereof the strands or yarns are quickly opened and washed into oakum, which is then taken out, dried, picked, and finished in the usual mode.

The advantages of the foregoing machinery

are the following: First, the water may be brought to a proper heat in about two hours, instead of twenty-four hours, and often thirty-six hours, which are required for heating water in wooden boxes on the plan hitherto in use; second, there is a saving of at least three-fourths of the expense of fuel, time, and labor; third, as the water may be heated to any desirable degree, and kept at that temperature uniformly, a much better quality of oakum is produced than can be made when the temperature is unequal and often insufficient, as it must be on the usual plan of heating water in wooden boxes.

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination of the boiler having a partition in the middle, with openings at each end, with the paddles and furnace, as described, and for the purpose set forth.

Dated and signed at Chatham this 17th day of June, A. D. 1843.

THADDEUS TIBBALS.
HENRY TIBBALS.
DANIEL TIBBALS.

In presence of—

VINE B. STARR,
HUNTINGDON SELDEN.