

(No Model.)

2 Sheets—Sheet 1.

J. CHASE.

APPARATUS FOR REMOVING VEGETABLE MATTER FROM WOOL.

No. 514,413.

Patented Feb. 6, 1894.

Fig. 1.

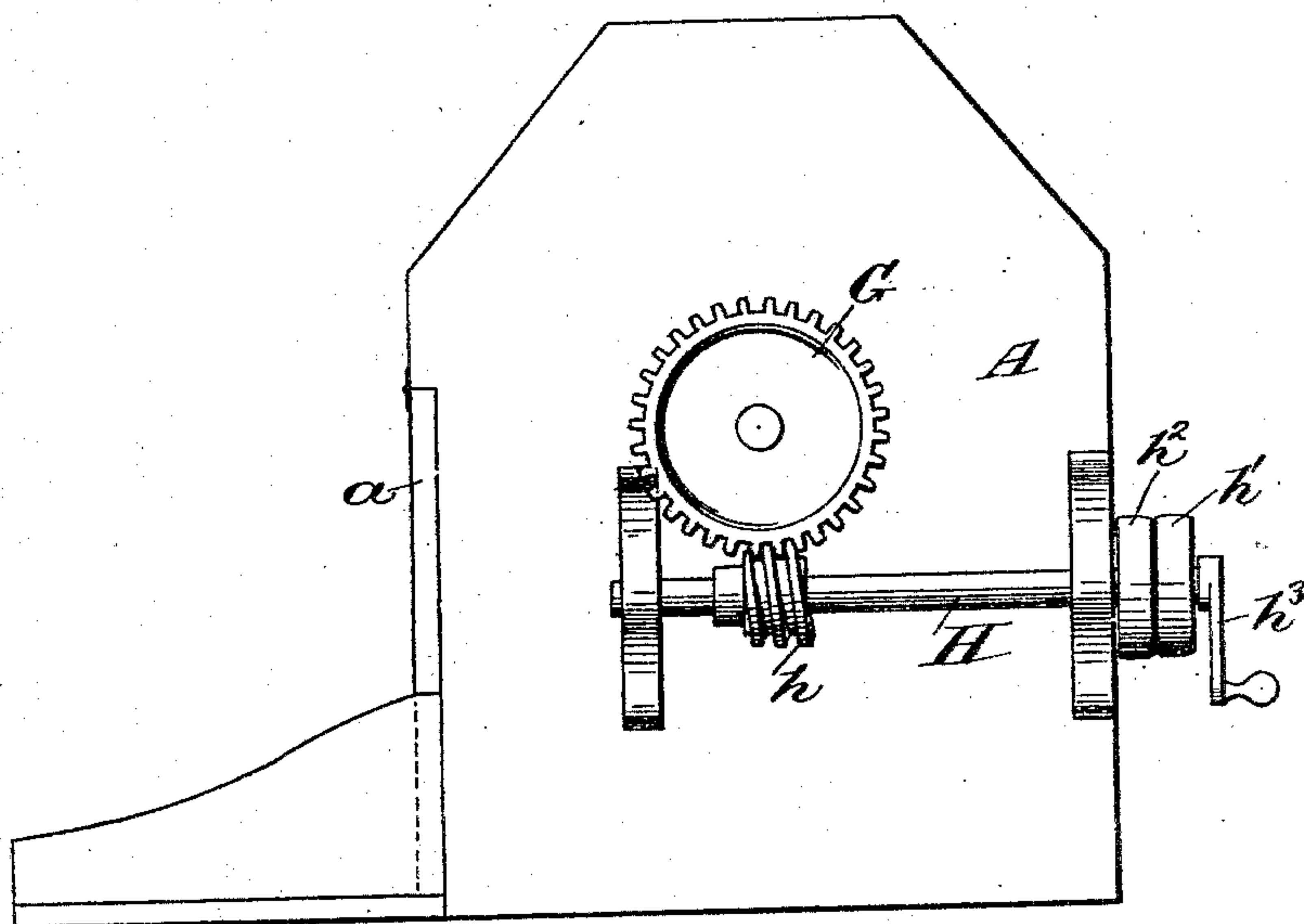
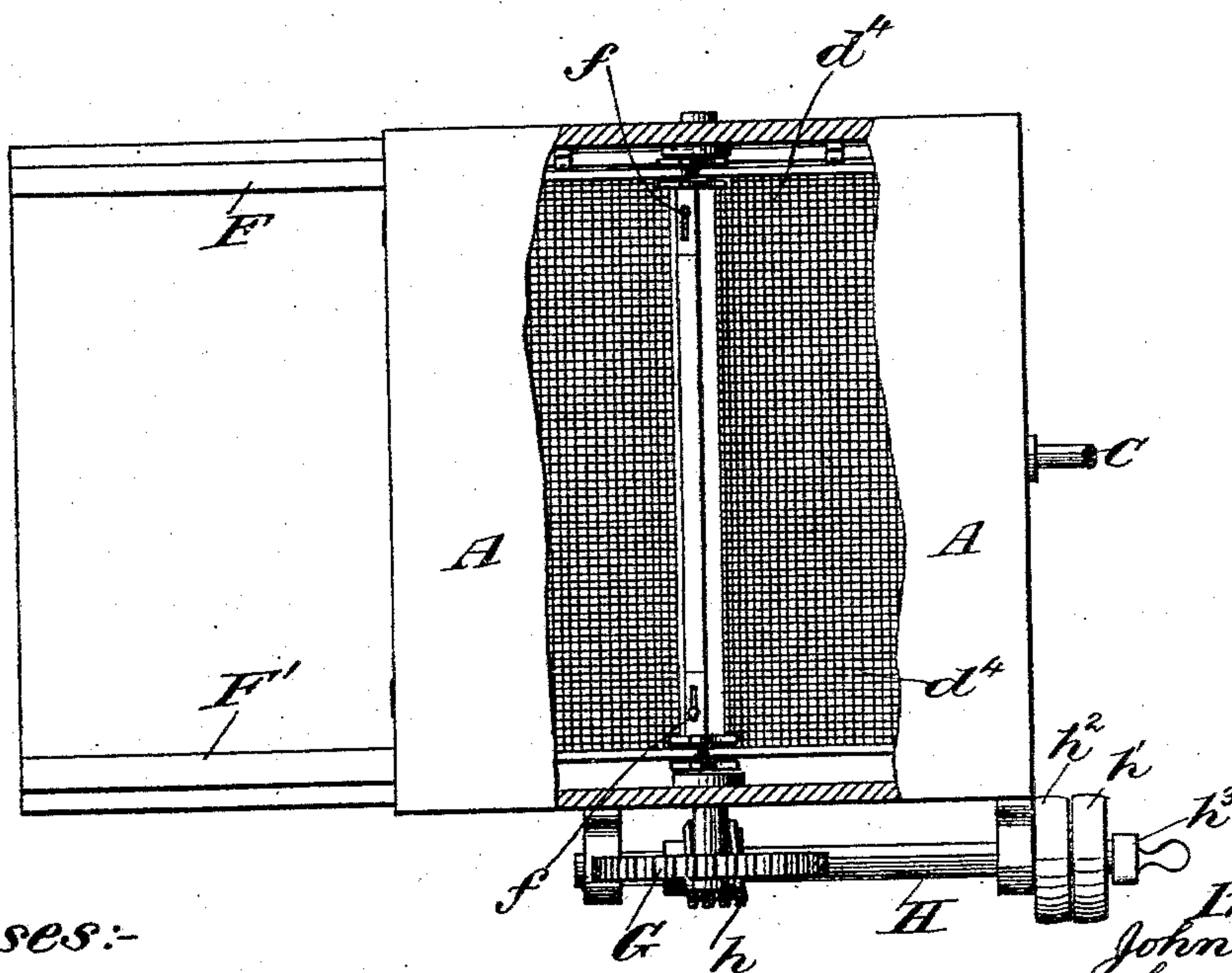


Fig. 2.



Witnesses:-

George Barry.
O. Sundgren

Inventor
John Chase
by attorneys
Brown & Ward

(No Model.)

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Fig. 3.

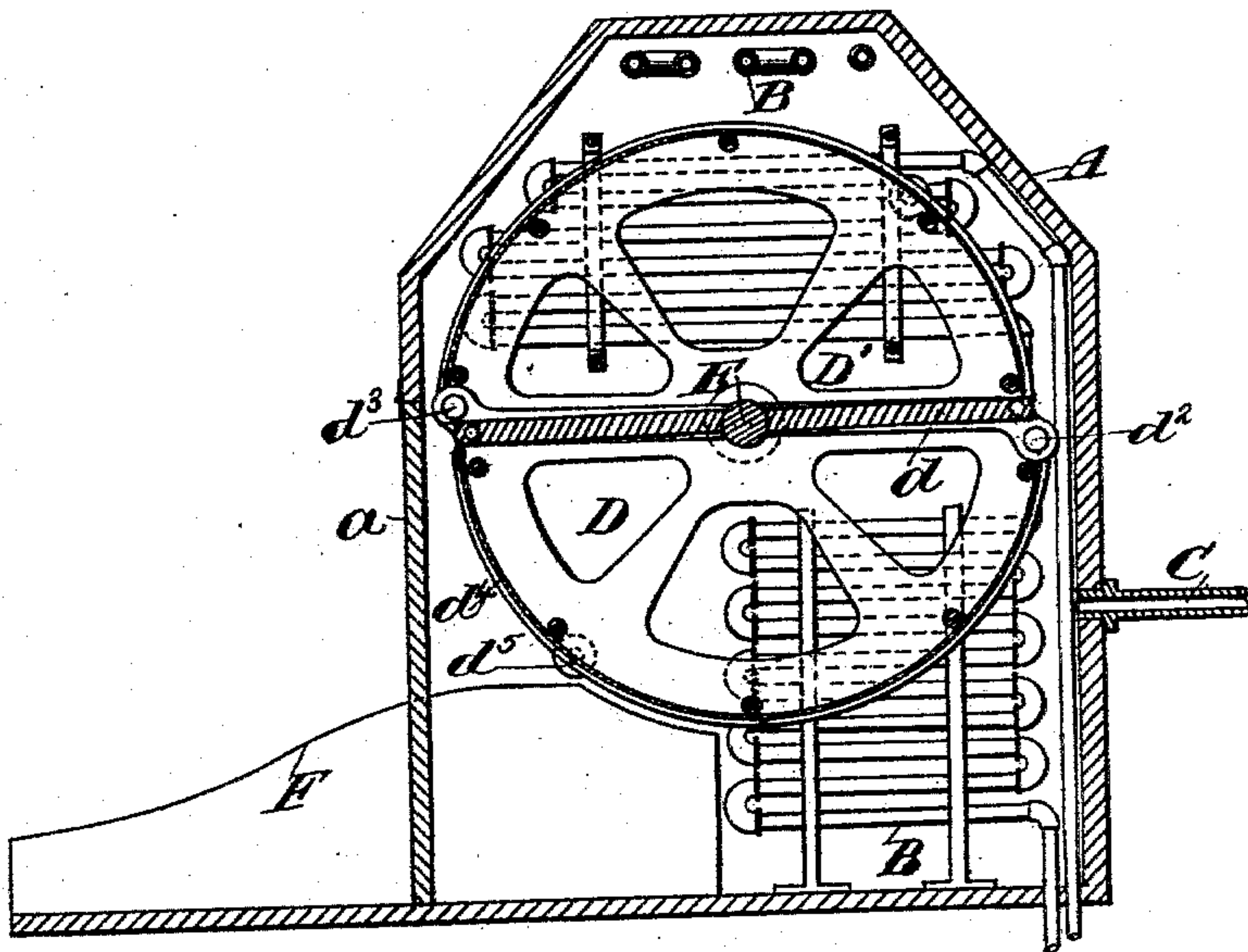
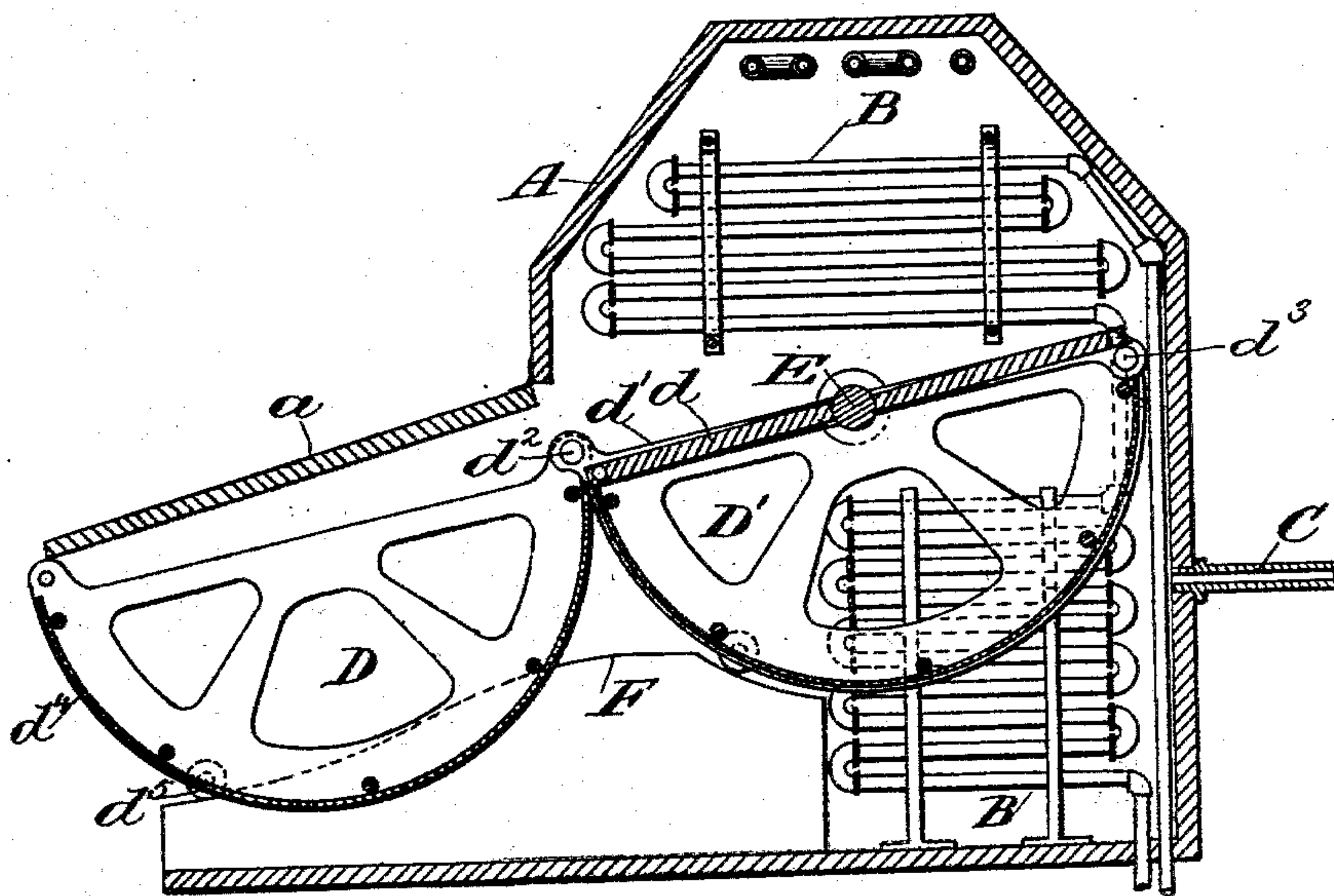


Fig. 4.



Witnesses:-

George Barry.
C. Sundgren

Inventor:-
John Chase.
by attorneys

Brown & Ward

UNITED STATES PATENT OFFICE.

JOHN CHASE, OF PATERSON, NEW JERSEY, ASSIGNOR OF TWO-THIRDS TO
JAMES M. CHASE, OF SAME PLACE.

APPARATUS FOR REMOVING VEGETABLE MATTER FROM WOOL.

SPECIFICATION forming part of Letters Patent No. 514,413, dated February 6, 1894.

Application filed September 15, 1893. Serial No. 485,565. (No model.)

To all whom it may concern:

Be it known that I, JOHN CHASE, of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful
5 Improvement in Carbonizing Apparatus, of which the following is a specification.

My invention relates to an improvement in carbonizing apparatus, with the object in view of saving time and waste of gas in loading
10 and unloading the cylinder which carries the material to be carbonized within the carbonizing chamber.

My invention contemplates the structure of the material-carrying cylinder with a plural-
15 ity of compartments so united that one of the compartments may be thrown out of the carbonizing chamber when it is desired to unload and load it and subsequently be drawn again into the carbonizing chamber and con-
20 nected with the other compartments of the cylinder during the operation of carbonizing.

A practical embodiment of my invention is represented in the accompanying drawings in which—

25 Figure 1 is a view of the apparatus in end elevation, the casing of the carbonizing chamber being shown closed as when in operation. Fig. 2 is a top plan view of the same, the top of the casing being broken away to show the
30 cylinder within. Fig. 3 is a vertical section taken transversely through the cylinder and showing the latter with its compartments closed, as in operation, and Fig. 4 is a similar transverse section, showing one of the
35 compartments of the cylinder opened from the cylinder and extended outwardly through an opening in the casing, as for loading and unloading.

The particular shape of the casing which
40 forms the carbonizing chamber is a matter of choice, that which I have shown being of a generally oblong rectangular form with a polygonal shaped top and having the lower portion of one side hinged to form a door which
45 may be swung open for the exit of one of the compartments of the carrying cylinder.

The casing is denoted by A and its hinged door by a.

50 Within the casing and at any position that may be found most feasible, I locate a steam radiator B for the purpose of raising the heat

of the chamber to the desired degree for the purposes in hand. A pipe C also communicates with the interior of the carbonizing chamber for the purpose of introducing the
55 gas to assist in the work of carbonizing.

Within the casing there is located a cylinder for receiving the rags or other material to be carbonized. The cylinder in the present instance is shown as composed of two
60 compartments D and D', separated by a central partition d, which partition radiates from the opposite sides of the cylinder supporting shaft E. The partition d and the central end
65 frame work d' of the cylinder are fixed to the shaft E so as to rotate therewith and carry with them the compartments D and D', the former being hinged to the said central end frame
70 d' at d² and the latter hinged to the opposite ends of said frame work at d³. The curved surface of the cylinder is preferably made of
75 wire gauze d⁴. The hinging of the compartments D and D' at diametrically opposite ends of the frame work d' admits of said compartments being opened in opposite directions
away from the shaft E or axis of the cylinder, the opened position of one of said compartments being clearly represented in Fig. 4.

Each compartment D and D' is provided at its opposite ends and at the edge of its curved
80 surface with bearing rollers d⁵ which are in position to engage fixed tracks F, F' projecting from within the carbonizing chamber outwardly from one of its sides, viz., that side which is closed by the swinging door a. When
85 the compartments D, D' are swung into closed position to complete the cylinder within the carbonizing chamber, they may be fastened in position by means of sliding bolts f (see Fig. 2) or by any other well known or approved
90 fastening device which may be found convenient for the purpose.

For revolving the shaft E and hence the cylinder, I provide the said shaft E exterior to the casing A with a worm wheel G which
95 intermeshes with a worm h on a worm shaft H mounted in suitable bearings at the end of the casing and provided with a driving pulley h' and a loose pulley h² for receiving a driving
100 belt from a source of power not shown. I further provide the worm shaft H with a hand crank h³ for the purpose of reversing the mo-

tion of the shaft when it is desired to unload and reload one of the compartments of the cylinder.

The apparatus hereinabove described is particularly well adapted to use in connection with removing vegetable matter contained in or mixed with animal fiber, either in its natural state or when manufactured into cloth, such for example as wool before it is manufactured into cloth and worn out goods composed of a mixture of wool and cotton. The vegetable fiber is carbonized and deposited in the form of a fine dust without injuring the wool fiber by utilizing within the chamber an acid in the gaseous form and made from salt and oil of vitriol vaporized in a retort or it may be made by vaporizing muriatic acid in a retort. Presence of the acid within the carbonizing chamber permits it, as the material is agitated therein to attack the vegetable fiber and at a temperature of 180° more or less, it will completely carbonize the vegetable fiber and permit it to fall away from the woolen fiber.

In practice, suppose the compartments of the cylinder to have been loaded with the material to be carbonized and the carbonizing process to have gone on to an extent where it becomes desirable to remove the load from one or more of the compartments of the cylinder and reload the same: The revolution of the cylinder by the driving belt may be stopped by shifting the latter upon the loose pulley and the cylinder having been turned into position to expose the fastening device *f* in front of the door *a*, as in Fig. 3. The compartments *D* may be released by sliding the bolts *f* and the rotary movement of the cylinder may then be reversed by means of the hand crank *h*³, which motion will cause the compartments *D* to travel outwardly through the door *a* on the tracks *F*, *F'* into the position shown in Fig. 4. The door *a* may be swung up out of the way and the load within the compartment *D* may be removed and a new load substituted therefor. The cylinder may then be rotated in the opposite direction to withdraw the compartment *D* within the casing *A* and bring it into its proper relation to the compartment *D'* about the shaft *E* in which position it may be again fastened and the operation of carbonizing may then proceed or the

cylinder may be then so turned as to extend the compartment *D'* outside of the carbonizing chamber to be unloaded and again returned and fastened in position about the shaft *E*.

By the above structure and arrangement of parts, I am enabled to unload and load the cylinder without waiting as heretofore for the interior of the chamber to cool and without requiring the expulsion of the gas from within the chamber as the work is attended to outside of the carbonizing chamber.

What I claim is—

1. Carbonizing apparatus, comprising a multiple compartment cylinder, one of the compartments of the cylinder being arranged to swing open away from another compartment, the carbonizing chamber in which the cylinder is mounted and means for causing one of the compartments of the cylinder to travel into an exposed position exterior to the casing of the chamber, substantially as set forth.

2. Carbonizing apparatus, comprising a cylinder made up of compartments hinged together so as to open away from one another, an operating shaft on which the cylinder is mounted, a carbonizing chamber provided with a door for permitting one of the compartments of the cylinder to be passed through it exterior to the outside of the casing, and a track for directing the movement of one of the released cylinder compartments out of and into its closed position around the shaft within the chamber, substantially as set forth.

3. Carbonizing apparatus, comprising a cylinder composed of compartments hinged together, a rotary shaft on which the compartments are mounted, a partition intermediate of two compartments and serving as a cover for both, a carbonizing chamber in which the cylinder and its shaft are mounted, means exterior to the wall of the chamber for rotating the said shaft and hence the cylinder in opposite directions and means for guiding one of the released compartments of the cylinder outwardly through the casing of the carbonizing chamber, substantially as set forth.

JOHN CHASE.

Witnesses:

FREDK. HAYNES,
GEORGE BARRY.