

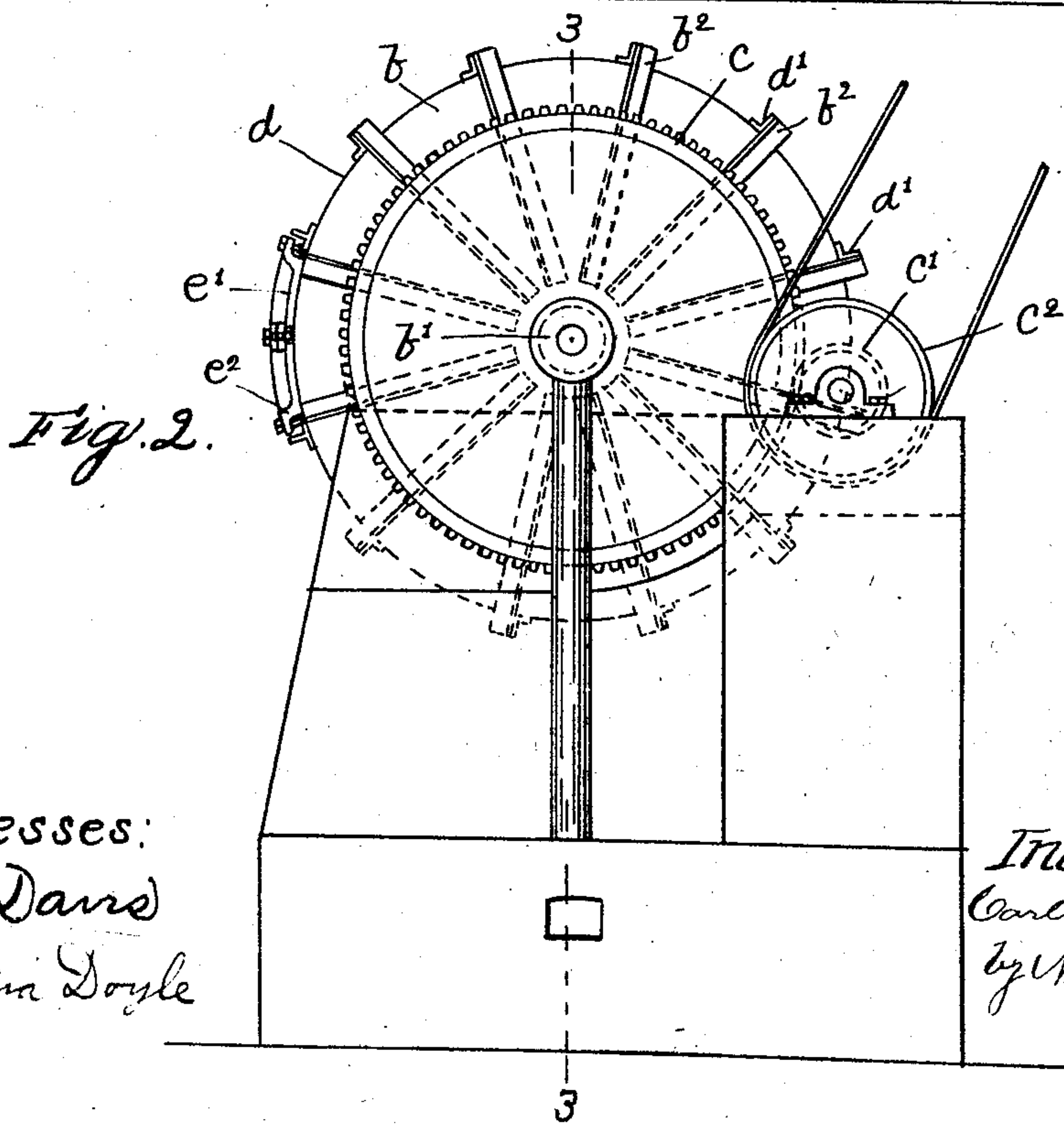
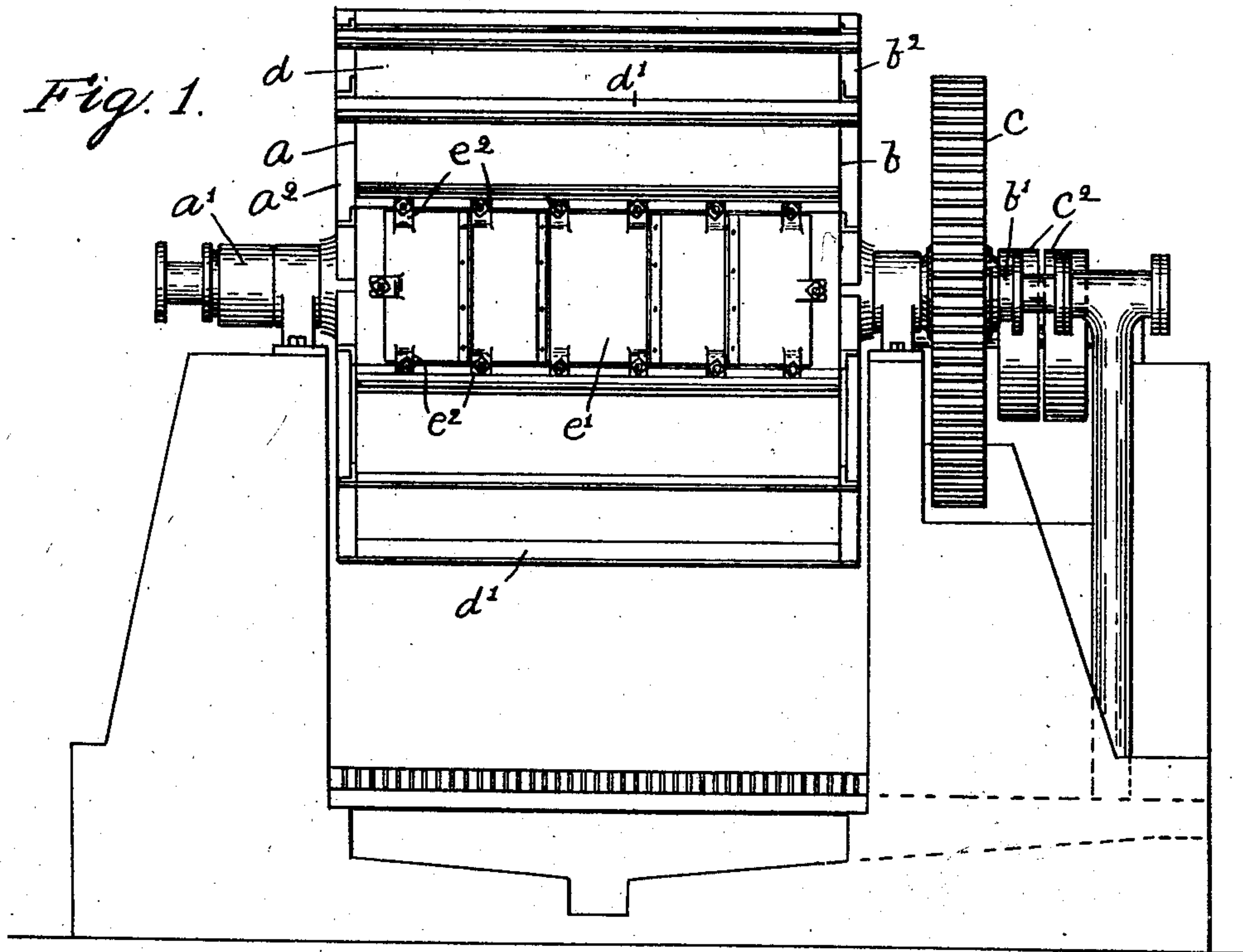
No. 889,292.

PATENTED JUNE 2, 1908.

C. BACHE-WÜG.
BARK REMOVING MACHINE.

APPLICATION FILED FEB. 28, 1907.

2 SHEETS—SHEET 1.



Witnesses:
H. B. Davis
Cynthia Doyle

Inventor:
Carl Bache-Wüg
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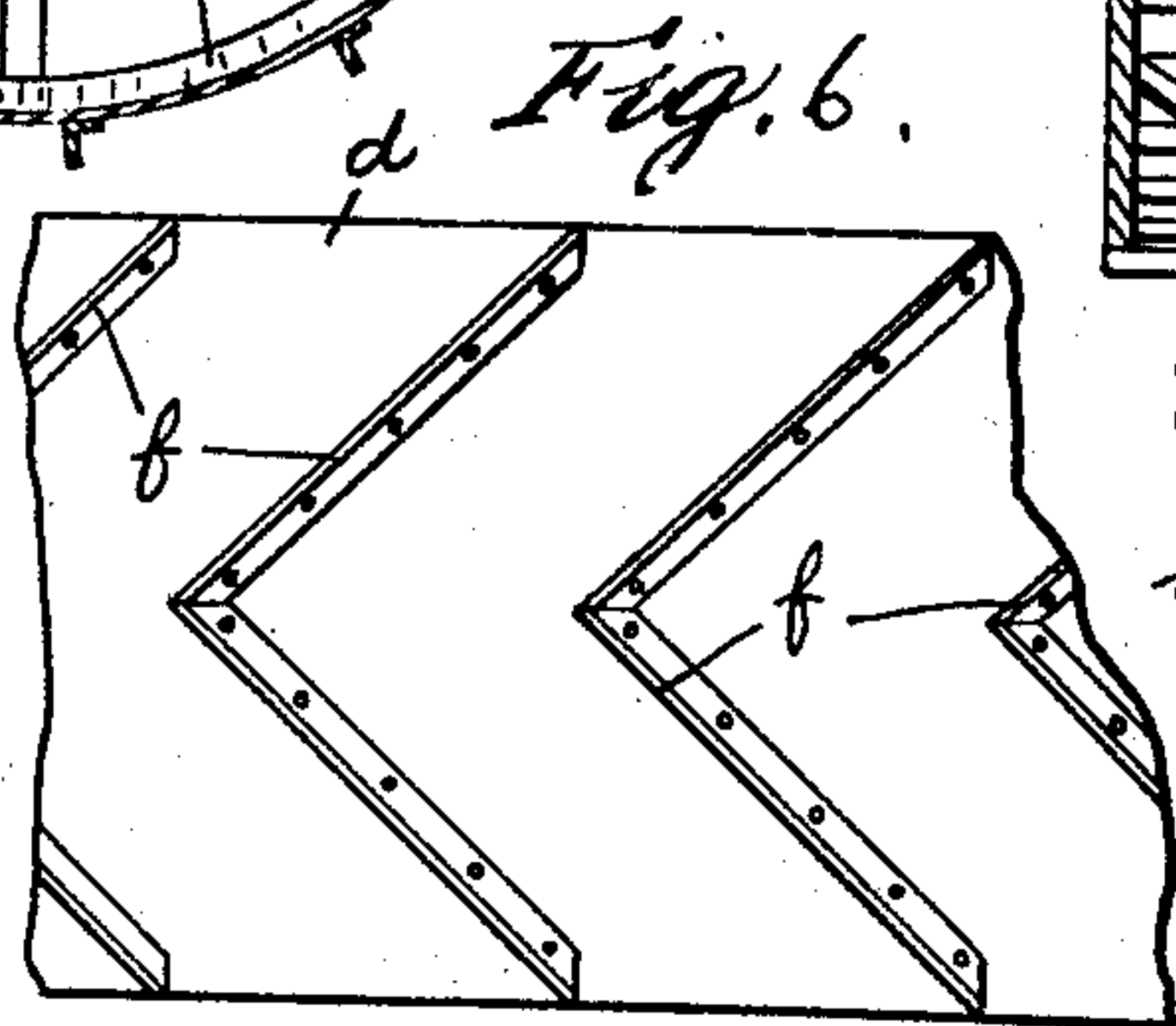
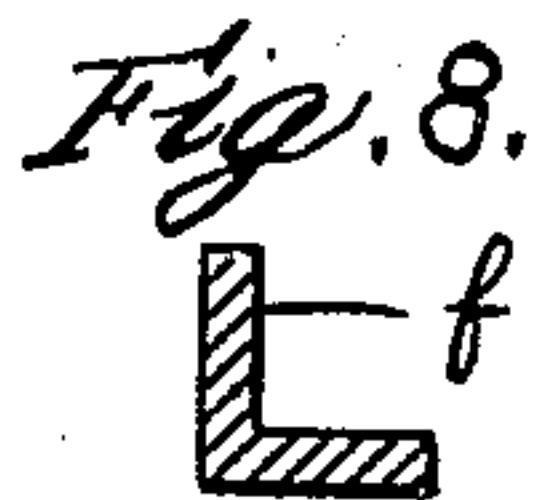
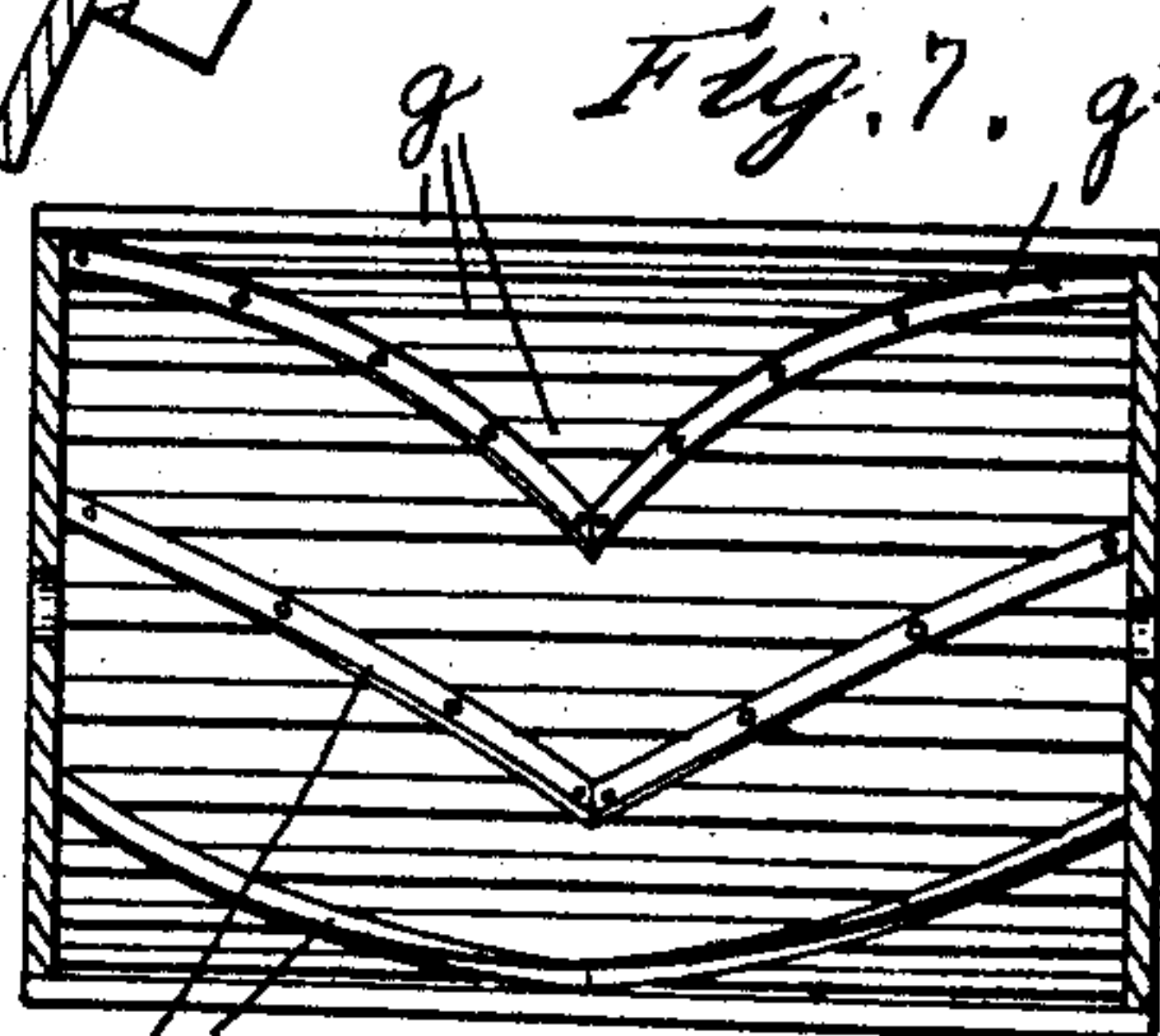
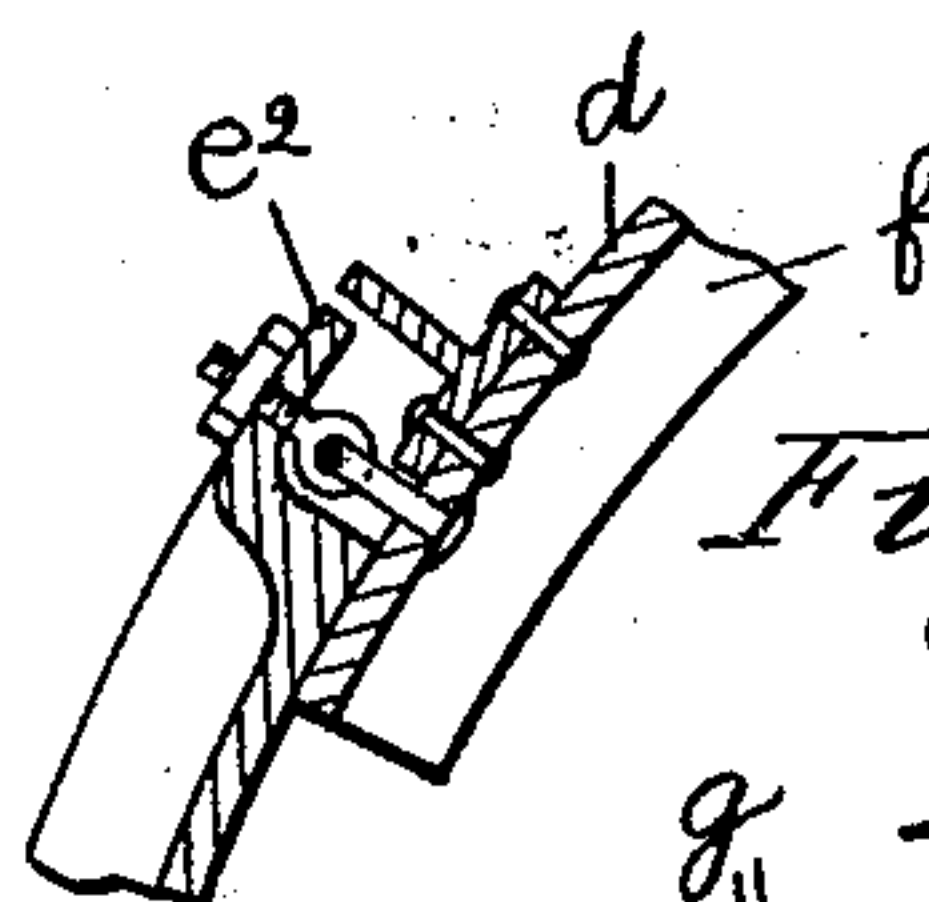
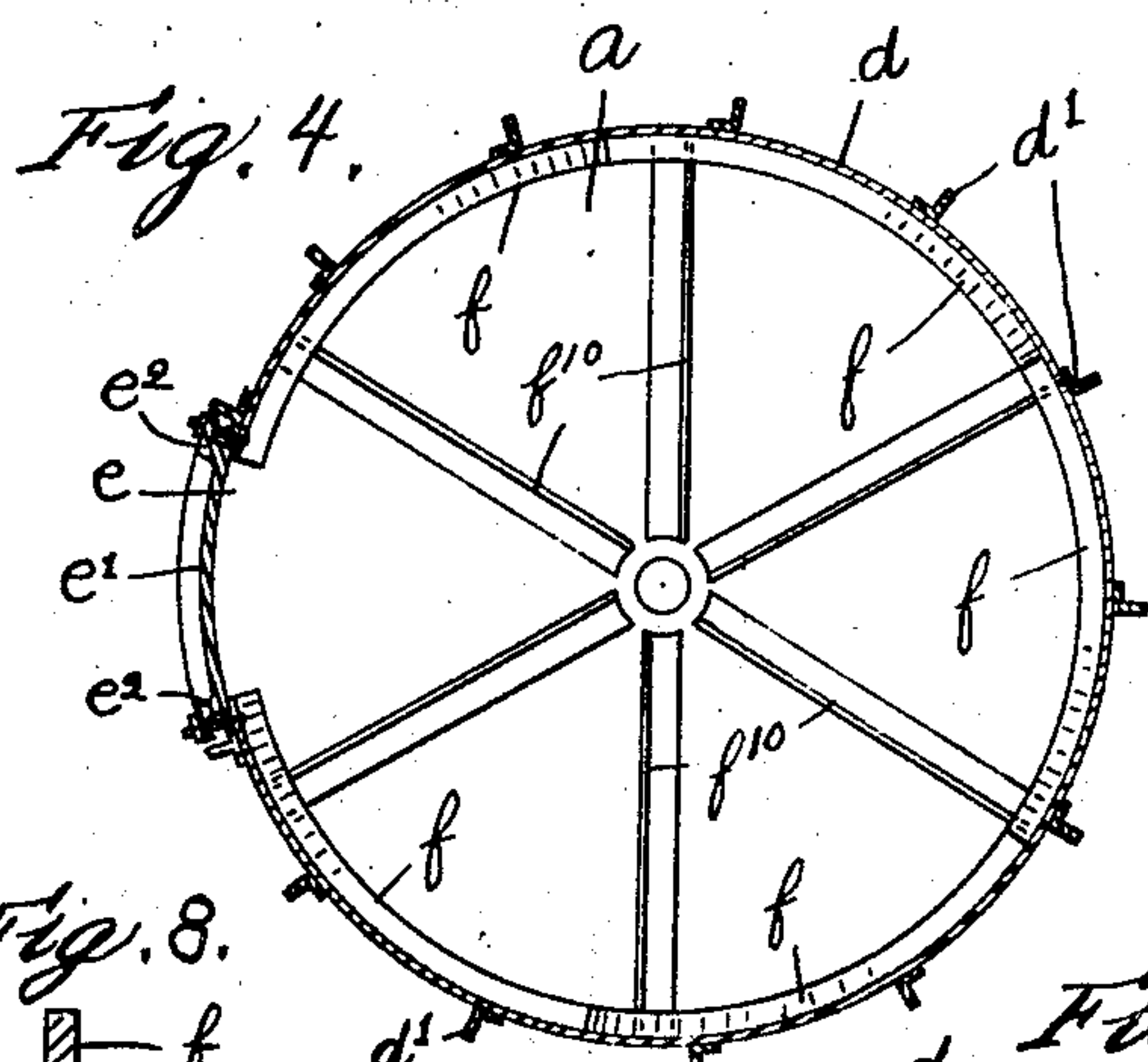
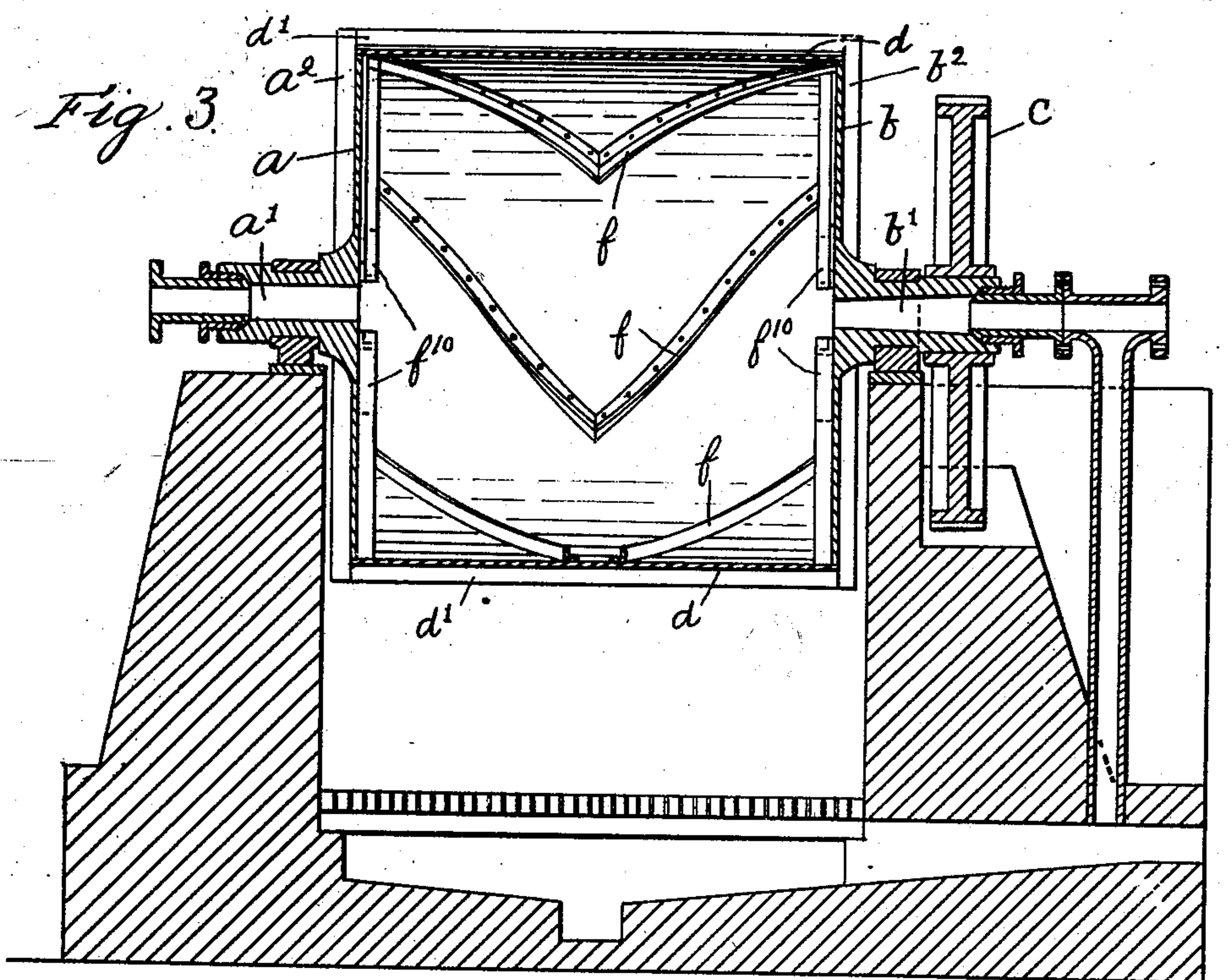
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BARK REMOVING MACHINE.

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2 SHEETS—SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

CARL BACHE-WÜG, OF GLENS FALLS, NEW YORK.

BARK-REMOVING MACHINE.

No. 889,292.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed February 28, 1907. Serial No. 359,707.

To all whom it may concern:

Be it known that I, CARL BACHE-WÜG, of Glens Falls, county of Warren, State of New York, have invented an Improvement in Bark-Removing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

10 This invention relates to bark removing machines adapted to remove the bark from blocks of wood preparatory to grinding the blocks for the production of wood pulp, or to otherwise treating them.

15 At the present time the machine commonly used for this purpose has knives which operate to chip off the bark, and in operation small pieces of wood are also chipped off, which results in a substantial loss of wood. 20 Furthermore, machines of this kind do not operate well upon irregularly shaped blocks and blocks of small diameter.

This invention has for its object to construct a machine adapted to remove the 25 bark from irregularly as well as regularly shaped blocks of wood, and from blocks of wood of small as well as of large diameter, and without loss of wood.

30 The invention consists essentially in a revolving drum, of cylindrical or other form; adapted to receive the blocks of wood and to tumble the same as the drum revolves, said drum having upon its interior block-engaging bark-removing means by which the 35 blocks contiguous the side wall and end walls of the drum, or some of them, are engaged and the bark is scraped off; and by which said blocks, or some of them, are also moved relatively to their neighbors and by 40 rubbing against them the bark of both the blocks so moved and of their neighbors will be scraped off. By the employment of such means, in addition to the tumbling action due to the drum revolving, the bark is en- 45 tirely removed without loss of wood and in a short period of time.

My invention also has for its object to provide means for softening the bark and the wood, to facilitate the removal of the bark, and 50 to this end my invention consists in adapting the revolving drum to hold a volume of hot water, or cold water, or other liquor in which the blocks are submerged, or steam or other vapor or gas may be employed in lieu there- 55 of to serve as a softening agent.

My invention also has for its object to pro-

vide means for removing the pieces of bark as they are detached from the blocks, and to this end my invention consists in adapting the revolving drum to receive a volume of 60 water or other liquor and to provide an opening for the escape of the liquor at a level whereby the floating pieces of bark will be carried away with or by the liquor.

Figure 1 shows in front elevation a bark- 65 removing machine embodying my invention. Fig. 2 is an end view of the machine shown in Fig. 1. Fig. 3 is a longitudinal vertical section of the machine shown in Fig. 2, taken on the dotted line 3—3. Fig. 4 is a trans- 70 verse section of the revolving drum. Fig. 5 is an enlarged sectional detail of a portion of the drum and its cover. Fig. 6 is a detail showing a portion of the cylindrical wall of the drum laid out flat. Fig. 7 is a view 75 showing a modified form of drum to be referred to. Fig. 8 is a sectional detail of one of the block-engaging ribs.

Referring to Figs. 1 to 6, which show the preferred form of apparatus and manner of 80 carrying out my invention; *a* and *b* represent two circular or other shaped heads or plates, of the same dimensions or thereabouts, which are adapted to serve as and constitute the heads or ends of a drum, of cylindrical or 85 other form. The head *a* is secured to a hollow journal or shaft *a'*, which is supported by suitable bearings, and the head *b* is secured to a hollow journal or shaft *b'*, likewise supported by suitable bearings. A 90 large toothed gear *c* is secured to one of said journals, it being herein shown as secured to the journal *b'*, and said gear is engaged by a pinion *c'*, secured to a shaft bearing fast and loose driving pulleys *c''*. By means of said 95 driving-mechanism the drum is revolved. A sheet of metal *d* or other material, in the form of a cylinder or other form, corresponding to the shape of the heads *a* and *b*, is secured at its edges to said heads, thereby pro- 100 ducing a hollow drum which is substantially water-tight, so as to hold a volume of water or other liquid. The sheet of metal *d* which serves as the side wall of the drum is preferably imperforate, but in any event, is adapt- 105 ed to support the blocks which are placed in the drum in such manner as to hold the blocks in the drum. Bars *a²* and *b²* are or may be secured respectively to the outside faces of the heads *a* and *b*, for the purpose of 110 strengthening them, and cross-bars *d'* may extend lengthwise the drum for the purpose

of strengthening its cylindrical wall, yet it is obvious that said parts may be otherwise strengthened, if necessary. The drum is formed or provided with an opening of suitable dimensions in order that the blocks of wood may be introduced and discharged, and, as herein shown, *e* represents the opening and *e'* the cover therefor. The opening is herein shown as extended lengthwise the drum and from end to end thereof, and the cover consists of a plate having ears *e'* extended from it laterally, which are slotted to receive eye-bolts by which it is secured to the drum, although it is obvious that said cover may be secured to the drum in any other suitable manner.

The drum has arranged within it a plurality of block-engaging, bark-removing devices, which are herein shown as strips or bars *f*, arranged on the inside of its cylindrical wall, being stationarily supported thereon or fixed thereto, as by rivets or bolts. They are preferably made of L-angle iron, one portion of which rests on the side wall and the other portion of which extends inward a short distance to thereby present ribs which engage the blocks, and the edges of said ribs are constructed and arranged to remove the bark by a rubbing or scraping action.

Each block-engaging, bark-removing device, as herein shown, comprises two strips or bars, which extend from the opposite ends of the drum or thereabouts to the middle, meeting at or about the middle of the drum, and said strips are arranged diagonally to the axis of the drum, but at an angle to each other; and said strips are curved in the direction of their length in order that they may conform to the curvature of the cylindrical wall of the drum, and the inner ends thereof are mitered in order that they may abut together. When thus constructed and arranged they present V-shaped engaging ribs, extending from end to end of the drum, transversely to its direction of rotation, and said ribs are arranged to point in the direction of rotation of the drum. By arranging these strips or bars diagonally to the axis of the drum they perform a shearing action on the blocks which, when arranged in parallelism with said axis they do not perform. The V-shaped engaging ribs have a tendency to move the blocks, or some of them, in a direction toward the opposite ends of the drum and the end walls are, therefore, provided with means for engaging the blocks which have a tendency to move them, or some of them, inward toward the middle of the drum. As a means for accomplishing this result, strips or bars *f'*¹⁰ are arranged radially or otherwise, on the inner faces of the end walls, which, as herein shown are constructed substantially the same as the block-engaging ribs *f*, so as to operate like

said ribs to remove the bark from the blocks while engaging them, yet at the same time acting to move the loose or unrestrained blocks inward toward the middle of the drum.

The drum sheet *d* is made imperforate and by means of the hollow journals a softening agent, in the form of a liquid, vapor or gas may be introduced at one end of the drum and discharged at the opposite end thereof. I prefer to employ water as the softening agent, and when such material is employed it fills the lower part of the drum and the small pieces of bark float on its surface, and by supplying water at one end of the drum, the water, carrying with it the pieces of floating bark, will be discharged at the opposite end thereof. My invention is not limited to the employment of any particular softening agent for the purpose of softening the bark and thereby assisting its removal.

In operation, the blocks of wood are introduced into the drum, partially filling it, and the drum is then revolved and the blocks thereby caused to tumble over each other in the drum, knocking off or scraping off the bark, and as the drum revolves the engaging-ribs engage the blocks contiguous the side wall and end walls, and act to scrape off the bark and also act to move the blocks relative to each other, to augment the tumbling action. Thus the bark is removed by the tumbling action and also by the action of the engaging-ribs. By the machine herein described, the bark is effectually removed without loss of wood and small blocks or sticks of wood or blocks or sticks of wood of small diameter and also irregularly shaped blocks as well as regularly shaped blocks may be acted upon.

Referring to Fig. 7 a drum of modified construction is shown. In lieu of an imperforate drum sheet *d* a plurality of cross-bars *g* are employed, which are attached at their ends to the heads of the drum, being located a short distance apart and block-engaging ribs *g'*, similar to the ribs *f*, and having bark-removing edges, are arranged on the interior of the drum, being attached to said cross-bars. The ribs *g'* will be diagonally arranged substantially as shown in Fig. 1. With this form of my invention the drum is especially designed to be partially submerged in a liquid softening agent and to revolve therein, the pieces of bark as they become detached from the blocks floating on the surface of the softening agents. The engaging-ribs *g'* act to scrape off the bark, as in Fig. 1, and the cross-bars serve as supports for said ribs.

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

1. In a bark-removing machine, a revolving drum adapted to receive blocks of wood, comprising a cylindrical block-supporting

side wall and end walls to which it is attached, a plurality of block-engaging ribs having bark-removing edges arranged V-shaped and extended from the middle of the side wall to its opposite ends, diagonally to its axis and pointed in the direction of rotation of the drum, and inwardly projecting means on the interior of the end walls of the drum for engaging and moving the blocks inward, substantially as described.

2. In a bark-removing machine, a revolving drum adapted to receive blocks of wood, comprising a cylindrical block-supporting side wall and end walls to which it is attached, a plurality of block-engaging ribs having bark-removing edges arranged V-shaped and extending from the middle of the side wall to its opposite ends, diagonally to its axis and pointed in the direction of rotation of the drum, a plurality of block-engaging ribs having bark-removing edges, arranged on the interior of the end walls of the drum which engage the blocks and move them inward and also remove the bark therefrom, substantially as described.

3. In a bark-removing machine, a revolving drum adapted to receive blocks of wood, comprising an imperforate cylindrical side wall and end walls to which it is attached, a plurality of block-engaging ribs having bark-removing edges arranged V-shaped and extended from the middle of the side wall to its opposite ends diagonally to its axis and pointed in the direction of rotation of the drum, substantially as described.

4. In a bark-removing machine a revolving drum adapted to receive blocks of wood, comprising a cylindrical block-supporting side wall and end walls to which it is attached, a plurality of pairs of longitudinally curved L-angle iron strips attached to the interior of said side wall, arranged V-shaped and extended from the middle of the side wall to its opposite ends, in a direction diagonal to its axis and pointed in the direction of rotation of the drum, the inner ends of the strips of each pair being mitered whereby they may be abutted together, one portion of each strip bearing on the side wall and the other portion projecting inwardly to engage the blocks and remove the bark therefrom, substantially as described.

5. In a bark-removing machine, a revolving

drum adapted to receive blocks of wood comprising a cylindrical block-supporting side wall and end walls to which it is attached, a plurality of pairs of longitudinally curved L-angle iron strips attached to the interior of said side wall, arranged V-shaped and extended from the middle of the side wall to its opposite ends, in a direction diagonal to its axis and pointed in the direction of rotation of the drum, the inner ends of the strips of each pair being mitered whereby they may be abutted together, one portion of each strip bearing on the side wall and the other portion projecting inwardly to engage the blocks and remove the bark therefrom, and a plurality of L-angle iron strips attached to the interior of the end walls adjacent the outer ends of the strips on the side wall, one portion of each strip bearing on the end wall and the other portion thereof projecting inwardly to engage the blocks and remove the bark therefrom, substantially as described.

6. In a bark-removing machine, a revolving liquid holding drum adapted to receive blocks of wood, comprising a cylindrical block-supporting side wall and end walls to which it is attached, said drum having an inlet orifice for the admission of liquid and an outlet orifice for the discharge of the liquid, the entrance to said outlet orifice being arranged on a level with the surface of the volume of liquid which is contained in the drum to provide for the escape of pieces of bark which float on said surface, and bark-removing means arranged on the interior of said drum, substantially as described.

7. In a bark-removing machine, a revolving drum adapted to receive blocks of wood, having on its interior block-engaging bark-removing means, hollow journals supporting it at its opposite ends which open directly into the drum and provide for the entrance thereto and the discharge therefrom of a softening agent and for the escape of floating pieces of bark, substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

CARL BACHE-WÜG.

Witnesses:

B. J. NOYES,
H. B. DAVIS.

It is hereby certified that the name of the patentee in Letters Patent No. 889,292, granted June 2, 1908, for an improvement in "Bark-Removing Machines," was erroneously written and printed as "Carl Bache-Wüg," whereas said name should have been written and printed as *Carl Bache - Wiig*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 3rd day of July, A. D., 1917.

[SEAL.]

F. W. H. CLAY,
Acting Commissioner of Patents.