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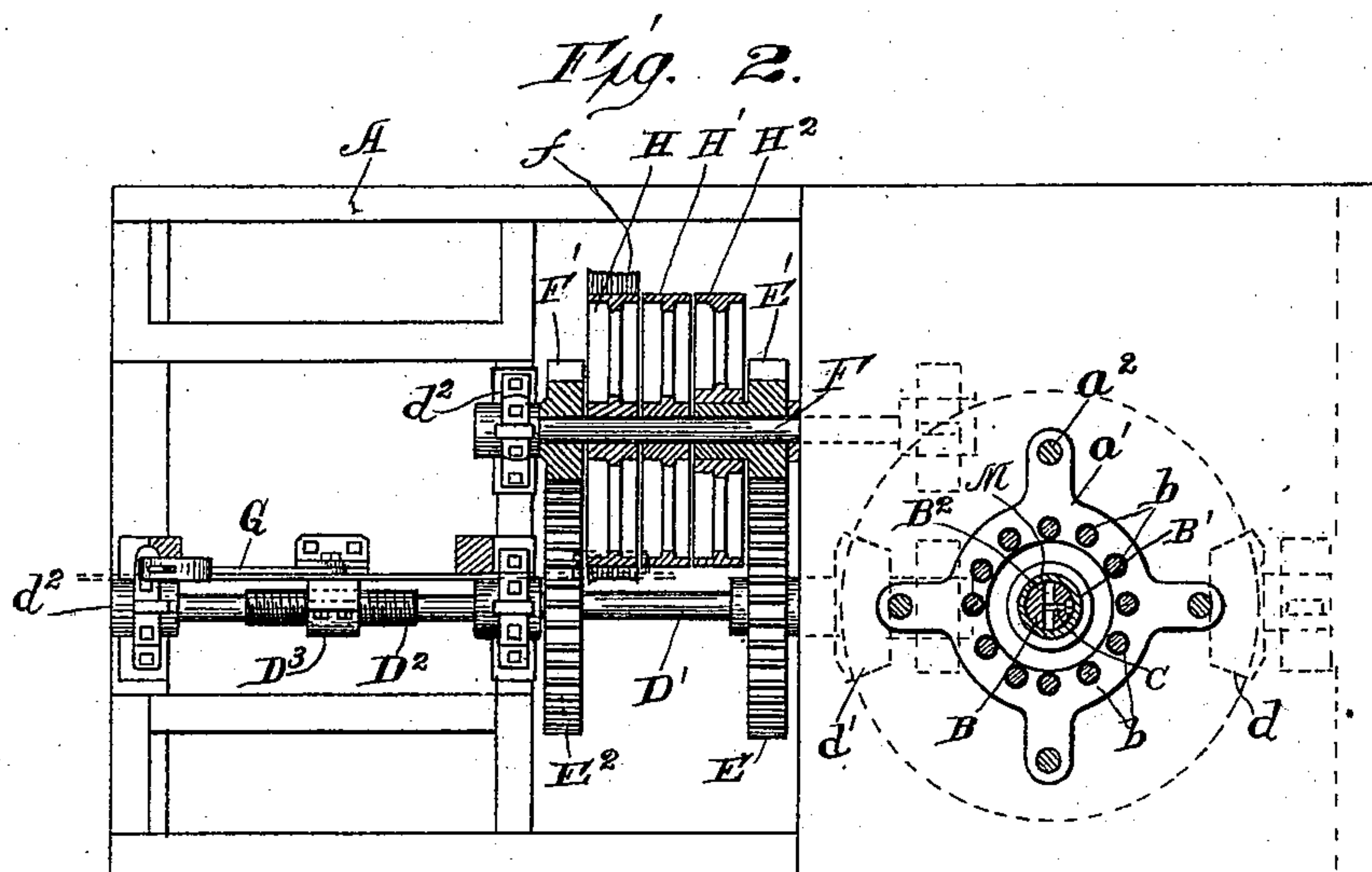
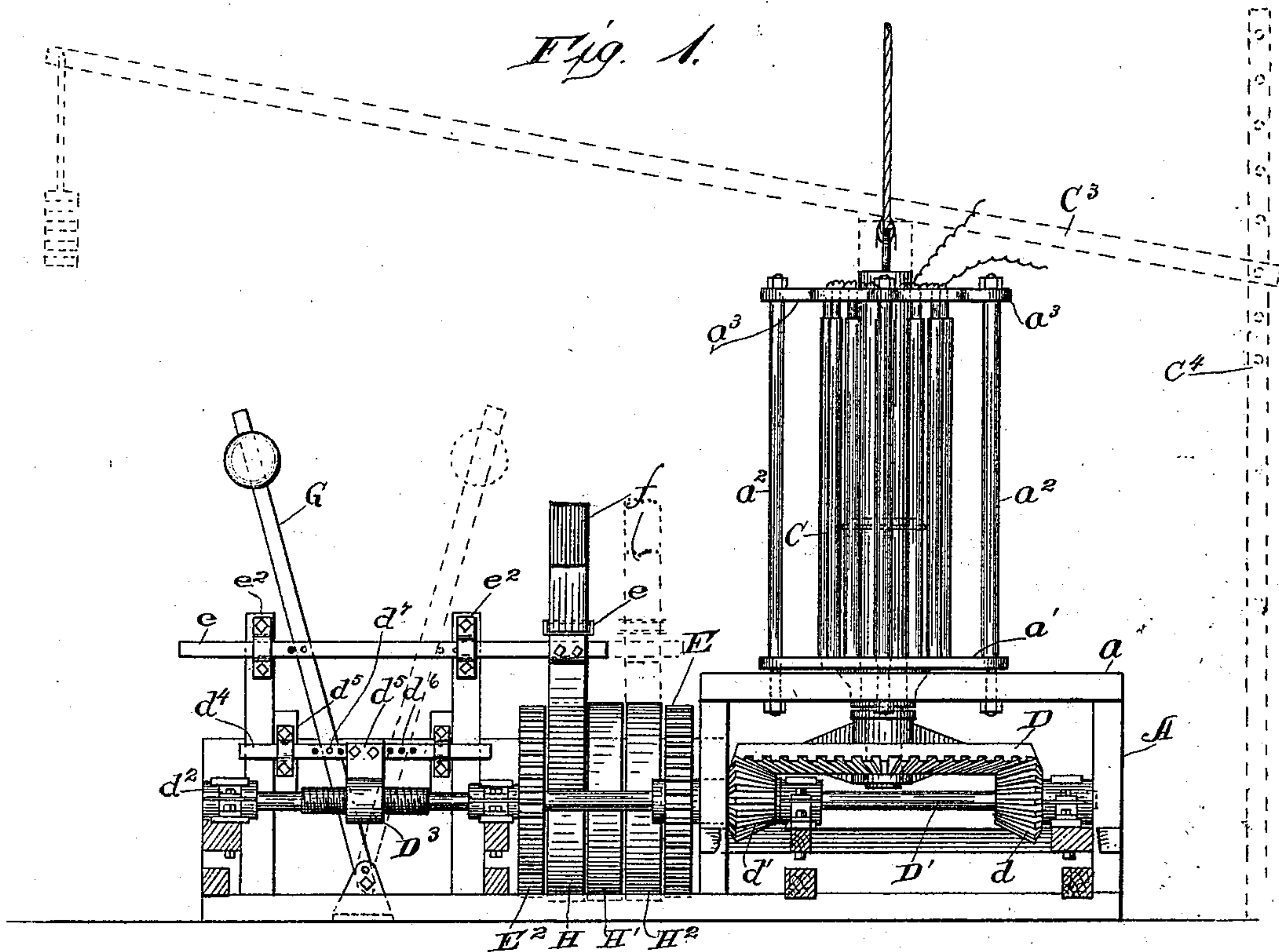
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P. R. DE F. D'HUMY.

APPARATUS FOR ELECTROLYTICALLY TREATING RAW HIDES.

No. 512,706.

Patented Jan. 16, 1894.



Witnesses:
Chas. E. Gordon.
C. A. Duggan.

Inventor:
Paul R. de F. D'Humy.

By Chas. C. Tillman

Att'y.

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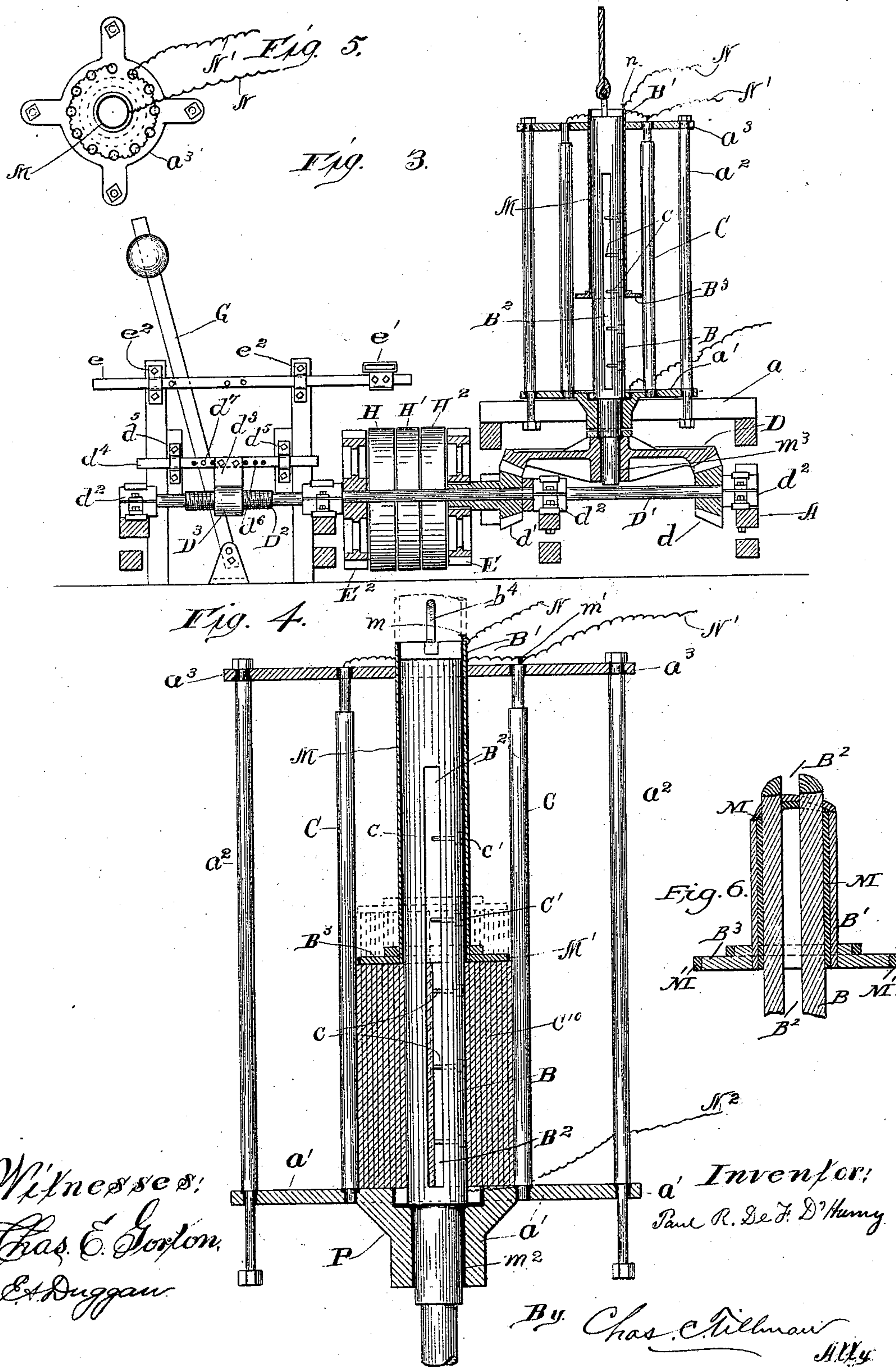
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UNITED STATES PATENT OFFICE.

PAUL R. DE F. D'HUMY, OF CHICAGO, ILLINOIS.

APPARATUS FOR ELECTROLYTICALLY TREATING RAW HIDES.

SPECIFICATION forming part of Letters Patent No. 512,706, dated January 16, 1894.

Application filed February 4, 1893. Serial No. 460,937. (No model.)

To all whom it may concern:

Be it known that I, PAUL R. DE F. D'HUMY, a citizen of the Republic of France, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for Electrolytically Treating Raw Hides, of which the following is a specification.

This invention relates to an improved machine for treating raw-hides, leather and analogous substances, and consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The object of my invention is to provide a machine for the above named purpose, which is simple in construction and reliable and effective in use, and will automatically reverse its movement.

In order to enable others skilled in the art, to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1, is a view in side elevation of my machine as it appears when ready for operation. Fig. 2, is a plan sectional view thereof. Fig. 3, is a view in side elevation partly in section showing some of the rollers or bars of the treating drum removed. Fig. 4, is a similar view of the treating cylinder and rollers or bars, showing the raw-hides in place and in the act of being treated or acted upon. Fig. 5, is a plan view of the upper plate of the treating-drum and the cylinder, and Fig. 6 is an enlarged detail sectional view of the lower portion of the sleeve and its flange.

Similar letters refer to like parts throughout the different views of the drawings.

A, represents the main or supporting frame, which rests on a suitable base or floor, to which is secured the various parts of the machinery, and in which the several shafts or journals have their bearing. To that portion of the supporting frame, which has the floor a , is secured in a horizontal position on the upper surface of said floor a plate a' , through suitable openings in which are passed and secured a number of standards or upright posts a^2 , which have secured at their upper ends a plate a^3 , of substantially the same construc-

tion and form as the plate a' . Through the center of each of the plates a' , and a^3 , is formed an opening, in the former named plate, for the reception and operation of the slotted metal cylinder B, and in the latter named plate, for the reception and operation of a metal collar or sleeve B', which fits around the cylinder, and has a vertical movement.

Placed in a circle around each of the central openings before explained in each of the plates a' , and a^3 , are formed a series of openings or bearings b , for the metallic treating rollers or bars C, which as shown in the drawings are placed in alignment one with the other, and in a vertical position.

As is clearly seen in Figs. 1, and 3, of the drawings, the lower portion of the cylinder B, extends through the floor a , and is provided with a horizontal beveled cogged gear D, which engages with beveled pinions d , and d' , which pinions are suitably mounted on the operating or main shaft D', which shaft has its bearings in suitable journal boxes d^2 , on the main or supporting frame, and extends some distance to one side of the horizontal gear D, and the treating drum and its cylinder. On this extended portion and adjacent to the pinion d' , is mounted a gear E, which meshes with the gear E', mounted on the shaft F, which shaft is located parallel with the driving shaft D', and at one side thereof in suitable journal boxes d^2 , on the main or supporting frame. Near the gear E, and on the shaft D', is another gear E², which engages with a pinion or gear F', on the shaft F, as is clearly seen in Fig. 2, of the drawings. To one side of the gear E², and near its outer end the shaft D', is formed or provided with a screw-threaded section D², with which engages a traveler or nut D³, which is formed or provided with an arm d^3 , the upper end of which is secured to a horizontal bar d^4 , which is adapted to slide or move horizontally with the traveler D³, and is held in position by means of suitable brackets d^5 , secured to a portion of the supporting frame.

By reference to Figs. 1, and 3, it will be seen that the sliding bar d^4 , is provided with a number of holes d^6 , through which a pin d^7 , may be passed to engage with the shifting lever G, which lever is pivotally secured at its lower end to the main frame, and engages

with a horizontal sliding bar e , on the inner end of which is provided a belt-guide e' , and which bar is retained in a horizontal position by means of brackets e^2 , secured to the supporting frame. Between the gears F' , and E' , on the shaft F , is mounted three pulleys H , H' , and H^2 , the pulley H' , being a loose pulley, and the one H , keyed to or fixed upon the shaft F , while the pulley H^2 , is rigid with the pinion or gear E' , which gear is loosely journaled on the shaft. The gears E^2 , and F' , and pinion d , are keyed to or rigidly fixed on their respective shafts, but the gear E , and pinion d' , are loose on the shaft D' , but are rigidly connected together thus permitting the reverse motion of the machine, as will be presently explained.

As before stated the cylinder B , is provided with a vertical slot B^2 , for the reception of the raw-hides, which are secured in said slots by means of suitable set-screws c , which are located in holes or openings in the cylinder at the desired point. These openings c' , are of sufficient size to admit of the insertion of a wrench or other suitable device for tightening the screws, which screws when tightened, are counter-sunk in the cylinder, so as to offer no obstruction to the movements of the sleeve B' , which is provided at its lower end with an annular flange B^3 , which flange extends from the periphery of the cylinder to the inner surface of the rollers or bars C , and affords a vertical pressure on the raw-hides. The upper end of the sleeve B' , is provided with a hook or ring b^4 , to which may be secured a rope which may operate over a pulley when it is desired to raise the sleeve. As the sleeve may not have sufficient weight to give the desired amount of vertical pressure, I may place across its top a bar C^3 , which may be weighted at one end and adjustably secured to a post C^4 , at its other.

As is clearly seen in Figs. 4, and 5, the inner surface of the sleeve B' , is provided with an insulation M , which extends from its top to its bottom, and that the flange or disk B^3 , thereof, is also provided with an insulator M' , around its periphery, which as before stated extends to the inner surface of the rollers C , which rollers are provided with an insulation, both at their upper and lower ends in the sockets within the plates a' , and a^3 , which are located as before set forth.

To the upper portion of the sleeve B' , is connected by means of a suitable binding-post or terminal m , a wire N , which leads from said post or terminal to a suitable battery, dynamo or other instrument for generating electricity. To one or each of the rollers C , is connected by suitable binding-posts or terminals m' , a wire N' , leading to the other pole of the battery, which may be of any desired kind and located at any proper point. It will also be seen that the socket-piece P , on the floor a , within which the lower end of the cylinder has its bearing has an insulation m^2 , and the hub of the horizontal gear D , is insulated as

at m^3 , to prevent the current of electricity passing through the same.

In the event of the inoperation of the current of electricity through the wire N , at the top of the sleeve B' , I may connect another wire N^2 , leading to the same pole of the battery, to the lower part of the cylinder B . In order to prevent the current of electricity from passing from the horizontal gear to the operating mechanism, the teeth or cogs of same may be made of any suitable non-conducting material.

The operation of my device is simple and as follows: The sleeve B' , is raised so as to expose the slot or a portion thereof in the cylinder B , and a number of hides are inserted and secured in said slot by means of set-screws c . The power is then applied to the machine by means of the belt f , which passes over the pulley H , and a power-pulley (not shown), and as the pulley H , is rigid on the shaft F , it will cause the same to revolve, in which operation the pinion F' , meshing with the gear E^2 , transmits the rotary motion to the shaft D' , which being geared to the horizontal cogged-wheel D , by means of the pinion d , will impart its motion to the cylinder B , and cause the hides c^{10} to be wound thereon, and to be compressed by reason of the rollers C , which as before stated are placed in a circle around the cylinder, and in order to prevent injury to the hides by reason of friction, are preferably loosely secured in the plates a' , and a^3 , and at the same time the sleeve B' , by reason of its own gravity or that of the bar C^3 , when used, will afford vertical pressure on the hides. In the movement of the machine described, the traveler or nut D^3 , will glide forward on the driving shaft by reason of its screw-threaded connection, and will cause the lever which engages with the bars e' , and d^4 , to assume the position indicated by dotted lines in Fig. 1, when the belt f , will be forced thereby from the pulley H , to the pulley H^2 , which being rigid with the pinion E' , which pinion is loosely journaled on the shaft F , and engages with the gear E , which is rigid with the pinion d' , will impart a reverse motion to the horizontal gear and through it to the cylinder, and at the same time the traveler D^3 , will be returned to its normal position and through its connections with the traveler, the lever will again cause the belt to shift back to the pulley H , when the operation before described may be again repeated.

In the above stated operation the current of electricity is turned on and carried through the sleeve B' , from which it passes into and through the hides, which may have been moistened to make them a better conductor, thence through the rollers C , and over the wire N' , or the alternative course may be taken. The electric current passing through the hides develops a gentle heat, and assists in the disintegration and separation of the fatty fibrin contained in the hides, and facilitates and accelerates the penetration of the component

liquor therein, which quickly renders the same pliable, elastic, and silky, by reason of the mechanical and electrical action to which they have been subjected.

5 The hides after receiving the above named treatment which is very rapidly and cheaply done, will readily absorb any desired substance to increase their weight, or any artificial dye.

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

1. In a machine for treating raw-hides and the like, the combination of the main or supporting frame with an operating shaft journaled thereon, a mechanism for operating the shaft, two pinions mounted on said shaft and adapted to engage with a horizontal gear and to reverse its motion, a slotted cylinder mounted on the main frame, and having means to secure the hide in its slot, a series of rollers or bars encircling the cylinder, a sleeve adapted to fit and operate on the cylinder, and having an annular flange at its bottom, a horizontal gear secured to the lower portion of the cylinder, and an electric generating device having one of its poles connected to the sleeve and its other pole to the treating rollers, substantially as and for the purpose set forth.

2. In a machine for treating raw-hides, the combination of the main frame with an operating shaft journaled thereon and having a screw-threaded section, a mechanism for operating the shaft, two pinions mounted on said shaft and adapted to engage with a horizontal gear and to reverse its motion, a traveler to engage the screw-threaded section on said shaft, and a shifting lever to automatically reverse the motion of the said lever pivotally secured to the main frame, and having means to engage the power-belt, a slotted cylinder mounted on the main frame and having means to secure the hides in its slot, a series of rollers or bars encircling the cylinder, a sleeve adapted to fit and operate on the cylinder, and having an annular flange at its bottom, and a horizontal gear secured to the lower portion of the cylinder, and an electricity generating device having one of its poles connected to the sleeve and its other to the treating rollers or bars, substantially as and for the purpose set forth.

3. In a machine for treating raw-hides, the combination of the main frame A, with the operating shaft D', journaled thereon and

having the screw-threaded section D², the beveled pinions d, d', mounted on said shaft, and adapted to engage with the horizontal beveled gear D, and to reverse its motion, the gears E, and E², mounted on the shaft D', the shaft F, pulleys H, H', H², and gears or pinions E', and F', on said shaft, and the latter engaging with the gears E², and E, respectively, the traveler D³, bars d⁴, and e, engaging with the shifting lever G, said lever pivotally secured to the main frame, the cylinder B, having the slot B², and set-screws c, the sleeve B', having the annular flange B³, a series of rollers C, placed in a circle around the cylinder and the horizontal beveled cog-gear D, and an electricity generating device having one of its poles connected to the sleeve, and its other pole to the treating rollers, substantially as and for the purpose set forth.

4. In a machine for treating raw-hides, the combination of the main frame A, with the operating shaft D', journaled thereon and having the screw-threaded section D², the beveled pinions d, d', mounted on said shaft, and adapted to engage with the horizontal beveled gear D, and to reverse its motion, the gears E, and E², mounted on the shaft D', the shaft F, pulleys H, H', H², and gears or pinions E', and F', on said shaft, and the latter engaging with the gears E², and E, respectively, the traveler D³, bars d⁴, and e, engaging with the shifting lever G, said lever pivotally secured to the main frame, the cylinder B, having the slot B², and set-screws c, the sleeve B', having the annular flange B³, said sleeve being insulated on its inner surface and the flange on its periphery, a series of rollers C, placed in a circle around the cylinder and having insulators at their sockets, and an electricity generating device having one of its poles connected to the sleeve, and its other pole to the rollers, substantially as and for the purpose set forth.

5. The combination in a machine, of the cylinder B, the sleeve B', to operate on said cylinder, the treating rollers C, located around the sleeve and cylinder, and the operating mechanism of an electricity generating device, having one of its poles connected to the sleeve and its other pole to the treating rollers, substantially as described.

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