

No. 652,057.

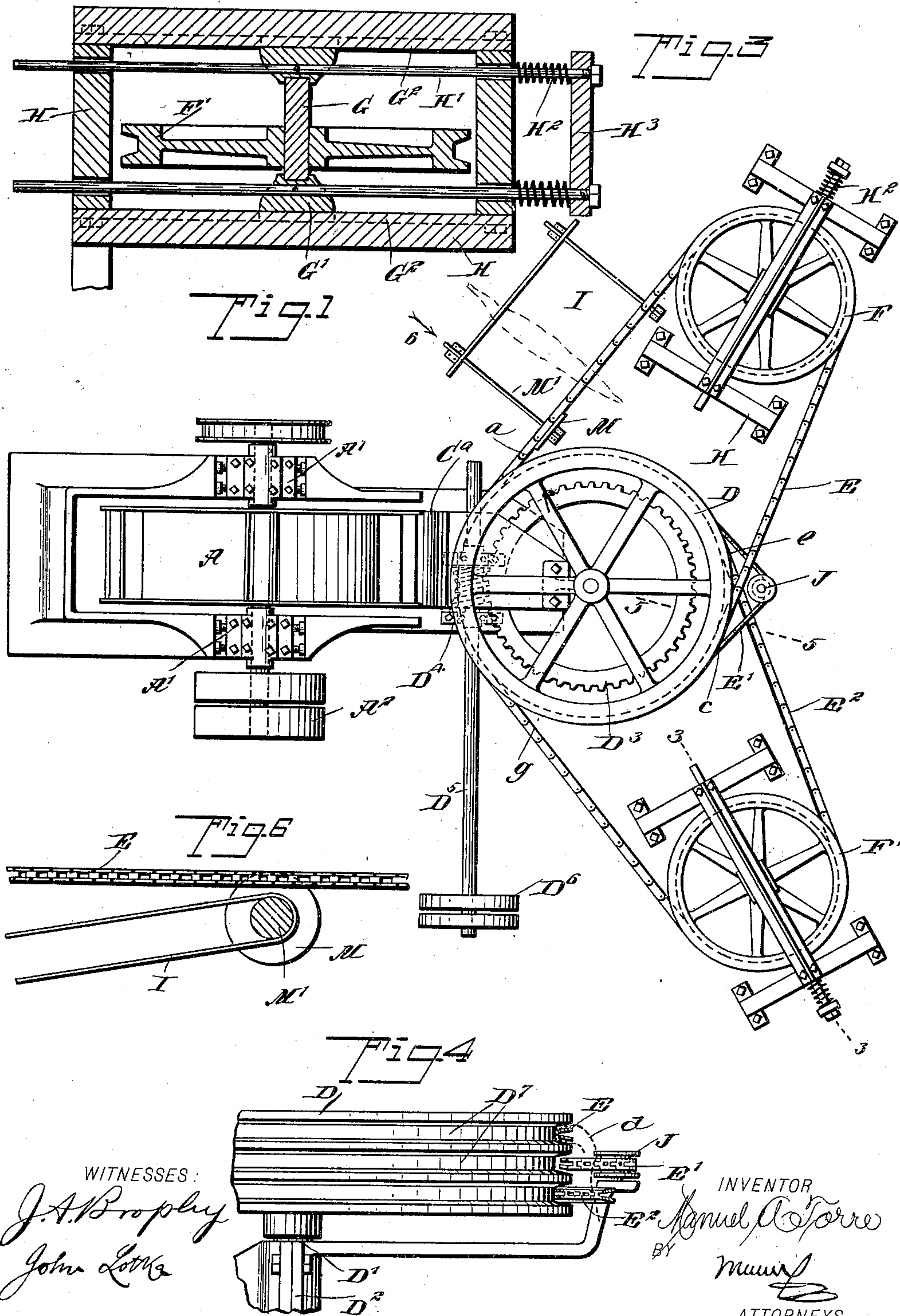
Patented June 19, 1900.

M. A. TORRE.
DEFIBRATING MACHINE.

(Application filed Nov. 27, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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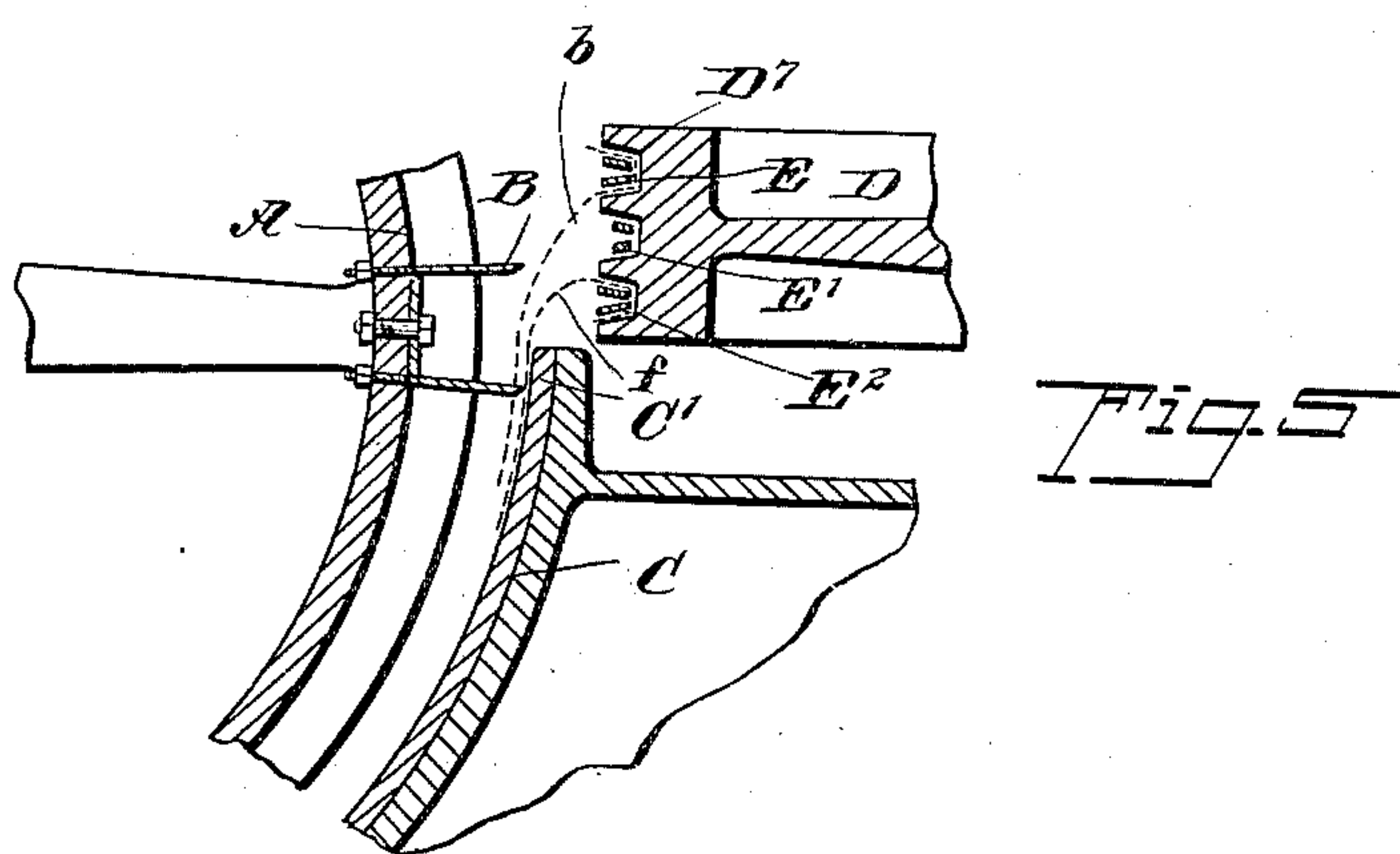
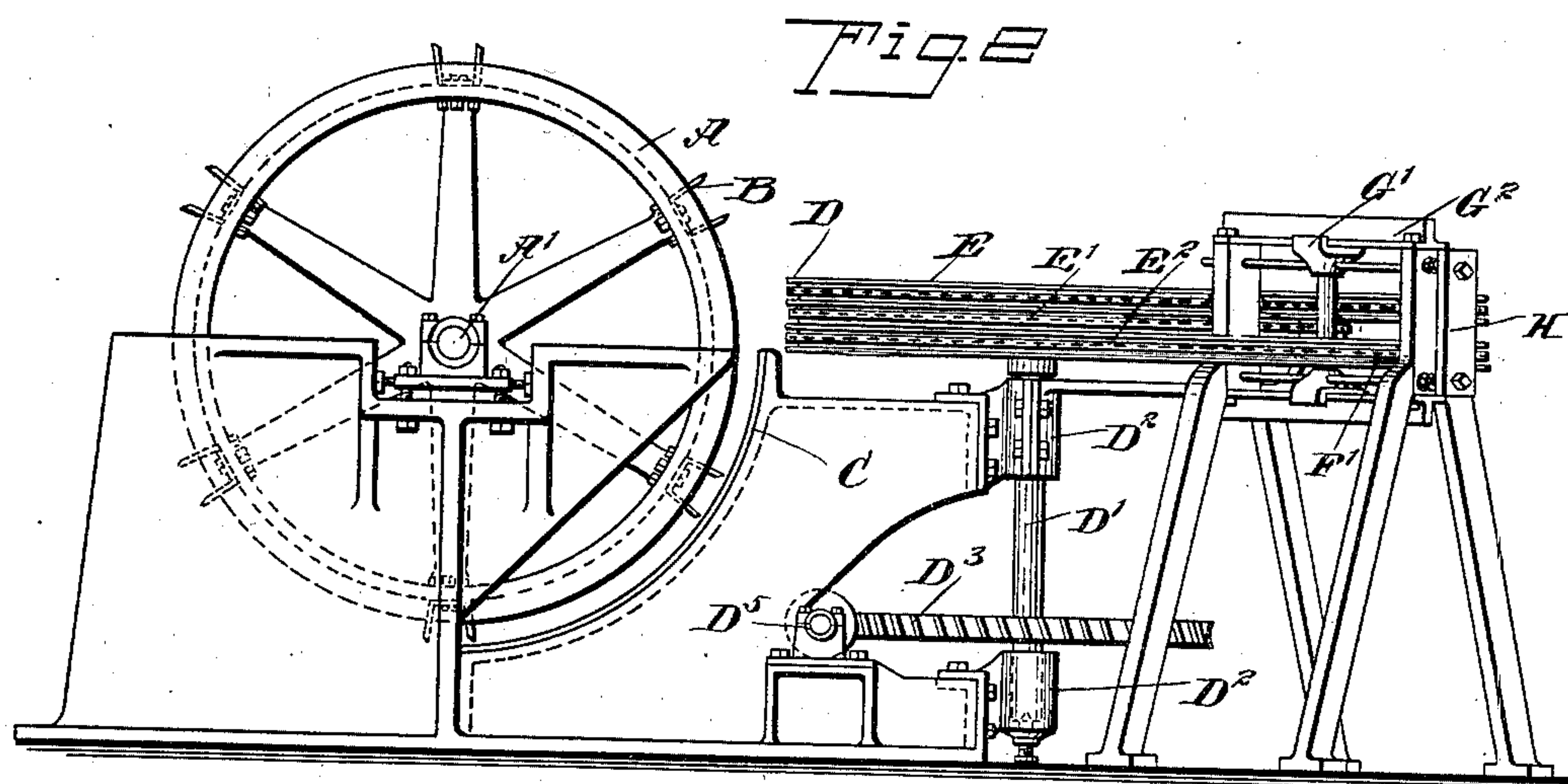
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UNITED STATES PATENT OFFICE.

MANUEL A. TORRE, OF MERIDA, MEXICO.

DEFIBRATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 652,057, dated June 19, 1900.

Application filed November 27, 1899. Serial No. 738,350. (No model.)

To all whom it may concern:

Be it known that I, MANUEL A. TORRE, a citizen of the Republic of Mexico, and a resident of Merida, Yucatan, Mexico, have invented a new and Improved Defibrating-Machine, of which the following is a full, clear, and exact description.

My invention relates to machines for cleaning vegetable fibers, particularly for scutching leaves, so as to free the fibers thereof.

The object of my invention is to provide a simple means for successively subjecting to a thorough scutching action the various parts of the leaves.

To this end I employ the construction hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan of my improved machine. Fig. 2 is a side elevation thereof. Fig. 3 is a section on the line 3 3 of Fig. 1. Fig. 4 is a detail elevation of the conveying-wheel. Fig. 5 is a detail sectional elevation on the line 5 5 of Fig. 1, and Fig. 6 is a detail elevation in the direction of the arrow 6 in Fig. 1.

The improved machine comprises a scutching-wheel A, journaled in bearings A' and provided with pulleys A² for driving it. Said scutching-wheel carries knives B, projected from its periphery and preferably arranged in pairs, the forward knife projecting less from the periphery than the rearward knife. Adjacent to a portion of the path of the knives is located a segmental stationary bed C, which forms a bottom, between which and the knives the leaves are adapted to pass. Adjacent to the entrance C' of the bed C is located the periphery of the conveying-wheel D, which is journaled, by means of a vertical shaft D', in bearings D². Motion may be imparted to said shaft by means of a worm-wheel D³, engaging a worm D⁴ on a shaft D⁵, which may be driven by belt applied to a pulley D⁶.

The conveying-wheel D is provided upon its periphery with three parallel superposed grooves D⁷, which are preferably flaring toward the periphery, as shown best in Figs. 4 and 5. In the upper groove D⁷ is adapted to

travel an endless chain E, made of links flaring toward the outer surface of the chain and preferably somewhat curved so as to fit the periphery of the conveying-wheel. Said chain also passes over a guide-wheel F, which at the same time is a tension-wheel, being journaled upon a shaft G, the bearings G' of which are adapted to slide in guideways G² of a stationary frame H. Rods H' are secured to the said bearings G' and are adapted to slide in the frame H, the ends of said rods being controlled by springs H² and connected by a cross-bar H³. The springs H² preferably have a tendency to keep the wheel F in its outermost position, and thus to keep the chain taut. A wheel F', like the wheel F and mounted in a like manner, is located at the opposite side of the wheel D, as shown in Fig. 1.

Adjacent to the angle *a* at which the chain E comes in contact with the conveying-wheel D is located a feed device which, as shown, consists of a link belt I, adapted to move in the same direction as the chain and inclined lengthwise upwardly toward the chain, the said belt passing at a sufficient distance under the chain to enable the ends of the leaves which project beyond the edges of the belt, as indicated in Fig. 1, to pass under the chain E and to come in contact with the wheel M, secured upon the shaft M' of the belt. This wheel is on the side of the chain opposite to the belt and passes close to the chain and is adapted to lift the depending or overhanging ends of the leaves into the plane of the chain, so that said ends will reach the pocket *a* and will there be seized and gripped between the chain E and the periphery of the conveying-wheel D.

It will be understood that the leaves will be seized at their upper ends and will hang down substantially in the position indicated by the letter *b* in Fig. 5, the lower end of the leaf being thus adapted to pass into the space between the bed C and the scutching-wheel A, to be there subjected to the action of the knives B. As the leaf is then carried around by the chain E and the wheel D its hanging end is adapted to come in contact with a second chain E' at the point *c*. This central chain E' engages the conveying-wheel D, at

the central groove thereof, and passes outwardly over a pulley J. It will be obvious that as the lower end of the leaf is dragged over the chain E', while the upper end of said leaf is still held by the chain E, said lower end will be raised, and this is done for the purpose of bringing the lower end of the leaf into the plane of the third or lowermost groove D' of the conveying-wheel. In this groove is arranged a third chain E², which passes over the tension-wheel F', which is constructed and arranged exactly like the wheel F, except that it is at a different level.

It will be observed that a line connecting the center of the pulley J with the center of the wheel D will bisect the angle formed by lines from the center of the wheel D to the centers of the wheels F and F', respectively.

The lower end of the leaf will by the action of the central chain E' be raised approximately to the level of the lowermost chain E², as indicated at d in Fig. 4, and is then caught by the chain E² where the same comes in contact with the periphery of the wheel D, and approximately at the same time the upper end of the leaf is released, owing to the chain E leaving the periphery of the wheel D at that point, so that from the point e on the leaf is held by its lower end, and what was the upper end of the leaf drops down by gravity, so that the leaf comes into the position shown at f in Fig. 5. In this position it is carried around and again exposed to the action of the scutching-wheel, and finally the leaf is released at the point g.

It will be seen that the apparatus is exceedingly simple, inasmuch as a single conveying-wheel is employed, and that the leaf is thoroughly scutched, for the reason that it is alternately seized at its opposite ends, the raising action of the central belt E' insuring the engagement of the lowermost chain E² with the proper end portion of the leaf.

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

1. The combination of the scutching-wheel, the conveying-wheel having three superposed peripheral channels, three endless flexible connections engaging the wheel at the said channels, and each extending in a different

direction therefrom, and means for operating the scutching-wheel and the conveying-wheel.

2. The combination of the scutching-wheel, the conveying-wheel arranged adjacent thereto, three endless flexible connections engaging the conveying-wheel at different planes and each extending in a different direction therefrom, and means for operating the said wheels.

3. The combination of the scutching-wheel, the conveying-wheel arranged adjacent thereto, three endless flexible connections engaging the conveying-wheel at different planes and extending in different directions therefrom, the axis of the central connection approximately bisecting the angle formed by the axes of the outer flexible connections, and means for operating the said wheels.

4. The combination of the scutching-wheel, the three endless flexible connections arranged to move in adjacent parallel planes, and each extending in a different direction, three coaxial circular surfaces engaged by said flexible connections, and means for actuating the scutching-wheel and the flexible connections.

5. The combination of the scutching-wheel, the three endless flexible connections arranged to move in adjacent parallel planes, and extending in different directions, the axis of the central connection approximately bisecting the angle formed by the axes of the outer endless connections, three coaxial circular surfaces engaged by said flexible connections, and means for actuating the scutching-wheel and the flexible connections.

6. The combination of the scutching-wheel, the conveying-wheel, the endless connections engaging the periphery of the conveying-wheel, the feed-apron extending toward the angle between the periphery of the conveying-wheel and the feed-run of the first flexible connection, a rotary wheel arranged in said angle to bend the ends of the leaves which project from the feed-apron, and means for actuating the scutching-wheel and the conveying-wheel.

MANUEL A. TORRE.

Witnesses:

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EVERARD BOLTON MARSHALL.