

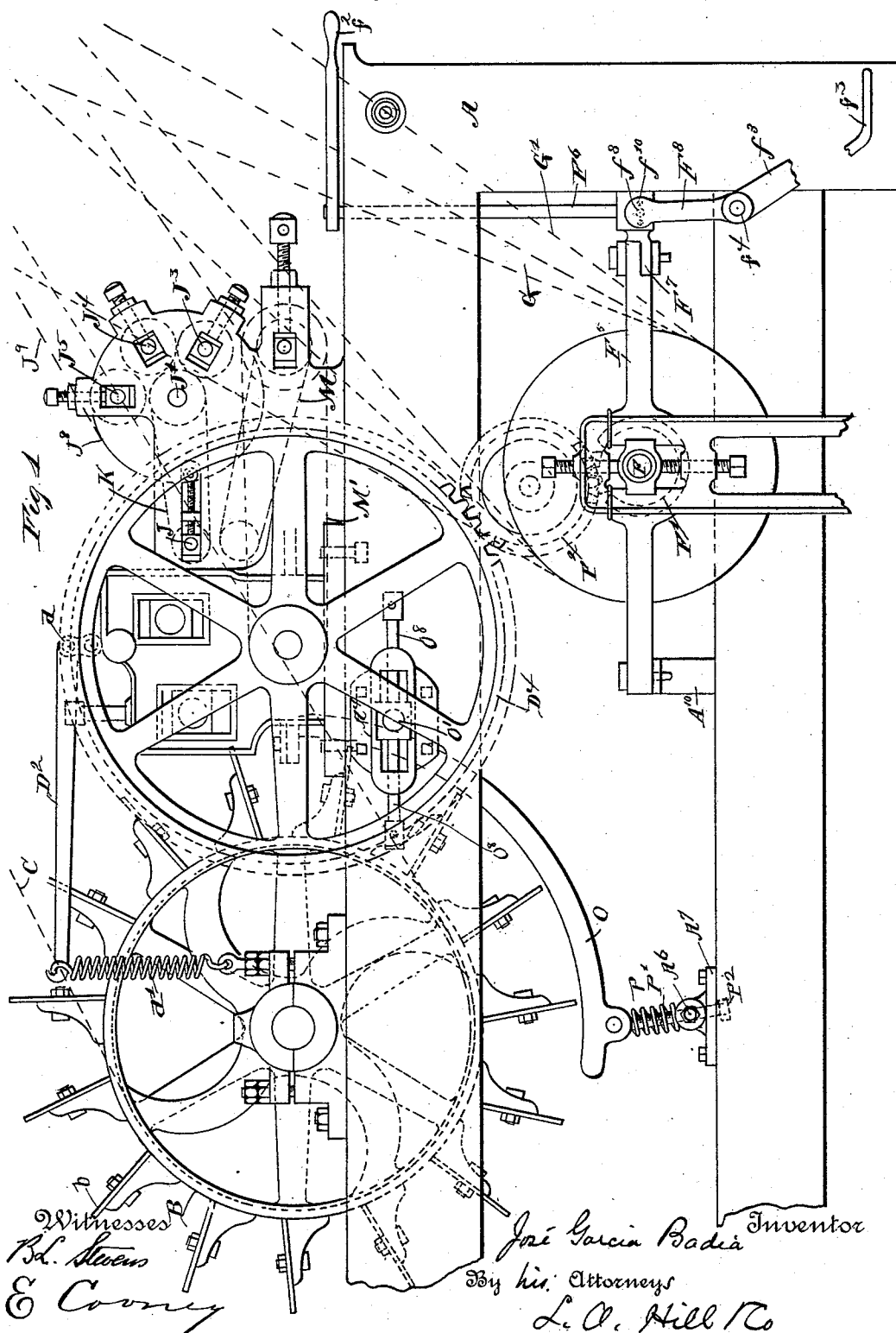
(No Model.)

3 Sheets—Sheet 1.

J. G. BADIA.
FIBER CLEANING MACHINE.

No. 469,222.

Patented Feb. 23, 1892.



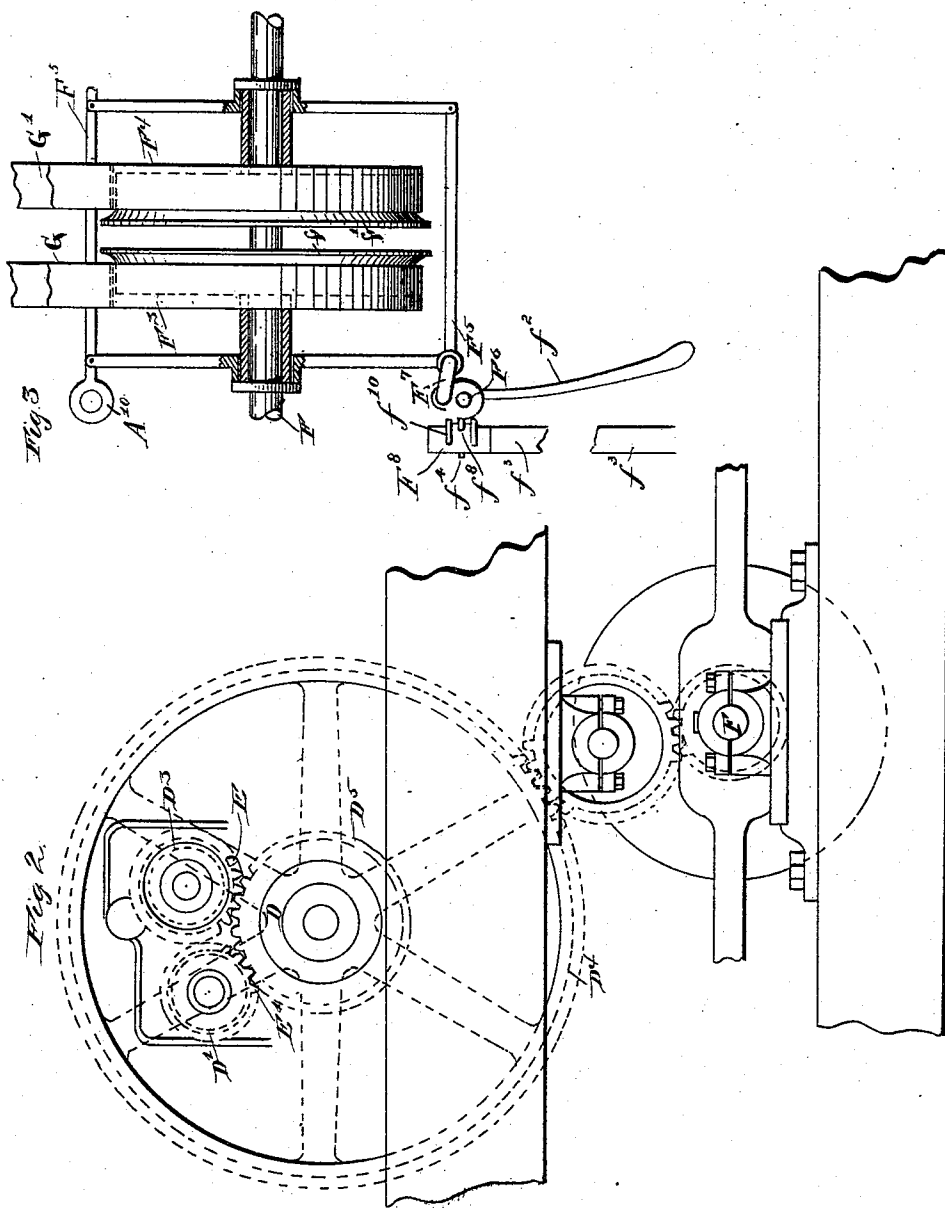
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Witnesses
E. Cooney
B. L. Stevens

José Garcia Badia, Inventor
By his Attorneys
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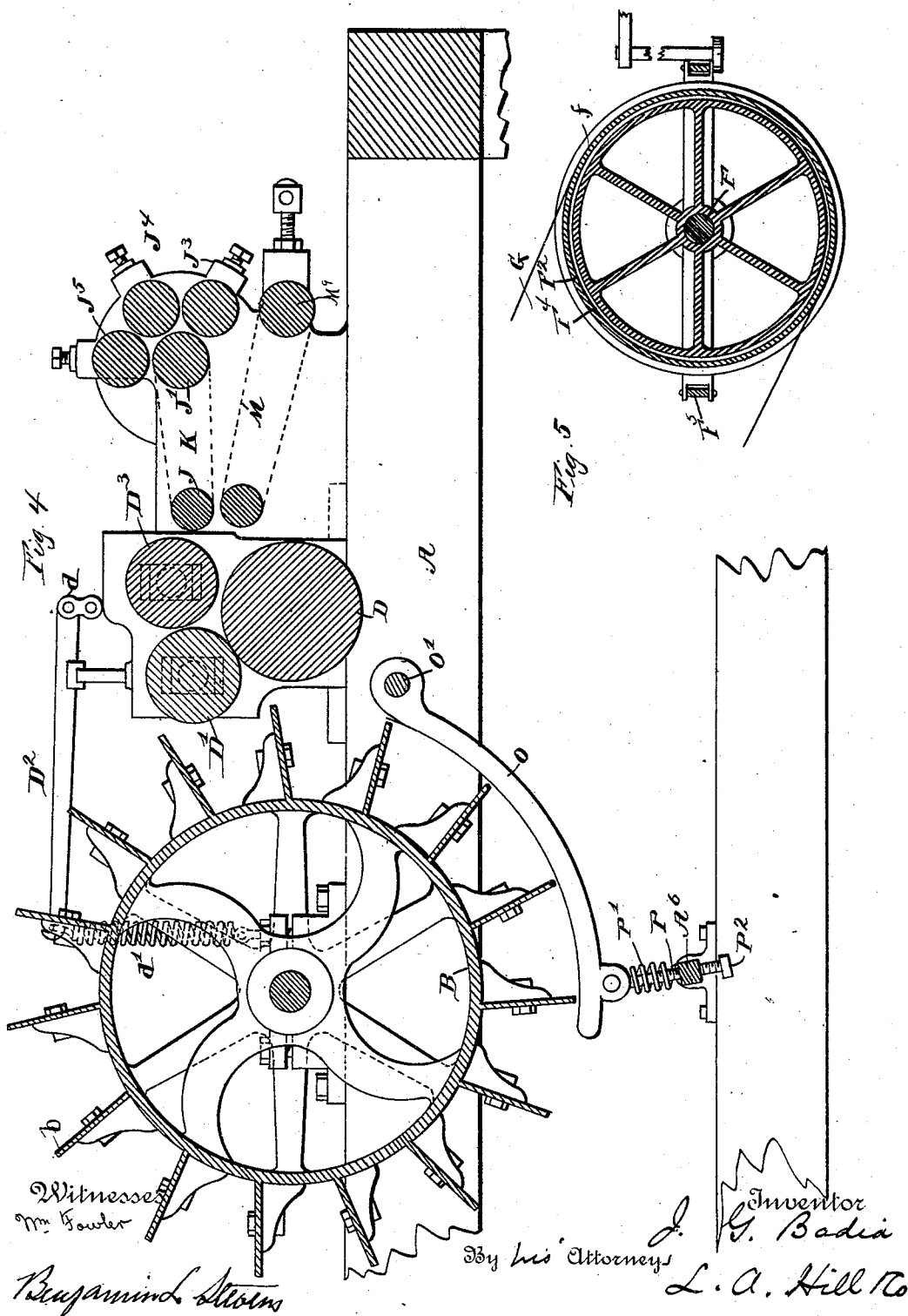
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UNITED STATES PATENT OFFICE.

JOSÉ GARCIA BADIA, OF NEW YORK, N. Y.

FIBER-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 469,222, dated February 23, 1892.

Application filed December 30, 1889. Serial No. 335,305. (No model.) Patented in Spain March 6, 1890, No. 10,456.

To all whom it may concern:

Be it known that I, JOSÉ GARCIA BADIA, a subject of the King of Spain, and a resident of New York, county and State of New York, have invented a certain new and useful Improvement in Fiber-Cleaning Machines, (for which I have obtained a patent in Spain, dated March 6, 1890, No. 10,456,) of which the following is a specification.

My invention relates especially to devices employed for cleaning or extracting fiber from plants, and has for its object the provision of a device simple in construction, cheap in manufacture, rapid and automatic in operation, and which will be efficient in practical use.

To attain the desired end my invention consists in the construction and arrangement of parts hereinafter fully set forth and claimed.

In the drawings which form a part of this specification, Figure 1 represents a side elevation of my machine. Figs. 2 and 3 are views in detail. Fig. 4 represents a view of the machine in longitudinal vertical section; and Fig. 5 is a transverse section on the line *x x*, Fig. 3.

Like letters of reference wherever they occur indicate corresponding parts in all the figures.

Referring again to the drawings, A represents the frame of my machine, preferably constructed of metal and provided with suitable supporting-standards. The drum B journaled thereto is provided on its periphery with any suitable number of tools *b*—as, for example, hacking-combs or equivalent picking devices or scutching blades or knives or equivalent scraping-tools, or both—and is driven by means of a belt C, which conveys the power from a counter-shaft (not shown) to a concentric pulley rigidly attached to the drum B.

Mounted on the frame A are two rolls, the lower one D revolving in fixed journals and the upper roll D' being held against the lower one by the engagement with the journal-boxes of the spring-pressed arms D², pivoted at *d*, each having at its free end a spring *d'*, the opposite end of which is fastened to the frame A. Inasmuch as the fibrous plants treated vary very much in thickness, I prefer, ordinarily, to use additional supplement-

tal rolls in order to partially crush the plants before they reach the final friction feed-rolls D D'—as, for example, the roll D³—which may be placed a short distance above or apart from the roll D, and in cases where it is deemed necessary or desirable still other supplemental rolls may be used, in order that the plants may be gradually crushed flatter as they approach the rolls D D'.

Placed in front of the feed-rolls is the belt K, supported by the rollers J J', at the outer end of which belt are exteriorly placed the friction-rolls J³ J⁴ J⁵. The roller J' is provided with a drum J³, placed at one side of the same, which drum is driven by a belt J², also passing around a pulley hung on a counter-shaft. (Not shown.) Below the belt K is situated the belt M, adapted and arranged to move in the same direction as the shaft of the gear D⁴ and roll D, said belt M being actuated by means of a connecting-belt M', which runs on two pulleys, one concentric with the outer roll M² of the belt M and the other placed upon the shaft of the roll D, the said roll D receiving its motive power from the shaft F through the intermediate gear F' F². The roll D, by means of the gear D⁵, which it carries, communicates motion to the rolls D' and D³ through the gear E E', secured, respectively, to the two said rolls.

Upon the shaft F are rigidly attached two pulleys *f f'*, provided with cone-shaped edges, over which are placed two hollow wheels F³ F⁴, rotating on integral sleeves extending from each wheel to the side of the frame F⁵ nearest the same, the ends of the sleeve being journaled in the frame sides, and which sleeves and wheels revolve (being actuated, respectively, by open and crossed belts G G', passing over pulleys hung on a counter-shaft, not shown) around a shaft F and move laterally with the movable frame F⁵. Upon the said frame F⁵ being pushed, as hereinafter set forth, to one side one of the wheels, as F³, will engage with one of the pulleys, as *f*, and the shaft F will consequently be rotated in one direction, and upon the frame F⁵ being moved in the opposite direction the other hollow wheel, as F⁴, moving laterally with the said frame, will engage with the other pulley, as *f'*, as is clearly shown in Fig. 3, and the shaft F will be rotated in the opposite direction.

The frame F⁵ is sustained in a movable rela-

tion at the side of the machine-frame A by means of a post A¹⁰, placed near the outer corner of the frame F⁵ nearest the drum B and mounted on one of the lower side cross-
 5 pieces connecting the standards of the frame A, and is also supported by means of the vertical rod F⁶, pivoted to the frame A by means of the connecting-bar F⁷, rigidly secured to the rod F⁶. This frame F⁵ may be actuated by
 10 manual means, as by a handle f², which serves to turn the vertical rod F⁶, pivoted, as stated, to the frame A and connected in a movable relation with the frame F⁵ by the bar F⁷, rigidly secured to the rod F⁶, a pin or other suitable
 15 connecting device serving to attach the frame F⁵ and bar F⁷ together. This movable frame F⁵ may also be actuated by the foot by means of the lever f³, fulcrumed at f⁴ to the lower side of the frame A, which lever also
 20 turns the vertical rod F⁶ by the short vertical arm F⁸ of the said lever, which engages the lateral pin f⁸ by means of the lugs f¹⁰, projecting inwardly from the upper part of the lever-arm F⁸. It is obvious that in lieu of
 25 the above methods of operating the frame F⁵ it may be moved laterally the very short distance required by the use of any other suitable manual or automatic mechanism.

The cross-bar O', projecting from each side
 30 of the top of the chute O, is adjustably supported by means of slotted plates A⁴, one placed on each side of frame A and rigidly secured to the same, each of the two slotted plates A⁴ engaging with one end of the cross-
 35 bar O'. The said cross-bar may be caused to approach nearer to or to withdraw from the drum B by manipulating the threaded screws placed on opposite sides of the cross-bar O' and working in the ends of the slotted plates
 40 A⁴, as is clearly shown in the drawings.

The position of the lower portion of the chute O is regulated by means of the threaded rod P, hinged thereto and passing through the cross-rod A⁶, supported by the plates A⁷,
 45 one placed on each side of the lower cross-pieces of the frame A, in connection with the nut P² and spring P', in the following manner: The resilience of the spring P', coiled around the rod P and placed between the
 50 chute O and cross-rod A⁶, tends to keep the lower end of the chute O adjacent to the cleaning-tools of the drum B, and by manipulating the nut P², working on the threaded rod P, (and placed on the outside of the trans-
 55 verse rod A⁶.) the end of the chute may be drawn away from and held at any desired distance from the drum B in consequence of the threaded rod P being gradually drawn through the cross-rod A⁶. The rod P, nut P²,
 60 and spring P' may be duplicated, if desired, oneset being placed at each side of the chute O.

The operation of parts is as follows: The plants to be cleaned are fed by hand to the rolls by holding them above the belt K. As

soon as one end of the plants are cleaned the
 65 parts are reversed by causing the frame F⁵ to move laterally in the desired direction and the plants, having had one end operated upon by the drum B, are delivered outwardly by the rolls D D', rotating with a movement
 70 contrary to the former one on account of the change of motion of the parts. The plants will now travel over the belt K, which constantly moves in one direction, and passing under the friction-rolls J³ J⁴ J⁵ will reach the
 75 top of the belt M at the time when (the parts having been reversed a second time) the said belt M, which changes its movement with the roll D, is once more traveling in a forward
 80 direction and the plants are again fed to the rolls, but now in a reversed position, and the other ends of the same thus cleaned, after which (the parts having been a third time reversed) the cleaned fiber is delivered from the
 85 rolls, and passing along the top of the belt M is removed from the machine by the operator or in any other manner desired. At the time, however, that the plants under the belt K are entering the second time in the friction-rolls the tender of the machine manually feeds a
 90 new batch to the machine, and thus each lot of plants is successively cleaned.

As it is evident that many slight changes in the construction and arrangement of parts might be resorted to without departing from
 95 the spirit and scope of my invention, I would have it understood that I do not restrict myself to the particular construction and arrangement of parts shown and described, but that I reserve the right to make such changes,
 100 and that

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the cleaning-drum B, of the belt K, rollers J³ J⁴ J⁵, reciprocating
 105 belt M, and feed-rollers D D', substantially as described.

2. The combination, with the cleaning-drum B and chute O, of the rigidly-mounted roll D, spring pressed roll D', and one or more sup-
 110 plemental or crushing rolls, substantially as described.

3. The combination, with the cleaning-drum B and chute O, of the rigidly-mounted roll D, spring-pressed roll D', one or more supple-
 115 mental or crushing rolls, and the reciprocating belt M, substantially as described.

4. The combination, with the cleaning-drum B, of the belt K, rollers J³ J⁴ J⁵, reciprocating
 120 belt M, feed-rolls D D', and one or more crushing-rolls, substantially as described.

In testimony of the foregoing specification I do hereby sign the same in the city of New York, county and State of New York.

JOSÉ GARCIA BADIA.

Witnesses:

LOUIS A. HILL,
 J. ODELL FOWLER, Jr.