No. 689,052. Patented Dec. 17, 1901.

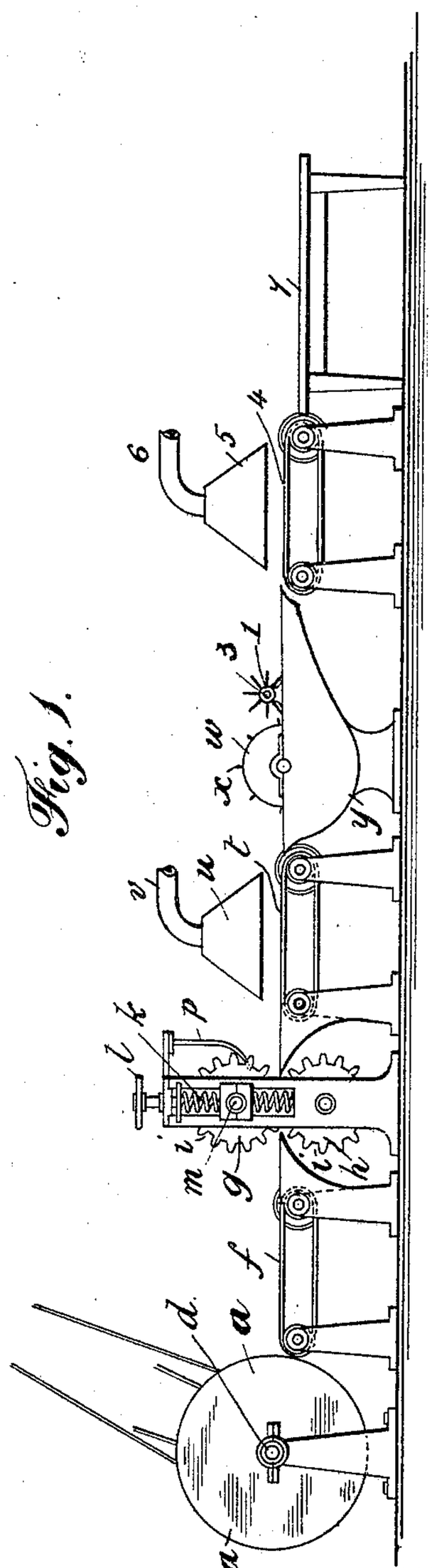
W. H. L. ALFRED.

METHOD OF TREATING COCOA OR LIKE FIBERS.

(Application filed June 14, 1901.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



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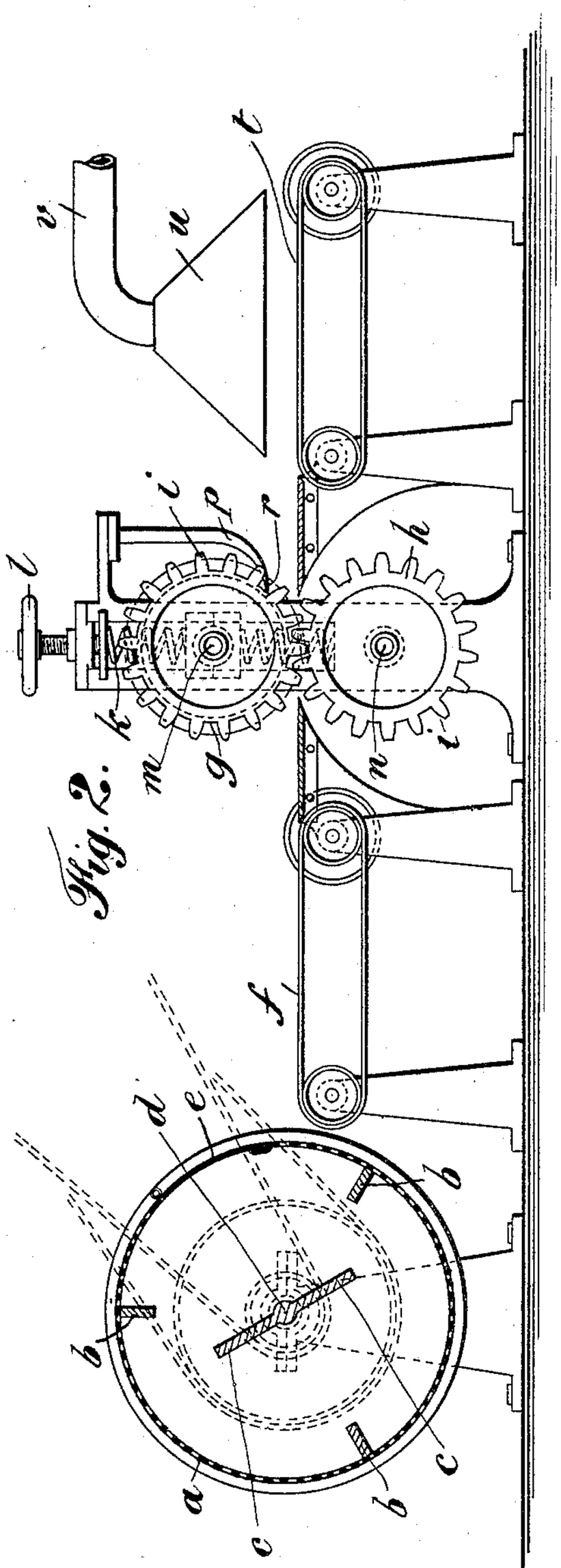

Fig. 2.

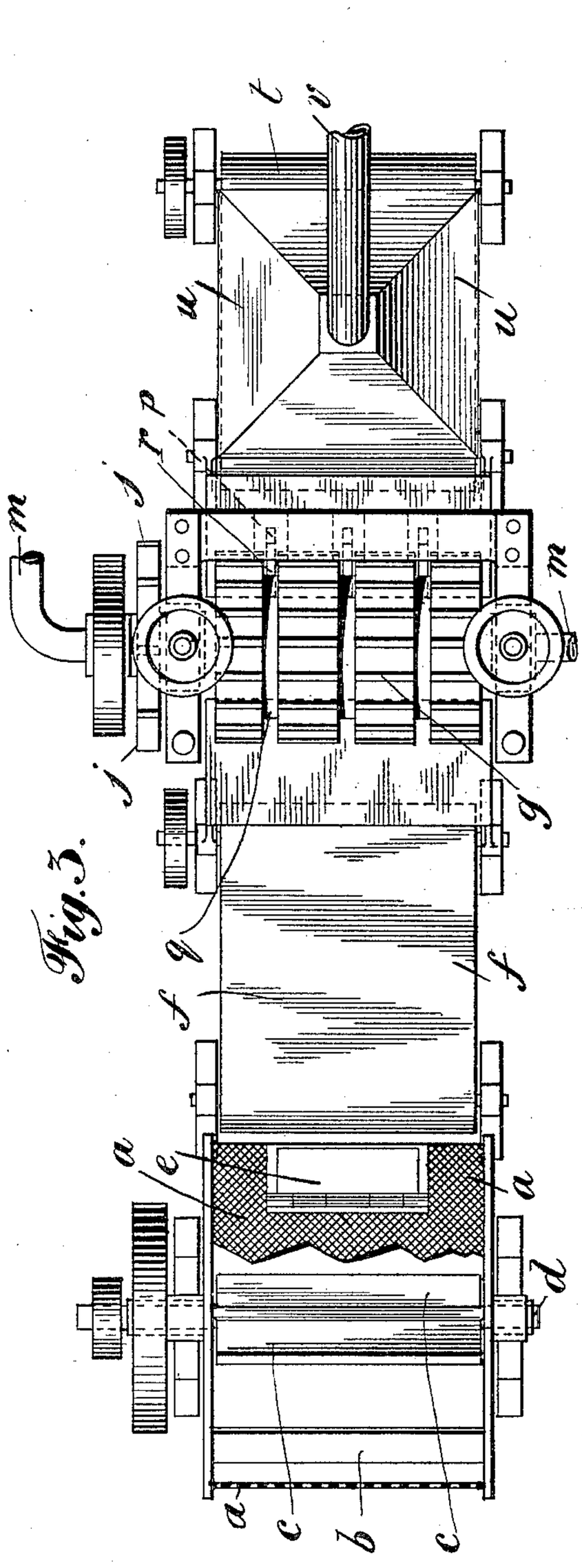

Fig. 3.

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(No Model.) 3 Sheets—Sheet 3.

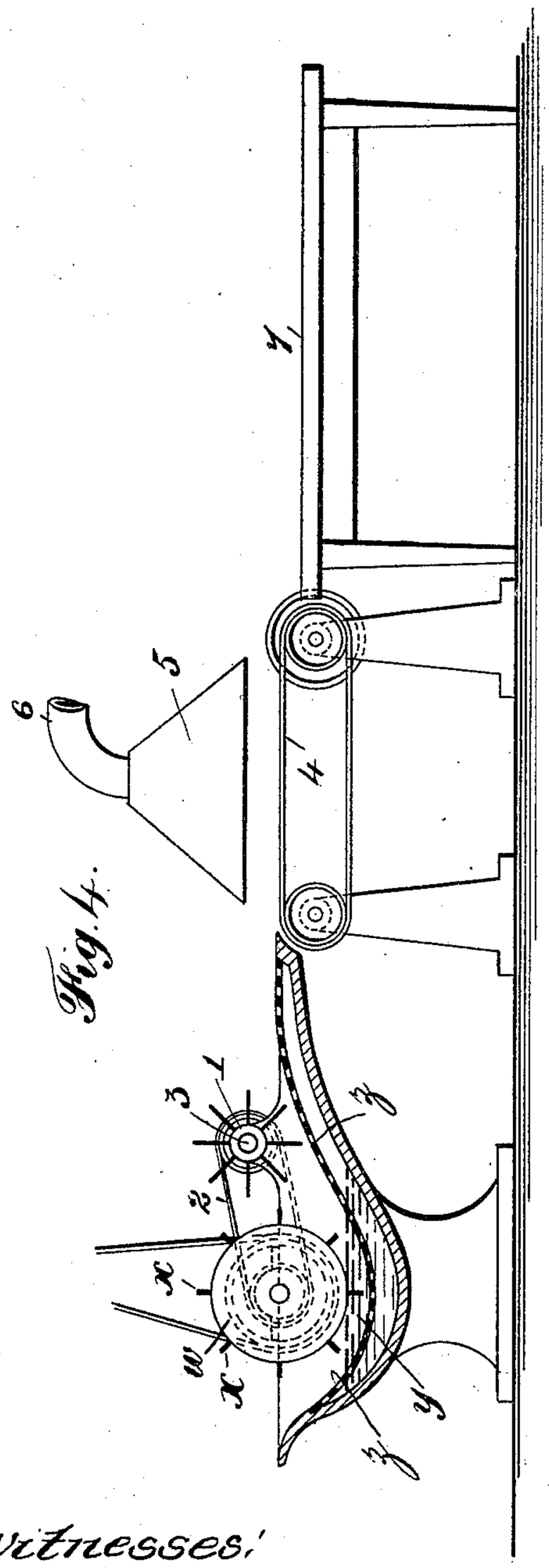

Fig. 4.

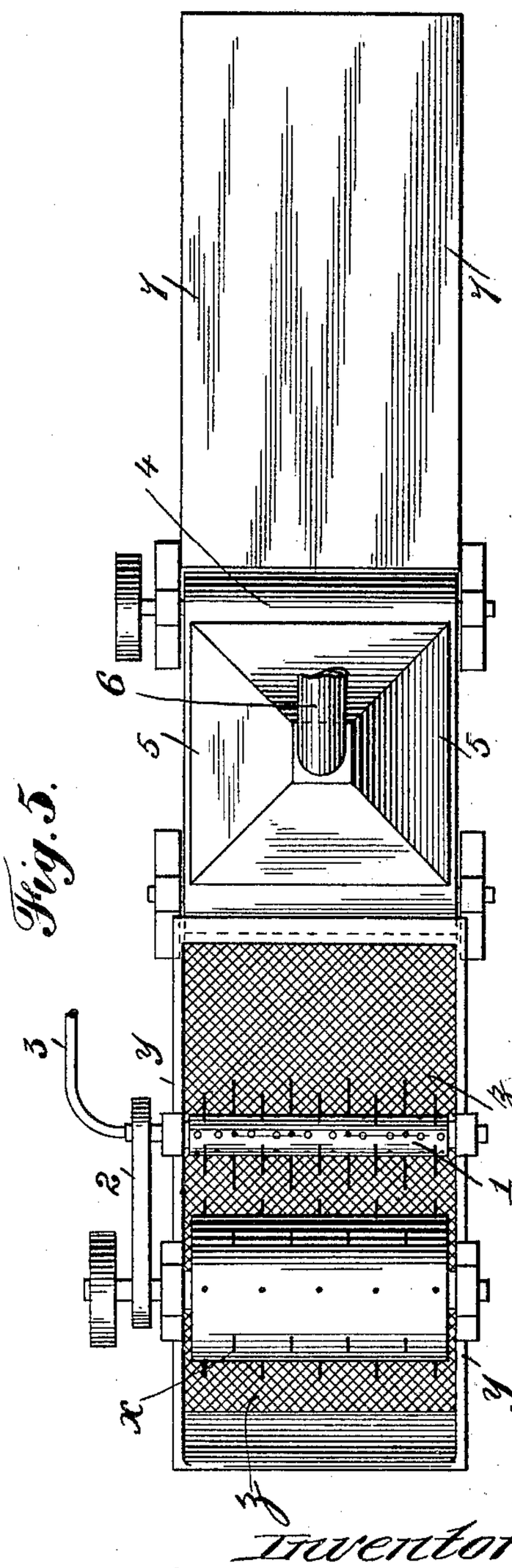

Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM HENRY LAMPERT ALFRED, OF LONDON, ENGLAND.

METHOD OF TREATING COCOA OR LIKE FIBERS.

SPECIFICATION forming part of Letters Patent No. 689,052, dated December 17, 1901.

Application filed June 14, 1901. Serial No. 64,621. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY LAMPERT ALFRED, a subject of the King of Great Britain, residing at 29 Selsdon road, West Norwood, London, England, have invented certain new and useful Improvements in the Method of Treating Cocoa or Like Fibers, of which the following is a specification.

This invention relates to a certain new and useful method of treating cocoa or like fibers in imitation of curled horsehair for upholstery and like purposes.

In describing the method in detail reference is had to the accompanying drawings, illustrating one form of an apparatus in which my improved method for treating cocoa and like fibers can be carried out.

In the said drawings, Figure 1 is a side elevation of the apparatus. Fig. 2 is a side elevation, on an enlarged scale, of a portion of the apparatus. Fig. 3 is a plan of Fig. 2. Fig. 4 is a side elevation, on an enlarged scale, of the remaining portion of the apparatus. Fig. 5 is a plan of Fig. 4.

To carry out my invention, I first boil the cocoa or like vegetable fiber, so as to soften it, and then submit it in bulk while wet and limp to a threshing or beating process, by which the bulk of fiber is partially dried and disintegrated or broken up into fragments. This is effected by placing and inclosing the fiber in a cylindrical vessel *a*, of open wirework or perforated with blades *b* lengthwise around its inner circumference and revolving slowly, thus lifting the fiber and causing it to continuously fall upon a paddle or beater with one or more longitudinal arms *c* revolving upon the same spindle *d* at a high speed. When thus separated, broken up, and partially dried, the fiber, still somewhat damp and limp, is taken out of the drum *a* by hand through the door *e* and laid or fed carefully upon a traveling band *f*, by which band it is fed in layers between one or more sets of two heated rollers *g h*, having lengthwise-fluted or spur-wheel-like surfaces *i*. These rollers *g h* are driven by power and through the usual cog-wheels *j*, its teeth *i* engaging the other roller for engaging the fiber and curling same. These rollers *g h* are adjustable and pressed together by means of springs *k* or weights, so as to sufficiently compress or corrugate the fiber between them, the springs being adjusted in their tension by the hand-screw *l*. Instead of the grooving being arranged longitudinally they may be peripherally arranged around the rollers. The heating of the rollers *g h* is by passing dry air or steam under pressure into the rollers by the pipes *m n*, the heating medium being conveyed from the heating apparatus or boiler, arranged in any part of the building. To prevent the fiber when passing from between these rollers curling around them, a fixed or movable leader or guide or roller or comb *p* is adapted, whereby the fiber is conducted free of the roller, the rollers with the teeth and grooves longitudinally having at intervals indentations *q* around them to about the depth of the grooves, so that the points of projecting pins *r* on the guide *p* will remove all the fiber as it leaves the rollers to be passed over to a traveling belt *t*, on which it is dried before being varnished. This belt *t* is preferably covered by a canopy *u*, down which the heated air from the pipe *v* is passed, so that it is spread out and has action upon the whole of the fiber as it is slowly passing along. From the traveling band *t*, in a sufficiently dried condition, the fiber is passed beneath a slowly-driven drum or roller *w*, having teeth *x* projecting around its periphery, by which the fiber is grasped, held, and carried beneath the surface of a liquid varnish contained in a vessel *y*, placed beneath the drum or roller *w*, so that every particle of the fiber is immersed and entirely coated with the varnish, and to prevent the fiber dropping from the teeth *x* when being carried through I provide a wire or perforated guide-piece *z* of semicircular form, fixed between the trough or vessel *y* and the driven drum or roller *w*, the fiber being carried by the teeth *x* on the roller *w* until it rises above the surface of the varnish, when after being released in its course from the teeth *x* of the revolving roller *w* it is taken hold of by a spiked roller 1, revolved from the axle of the rollers *w* by belt 2, the roller 1 being provided with perforations, through which a blast or current of air from the pipe 3 passes, and this in conjunction with the disturbing action given to the fiber by the roller 1 will effectually clear the fiber of superfluous varnish, which will run back

into the tank *y* by its slope. The fiber is then passed onto a traveling band 4, covered by a canopy 5, when it is thoroughly dried by hot air from the pipe 6, after which it is discharged onto a table 7, to be packed away ready for export, or the fiber may be finally rolled or tumbled or combed, so that its curled fibers may be mixed and interwoven and formed into bulk ready for use.

Instead of employing the canopies *u* and 5 drying-rooms may be employed, these being separated from the other parts of the building and holes made in the walls for passage of the fiber.

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

1. A method for treating cocoa and like fibers, consisting of successively softening, disintegrating, curling, drying, coating and drying the material.

2. A method for treating cocoa and like fibers, consisting of softening the material by boiling it, then disintegrating the material while wet and limp by threshing or beating it, then curling the disintegrated material, then drying the curled material by hot air, then coating the dried material, then removing the surplus coating, and finally drying the coated material.

3. A method for treating cocoa and like fibers, consisting of successively softening, disintegrating and curling the material, then drying the curled material by hot air, then coating the curled material by submerging in a suitable solution, then removing the surplus coating, and then finally drying the material.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM HENRY LAMPERT ALFRED.

Witnesses:

WM. O. BROWN,

EDMUND S. SNEWIN.