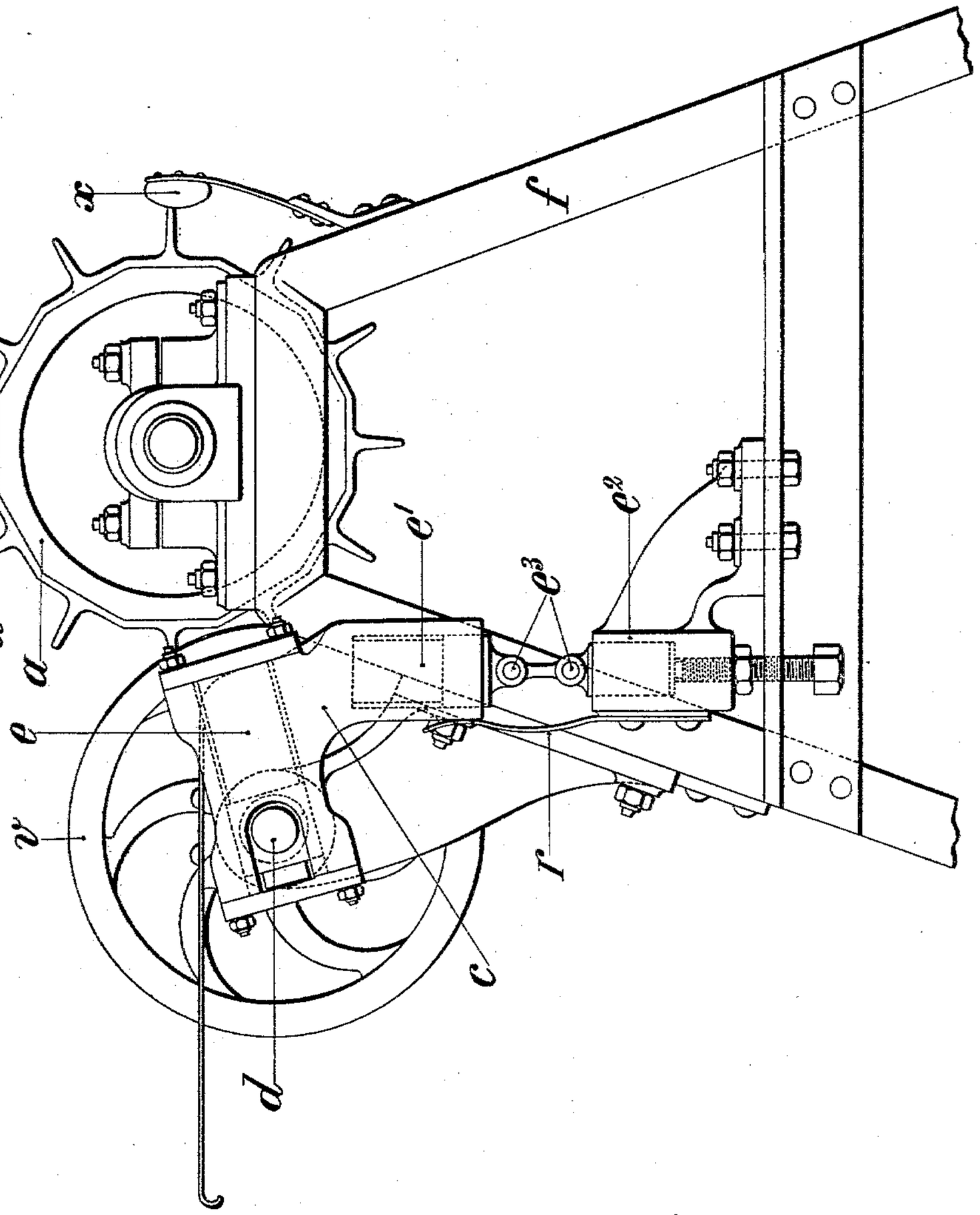
(No Model.) 4 Sheets—Sheet 1.

# P. P. FAURE.

## MACHINERY FOR DECORTICATING RAMIE, &c.

No. 564,982. Patented Aug. 4, 1896.

FIG. 1.




Witnesses:
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Fred. C. Mann,

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Pierre Paubin Faure,
By Briesen & Knauth,
his Attorneys.

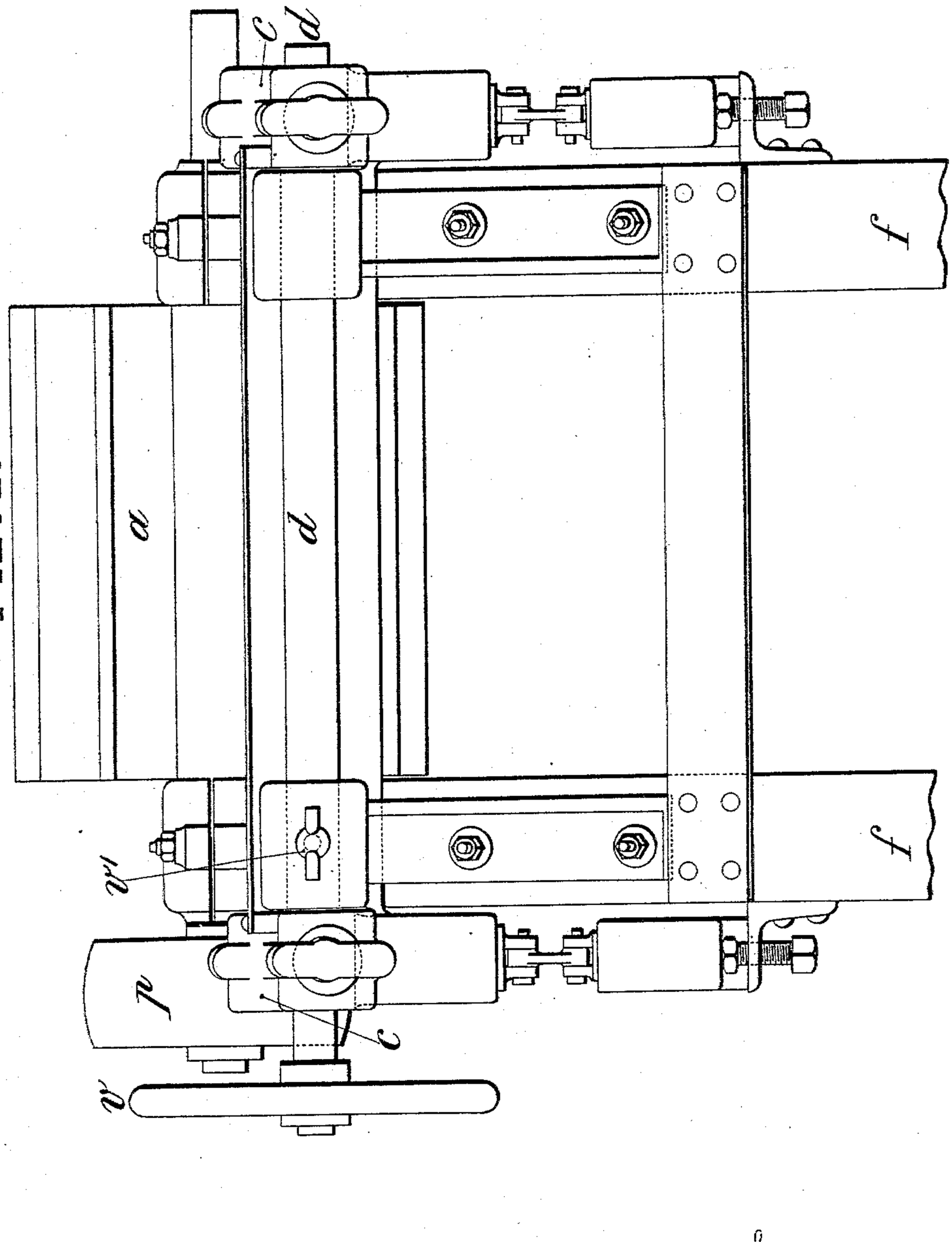
(No Model.) 4 Sheets—Sheet 2.

# P. P. FAURE.

## MACHINERY FOR DECORTICATING RAMIE, &c.

No. 564,982. Patented Aug. 4, 1896.

FIG. 2.

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(No Model.) 4 Sheets—Sheet 3.

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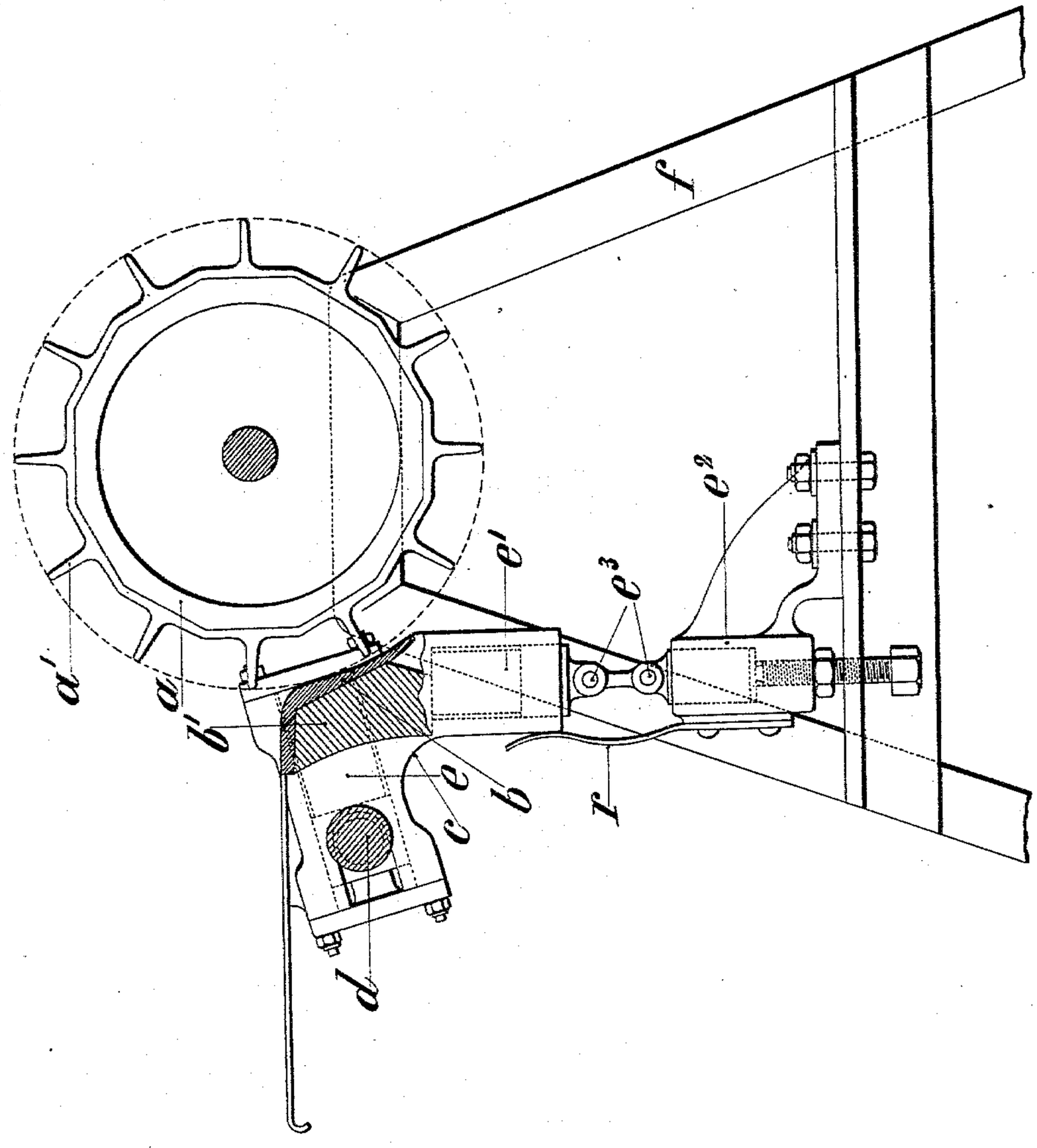
## MACHINERY FOR DECORTICATING RAMIE, &c.

No. 564,982. Patented Aug. 4, 1896.

FIG. 3.




Witnesses:
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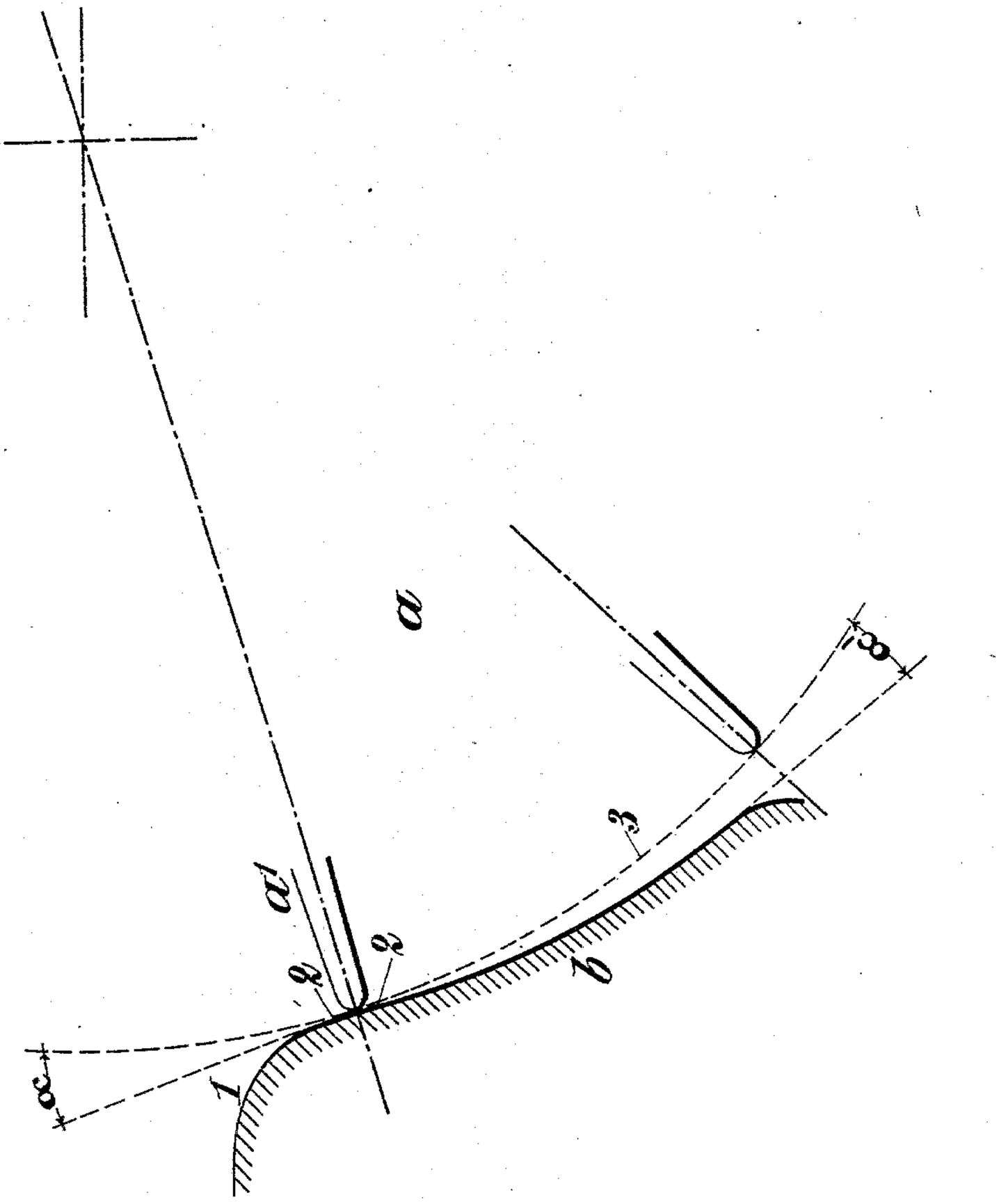
(No Model.) 4 Sheets—Sheet 4.

# P. P. FAURE.

## MACHINERY FOR DECORTICATING RAMIE, &c.

No. 564,982. Patented Aug. 4, 1896.

FIG. 4.




Witnesses:
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# UNITED STATES PATENT OFFICE.

PIERRE PAULIN FAURE, OF LIMOGES, FRANCE.

## MACHINERY FOR DECORTICATING RAMIE, &c.

SPECIFICATION forming part of Letters Patent No. 564,982, dated August 4, 1896.

Application filed December 13, 1894. Serial No. 531,638. (No model.)

*To all whom it may concern:*

Be it known that I, PIERRE PAULIN FAURE, of the city of Limoges, Haute-Vienne, France, have invented Improvements in Machinery for Decorticating Ramie and other Textile Plants and Leaves, of which the following is a full, clear, and exact description.

This invention relates to a machine for effecting the decortication of textile plants and leaves, and particularly ramie; and it consists in the construction and arrangement of parts hereinafter set forth and claimed.

In order that the improved machine may be readily understood, I have illustrated it in general arrangement and in detail in the accompanying drawings, forming part of this specification, wherein—

Figure 1 represents a side elevation, and Fig. 2 a front elevation, of the machine. Fig. 3 is a sectional elevation of the machine, the concave bed or breast being in section; and Fig. 4 is a detail sectional elevation of the bed or breast drawn to a larger scale.

The beater-drum *a* is provided with blades or beaters *a'*, as usual, and the concave bed or breast *b* is made of a special profile or section, the form varying at different parts thereof to suit the various phases of the work to be performed by the machine. The first portion 1 of the surface of the bed is curved, so that between it and the surface generated by the revolution of the beaters *a'* there is an angular space *α*. The next following portion 2 2, at which the principal part of the work is effected, is preferably made straight, and between the succeeding part 3, which is curved, and the circle described by the beaters there is an angular space *α'* opposite to *α*.

The beaters *a'* in rotating do not touch, but pass extremely close to the surface 2, the operation being as follows: The stalks of ramie are fed in at the part 1, where the woody portion becomes immediately broken by the action of the beaters *a'*, the strips separated therefrom being drawn into the space *α* and then onto the part 2. As the speed of the beater-drum is considerably greater than that at which the stalks are fed in, a tractive effect is produced on the strips, since the distance between the blades of the drum and the surface 2 is less than the thickness of the strips. This tractive effect fulfils a double purpose—viz., that of facilitating the stripping of the filaments from the woody portion and of exciting a scraping action, which attacks the pellicle and all matters foreign to the fibers. The stricks of filaments pass down vertically, and the separated matters—viz., the woody portion, pellicles, and gummy substances—are thrown out to a distance by the centrifugal force of the beater-drum.

When the stalk has been entered to within a short distance of its extreme end, the return movement is effected, whereupon the following action takes place: The strips having been operated on in the one direction return through the space indicated by *α*, and in following the curve 3 they are slightly and gradually grazed by the beater-blades, which throw out the coarser parts of the debris still adhering. The operation is performed with great delicacy, as the fibers tend to assume the position of the chord of the curve and are constantly agitated by the beater-blades; but when the fibers arrive at part 2, as the space between the beaters and this part is greatly reduced, the entire removal of the matters still adhering is effected and afterward that of a portion of the gummy matters, which run down the curved portion 3 and retain the debris detached by the flexure of the fibers produced by the beaters *a'* and the remainder of the debris separated from the fibers in passing over surface 2. On their return the fibers appear white, parallel, and spread out upon the bed or concave. Such is the operation of effecting the complete decortication. The next succeeding stalks on their entry clean out the debris remaining in the hollow curve 3 from the previous operation.

In order to render the action as delicate as possible, the bed or concave may be made of thin metal, capable of slightly yielding under the action of the pressure exerted at 2. As this flexure might ultimately render the metal misshapen, I may cushion the bed or concave upon elastic material *e e'*, Fig. 1, embedded in the supports of the concave bed or breast.

For small machines intended to be fed by hand the mechanism is arranged in the following manner, as illustrated in the drawings: The beater-drum *a* is driven by means of

pulley *p*. The bed or concave *b* is carried on a cross-bar *b'*, attached to a bracket *c*, which is provided with elastic cushions *e e'*. The ends of shaft *d*, which are carried in bearings on the bracket *c*, are eccentric to enable the setting forward of the bed or concave to be regulated, the vertical adjustment being regulated by means of a lifting-screw and socket $e^2$. In order to render the arrangement as sensitive as possible, double joints $e^3$ are interposed between the parts $e'$ $e^2$. The double joint is quite sensitive, because by having the two parts connected to a link an easier movement of adjustment is permitted. If a single joint is used, there would be a lateral strain on the parts when the regulating-screw is turned up, which is not the case when a double joint is used.

A spring *r* serves to return the bed or concave to its normal position. The eccentric shaft *d* is operated by a hand-wheel *v* and is fixed in its bearings by a thumb-screw *v'*. *x* is a rubber, made of suitable material, by which the gummy matters adhering to the edges *a'* of the beater-blades are detached. The entire mechanism is mounted on an iron framing *f*.

The machine is fed by two men, each holding in his hand five or six stalks at a time in the condition in which they are cut, that is to say, without the leaves being stripped off. The entry of the stalks is performed very quickly and the return movement at a moderate speed, about twelve seconds sufficing for the two movements for stalks of average length. The stalks leave the machine in a filamentous condition, but very little of the gums remaining, the extreme end only, which is held in the hand, being left undecorticated for a few inches. The blades of the beater-drum not being allowed to touch the concave bed or breast, the wear is reduced to the minimum. As the concave bed or breast is cleaned as the work on the stalks proceeds, choking is rendered impossible, and consequently all abnormal strains are avoided. The machine may therefore be driven by hand-power, rotary motion being imparted to the beater-drum through speed-multiplying spur or chain gearing.

It will be observed that the eccentric shaft serves to adjust the bed, as above pointed out, and the double-jointed support with its coöperating spring to allow a yielding and return movement of the bed. The said shaft and support therefore serve to position or determine the location of the bed at any particular instant.

I claim—

1. In a decorticating-machine, the combination of a concave bed or breast, an eccentric shaft and an auxiliary jointed support, elastic cushions carried by the auxiliary support and by the eccentric shaft and bearing against the said bed or breast and a beater, substantially as described.

2. In a decorticating-machine, the combination of a concave bed or breast, an eccentric shaft for adjusting the said bed or breast, an auxiliary jointed support for the said bed or breast, an adjusting means as $e^2$ for adjusting the support up and down and a rotary beater coöperating with the bed or breast.

3. In a decorticating-machine, the combination of a concave bed or breast, an eccentric shaft for adjusting the said bed or breast, an auxiliary jointed support for the said bed or breast, an adjusting means as $e^2$ for adjusting the support up and down, a spring *r* spanning the joint of the support and a rotary beater coöperating with the bed or breast.

The foregoing specification of my improvements in the method of and machinery for decorticating ramie and other textile plants and leaves signed by me this 23d day of November, 1894.

PIERRE PAULIN FAURE.

Witnesses:

CLYDE SHROPSHIRE,

ALBERT MOREAU.