

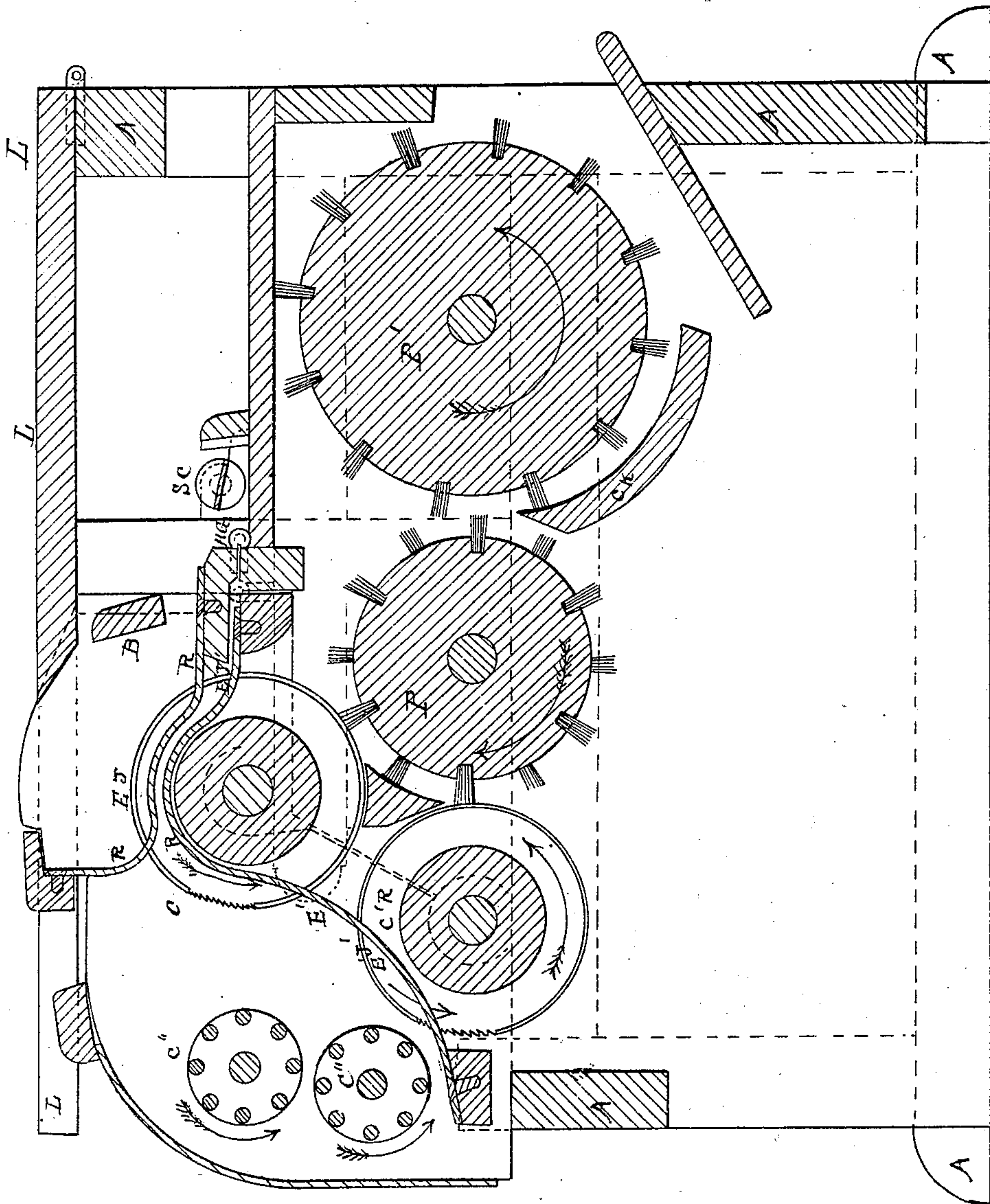
Sheet 1-3 Sheets

R. R. Gwathmey.

Ginning Cotton.

Nº 72846

Patented Dec. 31, 1867



Inventor

Witnesses  
Leonell d'Eprius  
L. E. Johns.

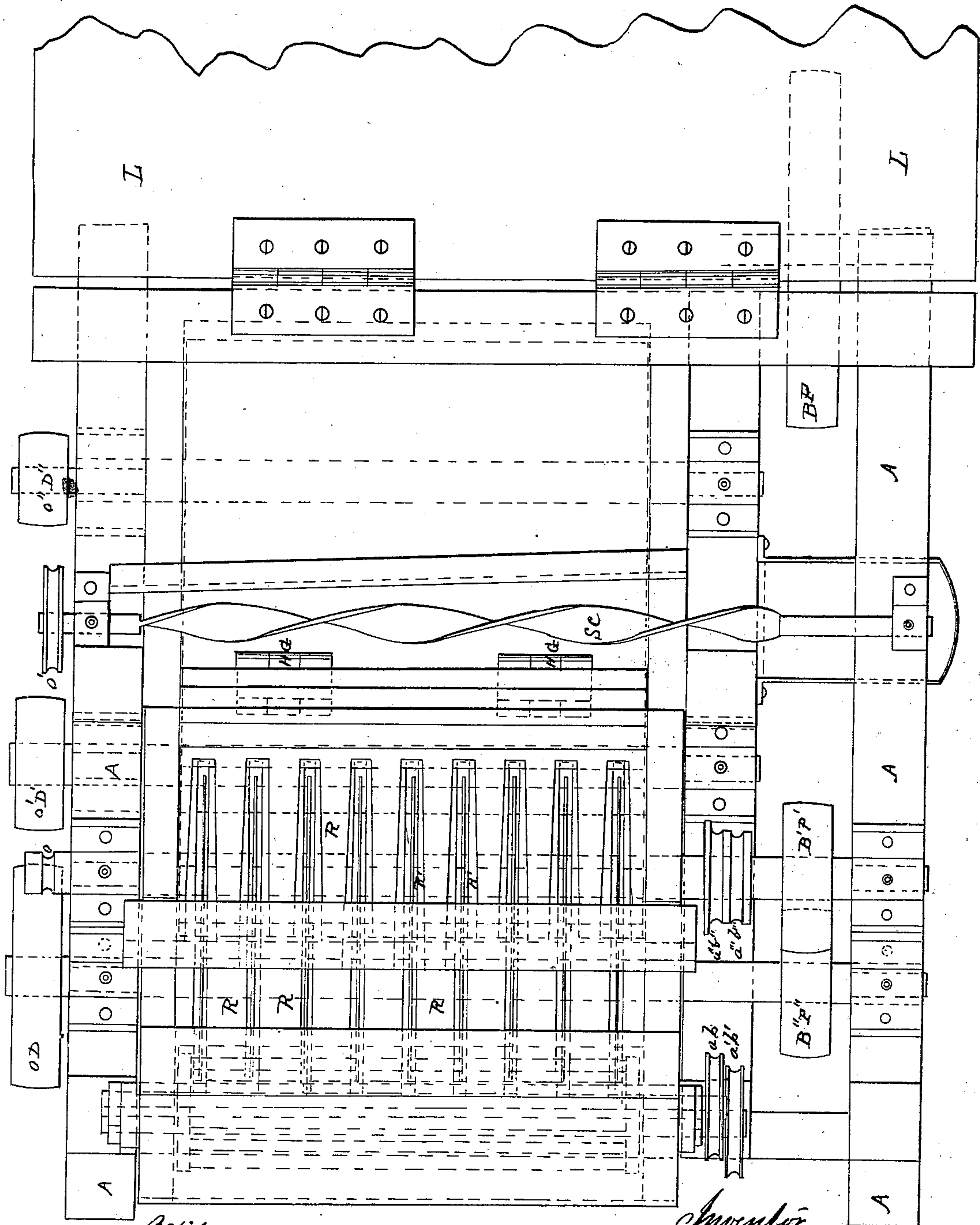
R. R. Gwathmey  
per his attorneys  
d'Eprius & Co.

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J. H. d'Epiney  
L. B. Johns

Inventor  
R. R. Gwathmey  
per his attorney  
d'Epiney & Co.



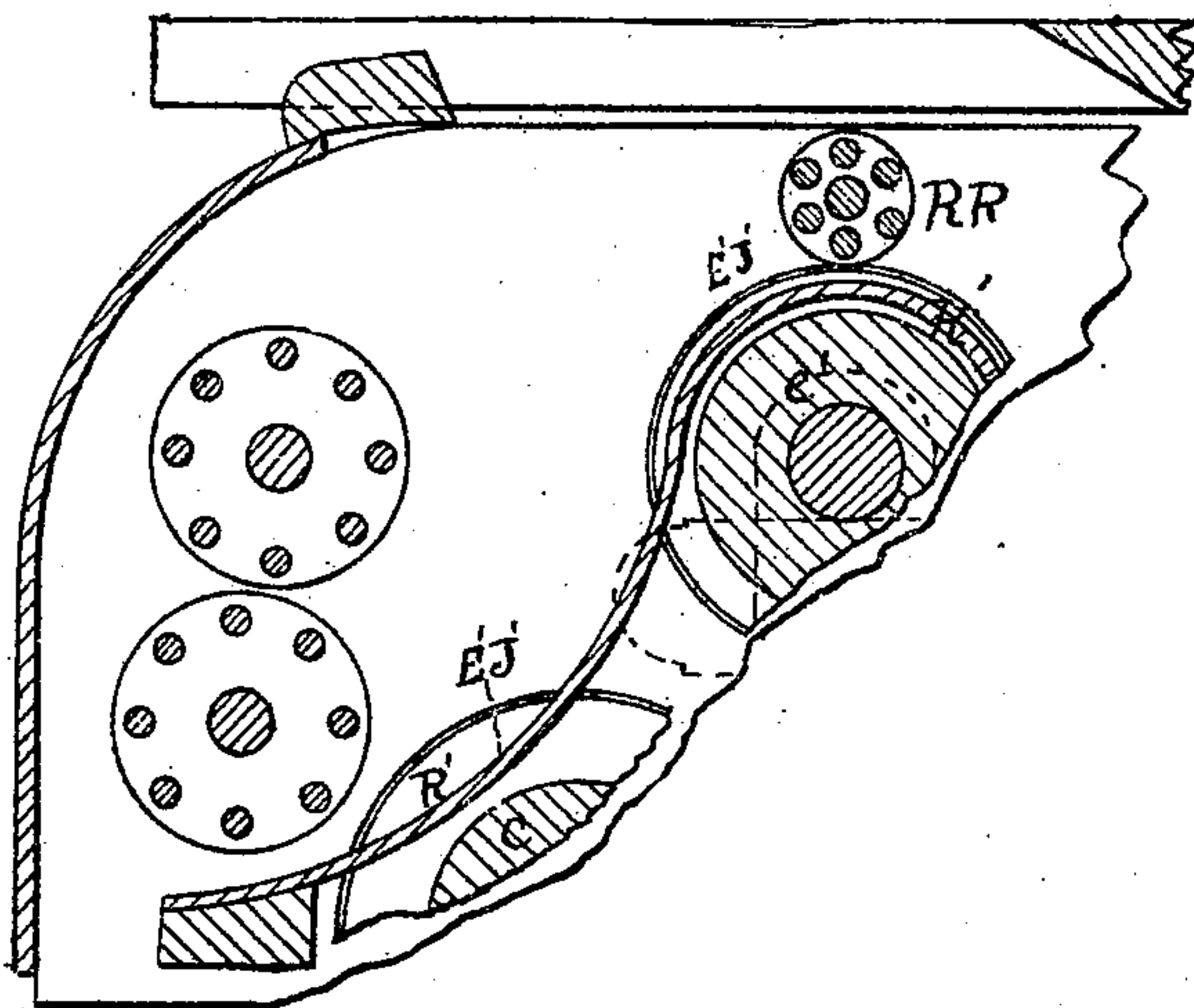
Sheet 3- 5 Sheets.

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Witnesses

James A. Epiney

J. H. Bowden

Inventor

R. R. Gwathmey  
per his attorneys  
d'Epiney &

# United States Patent Office.

R. R. GWATHMEY, OF MIDDLETOWN, KENTUCKY, ASSIGNOR TO HIMSELF  
AND C. W. MATTHEWS.

*Letters Patent No. 72,846, dated December 31, 1867.*

## IMPROVEMENT IN COTTON-GINNING MACHINE.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, R. R. GWATHMEY, of the town of Middletown, in the county of Jefferson, in the State of Kentucky, have invented a new and useful Improvement in "Cotton-Ginning Machines;" and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, plate 1, is a sectional longitudinal elevation of my cotton-ginning machine.

Figure 1, plate 2, is a plan view of the said machine.

The nature of my invention consists in the combination and use of certain devices, by means of which the cotton is easily fed, hulled, and ginned, thus saving time, using a less power than for other ginning-machines now in use.

To enable others skilled in art to make and use my invention, I will now proceed to describe its construction and operation.

A A is the framework of my machine, and can be built of wood or metal, to suit convenience. C and C' are two saw-cylinders, set parallel on the top of each other. R R is a series of metallic (or wooden) ribs, setting one between each couple of saws, and forming the top hopper's apron, E J, of my machine. Parallel to cylinders C and C' are set two wire-cage cylinders, C'' and C''', which revolve in the direction shown by arrows in red ink, (fig. 1, plate 1.) P and P' are two cylinders bearing brushes. Said cylinders set parallel to each other, and also to the saw-bearing ones C and C'. The outer brush-cylinder is of a larger diameter than the inside one. C K is a concave guide or box under cylinder P', the upper edge of which concave is lower than the axis of cylinders P and P'. E J, the upper apron, can be raised at will, and revolves around hinges, H G, to that effect. When set down in proper position, it is held there by means of movable transverse bar B. A series of ribs, R' R', forms the hopper's apron or bottom, E' J', between each couple of which ribs the jaws revolve. This apron, E' J', can be raised, with the whole hopper of my machine, by means of hinges. L L is the lid or cover of my machine, closing or opening at will, and to suit the purpose of the operator. In said lid is cut an opening corresponding with the hopper. Lastly, S C is a screw, by means of which the hulls are carried away when discharged from top hopper apron E J. B P is a pulley, set on stud or otherwise, and provided with the crank to which the proper motive-power is applied. A system of belts connects pulleys B P, B' P', and B'' P'' together. Another system of belts connects, also, pulleys a b, a' b', a'' b'', and a''' b'''. On the other side of my machine, the necessary belts do connect pulleys O D, O' D', and O'' D'', and also O and O'. The arrows in red ink in fig. 1, plate 1, show, by the direction the pulleys should follow, how the different belts above mentioned must be set on.

My machine, now ready for use, and set in motion, if I drop the cotton on to E J, the top saws will separate the hulls from the cotton without any injury to said cotton, and, prior to its entering into the gin proper, will feed it uninjured, through ribs R, into the breast or hopper E' J'. As it reaches there, the lower saws, in their rotary action, combined with that of cage-cylinders C'' and C''', which very effectually aid the roll, will entirely separate the cotton from the seed without injuring the fibres; and the cotton thus far cleaned will be drawn through ribs R', and fed to brush-cylinders P and P', where it will receive the finishing touch, and come out entirely clean at aperture O T.

In the above description of the construction of my machine, I have mentioned one upper and one lower breast-ribbed apron. The figure in additional drawing (plate 3) shows another mode of construction for the upper part of my machine. It consists, instead of using the said two ribbed aprons, in dispensing with the upper one, to have the ribs of the lower apron longer, and to bend them so that the upper portion of each of them will set between two consecutive saws of the upper cylinder C, in the same manner as the same ribs respectively set between two consecutive saws of the lower cylinder C'. A ribbed roller, R B, is set on top of and parallel with top saw-cylinder C, with space enough between said roller and cylinder, so that the roller clears the saws of the cylinder. R B is connected by a belt with a pulley on end of ribbed roller C'', and revolves in the direction of arrow in red ink, marked on R B. The pulley on R B must be small enough to insure a very rapid rotary motion to said R B. When thus constructed, I use my machine in the following way:

I drop the cotton, hull and all, in its crude state, into the space a r s, between roller R B and back of the



machine. It thus falls on the ribs of the apron back of R B. The saws, in their rotary motion in the direction towards Z', hull said cotton, but the ribbed roller R B, revolving very rapidly in the direction contrary to that of the saw-cylinders, keeps the hulls and dirt back, and the cotton and gin are alone fed to the breast of gin proper, where the operation continues, as has been above described for two-apron machines.

I do reserve to use either of the two above-described constructions.

In every one of the ginning or hulling-machines in which saw-cylinders are used, the bent of the points of teeth of the saws, as well as their rotary motion, is always in an upward direction, viz, towards the upper part or top of the machine, whereas, in my machine, the movement of the saws and the direction of the bent of their teeth are the reverse, that is, towards the bottom of my machine, (direction shown by arrows in red ink,  $x x'$ .) This reversed rotary movement of the saw-cylinders enables me to hull and gin cotton with my one machine, at two distinct places, but through one single and same operation. This is indeed one of the most important points of my machine.

To enable others to understand still more fully the relative position of my ribbed aprons, saw-cylinders, and direction of their rotation in my machines, I would add that, if one imagines red-ink line Y to be a vertical line passing through the centre of my upper cylinder, and red-ink line Z a straight line drawn from the foot or lower end of the breast or ribbed apron E' J' to the centre of upper saw-cylinder, the angle thus formed, and having its vertex on the centre of said upper cylinder C, will be about forty-five degrees; and the bent of the points of the teeth of my saws, as well as the direction of the rotary movement of said saw-cylinders, will always be, in my machines, the reverse of what it is in all other ginning-machines, viz, downwards towards letter Z', or the lower end of the lower apron.

When I use the second mode of construction for the top of my machine, the screw-shoveller S C, above described as designed to carry away or discharge the hulls and dirt separated from the cotton in the upper breast or hopper-apron E J, still effects the same operation when said apron is suppressed and replaced by the second mode of construction.

Having thus described my invention, what I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The mode of hulling and ginning cotton into one same machine, and at one same operation, by means of one, two, or more, ribbed aprons, combined with one, two, or more, saw-cylinders, invariably driven or rotated in the direction shown per red-ink arrows  $x x'$ , figs., plates 1 and 3, in the manner and for the purpose above set forth and described.

2. The combination of wire-cage cylinders C' C'' with saw-cylinders C and C' and ribbed aprons E' J' and E J, the whole constructed and operated in the manner and for the purpose above set forth and described.

3. The combination of ribbed cylinder R B (plate 3) with top saw-cylinder C, and ribbed apron E' J', and shoveller-screw S C, the whole constructed and operated for the purpose and in the manner above set forth and described.

4. The combination of upper saw C with top apron E J and screw S C, by means of which the cotton is hulled and rid of all dirt and trash, in the manner above set forth and described.

R. R. GWATHMEY.

Witnesses:

F. G. DANNECKER,  
SAML. MATLOCK.