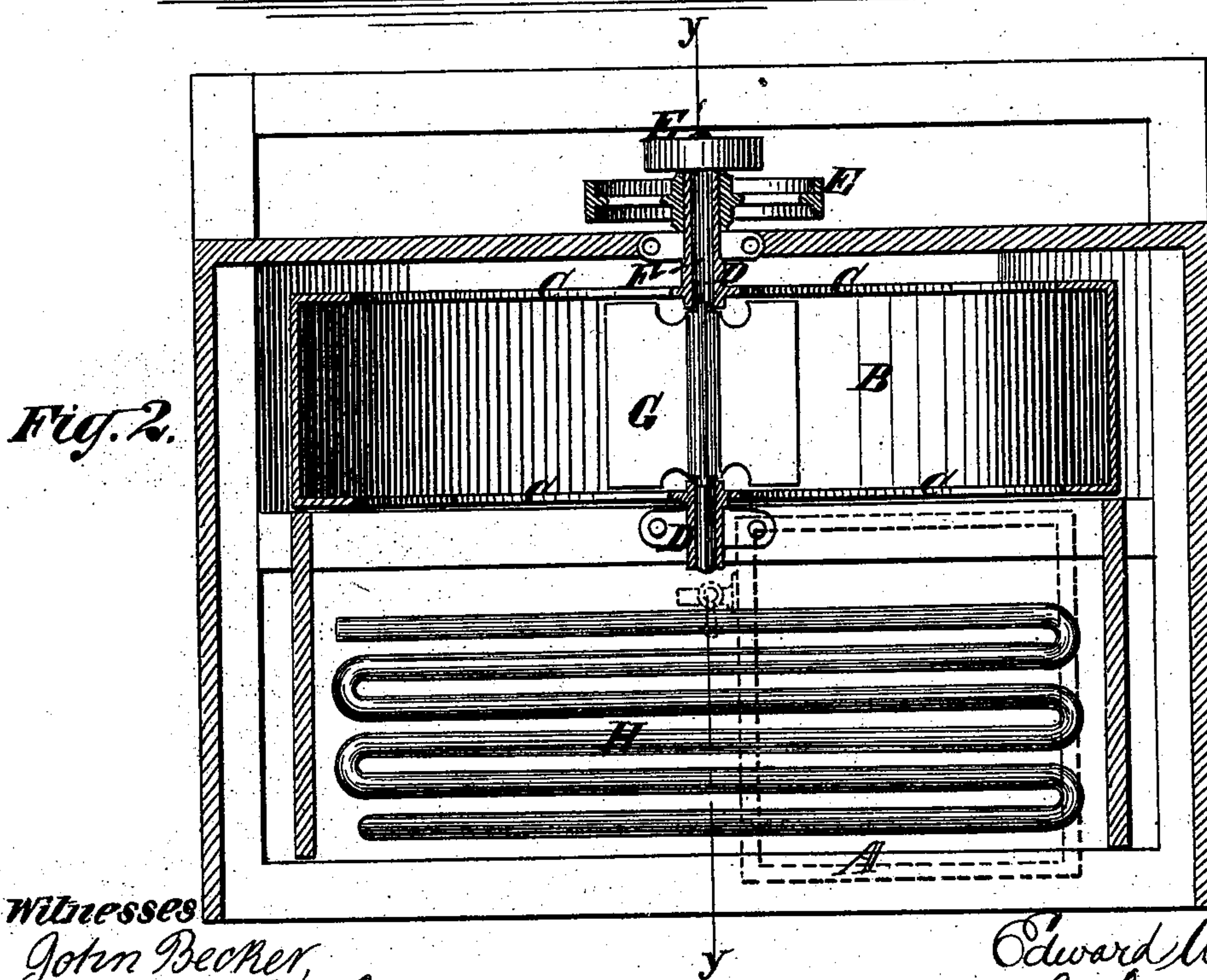
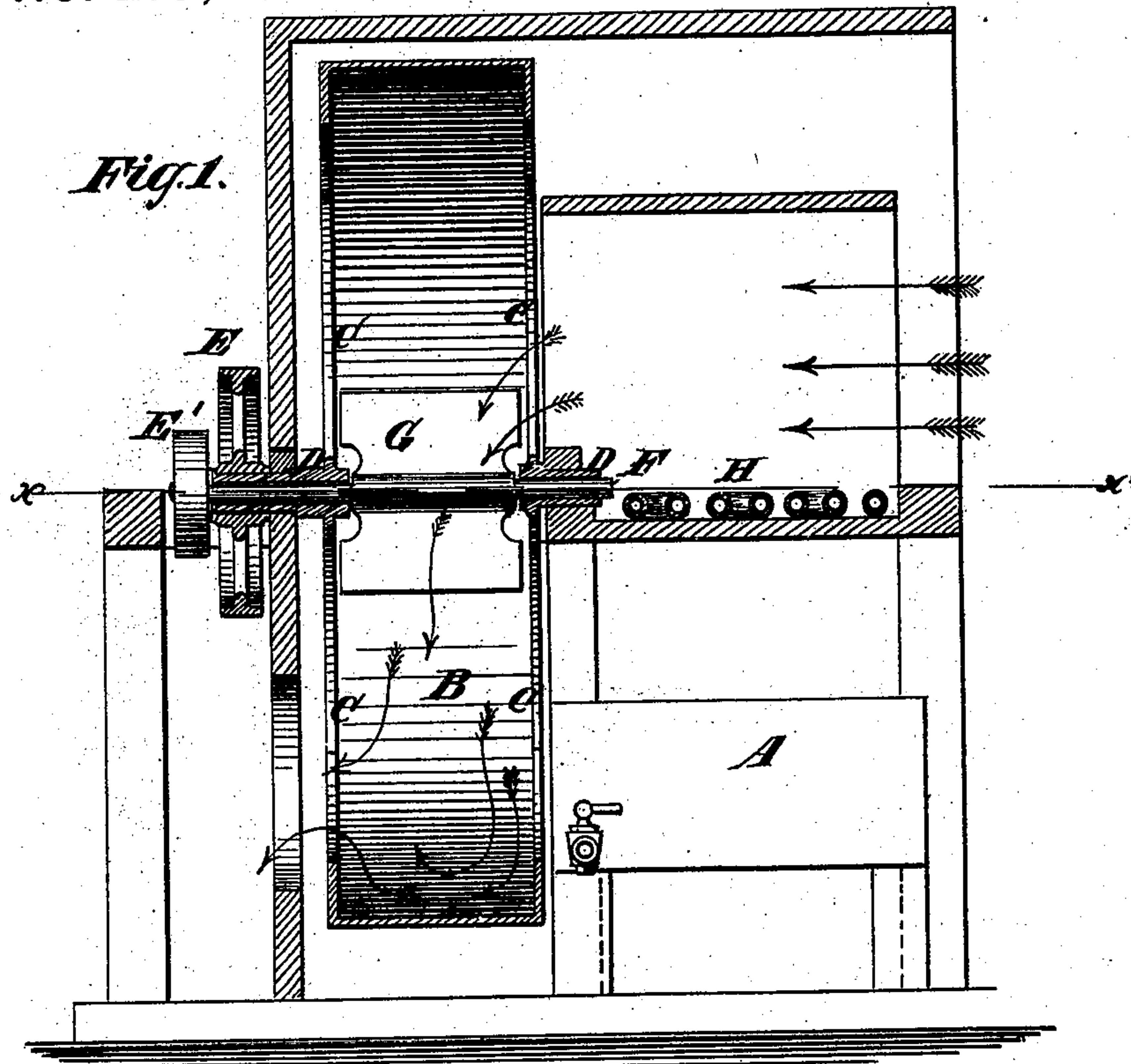


E. W. LEGGETT.
Glue Spreading and Drying.

No. 210,130.

Patented Nov. 19, 1878.



Witnesses
John Becker,
Benjamin N. Hoffman

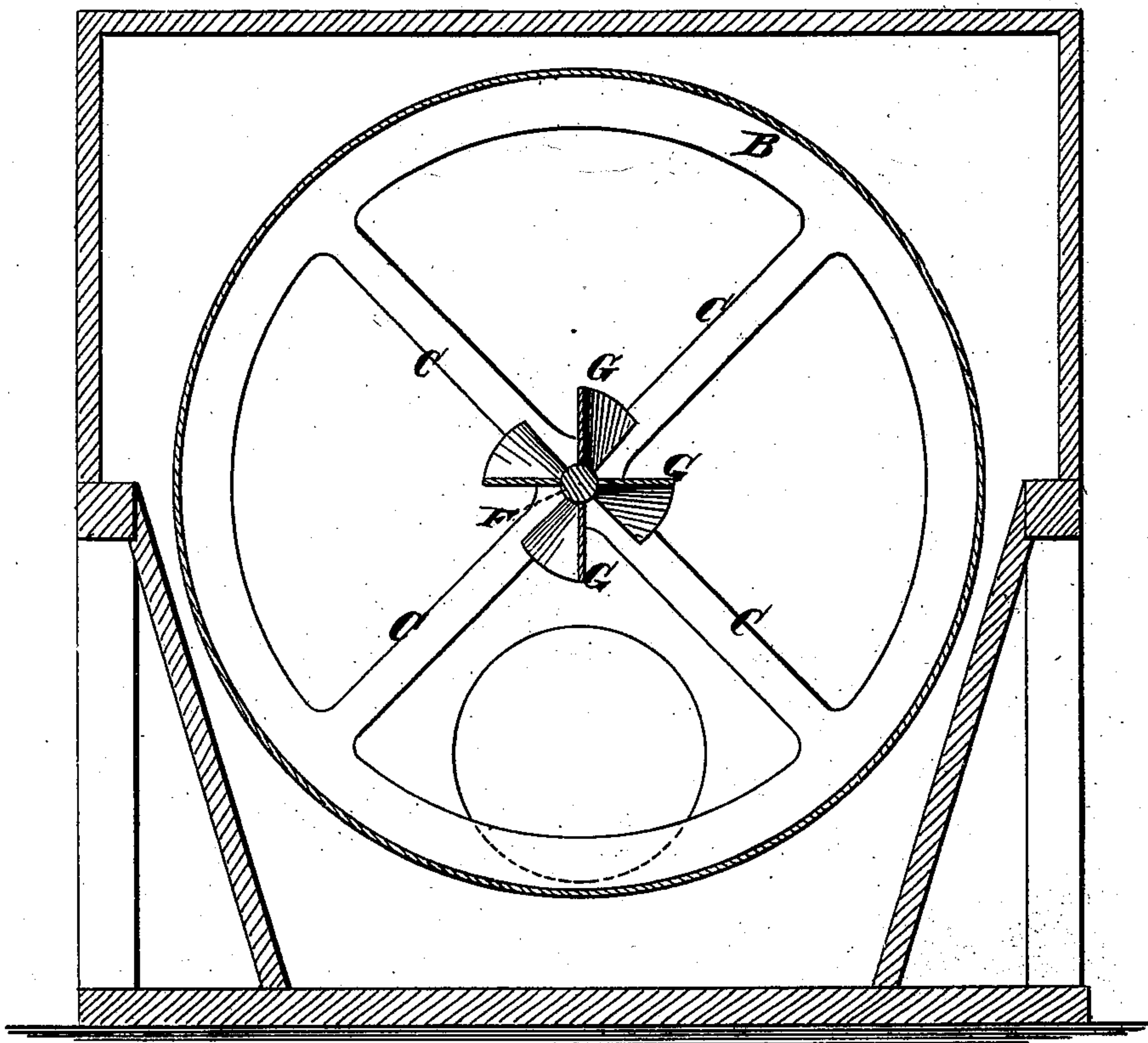
Inventor
Edward W. Leggett,
by his attorneys,
Brown & Allen

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Fig. 3.



Witnesses

John Becker
Fred. Baynes

Inventor

Edward W. Leggett
by his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE

EDWARD W. LEGGETT, OF ELIZABETH, NEW JERSEY, ASSIGNOR OF ONE-FOURTH HIS RIGHT TO HUGO SCHERRING, OF NEW YORK CITY, AND JOSEPH GLATZ, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN SPREADING AND DRYING GLUE.

Specification forming part of Letters Patent No. **210,130**, dated November 19, 1878; application filed March 23, 1878.

To all whom it may concern:

Be it known that I, EDWARD W. LEGGETT, of Elizabeth, in the county of Union and State of New Jersey, have invented an Improvement in Processes and Apparatus for Spreading and Drying Glue; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification.

My invention has for its object the formation of sheets of glue without air-bubbles, and the rapid and perfect drying of the sheets without the use of extensive and expensive drying-rooms, and other apparatus hitherto employed for this purpose.

Figure 1 in the drawing is a vertical section through an apparatus constructed according to my invention, the section being made on the line *y y* in Fig. 2. Fig. 2 is a sectional plan view, the section being made on the line *x x* in Fig. 1. Fig. 3 is a detail view of the air-propeller screw.

A represents a tub or tank, in which the glue in the liquid state is received from the vacuum-pans. This tub, however, forms no part of the invention.

B represents an annular trough, the interior of which is of metal, or of any other material to which glue, when dry, will not adhere so strongly as to be with difficulty removed. Said trough is, by radial arms C, centrally suspended upon hollow trunnions D, which have bearings in suitable frame-work for supporting said annular trough. To one of said trunnions D is attached a pulley, E, to which power is, in working the apparatus, applied to rotate the annular trough B. In the hollow trunnions D D is fitted a shaft, F, to which is attached the pulley E', and upon which is hung an air-propeller screw, G, which, when revolved, drives a current of air through the central part of the trough B, and also forces the air radially outward upon and over the interior of the trough. The blades of the said screw-propeller are so set as to draw the air into and propel the same through the apparatus in the direction indicated by the arrows. On that side toward which the air approaches

the said trough through the action of the said propeller is placed a steam, hot-air, or other heater of any suitable kind, by which the air is heated and its capacity for absorbing moisture increased previous to its passing through the trough.

The operation of the apparatus is as follows: A charge of glue, in the liquid state, is put into the trough, and the said charge runs down to the lower part of said trough, where it remains till spread, as hereinafter described. The trough is then caused to rotate by applying power to the pulley E. The result of the rotation is, that a portion of the liquid glue is spread in a very thin layer over and on the interior of the trough, and subjected to the desiccating action of the heated and thirsty air forced over it by the action of the propeller G. As fast as a layer or film of glue dries, more and more liquid glue is taken up from the bottom of the charge in the trough and spread over the inner surface of the film or sheet already formed, which is thereby thickened until the liquid glue is all taken up, and the sheet has reached the entire thickness required.

It will now be seen that the formation of the sheet of glue, as it finally adheres to the inner surface of the trough, is a gradual process, proceeding together with the drying; and that if the rate at which the air is forced through the trough be properly adjusted to the speed of the rotation of the annular trough, the sheet of glue formed in the interior of the trough will be nearly dry enough when the liquid glue is all taken up to be removed from the trough in a merchantable state. The said dried sheet of glue is removed, when completed, by a very slight effort, as the application of heat wholly to the inner side thereof tends to curl said sheet off from the said surface, instead of making it adhere to the surface, as is the case when the surface is itself heated. I may also, if found desirable, keep the said surface cooler than the surrounding air, by circulating cold air or water over the exterior of the trough by any suitable means, such as pumps or blowers.

But while I have described a convenient and practical means of carrying out my improved

process of forming a sheet of dried glue by a continuous drying and thickening process, I reserve the right of carrying out the same process by other means or appliances.

A particular advantage of the apparatus described is, however, that the glue taken constantly to build up the sheet is taken from the bottom of the liquid glue in the trough, and that thus a more homogeneous sheet of glue can be formed, as the air-bubbles which always rise to the top remain there, and are not incorporated into the body of the dried sheet.

I claim—

1. The process of forming glue into desiccated sheets by concretion and simultaneous desiccation, as herein described, wherein the glue is deposited in successive layers to form a sheet of the same, each layer being desiccated, or partly desiccated, before the deposition of the next layer, till the sheet has acquired the desired thickness, substantially as and for the purpose set forth.

2. In a glue spreading and drying apparatus, the annular rotary trough for receiving

a charge of glue, and, by rotation, forming a sheet of glue on its interior, substantially as and for the purpose set forth.

3. The combination, with the annular rotary trough, of a heater and mechanism for circulating air over or through said heater and through said trough, substantially as and for the purpose specified.

4. The combination, in a glue spreading and drying apparatus, of an annular trough, B, for holding, spreading, and concreting glue upon its interior surface, substantially as herein described, and an air-propeller, G, placed in central relation with the said trough, for forcing air through said trough and radially outward against the interior surface of said trough, for desiccating glue spread and concreted on said interior surface, substantially as and for the purpose set forth.

EDWARD W. LEGGETT.

Witnesses:

LEICESTER ALLEN,
BENJAMIN W. HOFFMAN.