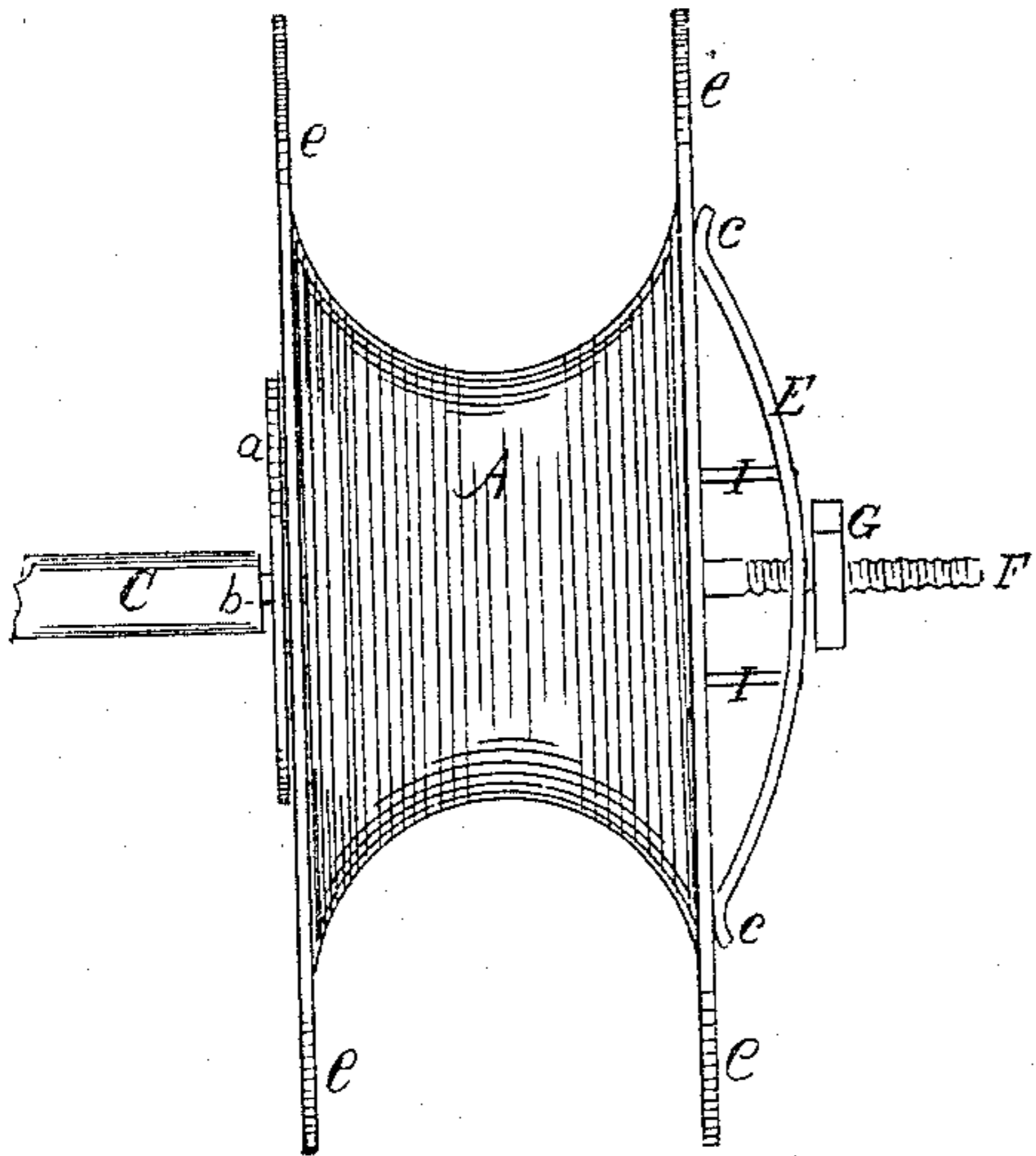


*S. D. Locke,  
Grain Binder.*

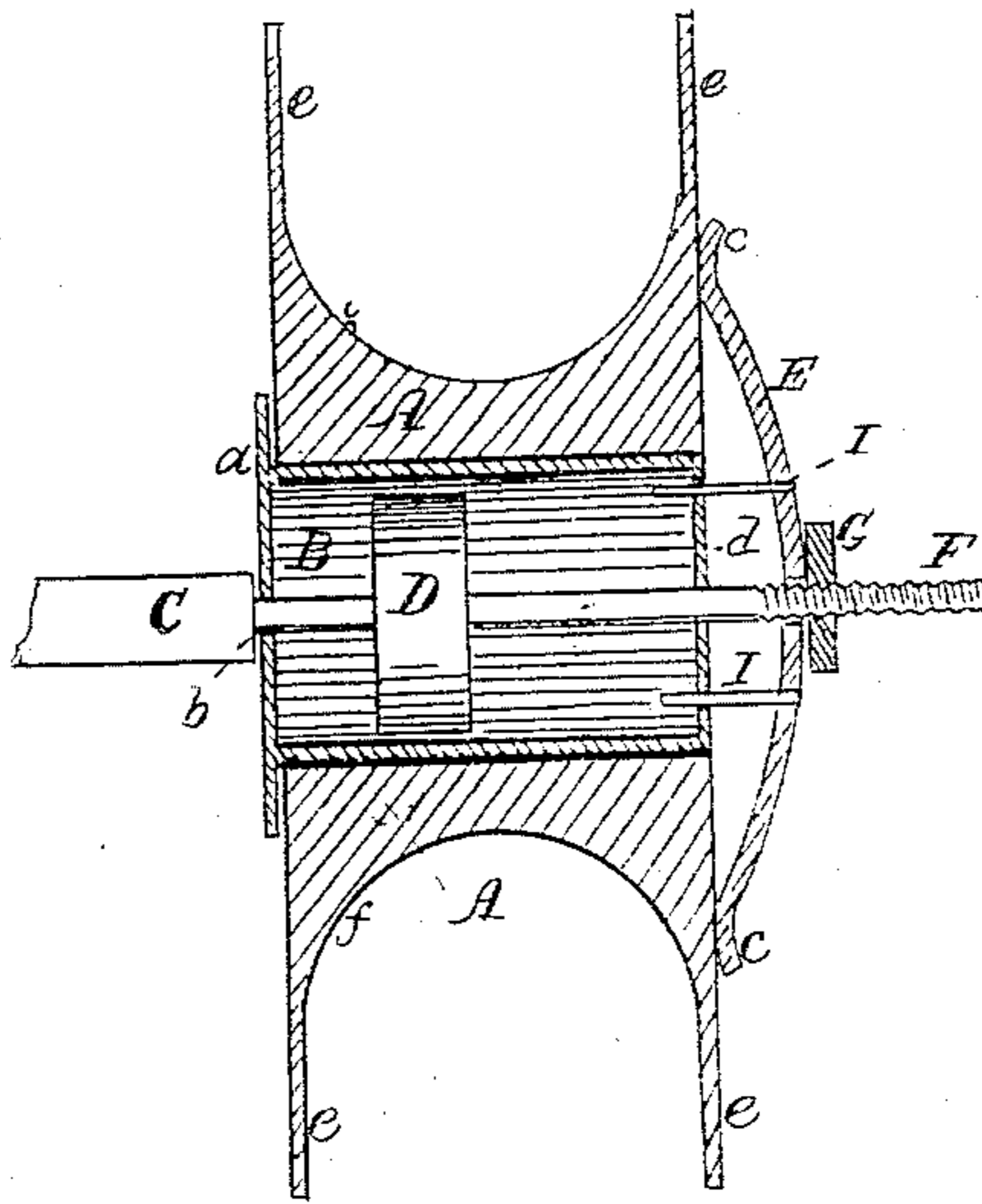
*No. 84,065.*

*Patented Nov. 17. 1868.*

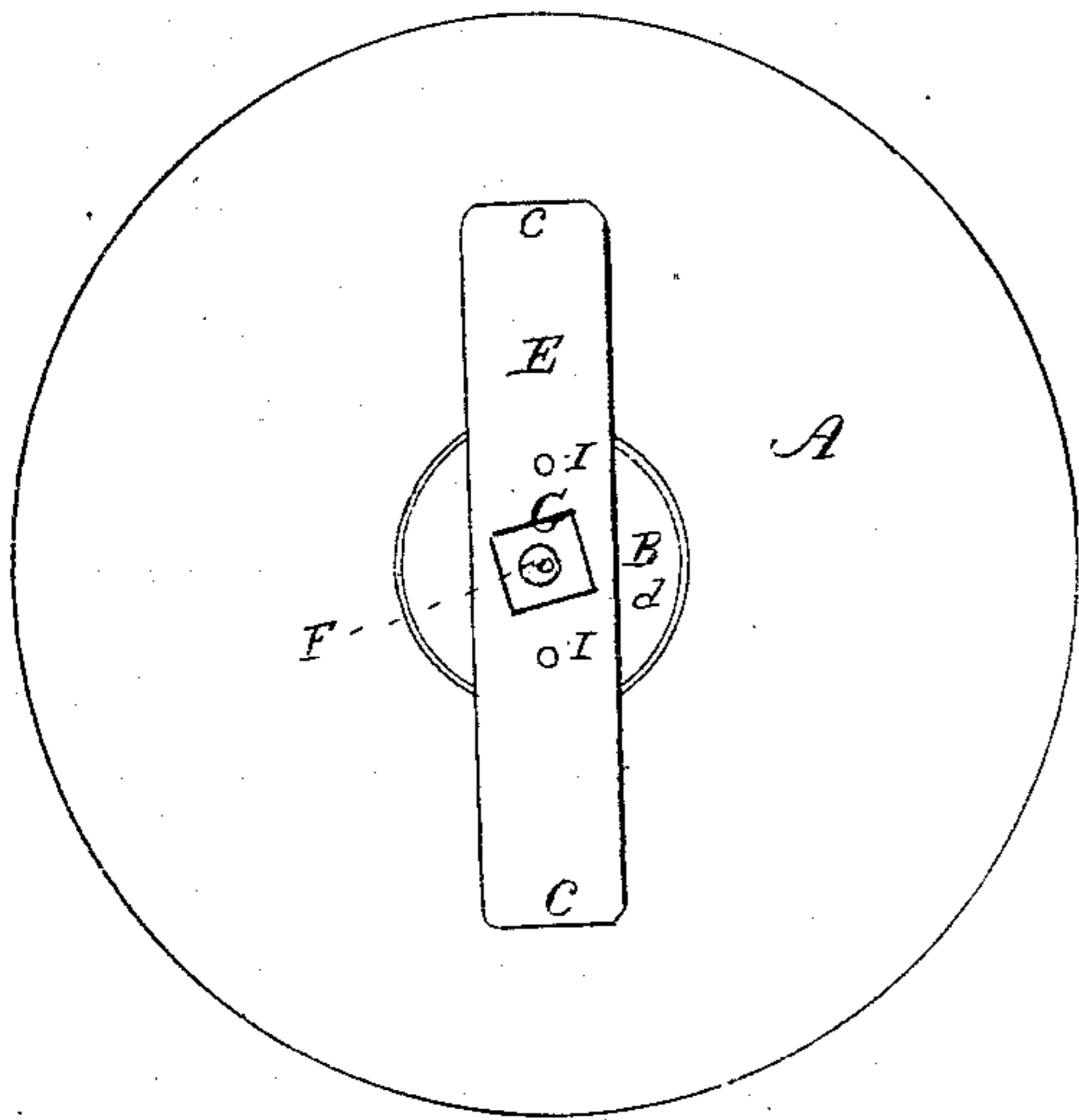
*Fig. 1*



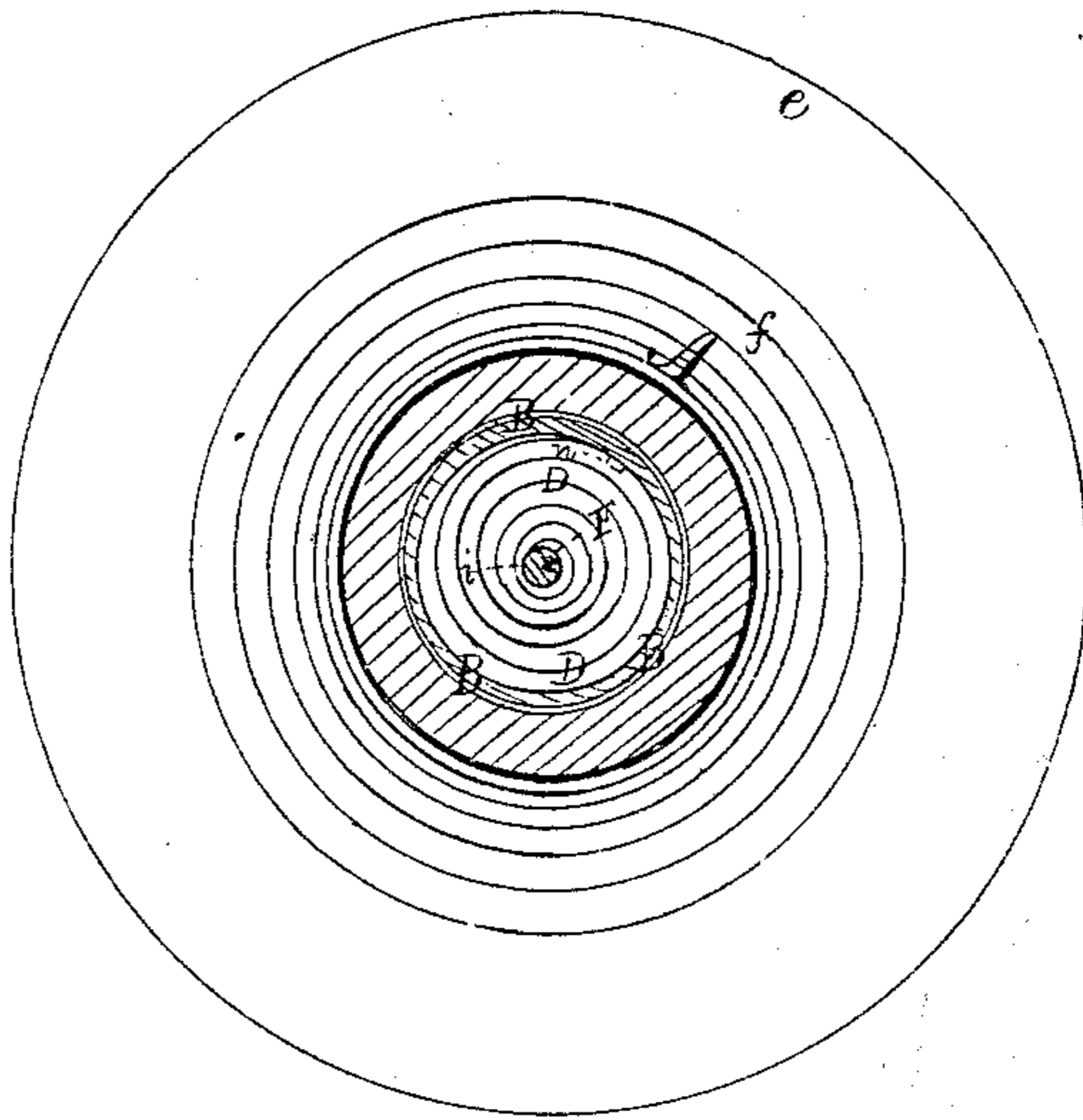
*Fig. 2*



*Fig. 3*



*Fig. 4*



*James Sutherland*  
*Orion Sutherland* } *Witnesses*

*Inventor*  
*Sylvanus D. Locke*

# UNITED STATES PATENT OFFICE

SYLVANUS D. LOCKE, OF JANESVILLE, WISCONSIN.

## IMPROVEMENT IN REELS FOR GRAIN-BINDERS.

Specification forming part of Letters Patent No. 84,065, dated November 17, 1868.

*To all whom it may concern:*

Be it known that I, SYLVANUS D. LOCKE, of the city of Janesville, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Reels for Grain-Binders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view. Fig. 2 is a longitudinal section. Fig. 3 is a front or end view, and Fig. 4 is a transverse section.

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

I construct the body A of my reel in any of the known forms and of any suitable material. In the drawings I have shown only one method of attaching the spring. In that method the body of the reel A plays freely upon a central cylinder, B, as bearing, and is kept thereon by the brake E and flange *a* of the rear end of the cylinder B. The cylinder B has its ends pierced centrally to receive, and takes bearing upon, the reel-shaft C F, that constitutes the support of the reel. Within the cylinder is a spiral spring, D, that has one end attached firmly to the shaft C F and the other to the inner face of the cylinder B. The shaft C F also passes centrally through the spring-brake E, that is operated by the nut G on the end F of the shaft, and works against the forward face of the body A of the reel, as shown. This spring-brake E is allowed to turn on the shaft C F only as the cylinder B turns by the pins I, that, projecting from the brake E, pass through orifices in the head of the cylinder, as shown in Figs. 1 and 2.

The operation of my reel, when constructed in this manner, is simple, for if the space between the reel-arms *e* be filled with binding material and the nut G turned back so as to loosen the brake E, the reel-body A will turn freely upon the cylinder B without affecting the spring D as the binding material is drawn out; but if the nut G be turned up so as to press the ends *c* of the brake forcibly against the reel-body A, the turning of the latter as the binding material is drawn off will cause the brake E to turn, that, by means of the pins

I, causes the cylinder B to turn on the shaft C F, so as to coil up the spring D, until the reactionary force of the spring shall equal the friction of the brake E upon the reel-body A, when the brake and cylinder will cease to follow the latter, the brake sliding over the face of the reel. If at this point any binding material drawn from the reel should not be required, the recoil of the spring D, by revolving the reel backward, causes the latter to take up such binding material, and so prevent the slackening of the same. If it be required to increase the tension of the binding material, or take up more slack, it is only necessary to turn up the nut G, when the turning of the reel A coils up still tighter the spring D until its reactionary force equals the friction of the brake E against the reel A, when the brake ceases to turn with the latter, but slides over its face, as before.

It will be observed that the friction of the brake is the measure of the tension with which the binding material is paid out, and that when the latter slackens, the spring, driving the reel backward, will cause the latter to take up the slack material until the former (the spring) is entirely uncoiled.

Another mode of constructing the reel is to avoid the use of the pins I by extending the flange *a* on all sides so as to increase the bearing-surface of the body A of the reel against it. In this case the brake E, playing freely upon the end F of the shaft, revolves at all times with the body A of the reel, and presses it forcibly against the flange *a*, that becomes the friction-surface, in lieu of the point of contact of the brake with the reel-body A being the friction surface, as in the first instance. This method of constructing the reel is preferable to that first described, but, owing to the constant movement of the brake E over the inner face of the nut G, necessitates a "check-nut" to prevent the latter from turning. The operation otherwise is precisely like that first described.

Still another mode of constructing the reel is to dispense with the cylinder B, the reel-body A taking bearing directly upon the shaft C F, and the friction-surface or head *a* being attached firmly to the shaft. The spring D, in this instance, is placed without the reel-body,

and immediately in front or just in the rear of the brake E, and has one end attached to the shaft and the other to the brake. The turning up of the nut would, by pressing the brake forcibly against the reel A, cause the brake to turn with the latter and the spring D to be coiled up until the force of the spring shall equal the friction of the brake, when the two, balancing, remain stationary as the reel continues to revolve, as in the first method.

What I claim is—

The combination of the reel A, spring D, and brake E, either with or without the pins I, or with or without the cylinder B, substantially as and for the purpose set forth.

SYLVANUS D. LOCKE.

Witnesses:

JAMES SUTHERLAND,  
ORION SUTHERLAND.