

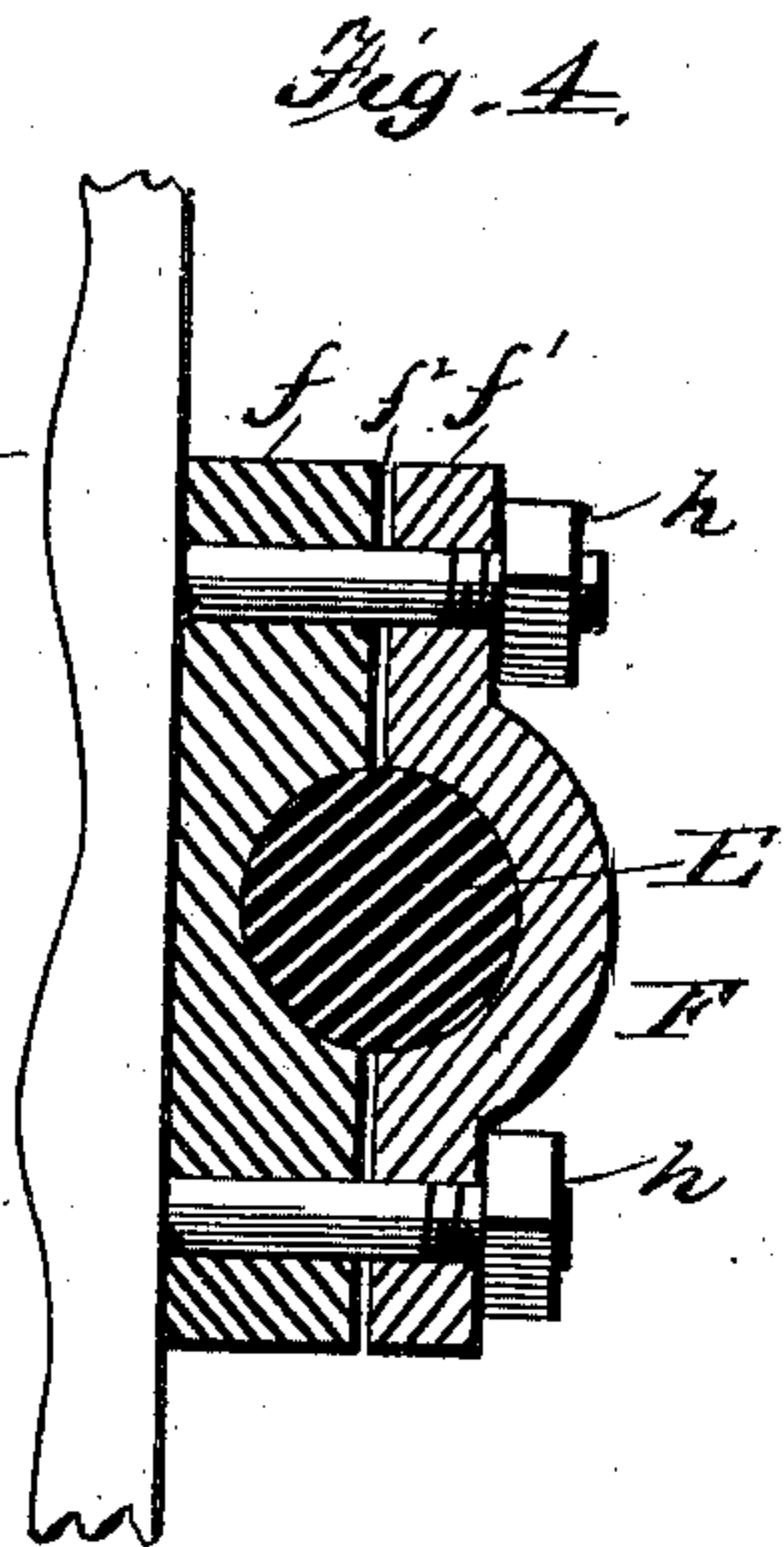
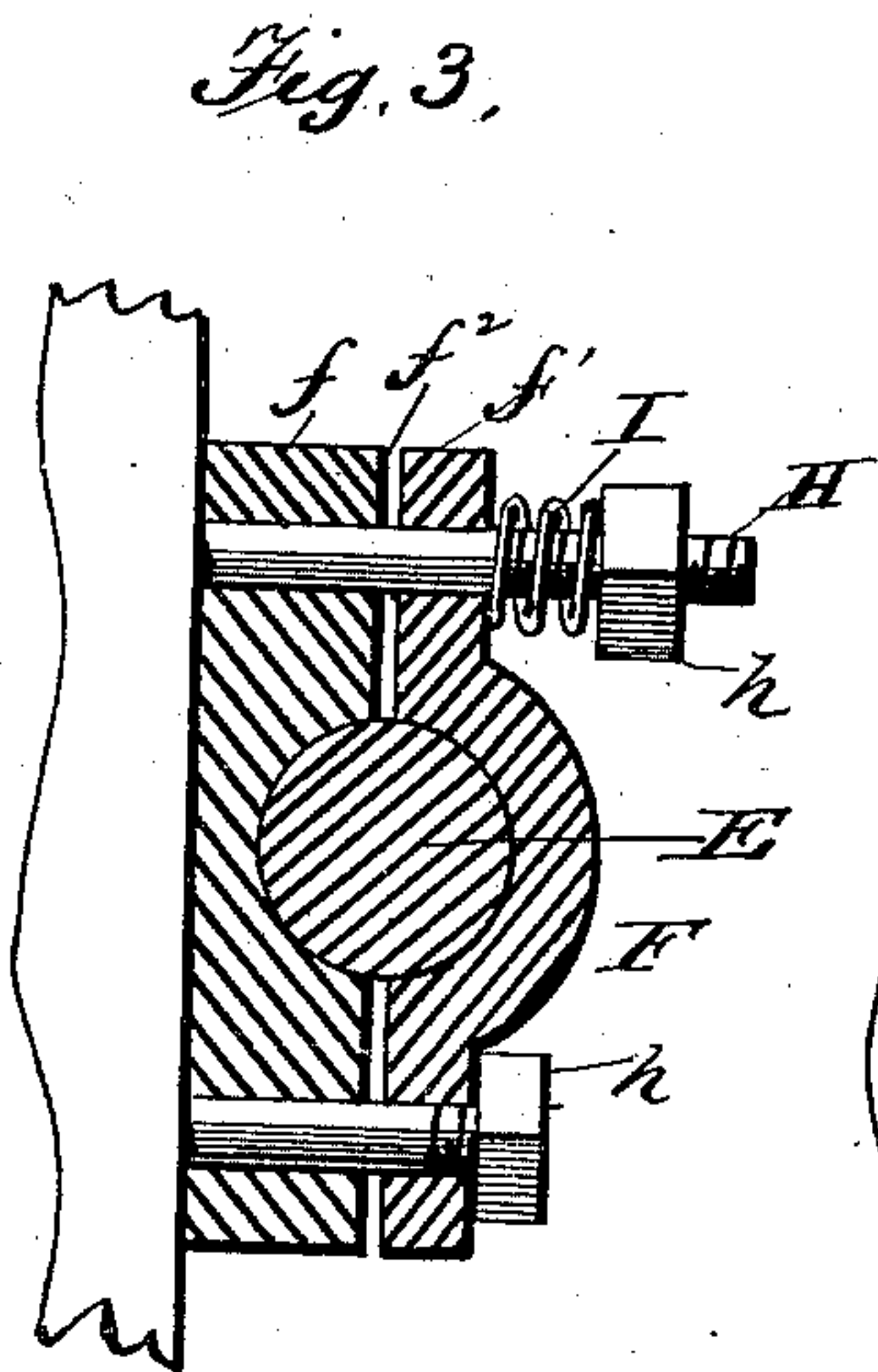
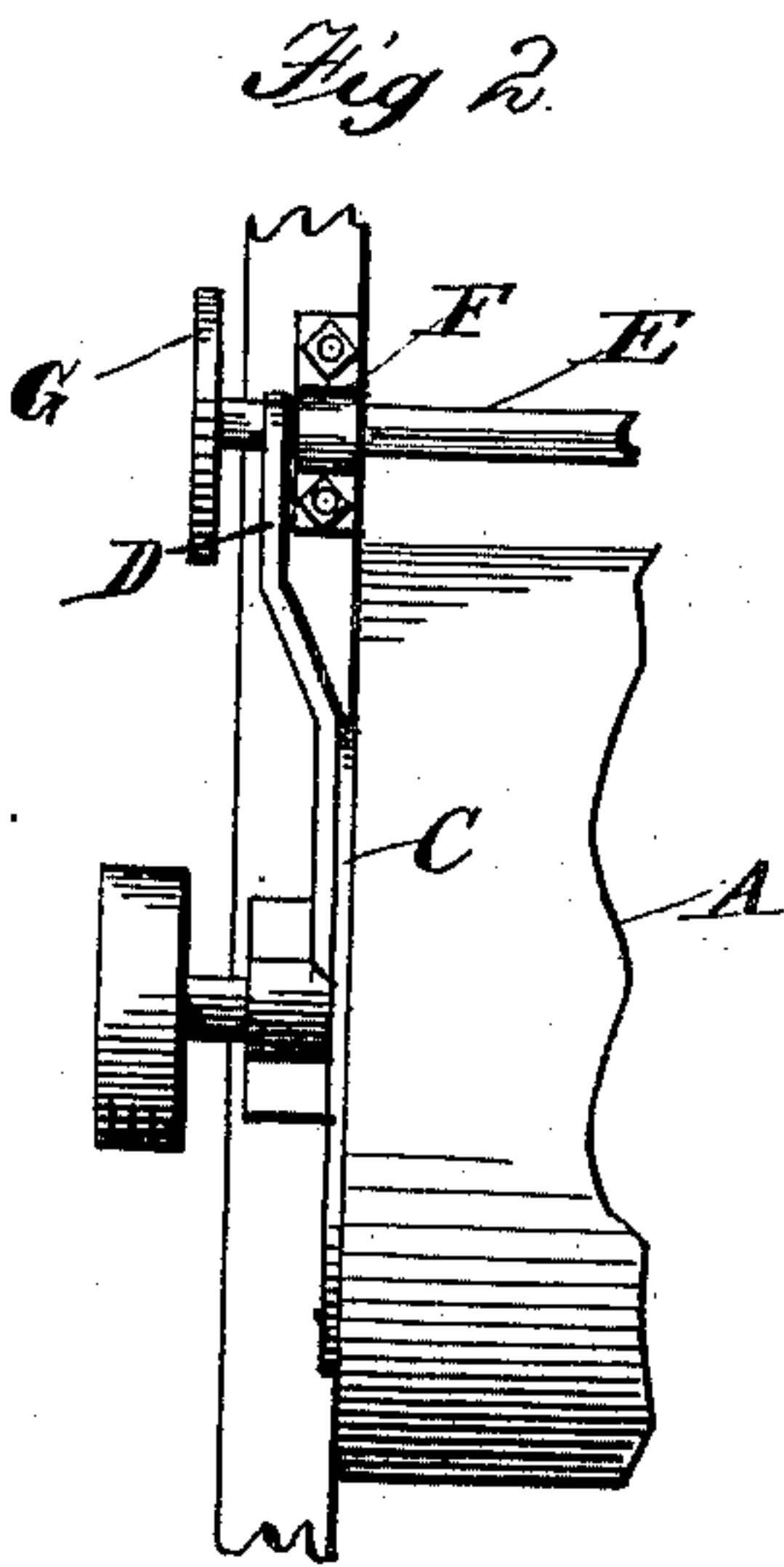
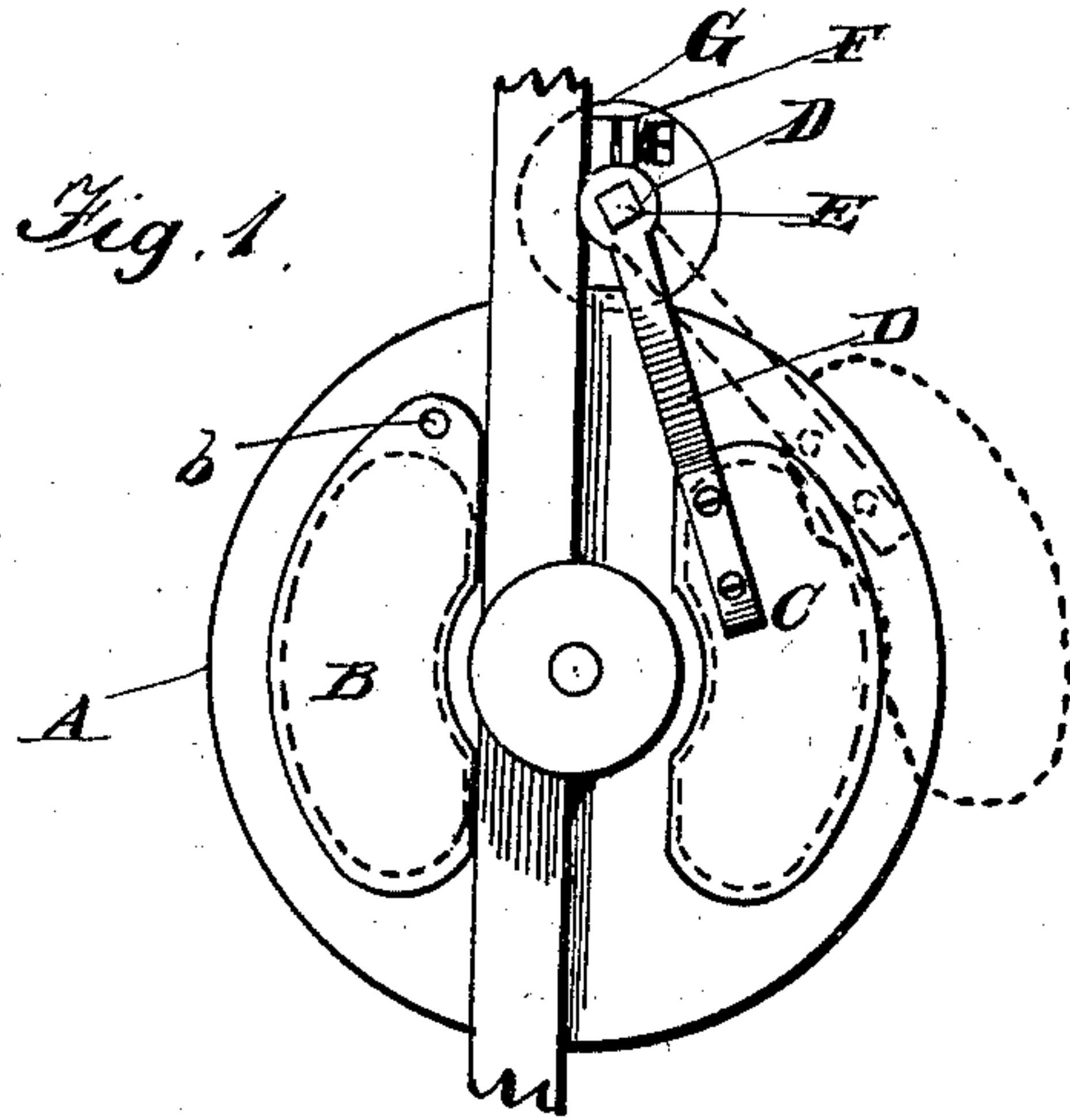
(No Model.)

J. GRUBE.

BLAST REGULATOR FOR GRAIN SEPARATORS.

No. 314,668.

Patented Mar. 31, 1885.



attest:
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UNITED STATES PATENT OFFICE.

JEFFERSON GRUBE, OF NEWARK, OHIO.

BLAST-REGULATOR FOR GRAIN-SEPARATORS.

SPECIFICATION forming part of Letters Patent No. 314,668, dated March 31, 1885.

Application filed July 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, JEFFERSON GRUBE, a citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Blast-Regulators for Grain-Separators, &c., of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to devices for adjusting or regulating the quantity of air supplied to rotary fans of grain-separators; but it relates more particularly to improvements upon the "blast-regulator" shown and described in an application for Letters Patent filed by me on June 6, 1884, and bearing Serial No. 134,075. Said application describes means for operating the fan-case shutters through links pivotally connected to a cross-head attached to the shutter-operating shaft.

The invention further contemplates the combination of the shaft with supporting-boxes, by means of which the tension on the shaft may be regulated.

To the accomplishment of the above the invention consists in the construction and arrangement of parts, substantially as hereinafter described, and particularly pointed out in the claims.

In the drawings, Figure 1 represents an end view of a separator fan-case detached from the machine and provided with my improvements. Fig. 2 is a rear view thereof. Fig. 3 is an end elevation of the shaft-supporting box provided with means for giving tension to the shaft. Fig. 4 is a modified form of the tension devices.

Similar letters of reference denote like parts in all the figures.

Referring to the drawings, A designates the fan-case, provided at its ends with openings for admission of air to the fan. The openings are closed by shutters B C, one of which, B, is pivoted at its upper end to the fan-case at *b*, while the other, C, is rigidly connected by an arm, D, to the end of a rock-shaft, E, mounted in boxes F, secured to the frame of the machine. Each end of the rock-shaft E is provided with a hand-wheel, G, by which

it is turned, thereby opening the shutter to a greater or less extent, as shown by dotted lines in Fig. 1.

I provide the rock-shaft E with the required amount of tension in the following manner, to wit: The parts *f f'* of the boxes F are slightly separated when the shaft E is in position in the box, (see *f'*, Figs. 3 and 4.) The box F is held to the frame by bolts H, projecting from the frame, the outer ends of which are screw-threaded and provided with nuts *h*, as shown.

I designate a spiral spring surrounding the upper bolt between the nut *h* and the cap *f'* of the box. If desired, a similar spring may be placed upon the lower bolt; or, as shown in Fig. 4, the springs may be dispensed with altogether, the desired amount of friction upon the journals of the shaft being obtained by means of the nuts alone.

In the drawings I have shown but one end of a fan-case; but it should be understood that the opposite end is similar in every respect to the one shown and described.

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

1. In a grain-separator, a fan-case adapted to admit air, and a rock-shaft, in combination with a shutter for regulating the admission of air to the fan-case, rigidly connected to the rock-shaft, extending from side to side of the machine, and adapted to be swung from side to side to regulate the admission of air into the case, substantially as described.

2. In a grain-separator, the combination of a rock-shaft extending from side to side of the machine, and boxes provided with tension devices, with depending arms rigidly attached to said shaft, the fan-case formed with air-ports, and shutters for opening or closing said air-ports, substantially as described.

3. In a grain-separator, the fan-case provided at its ends with air-ports, shutters therefor arranged in pairs, one of each pair being pivoted directly to the case, the other being rigidly secured by an arm, and a rock-shaft provided with said arms and extending from side to side of the machine above the fan-case, all combined substantially as described.

4. In a grain-separator, the combination of the rock-shaft E and boxes F, having tension-springs I, with the arms D, shutters C, and the fan-case A, having air-ports, substantially as described. 10
5. In a grain-separator, the combination of the fan-case A, having air-ports, and a shutter, B, hinged at each end thereof, with shutters C, arms D, the rock-shaft E, and spring-controlled boxes F, substantially as described. 10
- In testimony whereof I affix my signature in presence of two witnesses.
- JEFFERSON GRUBE.
- Witnesses:
J. A. SOLINGER,
CLARK L. CONNEL.