

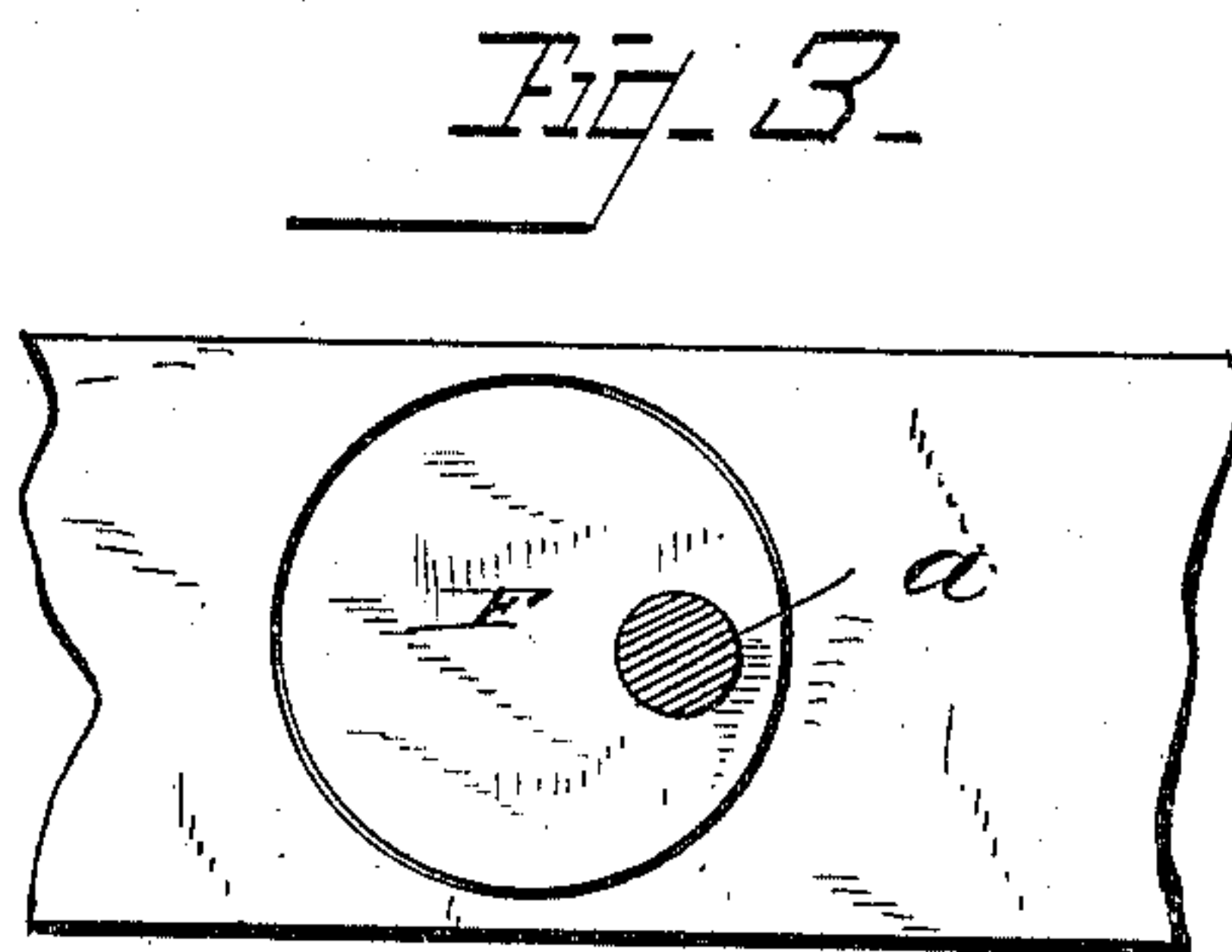
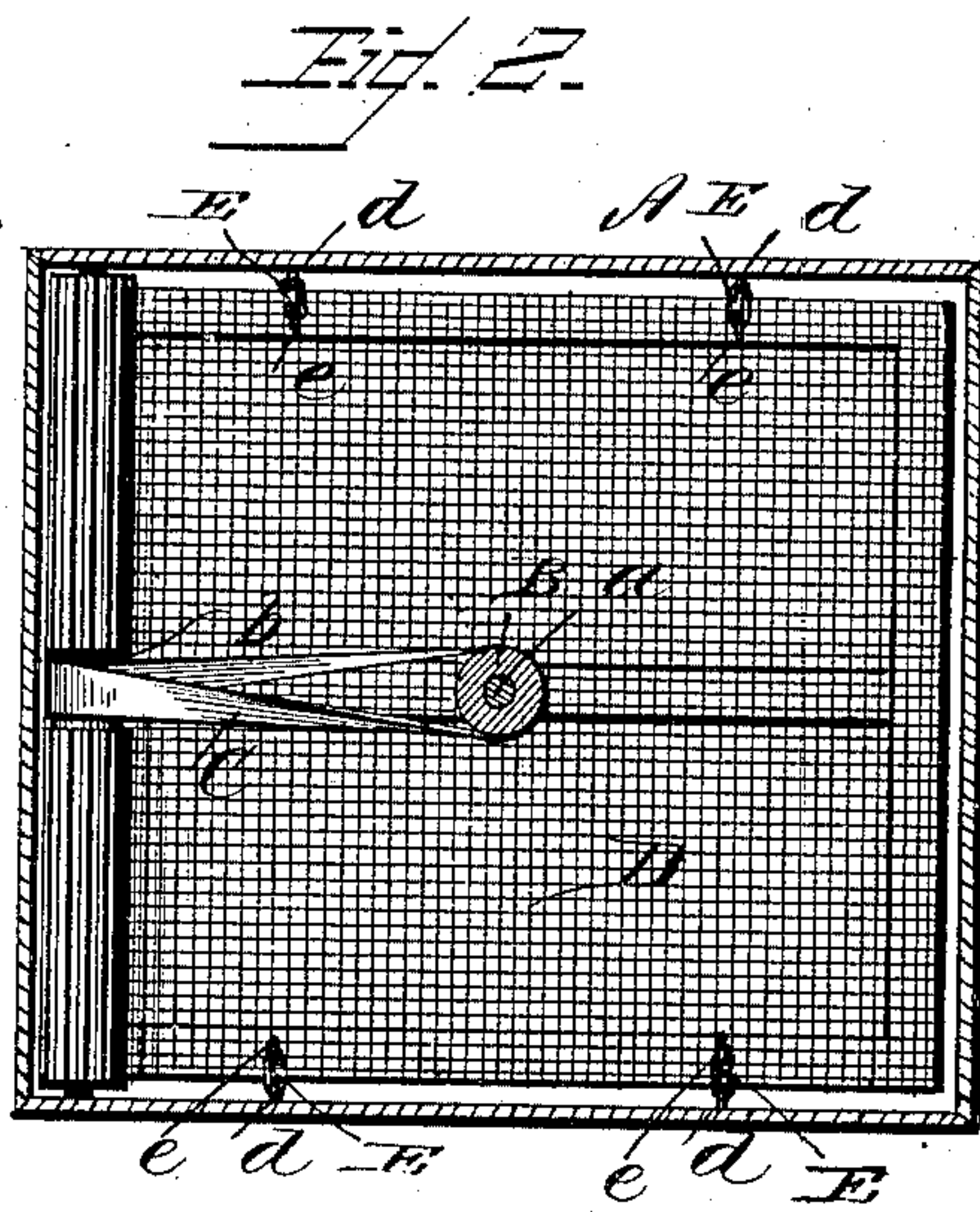
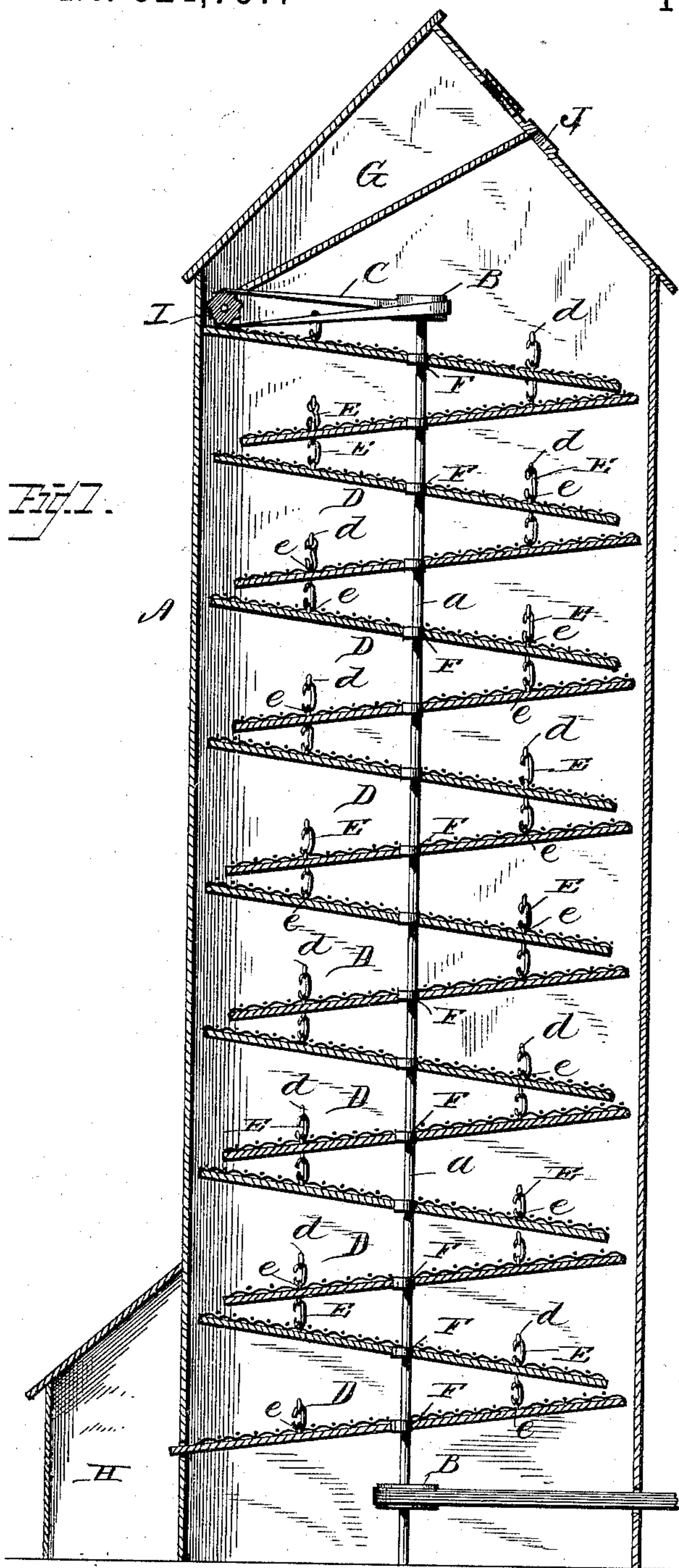
(No Model.)

J. R. SITLER.

GRAIN DRIER.

No. 324,737.

Patented Aug. 18, 1885.



WITNESSES

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UNITED STATES PATENT OFFICE.

JESSE R. SITLER, OF AXTELL, KANSAS.

GRAIN-DRIER.

SPECIFICATION forming part of Letters Patent No. 324,737, dated August 19, 1885.

Application filed August 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, JESSE R. SITLER, a citizen of the United States, residing at Axtell, in the county of Marshall and State of Kansas, have invented certain new and useful Improvements in Grain-Driers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to improvements in grain and other driers; and it consists in the construction and novel arrangement of devices, as will be hereinafter more fully set forth, and particularly pointed out in the claims appended.

The object of my invention is to provide a cheap and simple means for drying fruit, grain, and other articles which it is desirable to place upon the markets early in the season. This object I accomplish by the means shown and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of my invention. Fig. 2 is a transverse sectional view of the same; and Fig. 3 is a view of one of the inclined shelves removed from the case, with one of the eccentrics on the vertical shaft.

Referring to the said drawings by letter, A indicates the building or case in which the operating mechanism is arranged, and through which the grain is passed and dried. Within this case or building is arranged a vertical shaft, *a*, which is provided at opposite ends with a horizontal fixed pulley, B, the lower one of which is designed to receive a belt or other suitable device for imparting motion to the shaft and shelves from any suitable mechanical motive power, and the upper one is designed to communicate motion by means of a belt, C, to a feed-roller, *b*, engaging the same about midway of its length.

D indicates transversely-arranged inclined shelves for holding the grain, which are loosely swung from the inner walls of the case A, there being any suitable number employed, according to the capacity or drying-surface desired. The shelves are respectively composed of an open-work frame, which may be covered with gauze or other suitable pervious material for the upward passage of the hot air from the generator. These shelves are hung in the following manner: An eyebolt or

loop being first secured to the frame or case at opposite sides of the shelves or inclines, as shown at *d*, and the shelves provided with loops *e*, the loops of the shelves are respectively connected with the loops of the case by means of straps or links E, so as to allow the said shelves a vibratory movement, which is imparted to them from the eccentrics F on the vertical shaft *a*. The shelves are arranged to have their opposite ends extend beyond each other alternately from top to bottom of the case or frame, so as to have the material, after passing over the entire surface of one inclined shelf, to discharge from its lowest end to the next adjacent shelf beneath.

G is a hopper at the top of the drier for the reception of the grain, and H is a bin or receptacle for the grain after it has been dried and discharged from the lowest inclined vibratory shelf. The roller I, on which the pulley *b* may be formed, is grooved longitudinally, and extends the entire length of the hopper-throat *e*, and is designed to feed the grain from the said hopper into the drier, as may be desired.

It will be seen that the receiving ends of the vibratory inclined shelves are arranged in such close proximity to the walls of the case that the grain or material passing over and discharging from the respective shelves will occupy the entire space, or nearly so, from the edge of the shelf to the wall of the case, thus preventing the passage of the hot air at such points, and causing it to pass through the shelves and grain thereon.

J indicates an exhaust-aperture for the moist and damp air after it has been passed through the shelves and grain.

I am aware that it is not new to provide a grain-drier with a vertical shaft having eccentrics connected by means of arms with vibratory pans, and that a crank-shaft has also been employed for such purposes, and therefore do not claim such devices, broadly.

I attach importance to the manner of arranging the eccentrics with relation to the shelves. The eccentrics engaging the central portion of the shelves, a more thorough and easy vibration thereof is attained with but little power and strain upon the parts.

Another important advantage of this construction is, that all the parts, as well as the

operating-shaft, are arranged within the case, thereby affording no escape for the hot air other than at the desired point.

Having thus described my invention, what
5 I claim as new, and desire to secure by Letters Patent, is—

1. An improved drying apparatus consisting of a closed case having arranged centrally therein a vertical shaft provided with horizontal eccentrics, inclined shelves having central annular apertures for the engagement of the said eccentrics, the said shelves being suspended from the inner walls of the case, and extending beyond each other alternately at
15 opposite ends, and the said vertical shaft hav-

ing pulleys to receive and impart motion by belts, substantially as specified.

2. The combination, with the case and shelves constructed as described, and provided with the hopper at its upper end, of the
20 feed-roller arranged in the throat of the said hopper, the vertical shaft having the pulleys B, the belt C, and means for rotating the vertical shaft, substantially as specified.

In testimony whereof I affix my signature in
25 presence of two witnesses.

JESSE R. SITLER.

Witnesses:

JNO. F. SMITH,
B. S. STANLY.