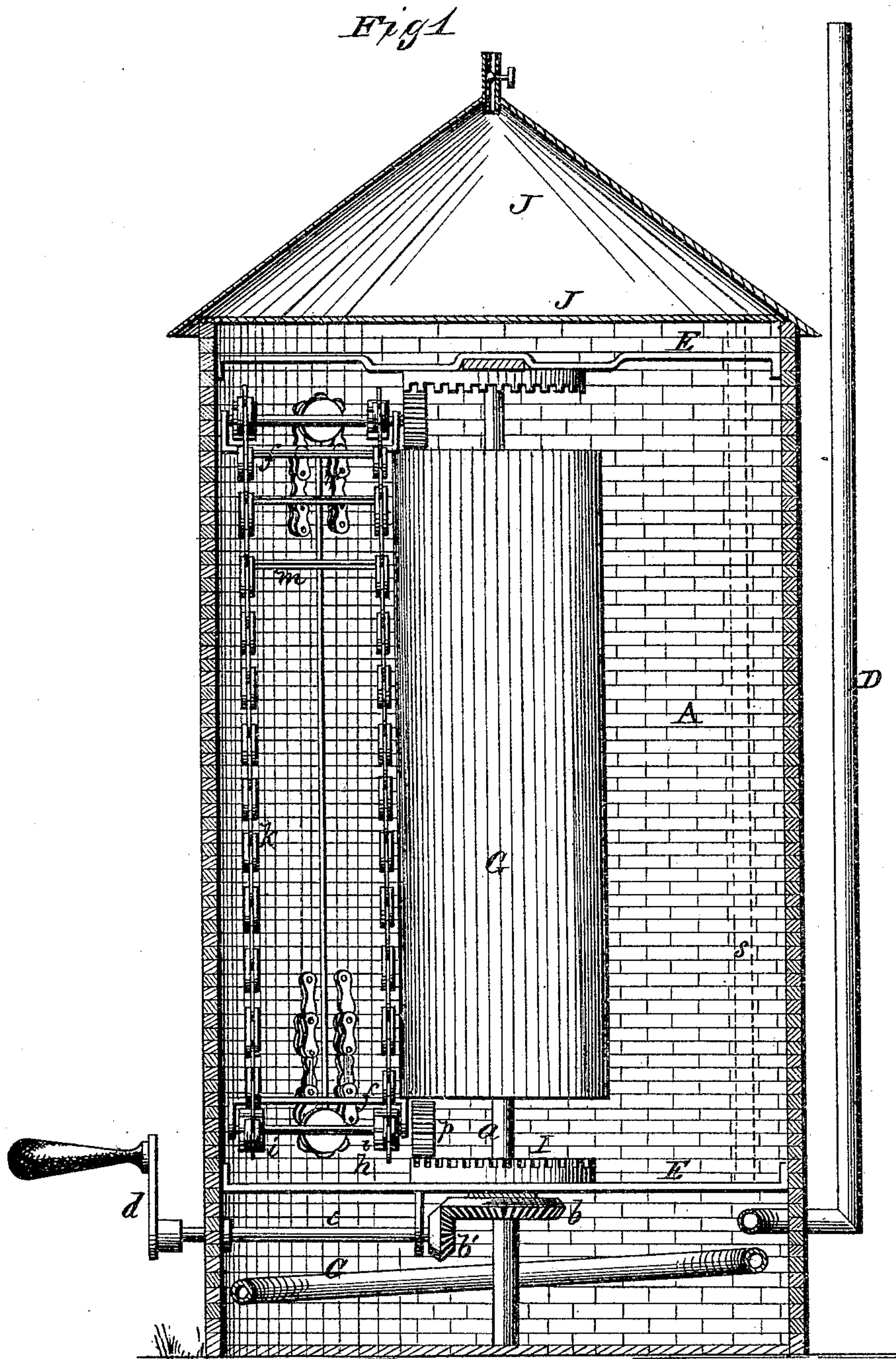


W. R. DAVIS.
FRUIT-DRIER.

No. 172,396.

Patented Jan. 18, 1876.



WITNESSES
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BH

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Fig 2

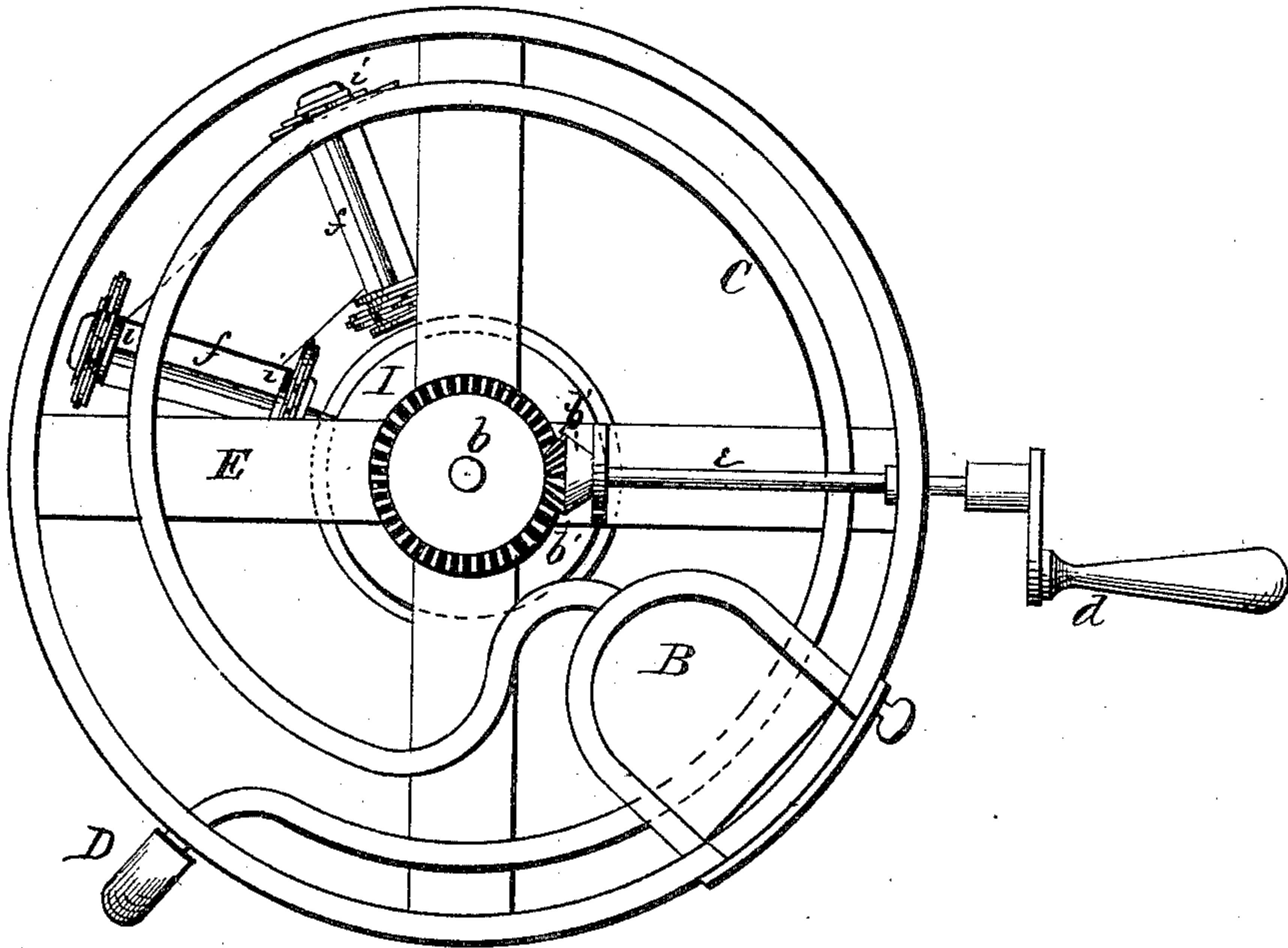


Fig 3

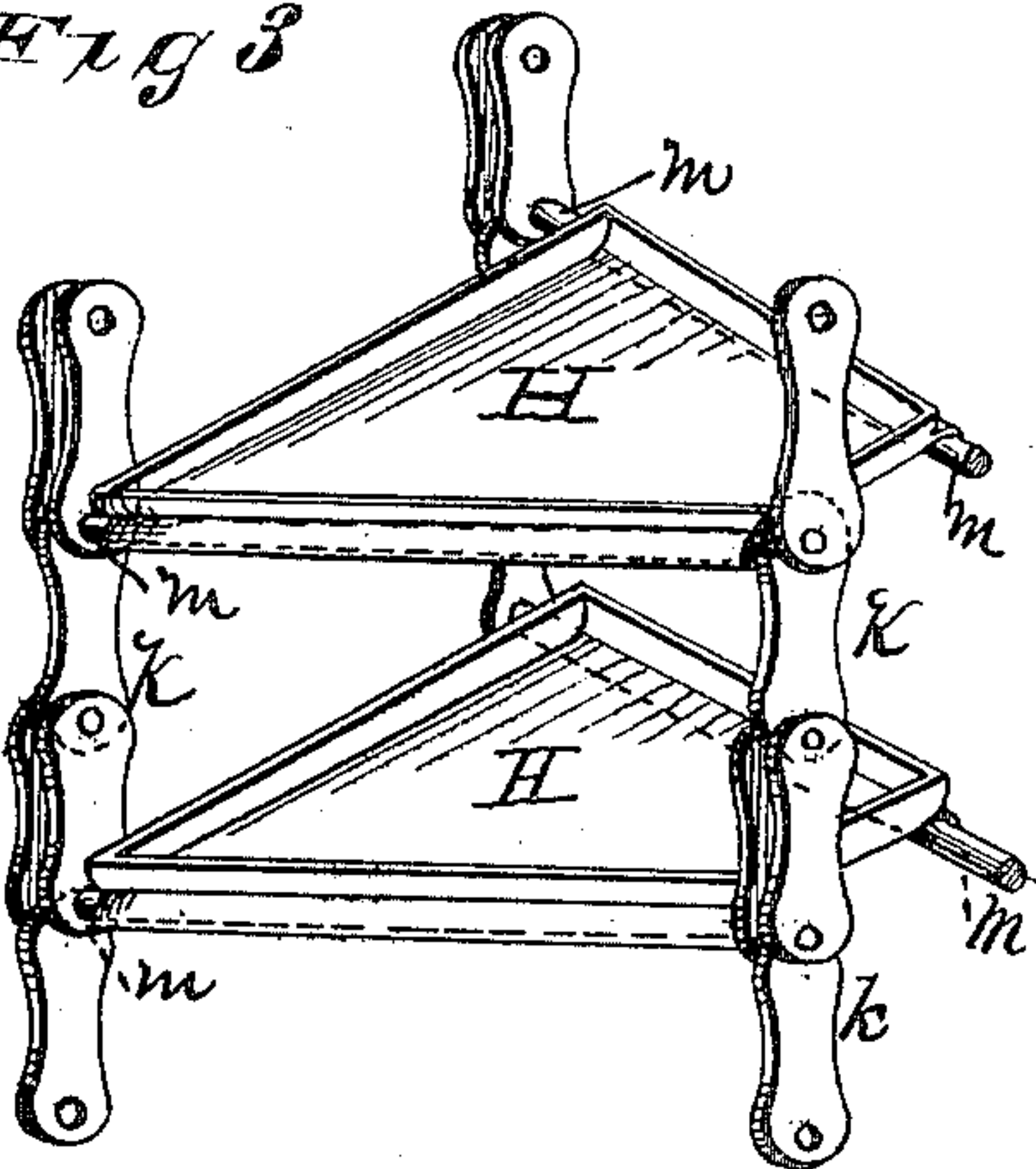
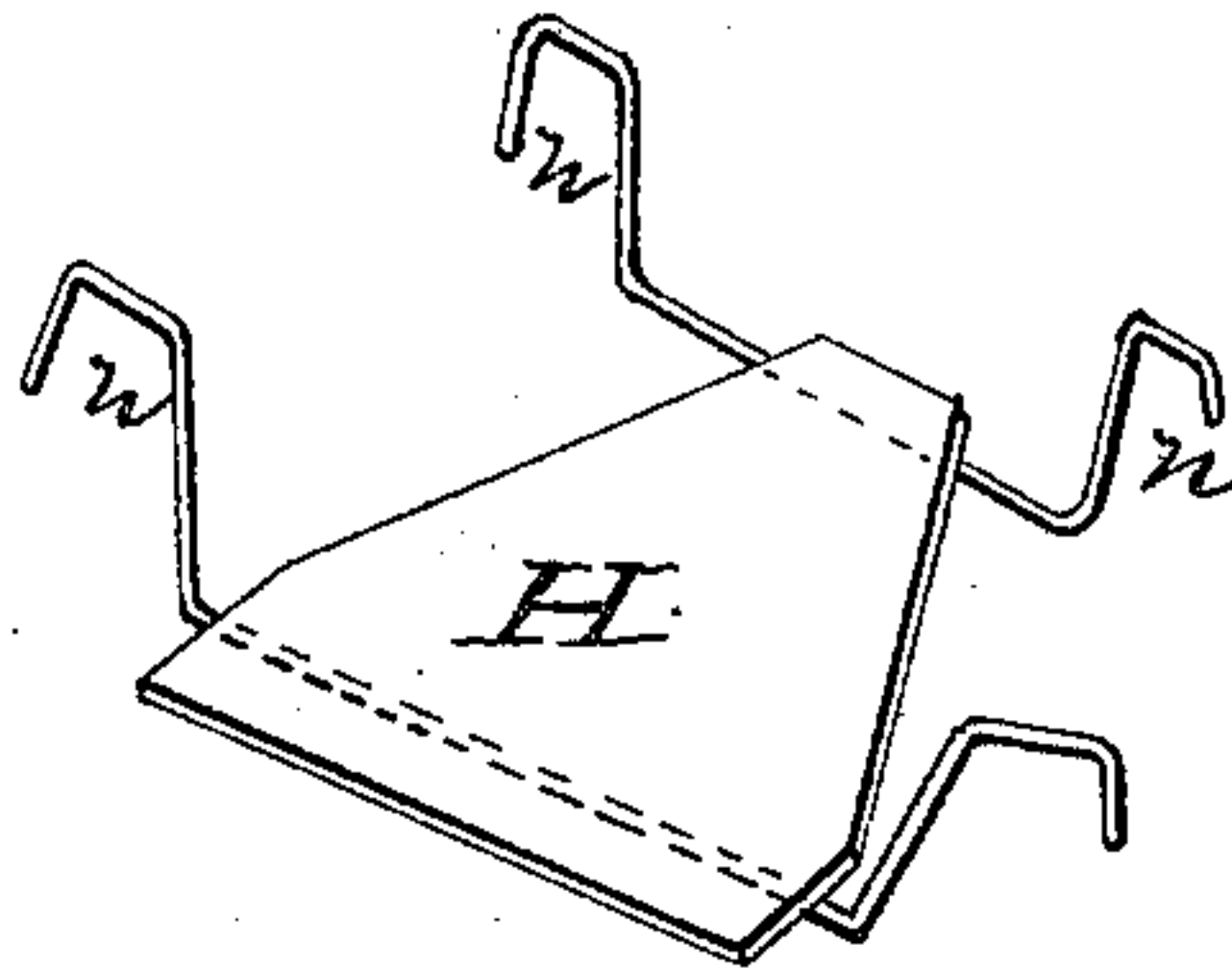


Fig 4



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UNITED STATES PATENT OFFICE.

WILLIAM R. DAVIS, OF AUGUSTA, GEORGIA, ASSIGNOR OF ONE-HALF HIS
RIGHT TO CHARLES W. FLOECKHER, OF WASHINGTON, D. C.

IMPROVEMENT IN FRUIT-DRIERS.

Specification forming part of Letters Patent No. 172,396, dated January 18, 1876; application filed
January 11, 1876.

To all whom it may concern:

Be it known that I, W. R. DAVIS, of Augusta, in the county of Richmond and in the State of Georgia, have invented certain new and useful Improvements in Fruit and Vegetable Evaporators; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a fruit-drier, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a vertical section of my fruit-drier. Fig. 2 is a plan view of the bottom thereof. Fig. 3 shows a section of the elevating apparatus. Fig. 4 shows one of the trays.

A represents a cylindrical dry-house, built of brick or other suitable material, and provided in the bottom at one side with a hot-air furnace, B, of any ordinary construction. From this furnace the smoke passes through a pipe, C, coiled in the bottom of the dry-house, and communicating with the smoke-stack or chimney D. Through the center of the dry-house A passes a vertical shaft, *a*, having its bearings in cross-bars E, secured within the walls of the dry-house. This shaft is rotated by means of bevel-gearing *b b'*, from a horizontal shaft, *e*, having a crank, *d*, on its outer end. On the shaft *a* is secured a vertical drum or cylinder, G, of suitable height, from the top and bottom of which project radial arms *f f*, having ears at their ends, to form bearings for horizontal shafts *h h*, which carry toothed pulleys *i i*. The arms *f*, with their shafts and pulleys, are arranged, as it were, in pairs—two at the top of the cylinder, corresponding exactly with two at the bottom thereof. Around the corresponding pulleys at top and bottom of the cylinder are passed endless chains *k k*, and the chains that pass around the pulleys on the same shafts are connected by a series of bars or rounds, *m m*.

These bars or rounds are at such distances apart as to form suitable supports for the fruit-trays H, which may either be provided with hooks *n n*, to be suspended from opposite bars or rounds, or have flanges or ledges on their under sides along two edges, to be held by said bars or rounds, as shown in figure. Each set of endless chains are operated by means of two pinions, *p p*, secured on the inner ends of one of the top shafts *h*, and one of the bottom shafts, and said pinions meshing with cog-wheels I I, secured on the upright center shaft *a*.

As the crank *d* is operated it will thus be seen that the entire interior structure is revolved around its center axis, and at the same time the fruit-trays are raised by the rotation of the endless chains. The trays are passed into the dry-house, and attached to the bars *m m* through a door in the lower part thereof, and removed when they arrive at the top through another door in the dry-house.

The central drum or cylinder G is simply to form a means for attaching the arms *f*, and anything that will answer the same purpose may be used in lieu thereof.

The dry-house A is covered on top by a hollow conical cap, J, having a flat bottom, J', into which cap hot air is admitted from the hot-air furnace through a pipe, *s*. By this means the upper part of the dry-house is heated equally as well as the lower part, and all the moisture from the fruit is entirely absorbed, drying the fruit completely without the necessity of putting in the trays again after they have once been removed.

I do not broadly claim a drum rotating within a drying-chamber, and carrying with it in its rotation a series of shelves, which are vertically reciprocated by means independent of the cylinder.

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

1. In a fruit-drier, the combination of a central rotating shaft, *a*, having two sets of radial arms, *f f*, the shafts *h*, pulleys *i*, endless chains *k*, with bars or rounds *m*, the pinions *p*, and cog-wheels I, all constructed and arranged as described, whereby the fruit-trays

are revolved around a center axis, and raised perpendicularly at the same time, substantially as herein set forth.

2. The combination of the dry-house A, hot-air furnace B, coil-pipe C, smoke-stack D, hot-air pipe s, and hollow cap J, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of January, 1876.

WM. R. DAVIS.

Witnesses:

H. A. HALL,
M. L. STOWELL.