H. R. BRINSER.

GRAIN DRIER.

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996,700.

Patented July 4, 1911.

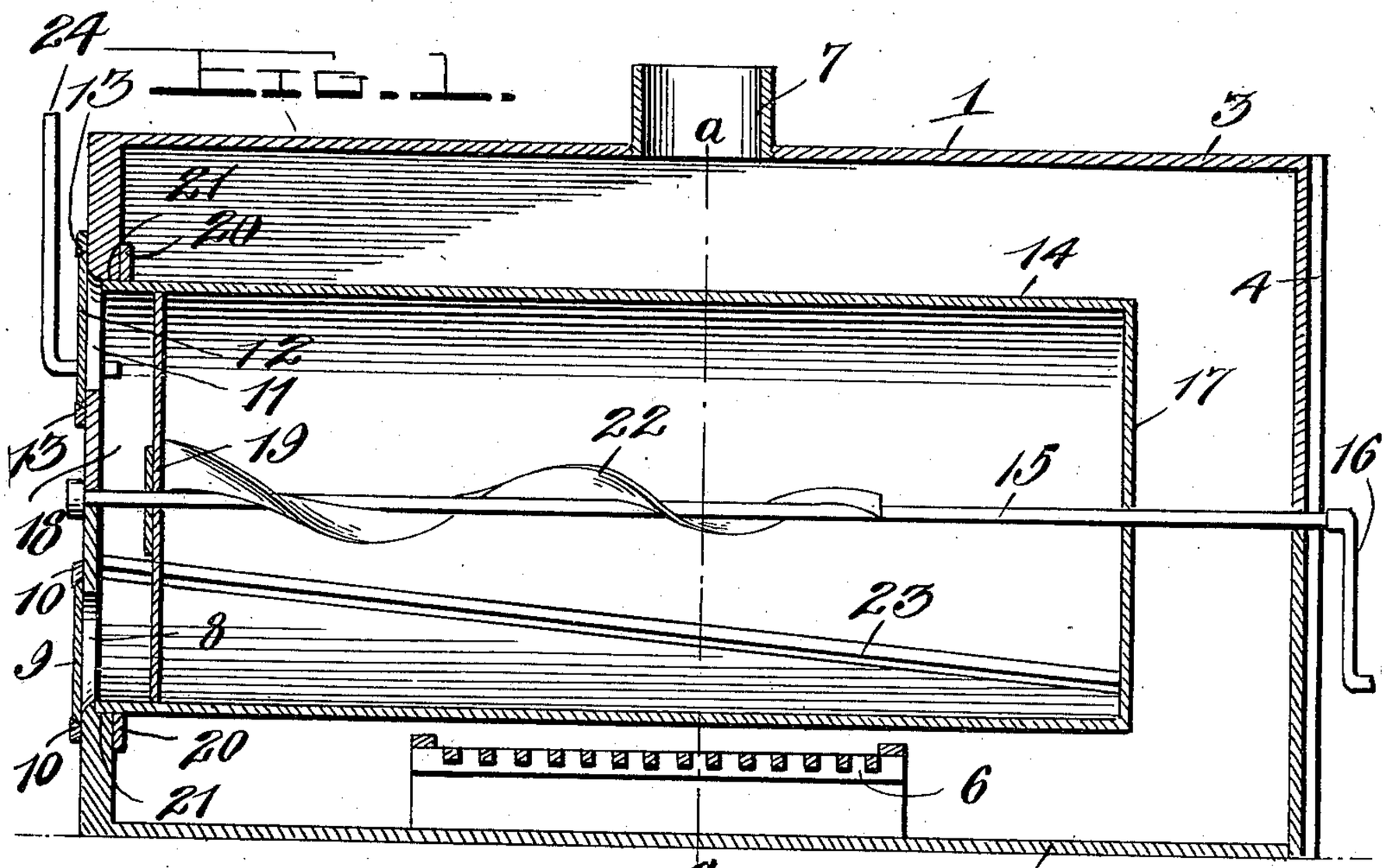
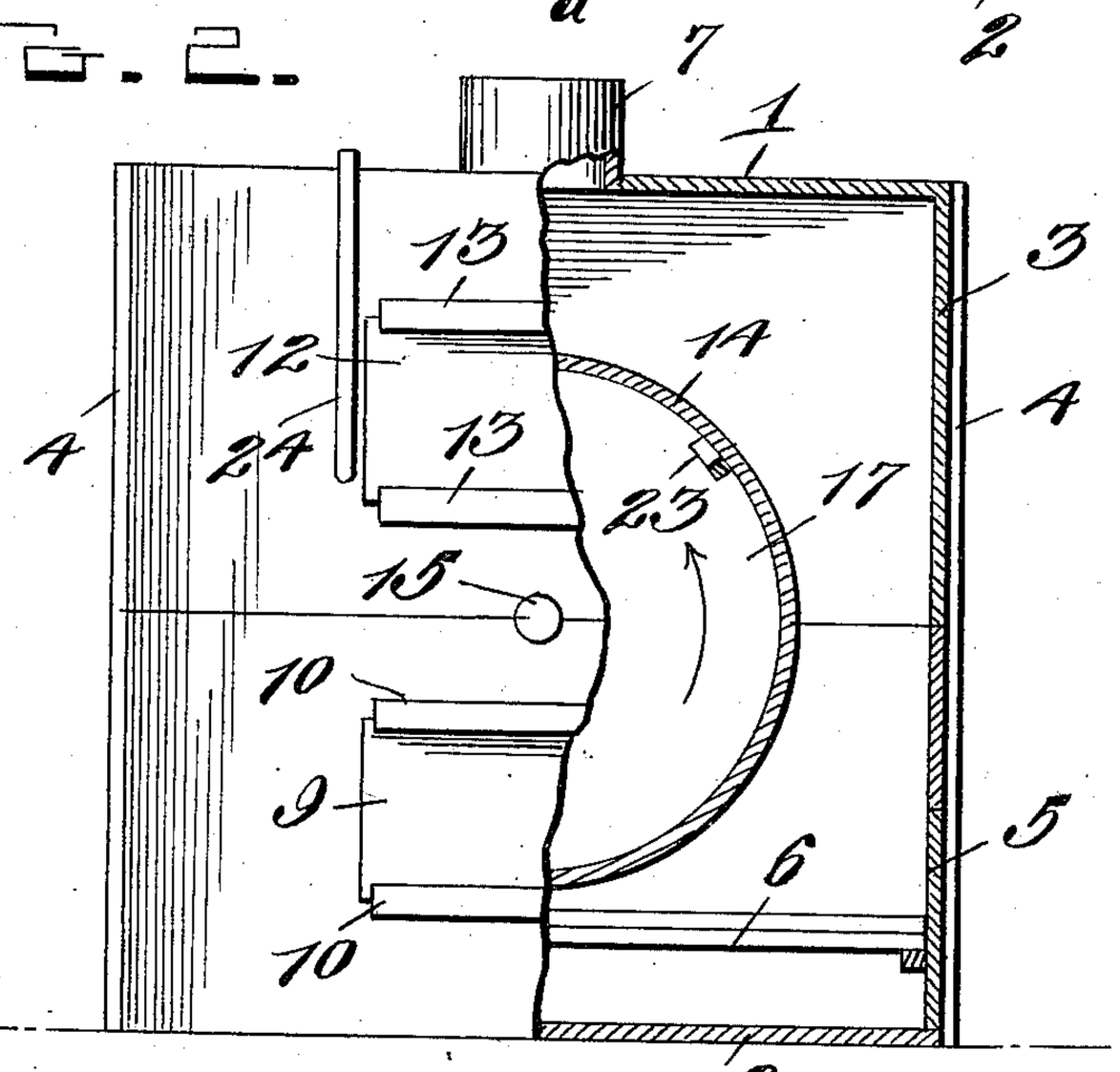



FIG. 2.




Witnesses

Chas. L. Griesbauer.

H. F. Peeler.

Inventor

Harry R. Brinser;

By Watson E. Coleman,

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

HARRY R. BRINSER, OF MIDDLETOWN, PENNSYLVANIA.

## GRAIN-DRIER.

996,700. Specification of Letters Patent. Patented July 4, 1911.

Application filed January 11, 1911. Serial No. 602,057.

*To all whom it may concern:*

Be it known that I, HARRY R. BRINSER, a citizen of the United States, residing at Middletown, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Grain-Driers, of which the following is a specification, reference being had to the accompanying drawings.

This invention is an improved drier for drying grain, nuts and other commodities, and consists in the construction, combination and arrangement of devices hereinafter described and claimed.

The object of my invention is to provide a cheap, simple and easily operated device of this character which is not likely to get out of order, is very strong and durable, and is provided with means to prevent the grain from adhering to the drying cylinder, and becoming burned and is also provided with means to prevent smoke or other products of combustion from the furnace or fire box from entering the drying cylinder, and injuring the grain.

In the accompanying drawings—Figure 1 is a vertical longitudinal sectional view of a drier constructed in accordance with my invention. Fig. 2 is partly a front elevation of the same, and partly a transverse sectional view on the plane indicated by the line *a*—*a* of Fig. 1.

In accordance with my invention, I provide a casing 1, which is here shown as of rectangular form and comprises a lower or body member 2, and a cover 3 which forms the upper member of the casing and is removable from the lower or body member, the latter being provided at its corners with upright guides 4, which serve to retain the cover in place, and yet permit the cover to be readily removed from the body or lower member of the casing, at will.

The casing is preferably constructed of sheet or plate metal, but may be made of any suitable material. The lower member or body 2 of the casing is provided at one side with a fire door 5, and is also here shown as provided with a suitable grate 6 on which a fire may be made.

Within the scope of my invention the casing may be provided with any suitable heating means and I would have it understood that I am not limited as to this particular.

The cover of the casing is shown as provided with a flue 7. The front end of the body of the casing is provided with a grain discharge opening 8, and with a slide door 9, to cover or open the same, the said slide door being mounted in suitable guide-ways 10. The front end of the cover or upper member of the casing is provided with a grain feed opening 11, and a slide door 12 for the same, the said slide door being mounted in guide-ways 13.

The grain cylinder 14 is provided with a shaft 15 which has its bearings at the front and rear ends of the casing. The cylinder is secured to the shaft by any suitable means. Suitable means, such for instance as a crank handle 16 is provided for rotating the shaft, and hence also the grain cylinder. Any suitable means may be employed for this purpose. The rear end of the grain cylinder is closed as at 17. Its front end is open as at 18, and is provided with crossed bars 19 which support the said open end of the grain cylinder on the shaft. Near its front end the grain cylinder is provided with an annular circumferential guard flange 20. The front walls of the lower and upper members of the casing are provided on their inner sides with a semi-circular recess 21, in which the front end of the cylinder is disposed, and the guard flange 20 of the cylinder bears against the inner surfaces of the said walls, and hence serves to prevent smoke or other products of combustion from entering the front end of the cylinder, and injuring the contents thereof. It will be observed that the cylinder extends directly over and above the grate so that the cylinder becomes heated, and hence the grain or other contents of the cylinder becomes heated while the cylinder is being revolved.

The shaft is provided with a conveying screw or worm 22 which extends from the front end of the cylinder nearly to the rear end thereof. When the cylinder is revolved in the direction indicated by the arrow in Fig. 2, the said conveyer worm serves to move the grain in the cylinder from the front end thereof and toward its rear or inner end. The cylinder is also provided on its inner side with obliquely disposed flights 23 which serve to move the grain from the inner end of the cylinder to the front open end thereof, so that as the cylinder revolves, the grain which is in the vicinity of the conveyer worm is moved toward the rear end of the cylinder, and the grain which is on

the bottom of the cylinder is moved toward the front end thereof, and hence the grain is kept in constant circulation and is prevented from adhering to the cylinder at any point and becoming burned, and moreover, the grain becomes heated and dried to a uniform extent at all points in the cylinder.

Assuming that the door 9 is closed the grain or other commodity to be dried is put into the drying cylinder through the opening 11, after opening the door 12, and when the cylinder has been filled to the desired extent and so as to cover its shaft, and the conveyer worm thereon, the said door 12 is then closed, and the cylinder is caused to rotate. A vent flue 24 is preferably provided to discharge the vapors from the interior of the cylinder and is here shown as attached to the front wall of the upper member 3 of the casing. After the grain has been dried and heated, a sufficient length of time, the door 9 is opened and the continued rotation of the cylinder causes the flights therein to discharge all of the grain from the cylinder out through the opening 8.

I claim:—

The herein described grain drier comprising a casing having a lower member and an upper member removable from the lower member, the former being provided with heating means, the latter being provided with a flue and the said lower and upper members being provided at one end of the casing on their inner sides with a circular recess, one half of which is formed in each of said members, the upper member being provided at the said end with an inlet opening and a closure therefor and the lower member being also provided at the said end with a discharge opening and a closure therefor; a grain cylinder mounted for rotation in said casing, having an open end disposed in said circular opening of the casing and further provided with an outwardly extending flange bearing against the recessed end of the casing, the said cylinder being provided with a supporting shaft which has its bearings at the joints between the lower and upper members of the casing at the ends thereof, the said shaft being provided with a conveyer worm to move grain inwardly in the cylinder and the latter being provided at its periphery with flights to move the grain toward the open end of the cylinder.

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

HARRY R. BRINSER.

Witnesses:

HERBERT S. BRINSER,

LANIOUS W. BRINSER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."