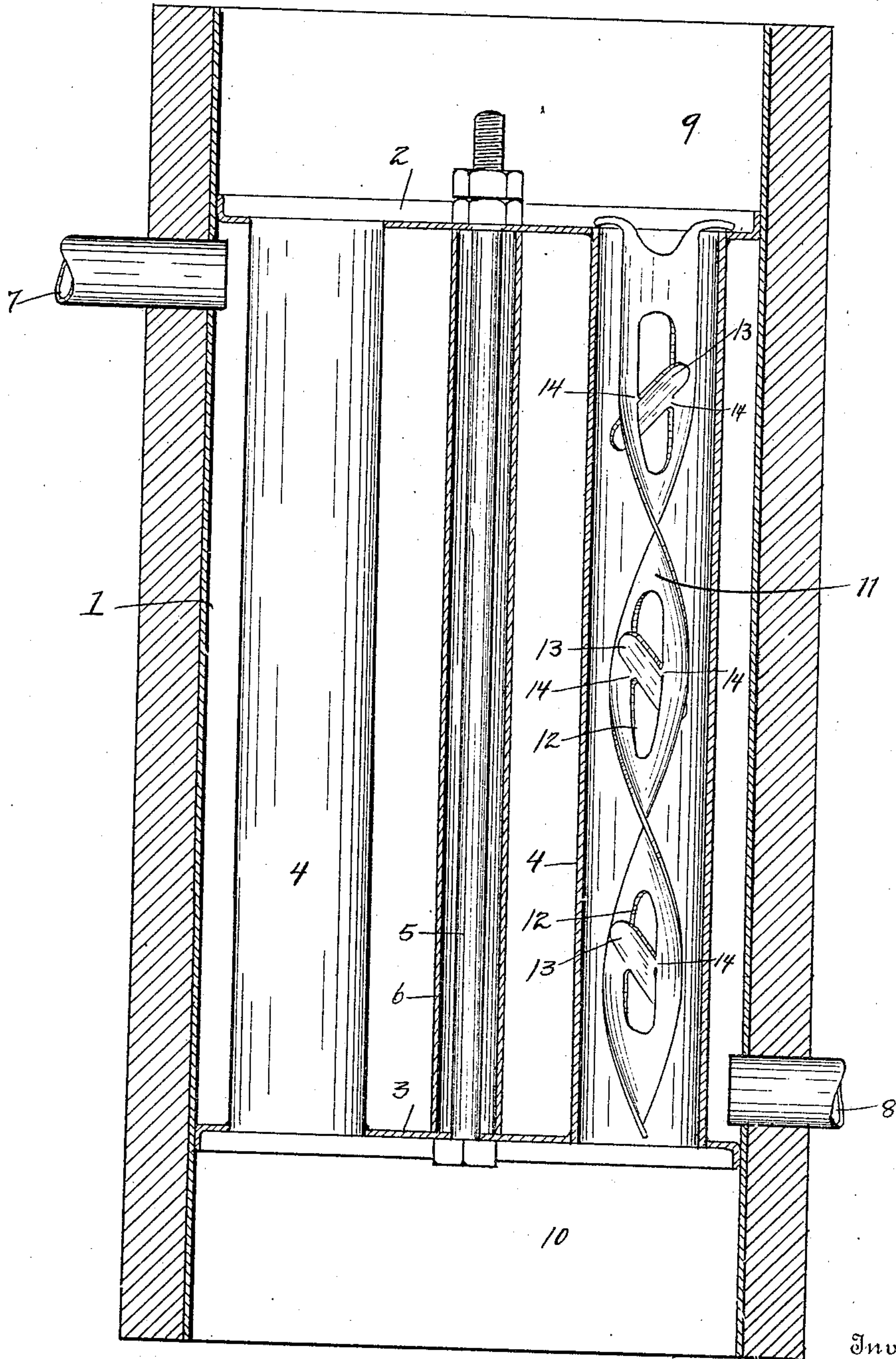


A. J. KOEGLER.  
 AGITATOR FOR GRAIN HEATERS.  
 APPLICATION FILED SEPT. 7, 1909.

960,024.

Patented May 31, 1910.



Inventor

Witnesses  
 C. R. Erwin  
*[Signature]*

By

*August J. Koehler*  
*Erwin & Koehler*

Attorneys



# UNITED STATES PATENT OFFICE.

AUGUST J. KOEGLER, OF MILWAUKEE, WISCONSIN.

AGITATOR FOR GRAIN-HEATERS.

960,024.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed September 7, 1909. Serial No. 516,535.

*To all whom it may concern:*

Be it known that I, AUGUST J. KOEGLER, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Agitators for Grain-Heaters, of which the following is a specification.

My invention relates to improvements in devices for deflecting and agitating grain as it flows through vertical steam heated tubes or ducts.

Experience has proven that when grain is permitted to flow unobstructed through the tubes of a heater, the grain which is nearest to the center will flow the fastest and it consequently becomes but slightly heated, while the grain in contact with the heated walls of the tubes is retarded by friction and becomes overheated.

The object of my present invention is to provide a simple and efficient device by which the grain which would otherwise pass unheated through the center of the heating tubes, will be deflected outwardly, while the heated grain nearest the walls of the tubes will be caused to flow inwardly, whereby all the grain passing through the tubes of the heater will be thoroughly agitated and uniformly heated.

The construction of my invention is explained by reference to the accompanying drawing, which represents a vertical section of a grain heater, comprising a steam chamber and a plurality of grain tubes vertically supported from the heads of such chamber, in one of which grain tubes is shown, a side view of my improved grain agitator.

Like parts are identified by the same reference numerals.

1 is the steam chamber, from the heads 2 and 3 of which a plurality of grain heating tubes 4 are supported. The heads 2 and 3 are connected centrally and are reinforced by the stay-rod 5 and rod inclosing tube 6.

7 is an inlet steam duct and 8 is an outlet steam duct.

9 is a receiving chamber into which the grain is discharged preparatory to being heated in the tubes 4, and 10 is the discharge chamber into which the heated grain is adapted to flow from said heating tubes, and from which it is led to the grinding rollers of a mill, preparatory to being ground into flour.

The heater thus far described is substan-

tially of ordinary construction and invention is predicated herein more especially upon the construction of the heat deflecting and agitating member 11.

The member 11 is formed of a long, narrow, thin strip of sheet metal, which is provided with a series of central apertures 12, preferably of greater length than width, in which apertures a deflecting plate 13 is centrally supported from its opposing sides. While said deflecting plates may, if desired, be separately formed and attached to the side of the apertures, they are preferably formed integrally with their supporting members with which members they are connected by the unsevered side members 14. The side members 14 are sufficiently flexible to permit the plates to be inclined at an angle to the vertical as shown, whereby the grain passing down upon one side of the deflecting member 11 is caught by the upper end of said deflecting plate, and thereby caused to flow upon said plate through the aperture 12, whereby it is brought into close proximity to the wall upon the opposite side of the tube. To provide for thus controlling the flow of grain from all sides of the heating tubes alike, the strip 11 is preferably bent into the spiral shape shown, so that the deflecting plates radiate toward the walls upon all sides of the heating tubes, whereby the downflowing grain will be deflected to all sides of the heating tubes alike. The upper ends of the members 11 are provided with outwardly projecting arms 15, which rest upon the upper ends of the grain tubes, whereby said members 11 are centrally suspended in said tubes.

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

1. In a grain deflector and agitator for the heating ducts of a grain heater, an elongated strip of sheet metal provided with a series of apertures, in combination with a plurality of deflecting plates, one of which plates is supported at an angle to said strip in each of said apertures.

2. In a grain deflector and agitator for the ducts of a grain heater, a spirally curved strip of sheet metal provided with a series of elongated apertures in combination with a plurality of deflecting plates, one of which plates is supported at an angle to the vertical in each of said apertures.

3. In a grain deflector and agitator for the



ducts of a grain heater, a spirally curved strip of sheet metal provided with a series of elongated apertures in combination with a plurality of integrally formed deflecting plates, one of which plates is supported at an angle to the vertical in each of said apertures, and a plurality of radial arms connected with the upper end of said strip for

supporting the latter from the upper end of a grain heating tube.

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

AUGUST J. KOEGLER. .

Witnesses:

JAS. B. ERWIN,  
LEVERETT C. WHEELER.