(No Model.)

F. WIPPERMANN.

WEB DRYING CYLINDER.

No. 590,928. Patented Sept. 28, 1897.

Fig. 2.

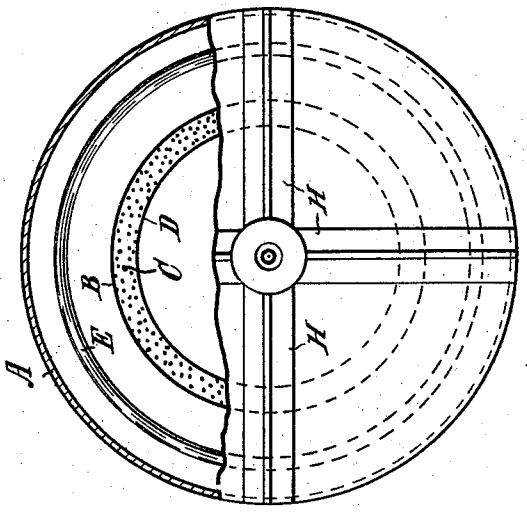
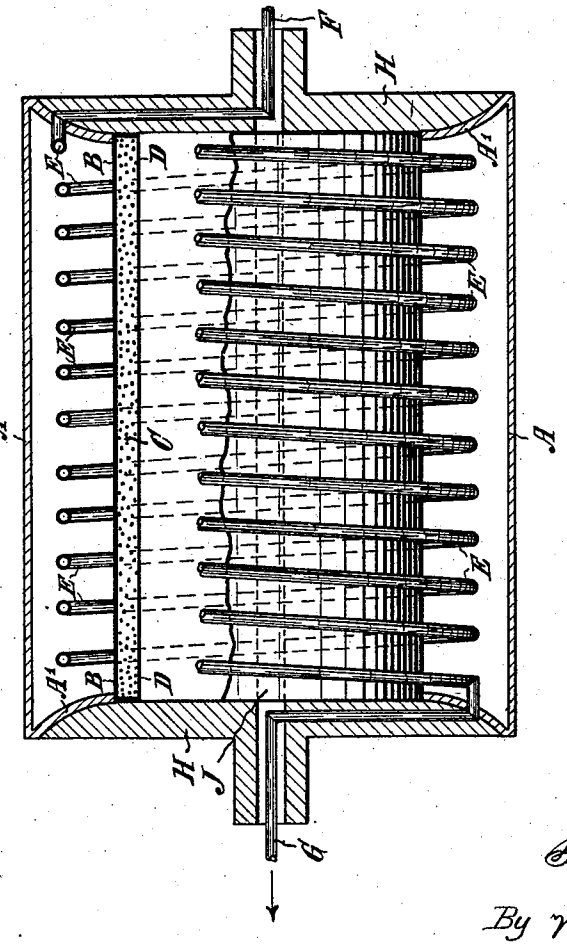


Fig. 1.



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WEB-DRYING CYLINDER.

SPECIFICATION forming part of Letters Patent No. 590,928, dated September 28, 1897.

Application filed April 22, 1897. Serial No. 633,356. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH WIPPERMANN, a subject of the King of Prussia, German Emperor, residing at Stotzheim, in the Kingdom of Prussia, Germany, have invented new and useful Improvements in Drying-Cylinders for Breadths of Stuff and Paper, of which the following is a specification.

This invention relates to a rotary drying-cylinder for fibrous matter, paper, pasteboard, and tissues heated by a coil rotatably arranged in the cylindrical inner space, so that the cylinder constructed according to this invention offers over the hitherto-used drying apparatus the advantage that it is completely protected against any explosion and that owing to an insulating-casing provided in the inner space of the cylinder and to the reduction of the frontal surfaces a loss of heat is prevented as much as possible.

The apparatus is shown in the accompanying drawings.

Figure 1 is a longitudinal section, and Fig. 2 a side elevation, partly in cross-section, of the drying-cylinder.

The construction and manner of working of the drying-cylinder are as follows:

The apparatus consists, essentially, of the outer cylinder-casing A, of the insulating-casing C, and of the heating-coil E. The outer cylinder-casing A, made of cast metal or of wire-cloth, is connected by the ring A′ to the inner cylinder-casing B, which in combination with the casing D, of sheet metal, forms a hollow space which is filled with an insulating material for the purpose of preventing as much as possible a radiation of heat to the side of the cylinder turned toward the axis of the latter. This double casing is connected with the axis by means of iron arms H, secured to the connecting-ring of the two cylinder-casings.

The cylinder is heated by means of the steam-coil E, spirally surrounding the insulating-casing, while the steam is admitted and discharged by the tubes F and G, respectively, introduced centrally with respect to the cylinder axis and guided on both sides along one of the connecting-arms H, to which the said tubes are fastened, so that their rotary motion is transmitted to the heating-coil.

By this construction I maintain that the consumption of steam in comparison with that of the hitherto-used drying apparatus is, owing to the small area of the cooling-surfaces, a very small one, the output of the apparatus remaining the same. The new drying-cylinder offers, moreover, the advantage that as there is no tension in the cylinder any danger of explosion is completely avoided. The cylinder-walls may therefore be of smaller thickness, so that the total weight of the apparatus is considerably reduced and a much lower impellent power is required.

Having now fully described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A drying apparatus having two casings arranged one within the other, heads connecting the casings, and a heating-coil run between the casings.

2. A drying apparatus having two casings arranged one within the other and connected by heads, and a heat-conveying apparatus extending between the casings.

3. A drying apparatus consisting in two casings arranged one within the other, heads for the cylinder, the heads having orifices therein, and a heating-coil extending through the orifices of the heads and wound between the casings.

4. A heating apparatus having two casings arranged one within the other, the inner side being of non-conducting material, heads for the casings, and heating devices extending between the casings.

5. A heating apparatus consisting in two casings arranged one within the other, the inner casing being of non-conducting material, the apparatus also having two heads with orificed central portions, and a heating-coil extending through the orifices of the head and wound between the two casings of the cylinder.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRIEDRICH WIPPERMANN.

Witnesses:

OTTO MERKENS,

W. JOS. SOMMER.