P. BREUER.

PAPER DRYING MACHINE.

APPLICATION FILED MAR. 8, 1921.

1,427,437.

Patented Aug. 29, 1922.

2 SHEETS—SHEET 1.

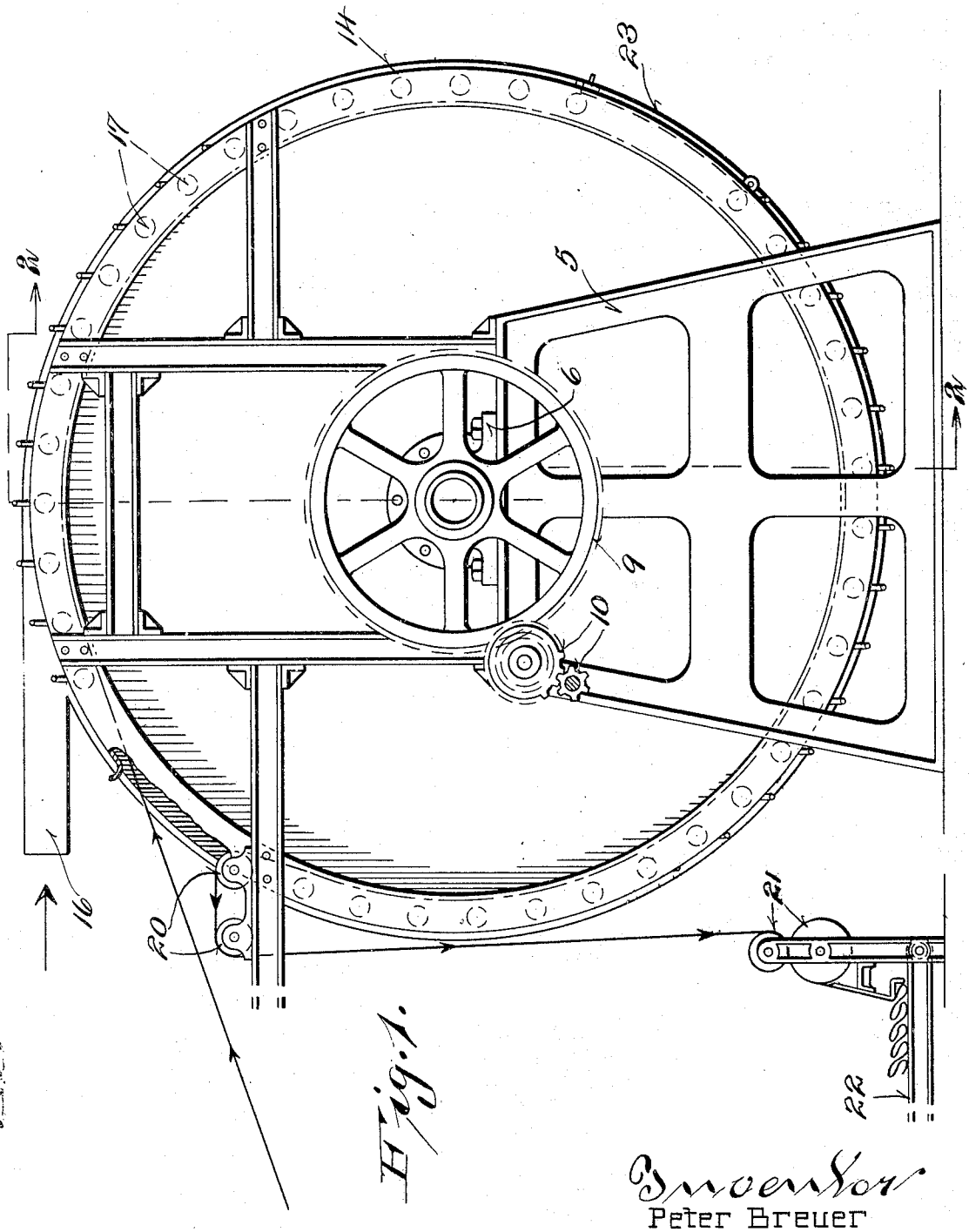


Fig. 1.

Inventor
Peter Breuer

Witness
J. P. Britt

By Young and Young
Attorneys

P. BREUER.

PAPER DRYING MACHINE.

APPLICATION FILED MAR. 8, 1921.

1,427,437.

Patented Aug. 29, 1922.

2 SHEETS—SHEET 2.

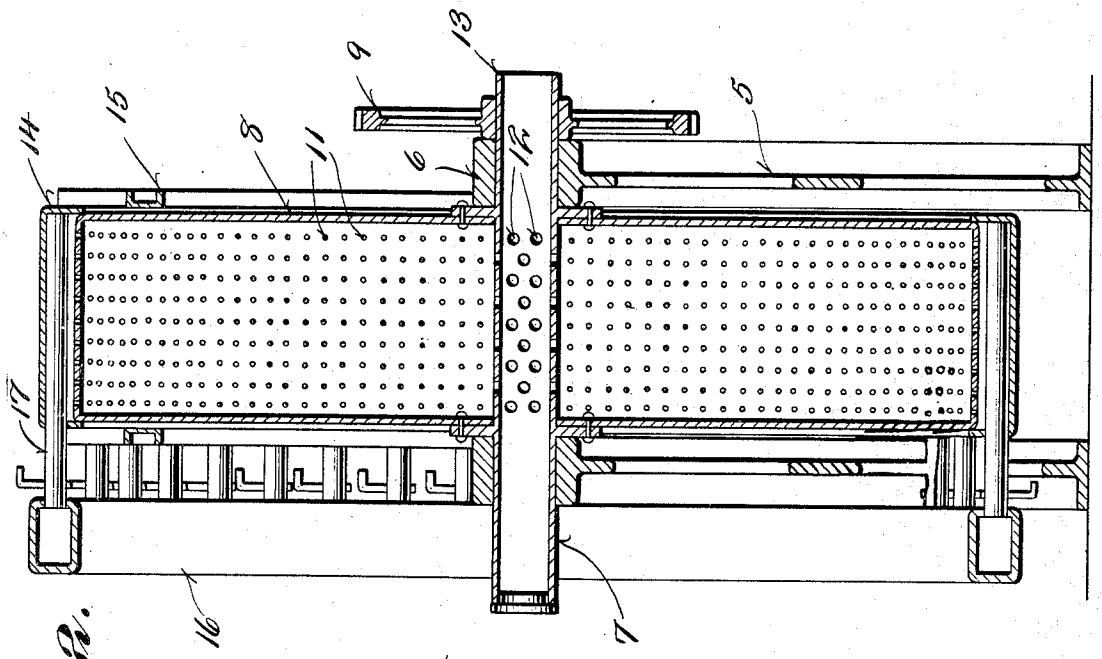


Fig. 2.

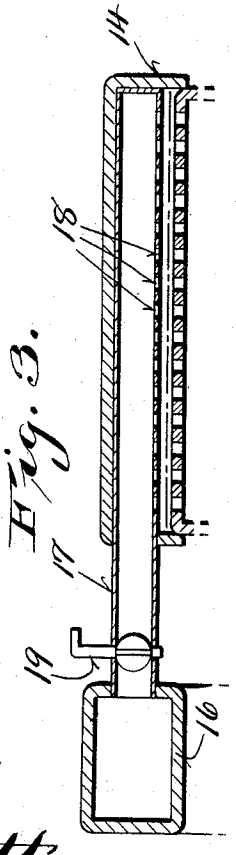


Fig. 3.

Witness
T. P. Britt

Inventor
Peter Breuer

By Young and Young
Attorneys

UNITED STATES PATENT OFFICE.

PETER BREUER, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF TO ALFRED A. JENSS, OF MILWAUKEE, WISCONSIN.

PAPER-DRYING MACHINE.

1,427,437. Specification of Letters Patent. **Patented Aug. 29, 1922.**

Application filed March 8, 1921. Serial No. 450,616.

To all whom it may concern:

Be it known that I, PETER BREUER, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Paper-Drying Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to an improvement in paper drying machines, and more especially to a machine for drying wall paper and the like as it comes from the printing rolls.

It has hitherto been the practice in printing paper and the like, to run it from the printing roll to a festooning machine which carries it in festoons until it dries by the natural action of the atmosphere. In printing paper of this kind, it is usually necessary to use a great amount of the liquid which contains the coloring material, and in order to dry the paper by this method an enormous space is necessary, resulting in considerable expense.

It is the general object of my invention, to provide a drying machine by which artificial heat is utilized for the drying operation, with the result that the drying takes place much more quickly and less space is required for its operation.

A more specific object of the invention, is to subject the printing paper to a blast of hot air, which vaporizes the moisture therein, and at the same time to provide suction to conduct away the vapor charged air.

With the above and other objects in view, which will be apparent as the description proceeds, my invention resides in the structural details which are illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of the machine, which embodies my invention.

Figure 2 is a transverse sectional view on the line 2—2 of Figure 1, and

Figure 3 is a sectional view through one of the hot air supply pipes.

Referring more specifically to the drawings, the numeral 5 designates a supporting frame which is provided with journal bearings 6, in which is journaled a hollow core 7 which carries a large hollow roller 8. Suitable means are provided for slowly rotating the roller. In the present instance I have shown a spur gear wheel 9, mounted on the core which is rotated by means of the reducing gearing 10. The outer surface of the roller 8 is provided with numerous perforations 11, through which the moisture from the paper may be drawn. This moisture passes through the larger perforations 12, and through the hollow core 7, which is provided at 13 with means for attaching a suction inducing device.

A housing 14 surrounds the periphery of the roller, and is spaced therefrom. This housing closely engages the sides of the roller, and is supported on the super-structure 15, which is carried by the supporting frame 5. A hot air blast is supplied through the trunk 16, which is provided with numerous branches 17 which extend into the housing 14, and are provided with perforations 18 opening toward the periphery of the drum. Each of the branch pipes 17 may be provided with a suitable valve 19 for controlling the amount of hot air supplied therethrough.

The paper as it passes from the printing rolls, passes around the roller 8 over the rollers 20 and 21 on to the conveyor 22, whence it is carried to suitable winding and measuring devices. A door 23 may be provided in the housing 14 for the purpose of gaining access to the interior thereof.

In the operation of my device, as the paper passes around the roller 8, it is subjected to the hot air blast which is supplied through the trunk 16 and the branch pipes 17, and the moisture in the paper is vaporized. The suction which is induced in the core 7 draws this vapor laden air through the perforations 11 and 12, thus by the time the paper has reached the rollers 20 it will be thoroughly dried.

From the foregoing description it will be seen that my device occupies comparatively small space. The paper may be handled with much less expense than is incurred in the operation of the usual drying machines, and it is also delivered from the roller in a convenient manner to be readily transferred to the devices which arrange it in commercial packages.

It will also be understood that while I have shown in detail one form in which my invention may be embodied, various changes may be made in the structural details without departing from the spirit of the invention.

I claim as my invention.

1. A paper drying machine comprising a hollow perforated roller around which the paper passes, a housing enclosing the periphery of said roller, a hot air supply pipe in communication with the interior of said housing for discharging hot air onto the outer surface of the paper as it passes around said roller and a rotatable hollow perforated core on which said roller is carried, whereby the moisture may be drawn from the paper through the perforations in the roller and core while the hot air is discharged onto its outer surface.

2. In a device of the character described, a hollow perforated core, a perforated roller carried by said core and forming therewith an enclosed space, a stationary housing outside the surface of the roller and closely fitting the ends thereof, pipes extending into the housing and having perforations opening toward the surface of the roller, means for supplying hot air to said pipes for drying the paper which passes over said roller and valves for varying the amount of air discharged through said pipes.

3. In a device of the character described, a roller having a hollow perforated core, perforations in the periphery of the roller in communication pneumatically with the perforations in the core, means for applying suction to the core to draw air through the paper which passes over said roller, a stationary housing outside the surface of the roller and closely fitting the ends thereof, pipes extending into the housing and having perforations opening toward the surface of the roller, means for supplying hot air to said pipes for vaporizing the moisture in the paper which passes over said roller, and means for rotating said roller.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

PETER BREUER.