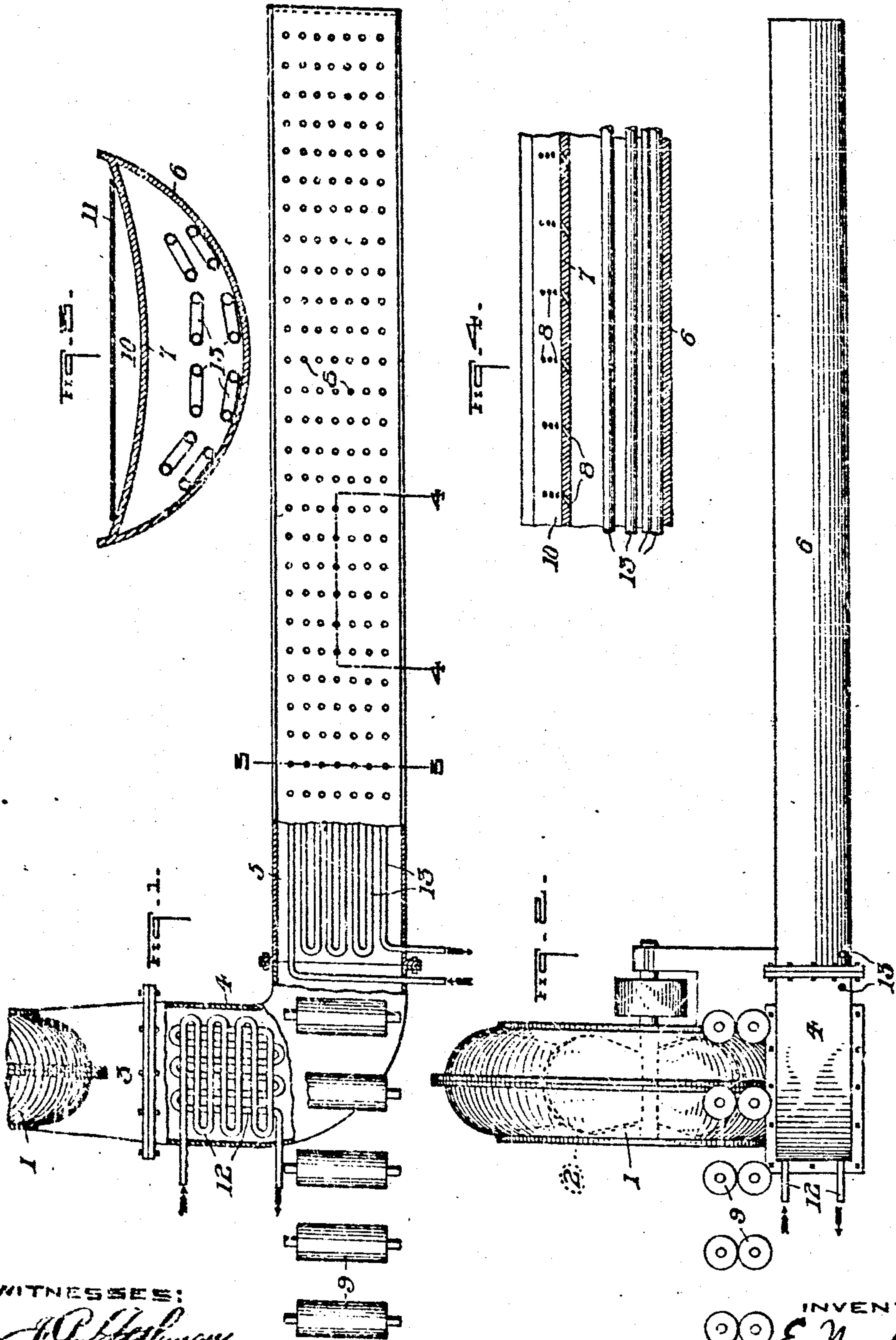


898,775.

E. NORTON
AIR CONVEYER.

APPLICATION FILED APR. 14, 1906.

Patented Sept. 15, 1908.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWIN NORTON, OF LAKE PLACID, NEW YORK.

AIR CONVEYER.

No. 898,775.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed April 14, 1908. Serial No. 427,073.

To all whom it may concern:

Be it known that I, EDWIN NORTON, a citizen of the United States, residing at Lake Placid, in the county of Essex and State of New York, have invented or discovered new and useful Improvements in Air Conveyers, of which the following is a specification.

My invention relates to that class of conveyers which employs a blast of air for moving articles along a track or runway, and particularly to the employment of such means of conveying heated, wide, thin sheets or packs of steel from a train of rolls, such, for example, as is shown in Letters Patent of the United States, No. 865,055, granted to me on the 3rd day of September, 1907.

When a continuous train of rolls is used for reducing a sheet or pack which not only reduces the metal by a succession of passes, but also stretches the metal between the successive roll-passes. After the finished pack has been delivered from the series of passes, and the metal has been relieved from the stretching operation of the several stands of rolls, it buckles slightly while yet hot, and upon becoming cool, it again assumes the flat smooth surface which it had while being subjected to the rolling and stretching operations, as set forth in my patent hereinbefore referred to.

Where an air conveyer is employed to remove the finished sheets from the mills, and deliver them to the shear-table to be cut into the desired lengths, it is necessary that the packs or sheets be quickly and uniformly cooled before passing to the shears in order that they may have the buckles removed and the surface restored to the flat smooth condition it was in on leaving the rolls. To that end, I combine with the storage chamber of the air conveyer, a suitable means for refrigeration or artificially reducing the temperature of the air within the chamber of the conveyer to its lowest possible point before discharging it against the sheets or packs of heated metal to convey it from the mills to the shear table.

As the sheets or packs of metal follow each other in rapid succession from the rolls, it will be seen that, when the air of the conveyer is artificially cooled, I am able to greatly increase the capacity of the mill because the sheets will be at once delivered to the shears smooth and in proper condition to be sheared; and by maintaining a refrigerated air pressure within the conveyer, the results will be uniform regardless of the tem-

perature of the mill, which is subject to wide variations in hot and cold weather. The quality of the surface of the sheets or plates is, by my invention, greatly improved and the quantity that can be turned out in a given time is greatly increased by the simple means described.

To enable others skilled in the art to make and use my invention, reference is had to the accompanying sheet of drawings, in which—

Figure 1 is a plan thereof with portions broken away; Fig. 2, a side elevation thereof; Fig. 3, a section of Fig. 1 on the line 3—3; and Fig. 4, a section of Fig. 1 on the line 4—4.

On the drawings, 1 represents a casing, containing a fan 2 which drives air through an air-chamber, having preferably the straight section 3, the elbow section 4, connected to the section 3, and the straight section 5 connected to the outer end of the elbow section 4, the sections 3 and 5 being preferably at right angles to each other. The sections 3 and 4 may have their top surfaces shaped as desired, but the section 5 has its upper surface trough-shaped. Preferably the section 5 is composed of two walls, the outer wall 6 being substantially a semi-circle in cross-section and the inner or top wall 7 being an arc of a large circle which joins the opposite sides of the wall 6 at or near its upper edges. The wall 7 has its concave face uppermost and is provided with numerous slits or holes 8 inclined from the interior of the air chamber toward the outer end thereof.

Several stands of rolls 9, such as hereinbefore mentioned, are arranged in line with the section 5 of the air chamber and at the end thereof nearer the fan or blower, so as to deliver rolled sheets or packs into the trough-like runway 10 formed by the said walls 6 and 7 aforesaid.

It will be readily seen that the fan will cause streams of air to issue from the inclined holes 8, whereby a sheet, such as 11, will be carried or partially floated along the runway 10 and away from the rolls 9 to any desired machine in which the sheet is to receive further treatment, such as shearing, as already stated.

In order to cool the sheets or packs for the purposes aforesaid to the degree described herein, I have shown in the section 3 a coil 12 of pipes and in the section 5 another coil 13 of pipes, designed to carry a refrigerating agent, as ammonia. These pipes may be arranged

in various ways and have various locations. Either coil may be omitted or subdivided as is clear.

I claim—

- 5 ' 1. The combination of a sheet or pack rolling-mill, an air conveyer for the hot rolled sheets or packs, said air conveyer comprising a casing provided with air ducts constructed so as to direct air from the casing
10 upwardly against the sheets or packs and forwardly in the direction in which the same are to be conveyed, and means for artificially cooling the air before it is discharged against the said sheets or packs being conveyed.
15 2. The combination of a sheet or pack rolling-mill, an air conveyer for the hot

rolled sheets or packs, said air conveyer comprising a casing provided with air ducts constructed so as to direct air from the casing upwardly against the sheets or packs and forwardly in the direction in which the same are to be conveyed, and pipes for the circulation of a refrigerating material arranged in the path of the air before its contact with said sheets or packs. 20

Signed at New York, this 11th day of April, 1908. 21

EDWIN NORTON.

Witnesses:

FREDK. V. HAAS,
V. A. NORTON.