

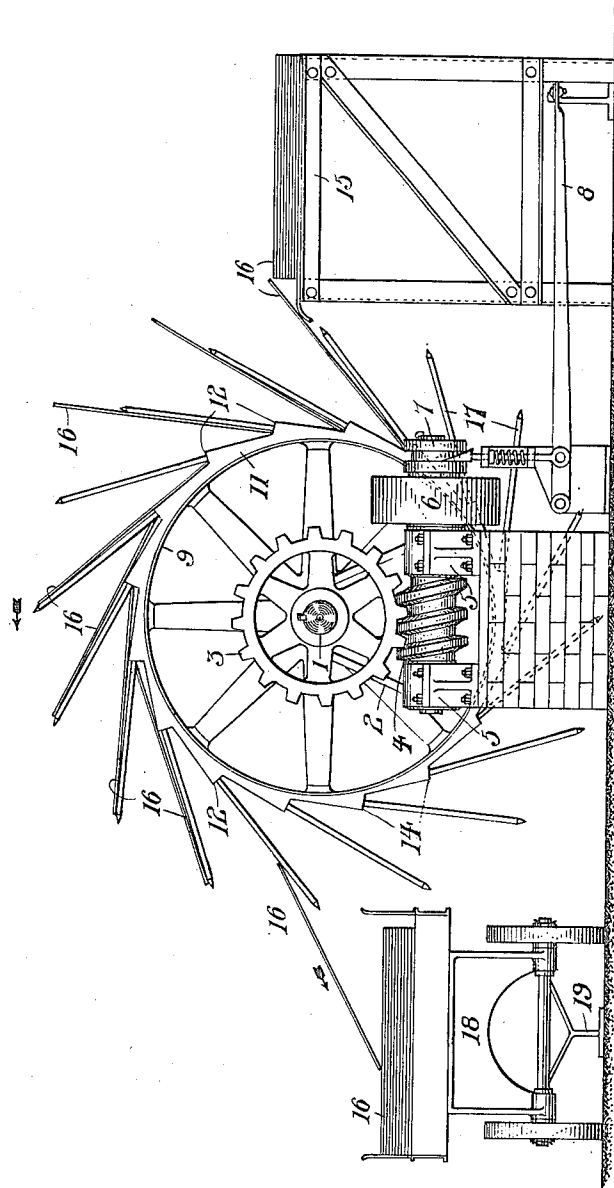
G. W. BICKERTON.
 COOLING APPARATUS FOR PLATES, SHEETS, AND THE LIKE.
 APPLICATION FILED MAR. 8, 1911.

1,006,902.

Patented Oct. 24, 1911.

2 SHEETS—SHEET 1.

FIG. 1



WITNESSES

J. C. Hoffman,
E. W. Stanick.

INVENTOR

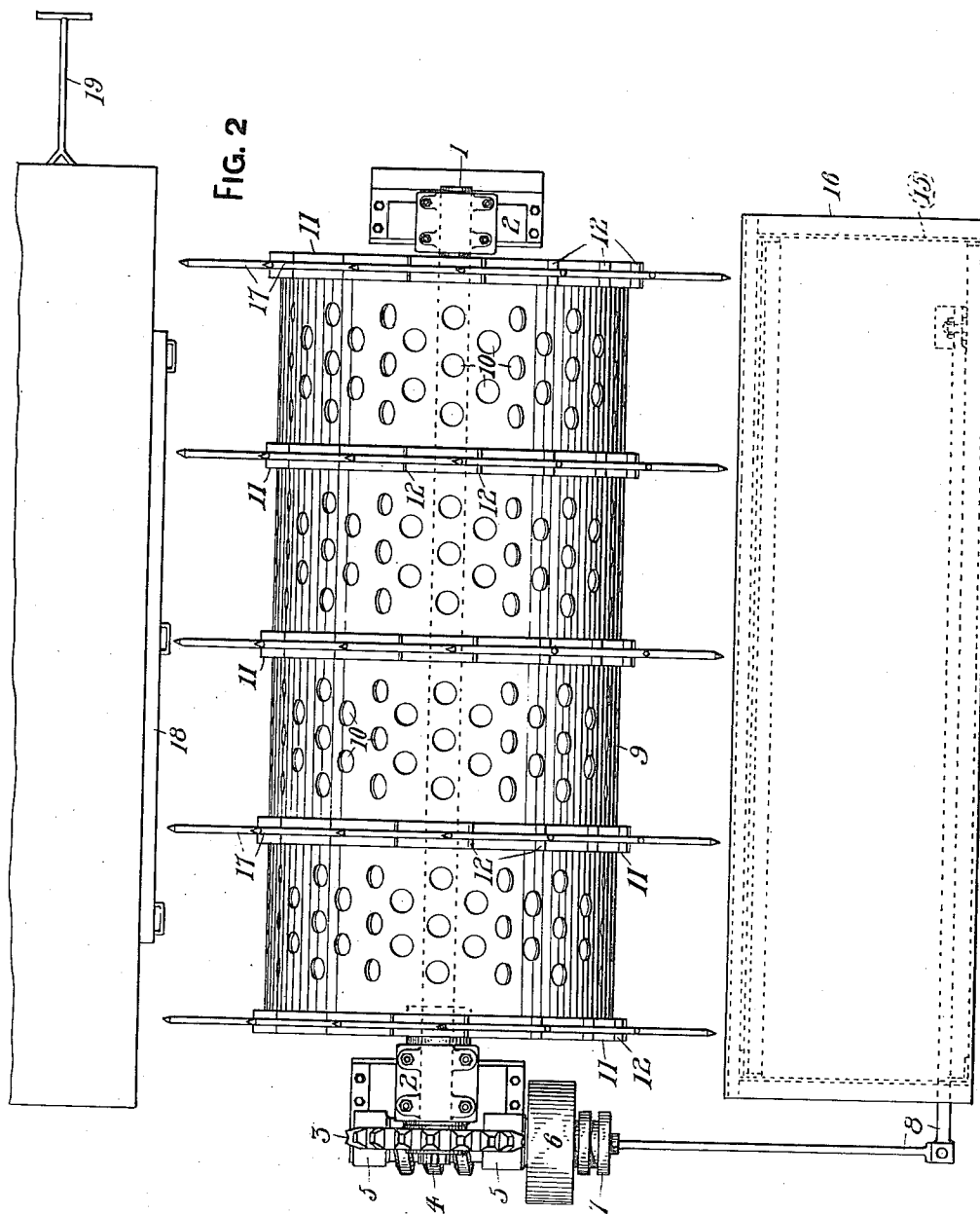
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WITNESSES

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Elwa Stanick.

INVENTOR

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UNITED STATES PATENT OFFICE.

GEORGE W. BICKERTON, OF YOUNGSTOWN, OHIO, ASSIGNOR TO THE YOUNGSTOWN SHEET AND TUBE COMPANY, OF YOUNGSTOWN, OHIO, A CORPORATION OF OHIO.

COOLING APPARATUS FOR PLATES, SHEETS, AND THE LIKE.

1,006,902.

Specification of Letters Patent.

Patented Oct. 24, 1911.

Application filed March 8, 1911. Serial No. 613,066.

To all whom it may concern:

Be it known that I, GEORGE W. BICKERTON, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented new and useful Improvements in Cooling Apparatus for Plates, Sheets, and the Like, of which the following is a specification.

My invention relates to rotary devices for cooling a number of sheets, plates, bars, or the like simultaneously. Its object is to provide a device of this character which will operate continuously and with a minimum of effort on the part of the attendants.

By my improvements sheets or their equivalent may be deposited in the cooling device with but little effort as the operating is assisted very greatly by gravity.

By my invention the cooling articles are discharged by gravity so as to fall or slide into a conveying apparatus with but little or no assistance, the conveying apparatus, as a truck, not being required to operate in a pit or sunken way.

Referring to the accompanying drawings, Figure 1 is an elevation showing my improved cooling device and Fig. 2 is a plan of the same with the sheets omitted.

On the drawings, 1 designates a shaft supported at its ends on the housings 2. The worm-wheel 3 on the shaft 1 meshes with the worm 4 carried by the housings 5, the worm shaft having thereon the driving or belt wheel 6.

7 represents conventionally a clutch of any preferred construction operated by the levers 8 actuated by the foot of an attendant, the kind of clutch or even its presence forming no part of this invention, though I show the presence of a clutch because the shaft 1 may be stopped and started at will.

The shaft 1 carries near each end a set of radial arms constituting a head, to which a cylinder of sheet metal is secured so as to form the drum 9 having therein the ventilating holes 10. At intervals along the drum I place the rings 11 arranged in plane at right angles to the axis of revolution of the drum, the rings having a series of outwardly projecting steps 12 arranged in the several rings so as to form rows parallel with the said axis of revolution. These steps have a long face 13 and a short face 14. At one side of the drum 9 I arrange the table 15 having its top preferably as high

as or somewhat higher than the shaft 1. The sheets 16 are piled on this table preparatory to their being fed to the drum. The drum is provided at the outer part of each step-face 14 with a rod 17 which is preferably tangential to the surface of the drum, though it may have the angle between it and the periphery of the drum of a different value. In any case it should form a very decided acute angle with the said periphery, the rods being inclined in the direction of rotation of the drum and their ends coming close to the edge of the table 15 as it rises above it. The face 14 is made preferably at such an angle with the angle at which the sheets 16 strike it when they slide down the rods 17 that the edges of the sheets will strike squarely against the said face 14.

At the opposite side of the drum 9 from the table 15 I place a receiving table or conveyer which may be of any suitable type, but I have shown the truck 18 capable of being drawn by the handle 19. The top of the truck is preferably arranged below the shaft 1 so that the sheets 16 will slide down the rods 17 in such a manner as to require little or no rearrangement. By making the rods 17 sharply inclined, as described, it requires but little effort to deposit the sheets 16 in the pockets between the consecutive rows of rods, because, as soon as their center of gravity passes the edge of the table, gravity carries them down to the faces 14 of the steps. The angular arrangement of the rods also permits the truck or other conveyer to be operated on the floor of the mill and does not require a pit for an elevator or a depressed way for the truck.

The receiving table is placed at such a level as to receive the sheets 16 as they slide by gravity from the rods 17. The rods 17 will at the position required for the discharge of the sheets have a definite angle with the horizontal, known as the angle of start. The table 18 can be very much higher by making the rods 17 sharply inclined in the direction of rotation, because the angle of start for the sheets to slide from the rods is at a much higher level than would be the case with radial rods which would require a pit below the floor level.

Power being applied to the band wheel 6 so as to cause the drum to rotate in a clockwise direction a continuous succession of

sheets or the like may be cooled or transferred.

I claim—

5 In a cooling device, a horizontal rotary sheet-metal drum having ventilating openings therein, rings carried by the drum and having thereon steps arranged in rows parallel with the drum, the faces of the steps being arranged so that one face supports
10 the edge of a sheet during the first part of its rotation with the drum, and the other

face supports a portion of one face of the sheet during the latter part of its rotation, and rods secured to the steps and inclining sharply in the direction of the rotation of the shaft. 15

Signed at Youngstown, Ohio, this 2nd day of March, A. D. 1911.

GEO. W. BICKERTON.

Witnesses:

W. F. Rust,
O. B. Young.