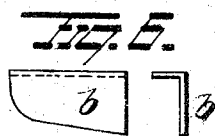
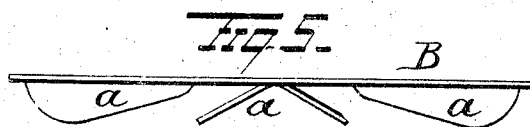
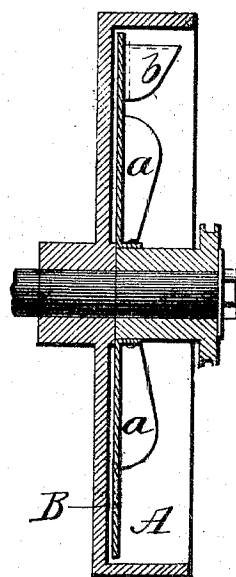
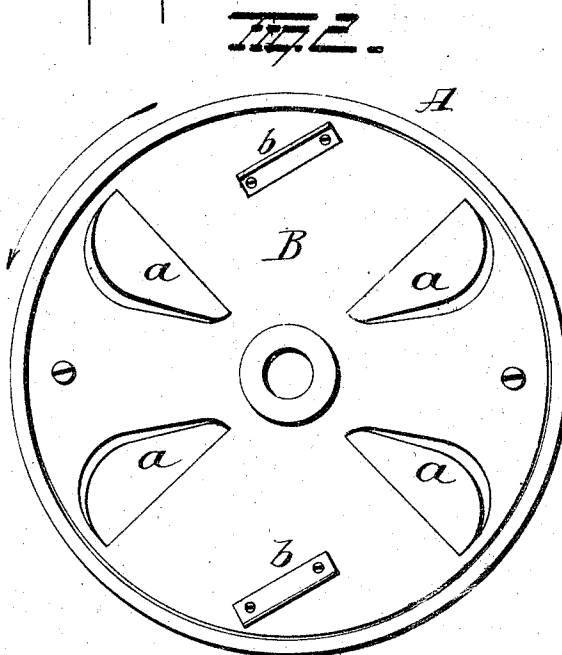
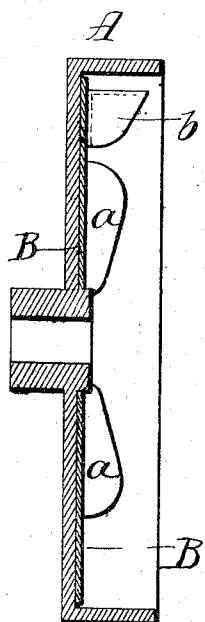
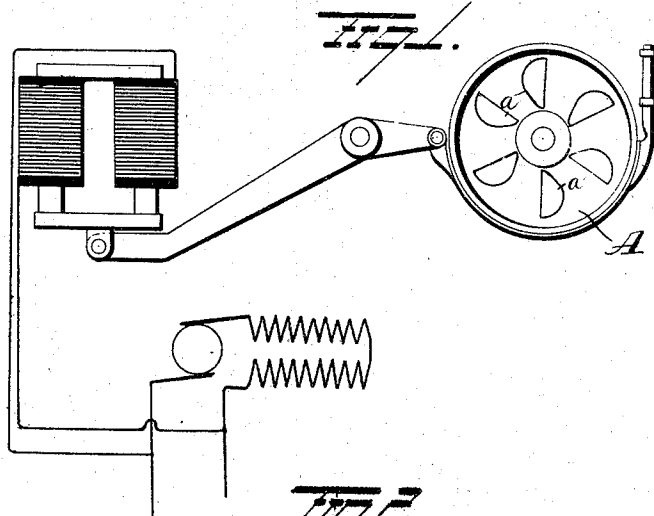


(No Model.)

W. H. MORGAN.
DEVICE FOR COOLING BRAKE WHEELS.

No. 550,723.

Patented Dec. 3, 1895.



Witnesses
W. H. Morgan
G. F. Downing

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UNITED STATES PATENT OFFICE.

WILLIAM H. MORGAN, OF ALLIANCE, OHIO.

DEVICE FOR COOLING BRAKE-WHEELS.

SPECIFICATION forming part of Letters Patent No. 550,723, dated December 3, 1895.

Application filed March 13, 1894. Serial No. 503,465. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MORGAN, of Alliance, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Devices for Cooling Brake-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in devices for cooling brake-wheels, and particularly brake-wheels on overhead traveling cranes; and it consists of a fan located adjacent to or attached to the brake-wheel and adapted to direct the air against the wheel.

In the accompanying drawings, Figure 1 is a diagrammatic view of an armature-shaft, showing a brake-wheel thereon and solenoids for actuating the brake-lever. Fig. 2 is a view of a brake-wheel, showing a fan attached thereto. Fig. 3 is a sectional view of same. Fig. 4 is a sectional view of a modified form. Fig. 5 is an edge view of the fan shown in Fig. 2, and Fig. 6 are views of the blades *b*. (Also shown in Fig. 2.)

A represents the brake-wheel, which is usually placed on the armature-shaft of the motor. Electric motors having brakes of the character disclosed in the drawings are now being extensively used, and owing to the high speed at which the brake-wheel runs it is necessary to machine the wheel all over in order to get it perfectly balanced. On large cranes which are used continuously for elevating and lowering heavy weights the friction of the brake band or shoe on the wheel while lowering or stopping causes intense heat in the brake-wheel and naturally causes an expansion of the wheel and mechanism.

With an automatic differential brake the heat prevents the brake acting uniformly as the wheel expands, while the brake-band is of a fixed length, thus causing the band to grasp the wheel at the wrong time.

To prevent undue heating of the wheel I take a circular piece of sheet metal *B*, and after cutting wings *a* thereon and bending them outwardly, as shown in Figs. 1 and 3, I fasten it to the inner face of the wheel, as shown in Fig. 2. If desired, instead of striking up the wings from a sheet they can be

made separate, as shown at *b* in Fig. 6, and attached to the wheel, as shown in Fig. 1.

The wings or vanes *a* and *b* are bent so as to force or direct currents of air against the face of the wheel and its shaft when the wheel is rotating in the direction of the arrow or while turning in a direction to lower a load. In raising a load the brake strap or shoe is out of contact and is not applied until the desired elevation has been reached and is then applied to hold the weight elevated.

In lowering, the direction of rotation of the armature of the motor can be reversed or the weight lowered by gravity. In either event to stop or control the descent of the weight the brake shoe or strap is applied, and hence it is during the descent that heating is liable to occur. Hence the wings are bent to force the air against the wheel while the latter is turning in a direction to lower the load.

Instead of attaching the blades to the wheel they might be mounted on an independently-rotating bearing located adjacent to the brake-wheel, as shown in Fig. 4. Again, I might be able to cast the wings on the wheel; but owing to the difficulty of machining the wheel to a proper balance I prefer to make the blades independent of the wheel.

It is evident that numerous slight changes might be resorted to in the relative arrangement of parts herein shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to restrict myself to the exact construction of parts herein shown and described; but,

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

1. In a device for preventing the brake wheel of a motor from overheating, the combination with a brake wheel and a braking mechanism adapted to engage the periphery of the wheel, of wings in proximity to the wheel for directing currents of air against said wheel, substantially as set forth.

2. In a device for preventing the brake wheel of a motor from overheating, the combination with a brake wheel and a braking mechanism adapted to engage the periphery of said wheel, of wings or blades secured to the face of the wheel and adapted to direct

currents of air thereagainst, substantially as set forth.

3. The combination with a brake wheel, of a brake for controlling said wheel, and an air
5 circulating device actuated by the rotation of said wheel for causing a current of air to act upon the brake surfaces.

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

WILLIAM H. MORGAN.

Witnesses:

H. W. HARRIS,
T. D. RUSSELL.