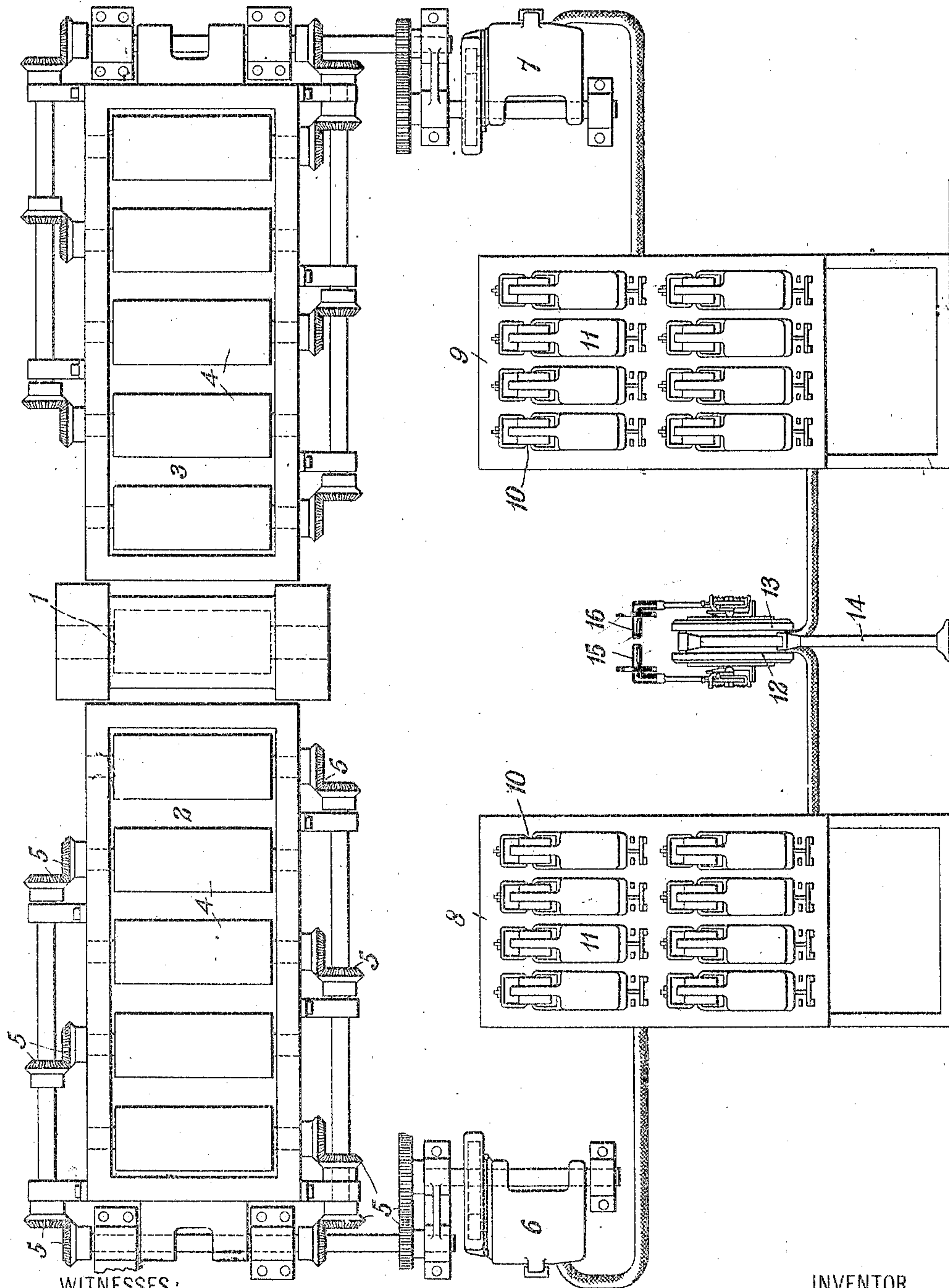


B. WILEY.  
 OPERATING MEANS FOR ROLLING MILLS.  
 APPLICATION FILED SEPT. 3, 1907.

967,284.

Patented Aug. 16, 1910.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

BRENT WILEY, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

OPERATING MEANS FOR ROLLING-MILLS.

967,284.

Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed September 3, 1907. Serial No. 391,246.

*To all whom it may concern:*

Be it known, that I, BRENT WILEY, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Operating Means for Rolling-Mills, of which the following is a specification.

My invention relates to rolling mills and particularly to the actuating means for the tables upon which ingots or billets are carried to and from the rolls.

The object of my invention is to provide means for so actuating and controlling the rollers of the tables upon which the product of the mill is carried to and from the shaping rolls, that the rollers of either table may be operated alone, or those of both tables may be operated simultaneously, either in the same, or in opposite directions, as desired by the attendant.

In rolling mills as heretofore constructed, the rollers of both tables have been operated simultaneously in the same direction, this result being effected, when electric motors are employed for driving the rollers, either by connecting the motors of the two tables in parallel and employing but a single controller therefor or by mechanically coupling the controllers of the respective motors so as to render them operable by a single handle. Since, with such an arrangement, the rollers of both tables must be operated in the same direction until the ingot or billet has been completely fed into the rolls, and must then be reversed, considerable time is lost in reversing the direction of rotation of the rollers and in feeding the ingot or billet back into the rolls with a consequential loss of a large amount of time and power, while the motors, or other devices that operate the table rollers, are subjected to very severe strains.

According to the present invention, the rollers of each table are actuated and controlled independently of those of the other, so that, if desired, when an ingot or billet is being fed into the shaping rolls, only the rollers of the table feeding the ingot or billet may be operated, since the shaping rolls will usually force the ingot upon the receiving table. The rollers of the receiving table may then be caused to return the ingot or billet promptly to the rolls without reversing the operating motors, and without

the delay and strain upon the motors and other parts necessarily incident to such reversal.

The accompanying drawing represents a rolling mill that is operated and controlled in accordance with my invention, and it comprises, as is usual, a set of rolls 1 between which ingots or billets are passed for reduction and shaping, and two tables 2 and 3 respectively upon opposite sides of the set of rolls, each of the tables being provided with a plurality of rollers 4 upon, and by means of, which the ingots or billets are carried to and from the rolls 1. The rollers 4 of the table 2 are actuated through intermediate gearing 5 by means of an electric motor 6, and the rollers of the table 3 are similarly actuated by means of a motor 7. The circuits of the motors 6 and 7 are governed, respectively, by means of similar and suitable controllers 8 and 9, which, in the present instance, comprise a plurality of separately actuated switches 10 having operating solenoids 11 the circuits of which are governed by master controllers 12 and 13 corresponding, respectively, to the motors 6 and 7. The master controllers are mounted upon a common base or support 14 and are provided with operating handles 15 and 16 that project inwardly toward each other or are otherwise so disposed adjacent to each other that they may be gripped simultaneously, or separately, as desired, by one hand of an operator.

Since the specific arrangement of the circuits of the systems of control for the motors constitutes no part of my present invention, and since there are many widely different systems that may be employed to control the motors, I deem it unnecessary to illustrate and describe any particular system in detail.

Other means than electric motors may also be employed, if desired, to operate the table rollers, and such means may be controlled in a manner similar to that herein set forth.

If, in the operation of the mill, it is desired to cause the table 2 to feed an ingot or billet into the rolls 1, only the master controller 12 need be operated, the ingot or billet being usually discharged upon the receiving table 3 by the shaping rolls. The rollers of the table 3 may then be caused to operate by the controller 13, so as to return the ingot or billet promptly to the shaping rolls, without first reversing the actuating



motor, as has heretofore been necessary. If, at times, it is desired to cause the rollers of both tables to operate in the same direction, the controller handles 15 and 16 may both be gripped and rotated simultaneously in the same direction, or they may be rotated separately in the same direction to cause the two sets of table rollers to rotate at different speeds. Thus the motors, and the gearing, shafting and bearings that are employed in the operation of, and in connection with, the table rollers, are subjected to much less severe wear and strain than heretofore with the result that the rate of deterioration thereof is correspondingly diminished. A material saving in the time intervening between the discharge of an ingot or billet from the shaping rolls and its return thereto is also effected because it is usually necessary to reverse the direction of rotation of the table rollers. Also by starting operation of the rollers of a table receiving an ingot or billet before the same has been completely discharged from shaping rolls, the mill may be operated at its maximum speed with the most economical use of power.

I claim as my invention:

1. The combination with a rolling mill comprising a set of rolls, and tables upon opposite sides thereof having rollers for conveying the ingot or billet, of motors for actuating the rollers of the one table independently of those of the other, and adjacently located but independent governing means for the motors.

2. The combination with a rolling mill comprising a set of rolls, and tables upon opposite sides thereof having rollers for con-

veying the ingot or billet, of actuating means for the rollers, and independent governing means therefor whereby the rollers of only one table may be caused to rotate at a time, or the rollers of both tables may be caused to rotate in the same or in opposite directions simultaneously, as desired.

3. The combination with a rolling mill comprising a set of rolls, and tables upon opposite sides thereof having rollers for conveying the ingot or billet, of motors for actuating the table rollers, and independent governing devices for the motors that may be actuated either simultaneously or separately as desired.

4. The combination with a rolling mill comprising a set of rolls, and tables upon opposite sides thereof, having rollers for conveying an ingot or billet, of motors for actuating the table rollers, and mechanical independent controllers therefor provided with operating handles so disposed with reference to each other that they may be gripped together or separately as desired.

5. The combination with a rolling mill comprising a set of rolls, and tables upon opposite sides thereof, having rollers for conveying an ingot or billet, of motors for actuating the table rollers, and mechanically independent controllers therefor having adjacent operating handles.

In testimony whereof, I have hereunto subscribed my name this 28th day of August, 1907.

BRENT WILEY.

Witnesses:

A. BUNDTSON,  
BIRNEY HINES.