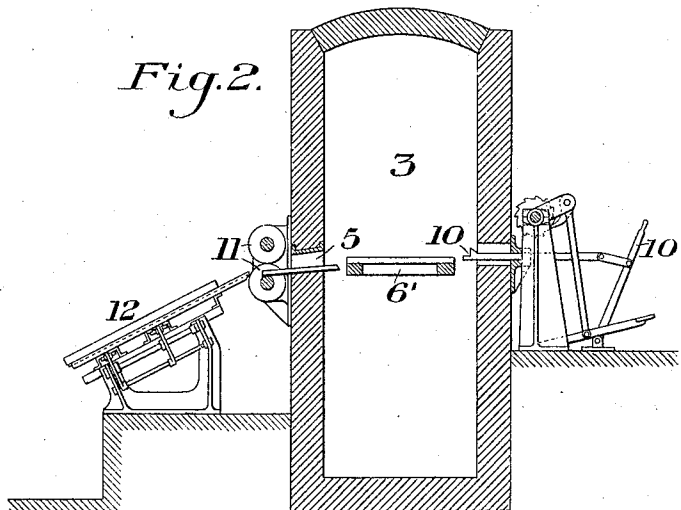
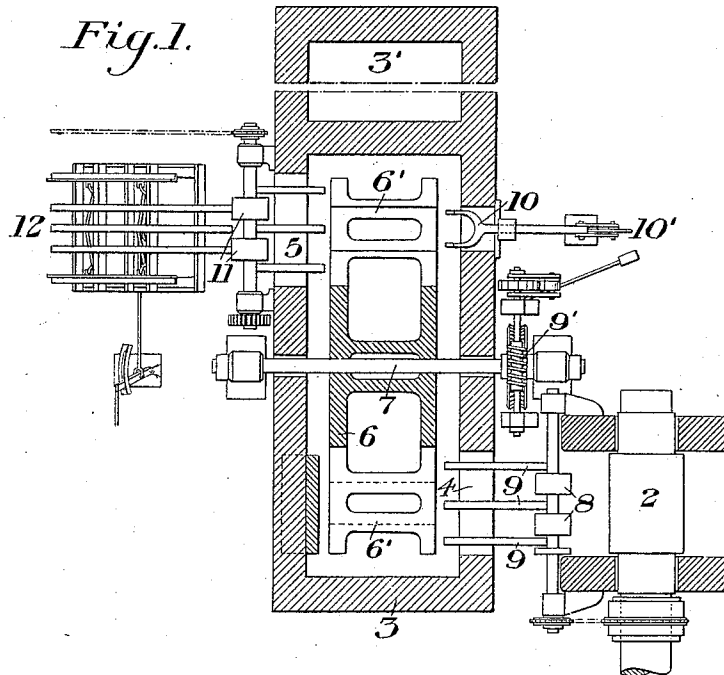


C. W. BRAY.
 APPARATUS FOR REHEATING AND MATCHING SHEETS.
 APPLICATION FILED JULY 2, 1908.

966,161.

Patented Aug. 2, 1910.

2 SHEETS—SHEET 1.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

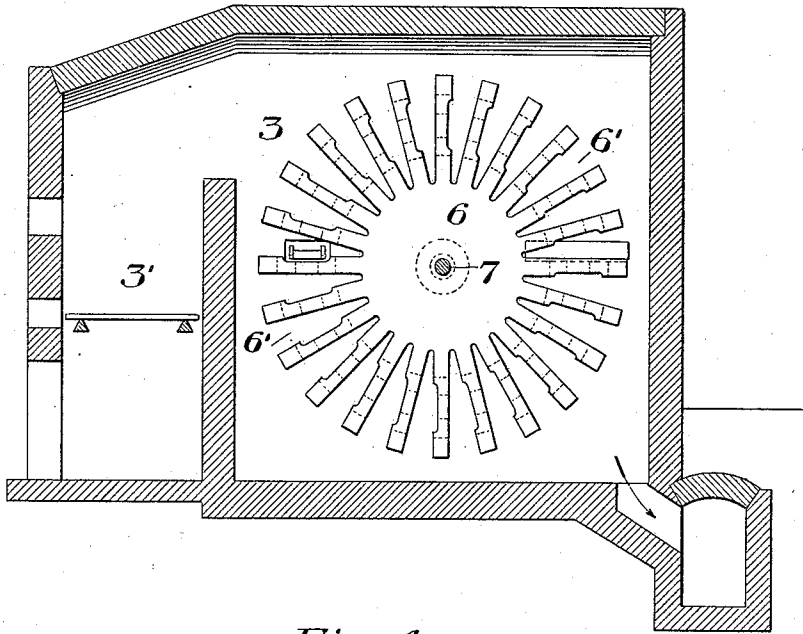
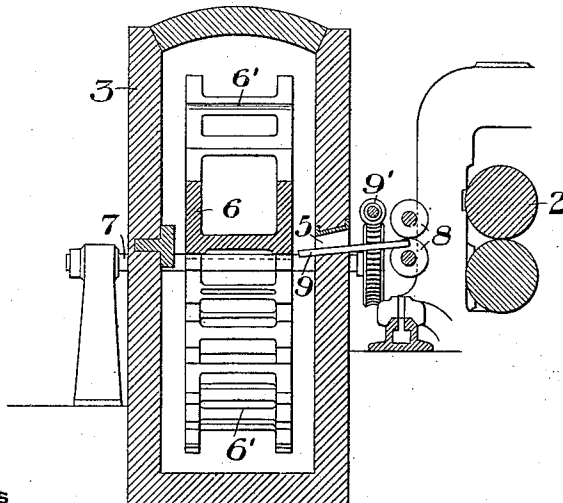


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES W. BRAY, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO AMERICAN SHEET & TIN PLATE COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

APPARATUS FOR REHEATING AND MATCHING SHEETS.

966,161.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Original application filed October 12, 1907, Serial No. 397,134. Divided and this application filed July 2, 1908. Serial No. 441,676.

To all whom it may concern:

Be it known that I, CHARLES W. BRAY, of Pittsburg, Allegheny county, Pennsylvania, have invented a new and useful Apparatus for Reheating and Matching Sheets, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a horizontal section of apparatus constructed in accordance with my invention; Fig. 2 is a vertical section of Fig. 1; Fig. 3 is a vertical section through the reheating furnace; and Fig. 4 is a vertical section of Fig. 1.

I have discovered that in the manufacture of metal sheets, and particularly in the manufacture of black plate, important results in regularity of product and diminishing waste can be secured by providing a continuous reheating furnace into which the sheets are introduced after being delivered from the roughing rolls, and a matcher on which the sheets heated uniformly in their passage through the furnace are matched preparatory to being delivered either directly, or indirectly by a suitable conveyer, to the finishing rolls. The furnace, being a continuous furnace adapted to contain a considerable number of sheets which pass serially therethrough, serves to interrupt the continuity of the rolling operation, and by equalizing the temperature of the sheets and delivering them in heated condition to the matcher, it diminishes the serious waste which has existed heretofore.

In the drawings, 2 represents the final set of rolls of the roughing train, and 3 is a continuous reheating furnace into which the sheets are delivered therefrom. This furnace contains suitable conveying mechanism for receiving the sheets and carrying them to the delivery end of the furnace, and it consists preferably of a furnace structure having a combustion chamber or portion 3', a charging opening 4, a discharging opening 5, and a conveying wheel 6 mounted on a rotary shaft 7, and having marginal pockets or holders 6', which are opposite to the openings 4, 5. The sheets are delivered from the rolls 2 between driven rollers 8 and upon a guide 9 to the wheel 6 which is intermittently rotated by driving mechanism 9' to bring the holders successively and at

suitable intervals into register with the opening 4.

The apparatus may be actuated so that each of the holders will receive one of the sheets, or a greater number—two or more—may be delivered to each holder, and in either case the furnace will at all times contain a considerable number of sheets and each sheet will remain in the furnace exposed to the heat for a considerable time.

As the holders 6' arrive successively at the opening 5 they are engaged by a pusher 10, actuated by a hand-lever 10', or otherwise, and are pushed from the holder through the opening 5 and into the bite of driven rollers 11, by which they are delivered to a matcher 12, the construction of which may be as described in my Patent No. 718,974, dated January 27, 1903. The heated sheets are here matched and the matched pack is then delivered to the finishing rolls by any suitable means, either directly or by a suitable intermediate transfer device as may be desired.

This application is a division of my application Serial No. 397,134, filed October 12th, 1907.

Within the scope of my invention as defined in the claims, changes in the form and arrangement of the apparatus may be made by the skilled mechanic, since

What I claim is:—

1. Apparatus for the manufacture of metal sheets, comprising roughing rolls arranged to roll singles, a continuous reheating furnace, a matcher, mechanism for delivering the plates from the last pass of the roughing rolls to the furnace, and mechanism for delivering the metal from the furnace to the matcher preparatory to rolling the pack, substantially as described.

2. Apparatus for the manufacture of metal sheets, comprising a set of roughing rolls, a continuous reheating furnace, a matcher, mechanism for delivering the plates from the last set of rolls of the roughing mill to the continuous furnace, and mechanism for delivering successive re-heated plates from the continuous furnace to the matcher preparatory to rolling the pack, substantially as described.

3. Apparatus for the manufacture of metal sheets, comprising roughing rolls, a continuous reheating furnace containing a rotary

wheel, a matcher, mechanism for delivering the plates from the rolls into the furnace, and mechanism for delivering the reheated plates from the wheel into the matcher to
5 form the pack preparatory to rolling the pack, substantially as described.

4. Apparatus for the manufacture of metal sheets comprising roughing rolls arranged to roll singles, a continuous re-heating furnace, a matcher on the delivery side of the
10 furnace, mechanism for delivering the plates from the last pass of the roughing rolls to

the furnace, and mechanism for delivering the metal singly from the furnace to the matcher in forming the packs preparatory
15 to rolling the packs; substantially as described.

In testimony whereof, I have hereunto set my hand.

CHARLES W. BRAY.

Witnesses:

G. C. KIMBALL,
F. E. FIEGE.