

No. 669,264.

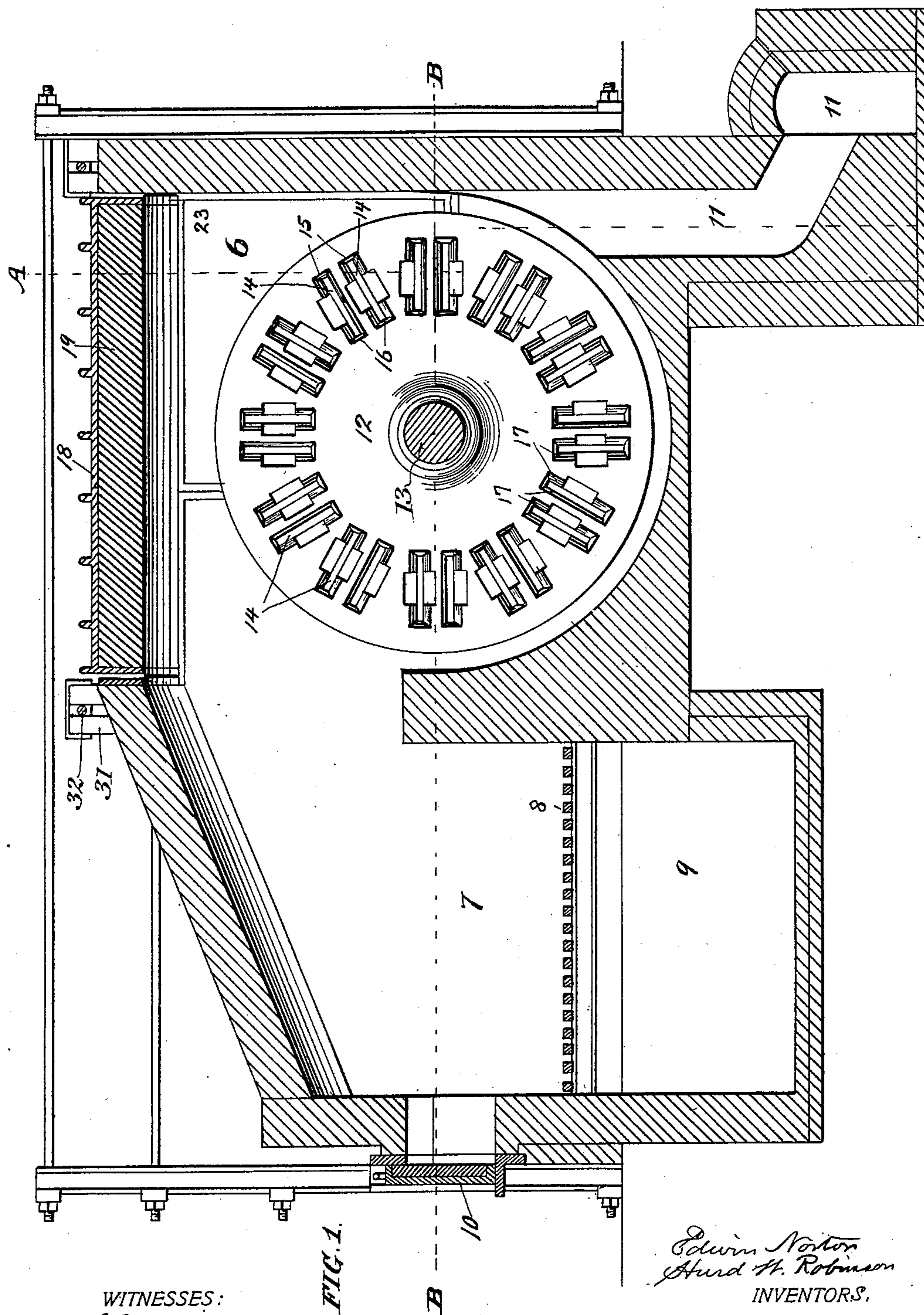
Patented Mar. 5, 1901.

E. NORTON & H. W. ROBINSON.
METAL SHEET OR BAR HEATING FURNACE.

(Application filed Oct. 22, 1900.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

F. B. Townsend
N. W. Munday.

Edwin Norton
Hurd H. Robinson
INVENTORS,

BY Munday Everts & Aldrich
Their ATTORNEYS.

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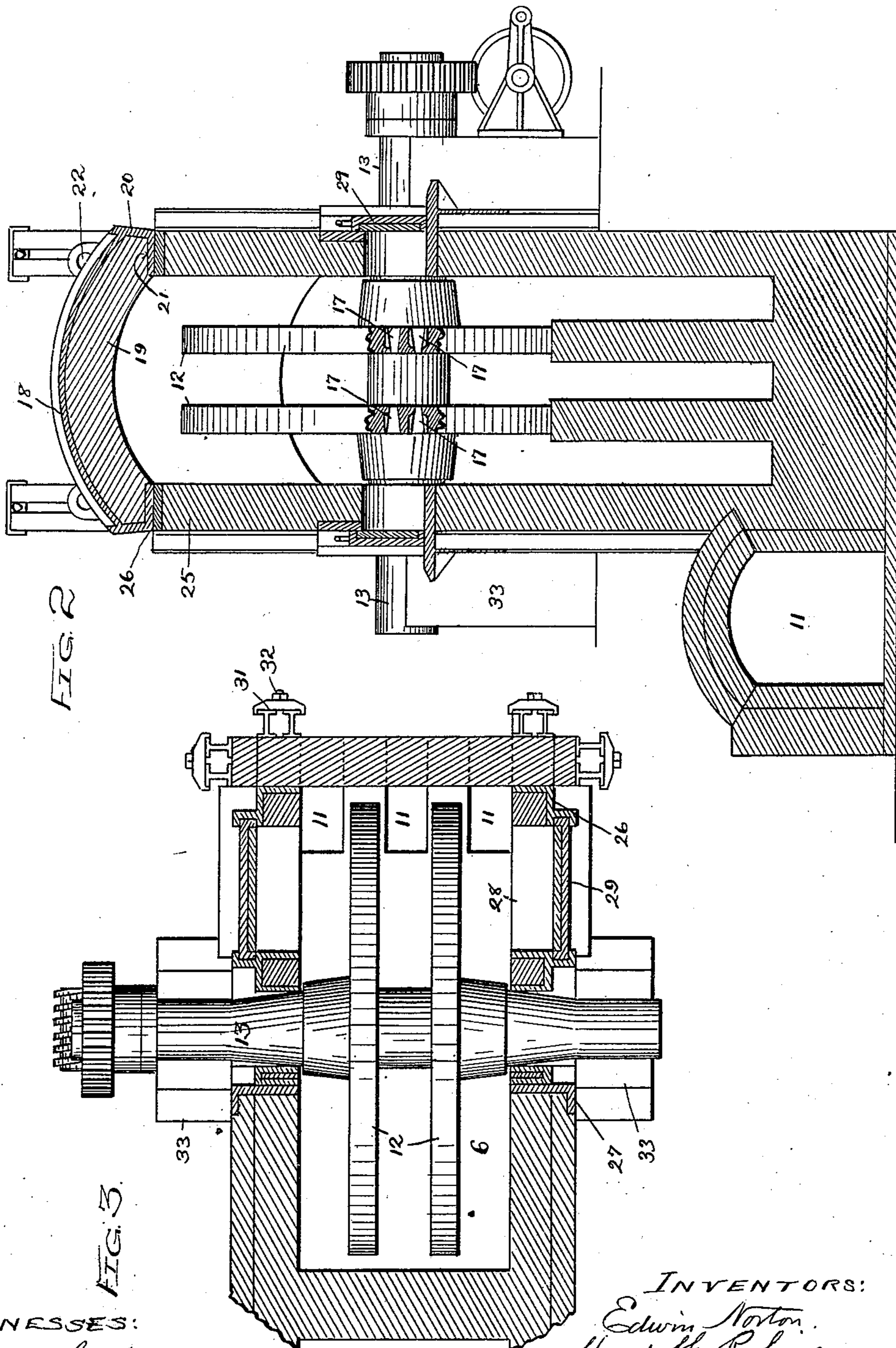
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3 Sheets—Sheet 2.



WITNESSES:

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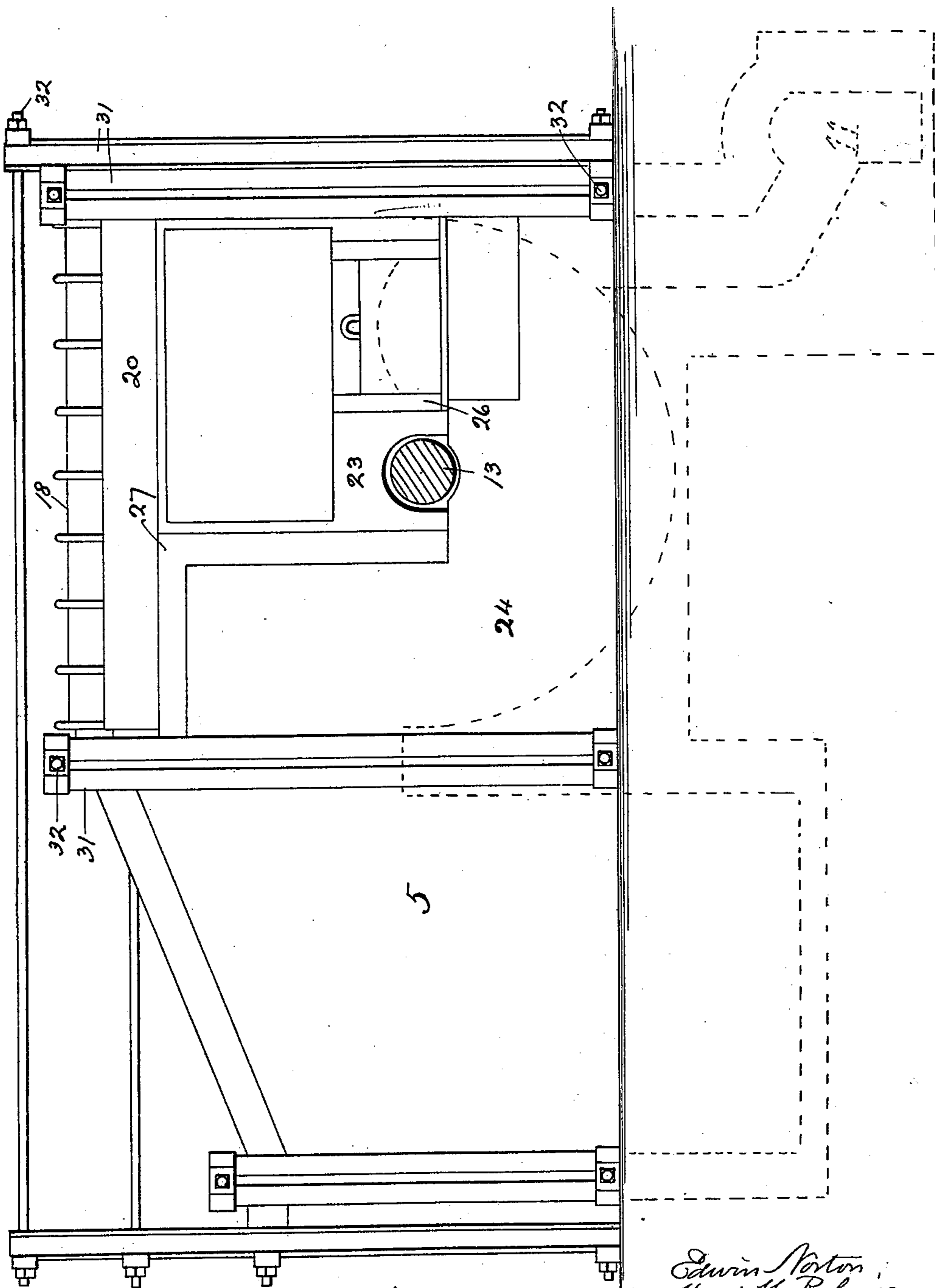
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3 Sheets—Sheet 3.



WITNESSES:
F. B. Townsend,
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FIG. A.

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Hurd H. Robinson
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UNITED STATES PATENT OFFICE.

EDWIN NORTON AND HURD W. ROBINSON, OF MAYWOOD, ILLINOIS,
ASSIGNORS TO NORTON BROTHERS, OF CHICAGO, ILLINOIS.

METAL SHEET OR BAR HEATING FURNACE.

SPECIFICATION forming part of Letters Patent No. 669,264, dated March 5, 1901.

Application filed October 22, 1900. Serial No. 33,951. (No model.)

To all whom it may concern:

Be it known that we, EDWIN NORTON and HURD W. ROBINSON, citizens of the United States, residing in Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Metal Sheet or Bar Heating Furnaces, of which the following is a specification.

Our invention relates to improvements in furnaces for heating metal bars or sheets preparatory to rolling the same into thin sheets for tin-plate or other purposes.

Our improvement consists in the furnace provided with a removable top and removable sides, the fire-brick or masonry of the removable top and of the removable sides being contained in removable cast iron or metal frames, so that the removable top and sides may be bodily lifted out and returned to position, thus greatly facilitating the repair of the interior work of the furnace.

In the accompanying drawings, forming a part of this specification, Figure I is a central vertical longitudinal section of a furnace embodying our invention, showing wheel or spider in elevation. Figs. II and III are vertical cross-sections on lines A A and B B, respectively, of Fig. I; and Fig. IV is a side elevation.

In the drawings, 5 represents a furnace having a heating-chamber 6, fire box or chamber 7, grates 8, ash-pit 9, fuel-door 10, and flue 11, leading to the smoke-stack. Inside the heating-chamber 6 the furnace is provided with a rotary rack or holder 12, comprising a pair of slotted wheels or spiders secured on shaft 13, which extends through the side walls of the furnace and is journaled in suitable bearings 33 33 outside thereof. The rotary rack or holder 12 is furnished with a series of radial pockets, receptacles, or slots 14, having supports or closed ends 15 for the outer edges of the sheets or bars to bear against and closed ends or supports 16 for the inner edges of the bars or sheets to bear against, while the bars or sheets are supported at their sides by the bevel-faces 17 of these pockets or slots as the holder 12 revolves in the furnace.

To facilitate the erection of the furnace, the putting of the rotary holder 12 in place therein, and its removal for repair or replacement

by a new or different holder, as may be required for operating upon sheets or bars of different shapes or sizes, we construct the furnace with a removable top 18, the fire-brick or masonry 19 of which is contained and supported within a removable metal frame 20, which is preferably made of cast-iron and furnished with lateral flanges 21 for the limbs of the arch or fire-brick masonry to rest upon. The metal frame 20 of the top is also provided with eyes 22 to receive the hooks of the hoisting apparatus when it is desired to remove the top, and for this same purpose the furnace is also provided with removable sides 23 at the portion of the side walls 24 thereof above the shaft 13, so that when these removable sides are bodily lifted from the furnace the rotary holder 12 and its shaft 13 may be quickly hoisted or lifted out of the furnace. The fire-brick or masonry 25 of the removable sides 23 is contained within and supported by a metal frame 26. The side walls 24 are also provided with a metal frame 27 to receive the metal frame 26 of the removable side 23. The removable side 23 is also furnished with a feed-opening 28 and a door 29 for closing the same, through which feed-opening the bars or sheets to be heated are inserted into the pockets or slots 14 of the holder 12. The uprights 31 and metal frame 27 are united together by tie-rods 32.

We claim—

1. The combination in a furnace of a heating-chamber having a removable top, of a rotary holder having a horizontal shaft extending through the side walls of the heating-chamber, said heating-chamber having removable sides above said shaft, substantially as specified.

2. The combination in a furnace of a heating-chamber having a removable top, of a rotary holder having a horizontal shaft extending through the side walls of the heating-chamber, said heating-chamber having removable sides above said shaft provided with metal frames containing the fire-brick or masonry of said removable sides, substantially as specified.

3. The combination in a furnace of a heating-chamber having a removable top, of a rotary holder having a horizontal shaft extend-

ing through the side walls of the heating-chamber, said heating-chamber having removable sides above said shaft, one of said removable sides being furnished with a door
5 through which the sheets or bars may be inserted or removed, substantially as specified.

4. In a furnace, the combination with a heating-chamber having a removable top provided with a metal frame containing the fire-
10 brick or masonry thereof, of a rotary holder having a horizontal shaft extending through the side walls of said heating-chamber, said heating-chamber having removable sides
above said shaft provided with metal frames
15 containing the fire-brick or masonry thereof, substantially as specified.

5. In a furnace, the combination with a

heating-chamber having a removable top provided with a metal frame containing the fire-brick or masonry thereof, of a rotary holder 20
having a horizontal shaft extending through the side walls of said heating-chamber, said heating-chamber having removable sides
above said shaft provided with metal frames containing the fire-brick or masonry thereof, 25
each of said removable sides being furnished with a door, one for the admission and the other for the discharge of the bars or sheets, substantially as specified.

EDWIN NORTON.
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Witnesses:
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