No. 608,381. Patented Aug. 2, 1898.

G. G. McMURTRY.

ROLLING MILL.

(Application filed Dec. 16, 1897.)

(No Model.)

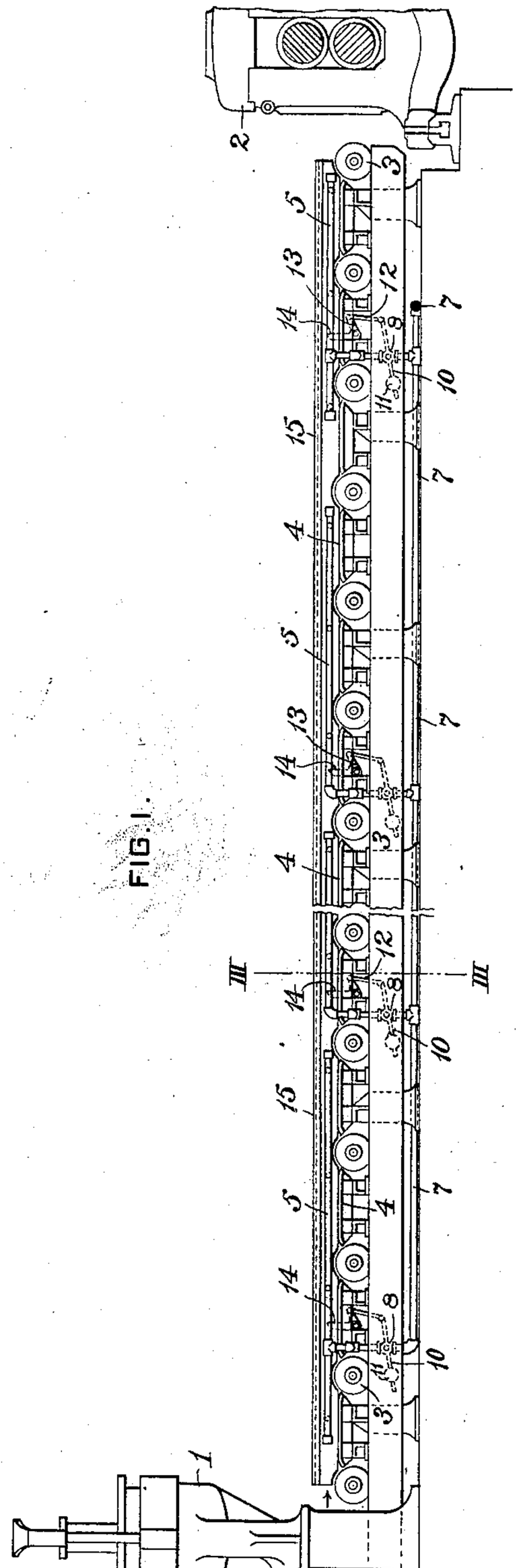

FIG. 1.

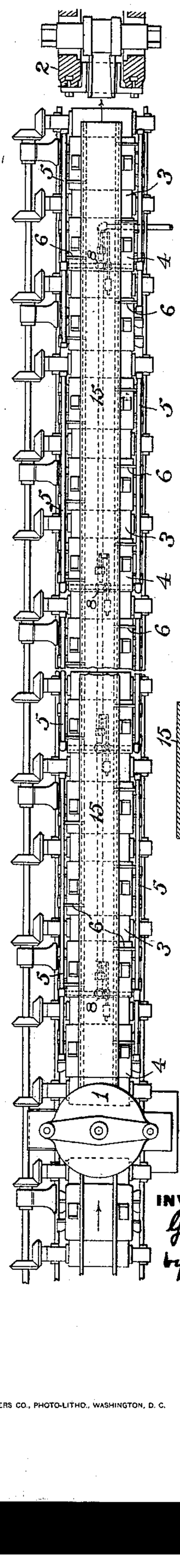

FIG. 2.

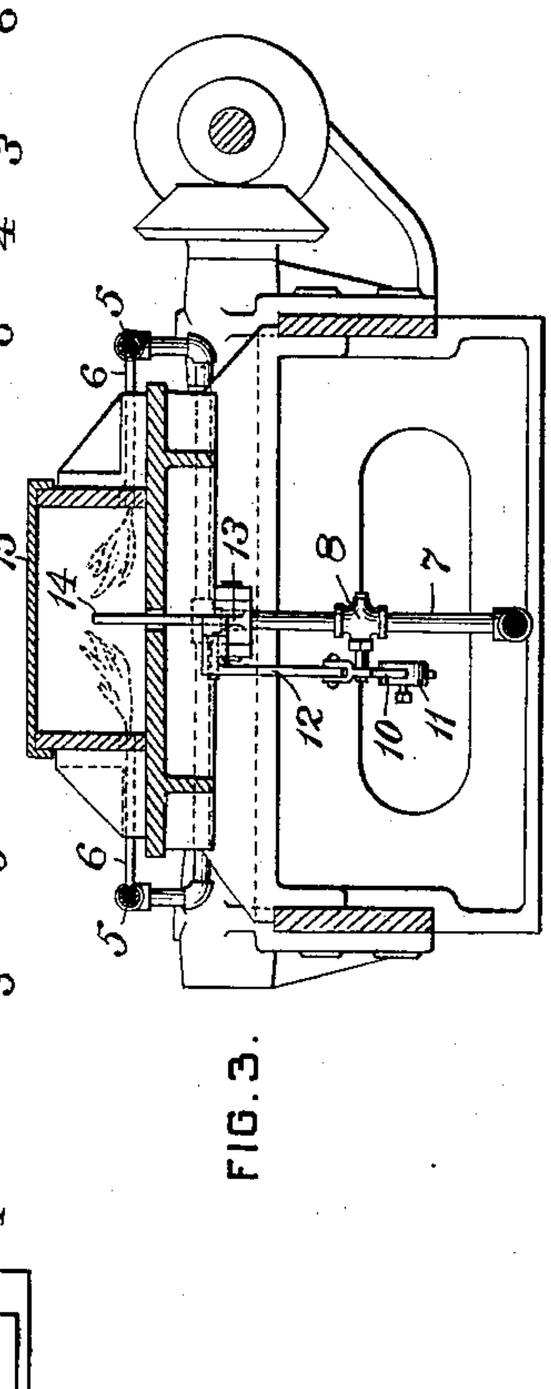

FIG. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE G. McMURTRY, OF ALLEGHENY, PENNSYLVANIA.

ROLLING-MILL.

SPECIFICATION forming part of Letters Patent No. 608,381, dated August 2, 1898.

Application filed December 16, 1897. Serial No. 662,144. (No model.)

To all whom it may concern:

Be it known that I, GEORGE G. MCMURTRY, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Rolling-Mills, of which improvements the following is a specification.

The invention described herein relates to certain improvements in rolling-mills, and has for its object a construction and arrangement of heating devices in suitable proximity to the feed-table extending between the shear mechanism and the roughing-mill, whereby sections of billets or bars may be maintained at a suitable rolling temperature as they are being moved along such table.

As is well known by those skilled in the art, it frequently happens that sections of blooms after they have left the shear mechanism must be held upon the table awaiting the reduction in the roughing-mill of the preceding sections. During this time such sections so held upon the table suffer such a considerable loss of heat as to be below a good rolling temperature by the time they reach the roughing-mill. In order to overcome this difficulty or objectionable feature, my invention consists, in general terms, in the arrangement along the line of the table of one or more pipes provided with perforations or nipples and connected to a suitable source of gas-supply, so that the flames of burning gas will impinge upon the sections lying upon the table.

The invention further consists in the provision of a valve mechanism adapted to be shifted to open position by the movement of the bloom-sections along the table and to be automatically closed after the passage of such sections, thereby preventing any wasting of gas while the table is unoccupied.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 shows in side elevation a shear mechanism and a roughing-mill with an interposed feed-table having my improvements applied thereto. Fig. 2 is a top plan view of the same; and Fig. 3 is a transverse section on an enlarged scale, the plane of section being indicated by the line III III, Fig. 1.

In the practice of my invention I employ any suitable form or construction of shear mechanism 1 and roughing-mill 2. Between these two mechanisms is arranged a feed-table of any suitable or well-known form or construction, provided with positively-driven feed-rollers 3 and interposed aprons 4 for the orderly movement of bloom-sections from the shear mechanism to the roughing-rolls.

On opposite sides of the feed-table I arrange one or more sections of pipe 5, having their ends closed and preferably provided with nipples 6, said pipes and nipples being so arranged as to direct flames upon a bloom-section moving along the table. The pipe-sections 5 are connected by a pipe 7 to a suitable source of gas-supply, a valve 8 being arranged in such pipe connection. Any suitable form or construction of valve and valve-operating mechanism adapted to be shifted by the bloom-section as it is moved along the table and to automatically close after the passage of such section may be employed. A suitable form of such valve-operating mechanism is shown in the drawings and consists of a lever 10, secured to the valve-stem and provided at one end with a weight 11, adapted to shift the valve to closed position. The opposite end of this lever is connected by a link 12 to one arm of a bell-crank 13, which is so mounted that its opposite arm 14 will project above the surface of the aprons 4, so as to be struck and shifted by a bloom-section as it passes along the feed-table. By the shifting of this arm or trigger 14 the valve is opened, thereby permitting gas to flow from the nipples 6 and be ignited by the bloom-section, which at such time will be at a sufficiently high temperature to effect such ignition.

While the pipe 5 may be made of a length approximately equal to that of the table, it is preferred to divide it up into a series of sections approximately equal in length to the length of sections into which the bloom is to be divided. Each of these sections is independently connected to the gas-supply, and each connection is provided with a valve and valve mechanism similar to that hereinbefore referred to. Such a construction permits of the use of gas only when a bloom-section occupies a position in front of one of the pipe-sections, thereby effecting a considerable sav-

ing of gas, as the flow of the latter will be automatically checked as soon as the bloom-section has passed beyond the controlling trigger or arm.

Although under most circumstances or conditions the play of the flame upon the bloom-section will maintain the latter at a good rolling heat, a more efficient action can be obtained by placing a hood or box 15 on top of the feed-table, thereby inclosing the bloom-sections as they pass along the table. When using such shield or box, the nipples 6 will project through the side walls of the same, as clearly shown in Fig. 3.

While the form or construction of apparatus hereinbefore described is especially applicable for washing, heating, or maintaining the temperature of articles passing along a feed-table, such apparatus can be used for directing any fluid upon the article passing along the table, and hence I desire to include within the scope of the claims the use of such apparatus for the purpose of treating the ingots in any desired manner.

I claim herein as my invention—

1. The combination of a feed-table, one or more pipes provided with discharge openings or nipples arranged in such relation to the table as to direct a fluid flowing from the discharge-opening toward or against an article passing along the table, a valve for regulating or controlling the flow of fluid to such pipes and means operated by the article as it moves along the table for shifting said valve, substantially as set forth.

2. The combination of a feed-table, one or more pipes provided with discharge openings or nipples and arranged in such relation to the table as to direct a fluid flowing from the discharge-openings toward or against an article passing along the table, a valve controlling the flow of fluid to such pipe or pipes, means operative by the article as it passes along the table for opening the valve and means for automatically closing the valve after the passage of the article, substantially as set forth.

3. The combination of a feed-table and hood or box on said table, one or more lines of pipe provided with discharge-nipples projecting into the box or hood, a valve for regulating the flow of fluid to such lines of pipe and means operated by the article as it moves through the hood or box for shifting said valve, substantially as set forth.

4. The combination of a feed-table, two or more sections of pipe provided with discharge-nipples and arranged in such relation to the table as to direct the fluid flowing through the sections of pipe toward or against an article on said table, valves controlling the flow of fluid through the pipe-sections, and means operated by the article as it passes along the table for shifting the valve, substantially as set forth.

In testimony whereof I have hereunto set my hand.

GEORGE G. McMURTRY.

Witnesses:
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J. C. McCORMICK, Jr.