H. L. THOMPSON.

ROD ROLLING MILL.

APPLICATION FILED JULY 23, 1906.

923,216.

Patented June 1, 1909.

Fig. 1.

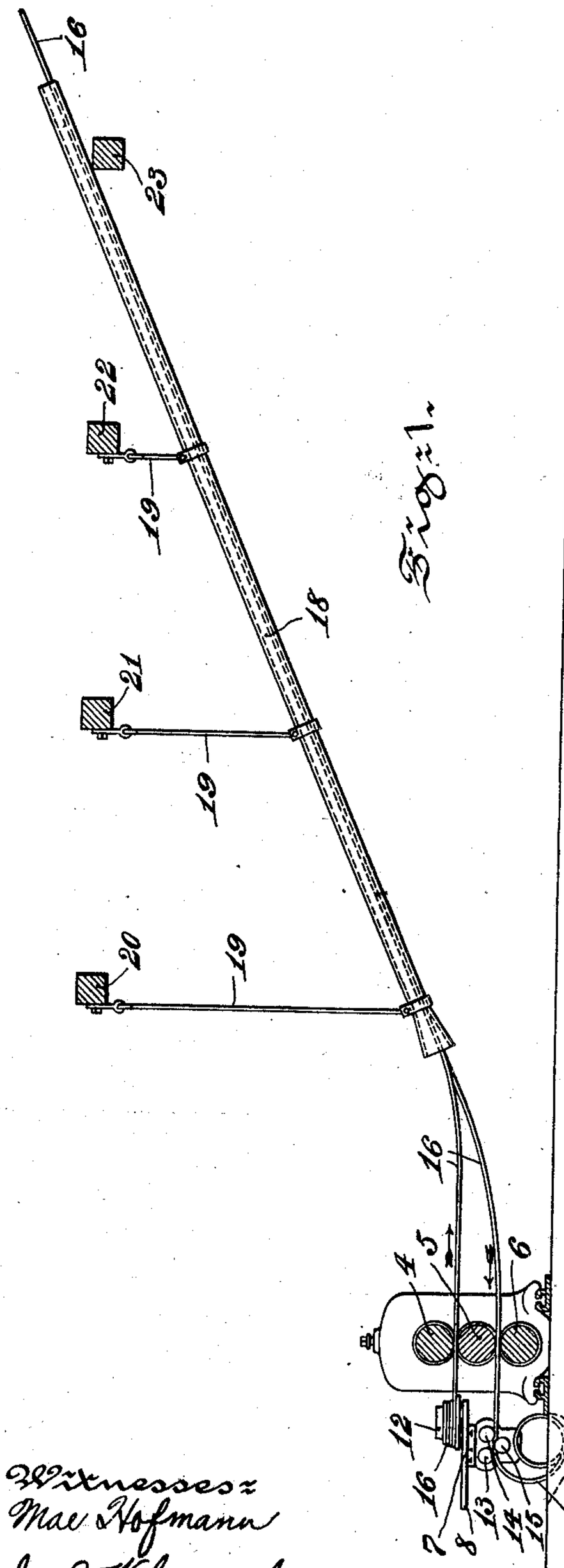


Fig. 3.

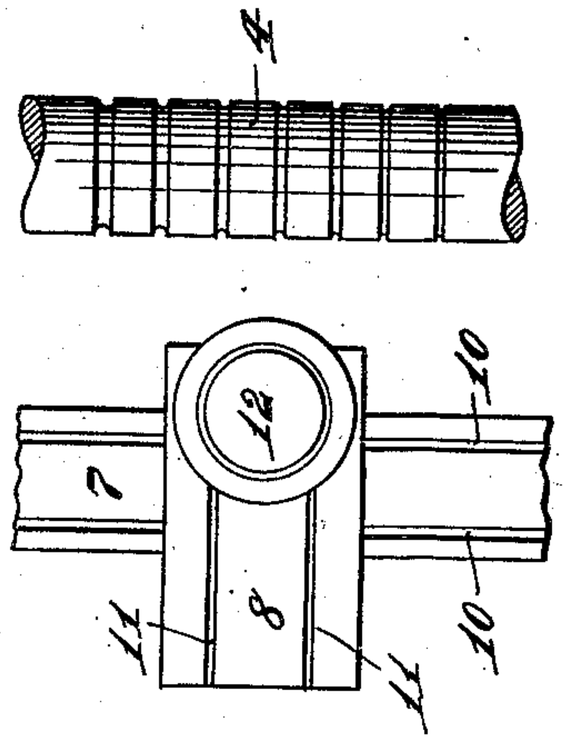
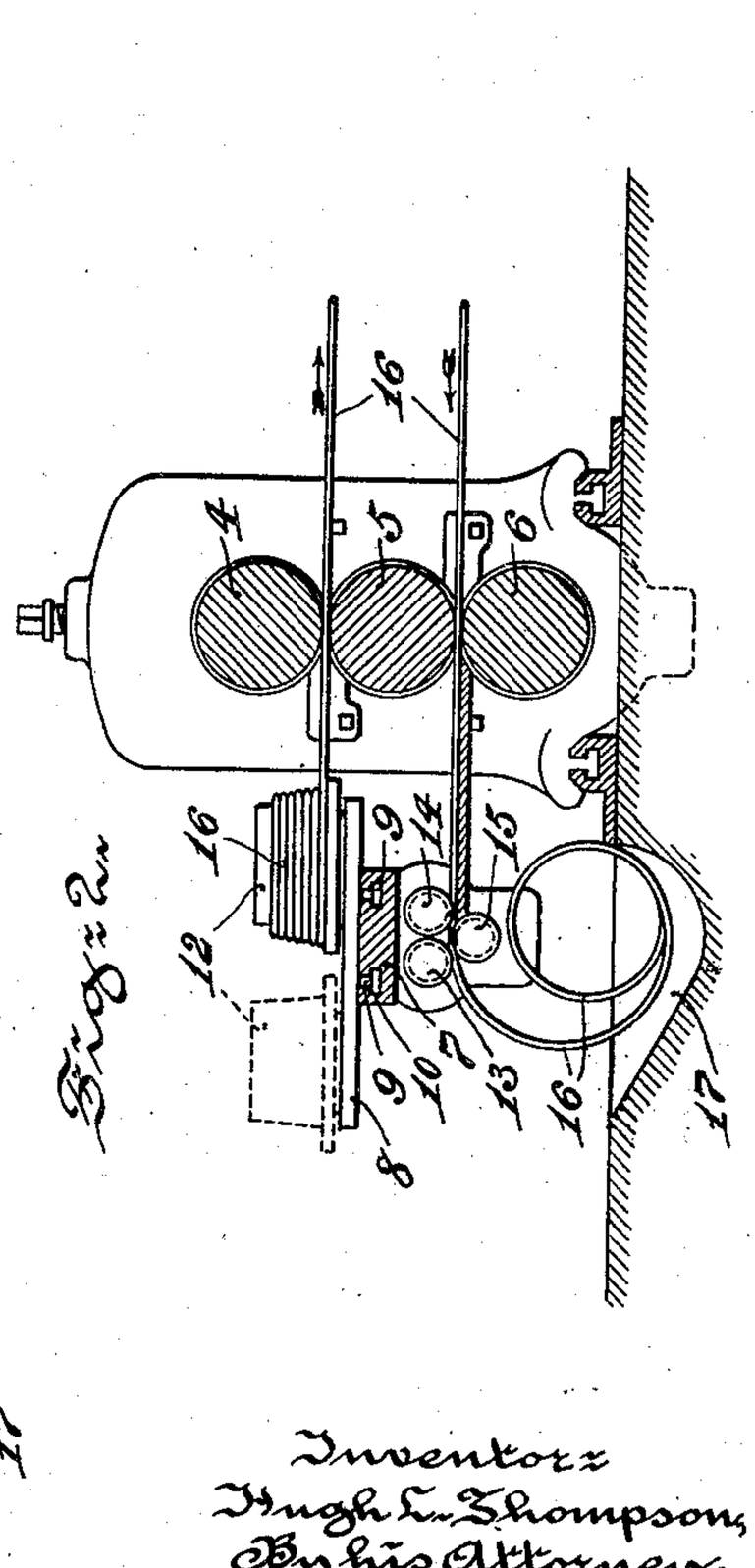


Fig. 2.



Witnesses:
Mae Hofmann
Jas. C. Wobnemith

Inventor:
Hugh L. Thompson,
By his Attorneys,
Wm. Goodale

UNITED STATES PATENT OFFICE.

HUGH L. THOMPSON, OF WATERBURY, CONNECTICUT.

ROD-ROLLING MILL.

No. 923,216. Specification of Letters Patent. Patented June 1, 1909.

Application filed July 23, 1906. Serial No. 327,299.

To all whom it may concern:

Be it known that I, HUGH L. THOMPSON, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Rod-Rolling Mill, of which the following is a specification.

My invention relates to improvements in rod-rolling mills.

My object is to provide improved means for supporting and guiding the rod as it passes through the rolls and for coiling the rod after the rolling operation has been finished.

My invention comprises improved means for supporting and introducing the rod to the rolls, improved means for receiving the rod from the rolls and returning it back to the rolls with a minimum amount of manual labor, improved means for coiling the rod after the rolling operation has been completed, said various means arranged relatively so as to occupy a minimum area of mill floor space.

Referring to the drawings:—Figure 1 is a side elevation of my device showing the rolls in section. Fig. 2 is a similar view, on an enlarged scale, of the rolls, drum and coiler. Fig. 3 is a fragmentary plan view of same.

Similar numerals refer to similar parts throughout the several views.

The device illustrated in the drawings comprises a set or train of three-high rolls. These rolls 4, 5 and 6 are positioned one above the other; their axes being in a vertical plane. To the rear of the rolls, and in close proximity thereto, is located a stationary structure 7. This structure supports the table 8 provided with T-bolts 9, adapted to slide in the T-channels 10 of structure 7, so that table 8 is adapted to have a horizontal movement parallel with the axes of the rolls. Table 8 is provided with T-channels 11 arranged transversely to channels 10 in which are adapted to slide similar T-bolts secured to the drum member 12 so that said drum member 12 is capable of a horizontal movement to and away from the rolls, and also by moving the table 8, the drum 12 is capable of a horizontal movement parallel with the rolls. The stationary structure 7 also supports the elements 13, 14 and 15 of the coiler. These elements are so disposed as to cause the rod 16 to be coiled beneath said elements into the pit 17. The trough, tube, or channel 18 is located on the other side of the rolls, is inclined upwardly from the rolls, and is adapted to receive the rod as it passes from one set of rolls and to return it to the other set of rolls.

The operation of my device is as follows:— The rod, in the form of a coil, is placed upon the drum 12, in the position indicated by dotted lines in Fig. 2. The end of the rod is straightened from the coil to the length of four or five feet. The drum 12 is then moved into the position shown in solid lines in Fig. 2, to facilitate the operator in introducing the end of the rod between rolls 4 and 5, in the direction of the arrow. As the rod passes through the rolls 4 and 5, it is introduced into the trough or channel 18, which inclines upwardly from approximately the horizontal plane passing between rolls 4 and 5. The rod is forced upwardly in the trough or channel 18, until it entirely passes from between rolls 4 and 5. It is now in a most convenient position for the operator to introduce the rear end of the rod 16 back between the rolls 5 and 6 for further reduction of the same. It will be noted that gravity assists the operator in introducing the rear end of the rod between the under pair of rolls and it also assists in feeding the rod thereto. As the rod passes from between rolls 5 and 6 it passes between the elements 13, 14 and 15 of the inverted coiler forming said rod into a coil beneath the coiler elements and beneath the drum supporting table into the pit 17. It will be seen that the coiler is extremely close to the rolls, and entirely beneath the drum supporting table, so that a minimum area of factory floor space is occupied.

The inclined trough or channel 18, is supported by the rods 19, from girders 20, 21 and 22, and directly upon the girder 23. It will thus be seen that the greater portion of this trough or channel 18 is elevated entirely out of the way of the floor lying beneath the same.

The rods 19 are connected by a hinge connection with girders 20, 21 and 22 so that the same will swing to permit the movement of the mouth or end of trough or channel 18, which is near the rolls, in a substantially horizontal direction, so that the same may be brought into substantial alinement with the grooves of the rolls through which the rod is traveling. The horizontal movement of the drum 12 parallel with the axes of the rolls is for the same purpose.

What I claim is:—

1. The combination of coöperating rolls and a combined coil supporting drum and inverted coiler structure in close proximity to the rolls.

2. In a rod rolling mill, the combination of coöperating rolls having back and forth passes, an inverted coiler in close proximity thereto, and a coil supporting drum superimposing and supported by the coiler structure.

3. In a rod rolling mill, the combination of coöperating rolls having back and forth passes, a coil supporting drum, a movable supporting table therefor, and a stationary supporting structure for the table, the drum having movable engagement with the table toward and from the rolls and the table having a similar movable engagement with the stationary supporting structure in direction parallel with the axes of the rolls.

4. In a rod rolling mill, the combination of coöperating rolls having back and forth passes, a channel structure inclining upwardly from approximately the height of the upper roll and having an overhead suspended hinged support so that it may swing into approximate alinement with the several passes of the rolls.

5. In a rod rolling mill, the combination of coöperating three high rolls having back and forth passes, a channel structure inclined downwardly and toward the rolls for substantially its entire length for guiding and supporting the rods, having its end toward the rolls substantially removed therefrom, as and for the purpose specified.

6. In a rod rolling mill, the combination of coöperating rolls having back and forth passes, an inclined channel structure extending upwardly from approximately the height of the upper roll and having part of its extension toward the rolls provided with overhead suspended hinged supports to permit of substantially horizontal movement for approximate alinement with the several passes.

HUGH L. THOMPSON.

Witnesses:
EUGENE ZEIGLER,
MAE HOFMANN.