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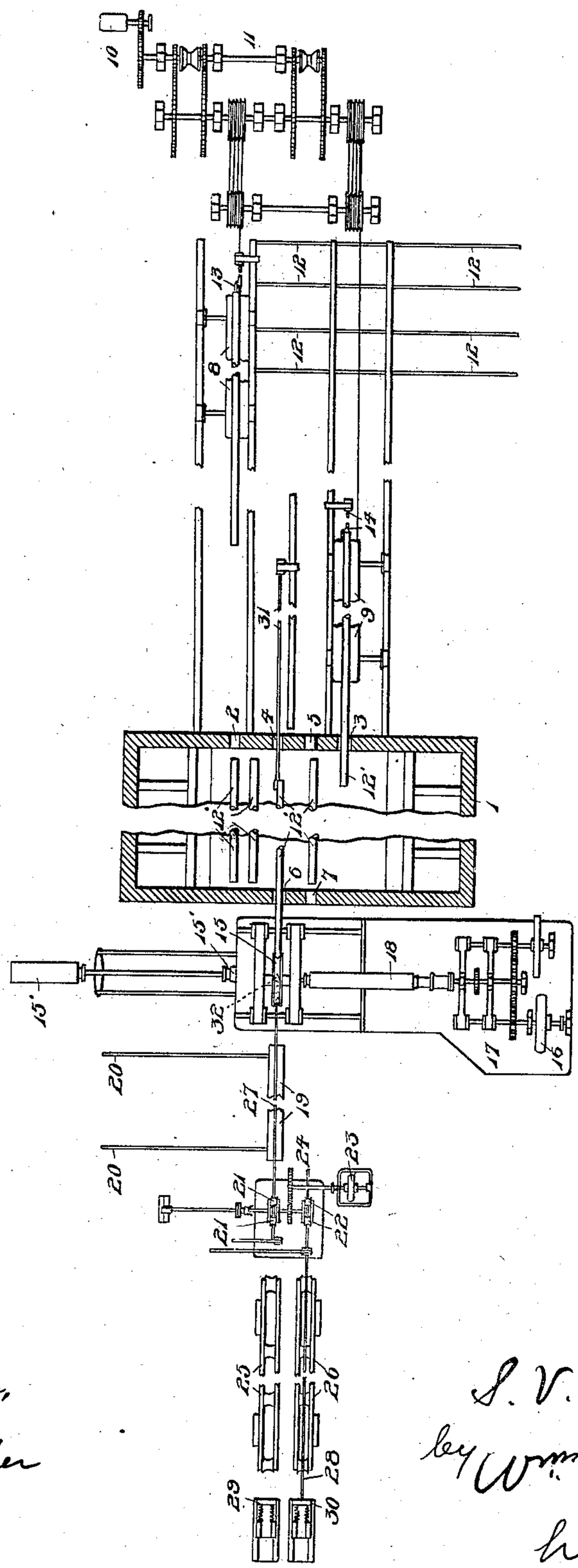
S. V. HUBER.

APPARATUS FOR MANUFACTURING TUBES.

APPLICATION FILED JULY 29, 1904.



WITNESSES:

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APPARATUS FOR MANUFACTURING TUBES.

No. 857,348. Specification of Letters Patent. Patented June 18, 1907.

Application filed July 29, 1904. Serial No. 218,737.

To all whom it may concern:

Be it known that I, SIGMUND V. HUBER, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Apparatus for Manufacturing Tubes, of which the following is a specification.

My invention relates to apparatus for making lap-weld tubes, and more especially to the apparatus for charging the tubular skelp into the welding furnace and drawing of the same therefrom into welded pipe. The flat plates are charged into the rear of a bending furnace and drawn at the opposite end of the furnace into tubular skelp which are transferred transversely of their length to the charging apparatus of the welding furnace, lying beside the bending furnace.

My invention has special reference to the combination of the welding furnace and the charging and welding mechanisms associated therewith.

The drawing shows conventionally the apparatus which I employ, the furnace being shown in horizontal section.

1 represents the welding furnace having at its rear end the two skelp charging openings 2 and 3, one situated at one side of the center line of the furnace and the other at the other side thereof. Between the openings 2 and 3 are the two openings 4 and 5. The front of the furnace has the two openings 6 and 7, which are opposite the rear openings 4 and 5.

At the rear of the openings 2 and 3 are the two cars or carriages 8 and 9, respectively, moved back and forth by means of the motor 10 and gearing 11, constructed in any approved manner to actuate the cars, the particular mechanism for doing this being immaterial to the present invention.

Skids 12 convey the tubular skelp 12′ from the bending mechanism (not shown) to the cars 8 and 9.

Traveling toward and from the rear of the furnace are the pushers 13 and 14, arranged to push the pipe from the cars into the furnace. I have shown the pushers by conventional symbols, as my present invention does not confine me to any type of pusher or mechanism for moving it, farther than I provide a separate pusher for each charging opening and do not give the pusher lateral movement to charge in skelp at both sides of the furnace.

At the front end of the furnace I place the welding apparatus, represented conventionally by the roll 15, which is moved by the hydraulic cylinders 15′, transversely across the furnace so as to receive the heated skelp from either opening 6 or 7.

16 represents the roll driving motor and 17 the gearing connecting the rolls and the motor. This gearing may be variously constructed, and the motor and gearing may be stationary or they, with the rolls, may be mounted on the same traveling platform. In case the motor and gearing are stationary, the driving spindles as 18, may be telescopic or the travel of the rolls otherwise provided for.

The roll housing carries with it the pipe receiving trough 19 and the skids 20, preferably telescopic, down which the pipes are rolled after welding.

At the rear of the trough 19, I mount two stationary bar pullers represented by rollers 21 and 22 driven by the motor 23 and gearing 24. 25 and 26 are tables for carrying the bars 27 and 28 back out of the welded tubes and back to the rolls 15. 29 and 30 are back stops for the bars.

The operation of my invention is as follows: One of the cars 8 or 9 is brought opposite the ends of the skids 12 and a tubular skelp is rolled along the latter and upon the car, but it is immaterial how the skelp is transferred to the car. The car is then started forward and when it reaches the rear of the furnace the corresponding pusher 13 or 14 is brought forward and pushes the skelp from the car into the furnace. While this is being done another skelp is being placed on the other car. As the first car returns for another skelp the second car conveys to the furnace its pipe which is charged into the furnace by the other pusher. The drawing shows the pusher 14 pushing a skelp from the car 9 into the furnace, the car 8 being returned almost to its position for receiving a skelp.

Each pipe is rolled by hand from the position, in which it was charged, toward the center of the furnace and finally rests opposite one of the openings 4 or 5. After the skelp have been moved from their first positions, fresh skelp are charged in through the charging openings 2 and 3 as above described.

When one of the skelp opposite the openings 4 or 5 is ready for welding the pusher 31 is moved up and pushes the skelp through the opening 6 or 7 into the welding rolls 15,

as shown on the drawing. The pipe passes over the bar 27 or 28 and the mandrel 32 on the end of the bar. As soon as the pipe has passed through the rolls the bar is released and the corresponding bar puller 21 or 22 withdraws the same from the pipe and shoves it back on the table 25 or 26. The bar 28 is shown withdrawn. The rolls 15 and trough 19 are then moved over opposite the other opening 6 or 7 and the other bar is pulled from its table 25 or 26 to its forward position, with its mandrel between the rolls 15. The pusher 31, having been previuosly withdrawn and had its pusher arm moved opposite the pipe which is in line with the rolls, then moves forward and the skelp is welded in the same manner as the preceding skelp. In this case the second bar puller withdraws the bar just used and the first bar puller returns its bar to normal position.

The operation of charging fresh skelp into the openings 2 and 3, moving them opposite the openings 4 and 5, pushing them into the rolls, adjusting the rolls, and pulling and returning the bars is repeated *ad libitum*.

The specific construction of the several mechanisms employed by me is not made a part of this invention and in no instance is any showing intended to be other than conventional, as I intend to include within my invention all constructions which read fairly on my claims irrespective of the specific mechanisms employed.

Having described my invention, I claim:—

In a tube mill, a transversely movable set of rolls and separate stationary means for withdrawing mandrel bars from their position relative to the rolls, the said set of rolls adapted to be brought into alinement with the said withdrawing means.

Signed at Pittsburg, this 28th day of July, A. D. 1904.

SIGMUND V. HUBER.

Witnesses:

F. N. BARBER,

A. M. STEEN.