May 10, 1932. F. S. SPEICHER 1,857,166

MARKING DEVICE

Filed July 26, 1930 2 Sheets-Sheet 1

Fig. 1.

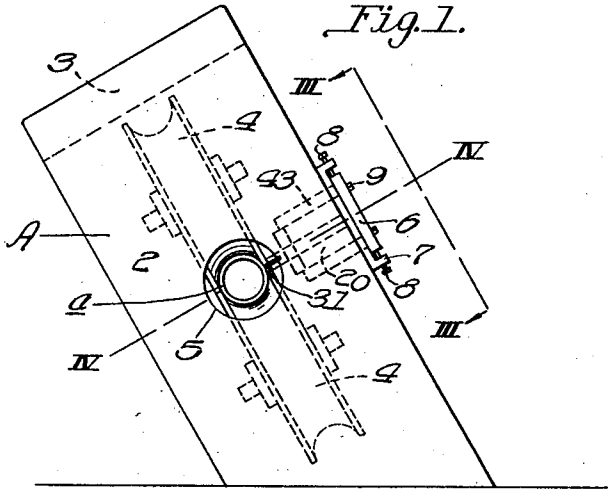

Fig. 2.

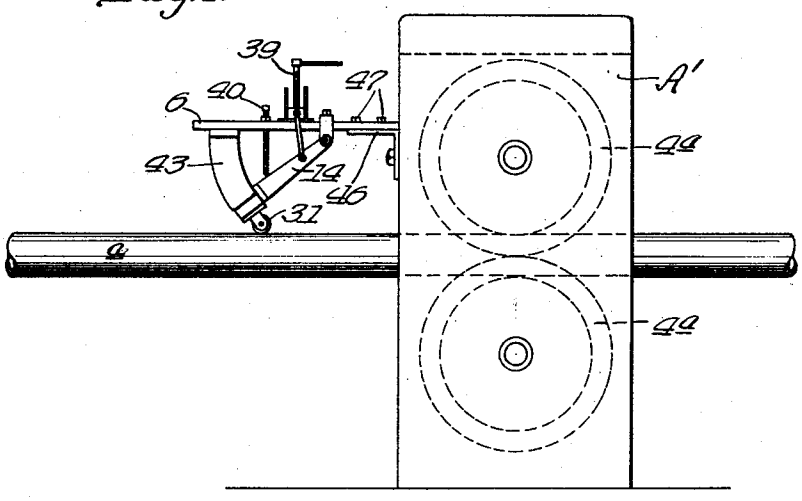

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Fig. 3.

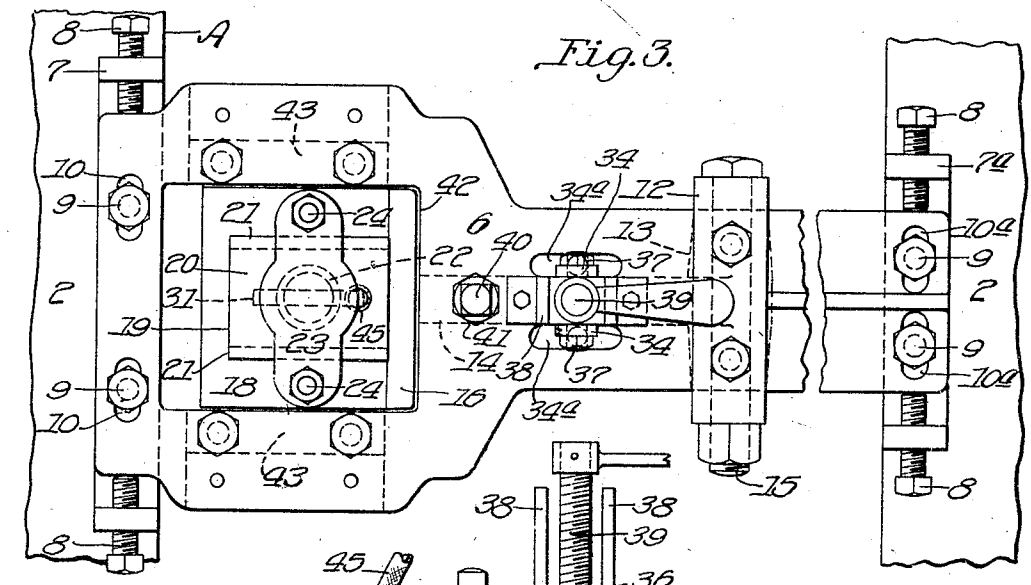
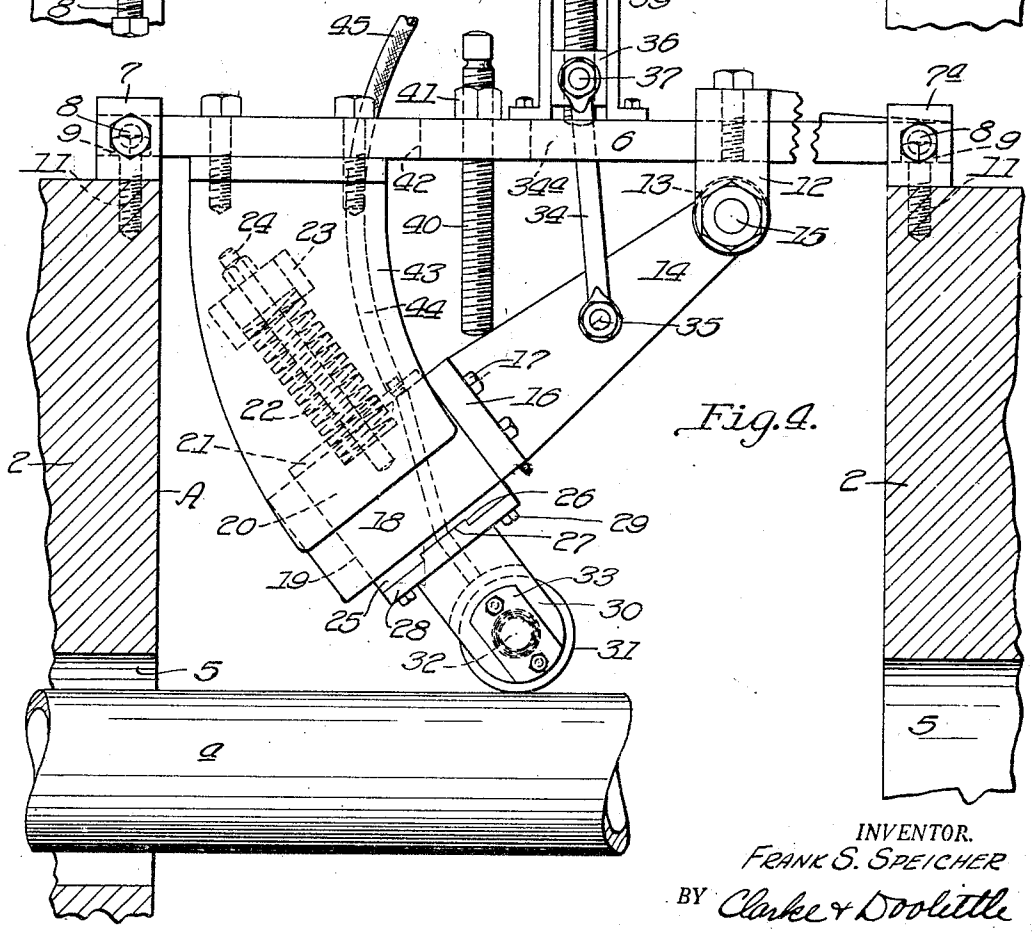


Fig. 4.



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Patented May 10, 1932 1,857,166

UNITED STATES PATENT OFFICE

FRANK S. SPEICHER, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO M. E. CUNNINGHAM COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

MARKING DEVICE

Application filed July 26, 1930. Serial No. 470,871.

My invention relates to improvements in marking devices employed in the marking of tubing or the like.

Heretofore it has been the practice to mark or stamp tubing, pipe, etc., after the same has been removed from the mill, necessitating extra labor and resulting in spaced-apart markings which in some instances would not appear upon severed pipe sections.

It is a prime object of my invention to provide a marking device particularly designed for marking tubing and the like as it is formed, said device being operable by the passage of the tubing through the mill.

A further object is to provide a marking device capable of applying a continuous marking longitudinally of the tubing and throughout its entire length.

Other and additional objects and advantages are, to provide an adjustable mounting for said marking device whereby the same may be readily applied to any of the various types of tube mills and utilized for marking tubing of different sizes, and to provide a simple and efficient construction.

My invention may be more readily understood from the following specification taken in connection with the accompanying drawings, wherein:

Fig. 1 is an end elevational view of the roll housing of a tube mill, showing my invention applied thereto;

Fig. 2, a view similar to Fig. 1, showing the application of my invention to a different form of roll housing;

Fig. 3, a plan view of the marking device, said view being indicated by the line III—III of Fig. 1; and

Fig. 4, a part sectional and a part elevational view, the section being taken on the line IV—IV of Fig. 1.

Referring to the drawings, and first to the form of Fig. 1, the tube mill roll housing A is generally known as the American-type housing and comprises an inclined U-shaped casting having end members 2 and an upper connecting member 3. Rolls 4, as for example, the finishing rolls of a tube mill, are rotatably mounted in the housing A in the position indicated, and are adapted to be driven by any suitable power means, not shown. Openings 5 are provided in the end members 2 in alinement with the effective forming surfaces of the rolls 4 to permit the passage of the tubing *a* therethrough.

The preferred embodiment of my marking device or apparatus when applied to one side of the housing A includes a base member 6 extending in parallelism with the axis of the tubing *a*. The ends of the base member are adjustably mounted in U-shaped brackets 7 and 7*a* having opposed adjusting screws 8 therein. Securing screws or bolts 9 are passed through openings in the brackets 7 and 7*a* and slotted openings 10 and 10*a* in the ends of the base member, said screws or bolts being threaded into the end members 2, as at 11.

Substantially midway of its length, the base member 6 carries a bifurcated mounting 12 for receiving the pivoting end portion 13 of an arm 14, said arm being pivoted on a transverse bolt 15 passed through the mounting and the arm. As shown, arm 14 and its mounting 12 are located on the inner or tubing side of the base member 6. The free end of said arm is T-shaped, having a cross member 16 preferably integral therewith.

Secured to the face of the cross member 16 by means of bolts 17, I provide a U-shaped member 18, said cross member and U-shaped member forming a rectangular recess or opening 19 therebetween and transversely of the arm 14.

A plunger 20 is slidably positioned in the recess 19 and has extending flanges 21 thereon for limiting the movement of the plunger in the direction of the tubing *a*. The movement of said plunger away from the tubing is against the action of a spring 22 having one end thereof seated in the plunger 20 and its other end retained in a member 23, the latter being mounted on bolts 24 secured in the member 18.

One end of the plunger 20 extends beyond the members 16 and 18, as at 25, and is formed with a transverse slot or groove 26 therein for receiving a complementary tongue or projection 27 on the stamp or marking die holder 28. Said marking die holder is secured to

the plunger 20 by means of bolts 29 and is provided with depending spaced-apart portions 30 for receiving the marking die 31 therebetween, the latter being freely rotatable on a pin or shaft 32 retained in the portions 30, as by cover plates 33. As indicated, the marking die 31 is in the form of a roller having the desired characters upon the periphery thereof, and is adapted to be rotated by the passage of the tubing *a* in contact therewith.

For adjusting the arm 14 and its marking die 31 to the proper position with respect to the tubing *a*, I have provided links 34 extending through slotted openings 34*a* in the base member 6. These links are pivoted to arm 14 at 35 and to a cross-head 36, as at 37. Said cross-head is adapted to be translated in suitable guides 38 for adjusting the arm 14 by means of a screw 39, having one end bearing against the base member. An adjustable stop 40 is provided for engaging the arm 14 and has a lock nut 41 thereon.

The base member 6 is formed with an opening 42 therethrough for the passage of the spring 22 and its associated parts when the arm 14 is retracted. Depending cheeks or guides 43 are positioned adjacent the sides of said opening for guiding the arm 14 by contacting with the sides of the U-shaped member 18.

In operation, assuming the marking device and its mounting are positioned on a roll housing in the manner described, for example, on the housing for the finishing rolls of a tube mill, arm 14 is lowered by means of the screw 39 and the links 34 until the die roller 31 is in a position just beyond its line of contact with the outer surface of the tubing *a*. The adjustable stop 40 is lowered until it is spaced from the arm 14 but a slight amount, thus providing for slight play in the arm 14.

The tubing passes through the various rolls and through the finishing rolls while still in a heated condition. As the tubing *a* engages and rotates the roller 31, the arm 14 and its parts will be moved slightly toward the stop 40. The remainder of the distance necessarily travelled by the roller 31 to engage the outer surface of the tubing produces a sliding movement of the plunger 20 against the action of the spring 22, thereby urging said roller firmly against the tubing to produce a good impression thereon.

Since the characters are on the periphery of the roller, the marking will take place continuously during the passage of the tubing thereunder.

It is to be noted that any inaccuracies in the diameter of the tubing will be compensated for by means of the adjustable mounting and spring action just described, and that my invention is capable of use for marking various sizes of tubing or the like.

For the purpose of cooling the die roller 31, an opening 44 is provided through the plunger 20 and the die holder 28 for supplying the stream of cooling fluid to the roller through a flexible conduit 45.

Fig. 2 illustrates the vertical housing A′ of the German-type tube mill, having rolls 4*a* rotatable therein. In this instance, the marking device may be mounted in parallelism with the tubing *a* by means of an angle member 46 secured to the housing. The base member 6 is in such case bolted or otherwise secured to the horizontal flange of said angle by bolts 47.

It will be understood that my invention is not to be limited to the particular form or application shown herein, but may be applied to the marking of other products and in combination with other devices.

Various changes and modifications are contemplated, provided they fall within the scope of the following claims.

I claim:

1. A marking device adapted for marking a moving object including a base member, an arm pivoted to the base member, a resiliently mounted plunger slidable in the arm, a die member carried by the plunger, and adjustable means associated with the arm for positioning the die member in the path of the moving object.

2. A marking device including a base member, an arm pivoted to the base member, a recess in the arm, a plunger slidable in the recess, a spring retainer secured to the arm and spaced from the plunger, a spring extending between the retainer and the plunger, and a die member carried by the plunger.

3. A marking device including a base member, an arm pivoted to the base member, guide members for the arm, means for adjustably positioning the arm from the base member, and a die member resiliently mounted in the arm.

4. A marking device including a base member, an arm pivoted to the base member, a slidable cross-head on the base member and a screw therefor, links connecting the cross-head and the arm, an adjustable stop member for engaging the arm, and a die member resiliently mounted in the arm.

5. A marking device including a base member, an arm pivoted to the base member, a cross member on the arm, a U-shaped member secured to the cross member, a resiliently mounted plunger slidable within the U-shaped member, a die holder secured to the plunger, and a roller die rotatable in the die holder.

6. A marking device adapted for marking a moving object including a base member, an arm pivoted thereto, a recess in the arm, a plunger slidable in the recess, a spring retainer secured to the arm and spaced from the plunger, a spring extending between the

retainer and the plunger, a roller die carried by the plunger, adjustable means associated with the arm for positioning the die in the path of the moving object.

7. In a device for marking tubing and the like, the combination with a roll housing having spaced-apart end members, of a base member secured to and extending between said end members, an arm pivoted to the base member, a resiliently mounted plunger slidable in the arm, a die member carried by the plunger, and adjustable means for positioning the arm within the housing.

In testimony whereof I affix my signature.

FRANK S. SPEICHER.