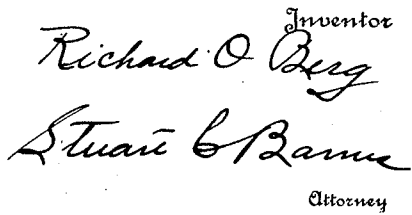


1,378,992.

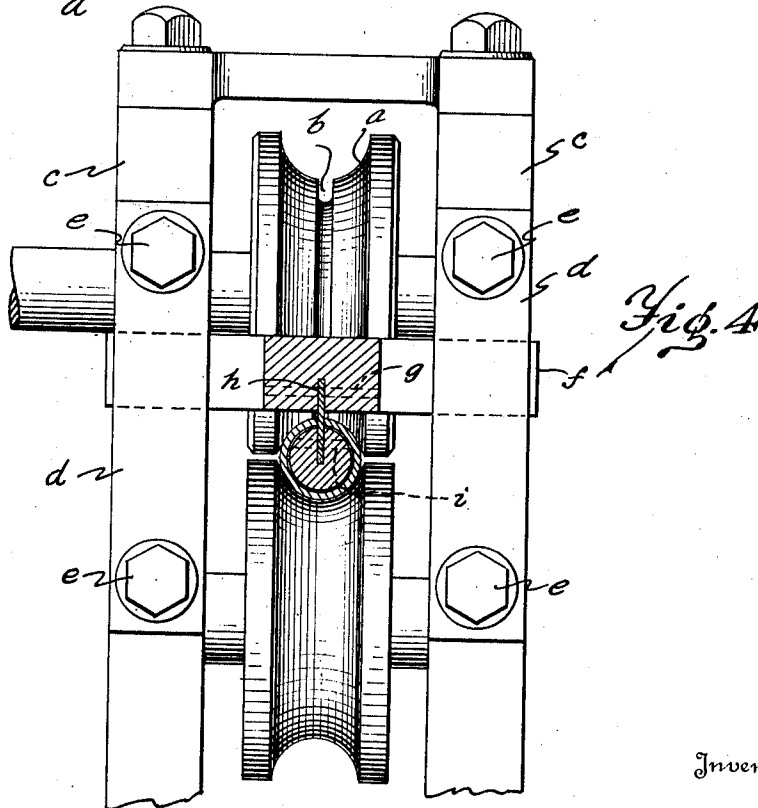
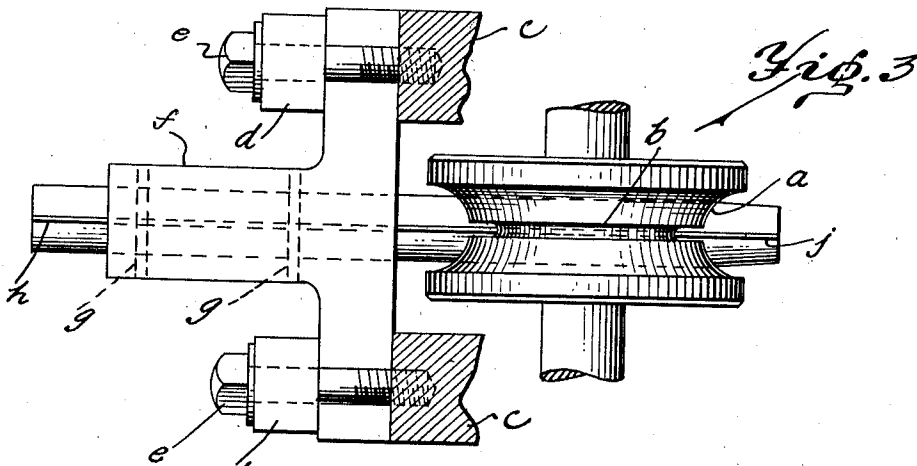
2 SHEETS—SHEET 1.



R. O. BERG.
GUIDE FOR TUBE MAKING MACHINES.
APPLICATION FILED JUNE 3, 1920.

1,378,992.

Patented May 24, 1921.
2 SHEETS—SHEET 2.



Inventor

By *Richard O. Berg*
Stuart E. Barnes
Attorney

UNITED STATES PATENT OFFICE.

RICHARD O. BERG, OF DETROIT, MICHIGAN, ASSIGNOR TO MICHIGAN STEEL TUBE PRODUCTS COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

GUIDE FOR TUBE-MAKING MACHINES.

1,378,992.

Specification of Letters Patent.

Patented May 24, 1921.

Application filed June 3, 1920. Serial No. 386,403.

To all whom it may concern:

Be it known that I, RICHARD O. BERG, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Guides for Tube-Making Machines, of which the following is a specification.

This invention relates to guides for tubing. It has been customary heretofore in tube welding to provide some form of guide to line up the edges of split tubing with the welding torch or welding electrodes. It has been quite usual to provide some kind of a projecting fin or blade that engaged between the opposed edges of the split tubing to prevent twisting of the tubing as the same is being fed to the torch or electrodes. It has also been proposed to use a peripheral fin on one of the feed rolls for this purpose.

It is the object of the present invention to so arrange the combination of feed rolls, the fin, and mandrel, that the same all cooperate at one point not only to prevent the tube from being twisted torsionally but also to make the opposed edges of the split tubing substantially register.

It is a further object of the present invention to provide a support for the combined fin and mandrel which will give it a universal adjustment within given limits to accommodate itself to varying requirements.

In the drawings,—

Figure 1 is a vertical section through a pair of feed rolls in a tube welding machine showing the torch, the feed rolls, and my improved mandrel.

Fig. 2 is a cross section on the line 2—2 of Fig. 1.

Fig. 3 is a plan view of the upper feed roll and improved mandrel taken as a section on the line 3—3 of Fig. 1.

Fig. 4 is a section taken on the line 4—4 of Fig. 1.

Heretofore the most common way of guiding the split of the split tubing directly under the welding torch has been to use a peripheral fin on one of the feed rolls. This form of guide, however, makes no provision for lining up the edges of the tubing into correct registry with each other. Furthermore, this form of roll is somewhat expensive to construct and when the guiding fin gives out the roll assembly has to be taken apart, the roll removed, and a new one

inserted, resulting in rather expensive repair work. This form of roll is obviated by my improvement. In place of using such a roll, I use a grooved feed roll *a* provided with an annular groove *b*. This feed roll is mounted in the usual way between the posts *c, c*. A pair of clamping bars *d, d* can be bolted to each of these posts by the cap screws *e*. These are adapted to clamp the T shaped mandrel carrier *f* to the face of the posts. By comparing Figs. 1 to 4 it will be seen that the cap screws *e* do not pass through the T shaped mandrel carrier. Hence by loosening the clamping bars the T shaped mandrel carrier may be adjustable either upwardly or laterally, giving a universal adjustment within certain limits.

The pins *g* pass through the mandrel carrier and through the fin *h*, serving to support the fin on the mandrel carrier. Similarly pins *i* pass through the mandrel and the fin. It will be noticed that the forward end of the fin is narrowed as at *j* and the fin and the mandrel are located between the upper and lower feed rolls. This portion of the fin not only accomplishes what was heretofore accomplished by the fin on the upper feed roll but the mandrel operating in conjunction with the two feed rolls serves to cause the two edges of the split tubing to register. Obviously the edges of the tubing cannot get out of suitable registry by one dropping below the other because the mandrel prevents this, and the two edges cannot get out of substantial registry by one of the edges springing outwardly because the feed rolls prevent this. Hence this combination of mandrel, fin, and feed roll accomplishes not only the function of a guide against twisting but also properly secures registry between the meeting edges of the tubing.

It will readily be seen that in case the mandrel becomes damaged the same may be easily removed and replaced or another mandrel may be placed in the machine for tubing of different sizes simply by unloosening the clamping bars. This does not require the rolls to be disturbed for repairing the guiding element.

What I claim is:

1. A guiding device for a tube making machine, having in combination, a pair of feed rolls, a guiding fin, and a mandrel supported adjacent the feed rolls with both the

guiding fin and the mandrel running between the feed rolls.

2. A guiding device for a tube making machine, having in combination, a pair of
5 feed rolls, the upper one of which is provided with an annular groove, a guiding fin, and a mandrel running between the feed rolls and the guiding fin engaging in the said groove of the upper feed roll.
- 10 3. A guiding device for a tube making machine, comprising a fin adapted to be engaged in the slot of the split tubing, a mandrel supported thereby adapted to engage in the interior of the split tubing, and
15 means engaging the exterior of the tubing directly above the mandrel and fin for preventing the edges of the tubing springing out of substantial registry.
4. A guiding device for a tube making
20 machine, comprising a support, a fin and mandrel, a carrier therefor, and a clamping device for jamming the carrier against the support but permitting the carrier to be adjusted in any direction within given
25 limits.

5. A guiding device for a tube making machine, comprising a post, a fin, a carrier for the fin, and a clamping device for fric-

tionally engaging the carrier and jamming the same against the post to permit the uni- 80
versal adjustment of the carrier within given limits when the clamping device is released.

6. A guiding device for a tube making machine, comprising a fin, a carrier therefor, 85
a post, a clamping device comprising a pair of bars adapted to engage the carrier and having screws engaging the posts by which the bars may be jammed against the carrier to jam the latter against the post to 40
permit universal adjustment of the carrier when the clamping bars are released.

7. A guiding device for a tube making machine, comprising a fin, a carrier of T 45
shape when viewed in plan, a pair of vertical clamping bars, a post, and screws by which the clamping bars may be jammed against the ends of the bar of the T to hold the carrier to the post.

8. A guiding device for a tube making 50
machine, comprising a pair of rolls one of which has an annular groove, a carrier and a fin supported between the rolls in the groove of the one roll by the said carrier.

In testimony whereof I affix my signature. 55

RICHARD O. BERG.