K. HOFWING.

MACHINE FOR THE PRODUCTION OF WROUGHT IRON RIBBED PIPE.

APPLICATION FILED SEPT. 14, 1920.

1,404,122. Patented Jan. 17, 1922.

Fig. 1

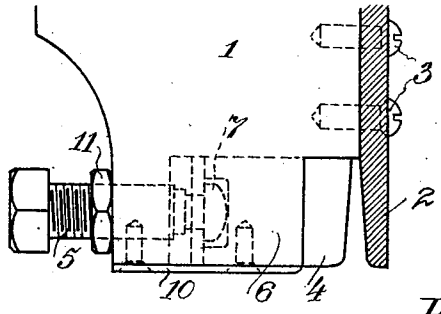


Fig. 2

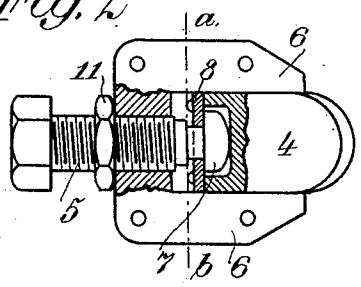


Fig. 3

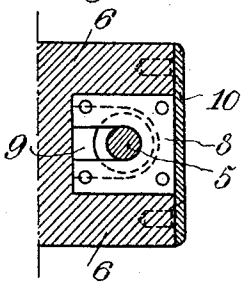


Fig. 4

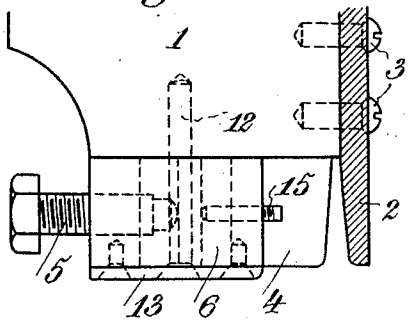
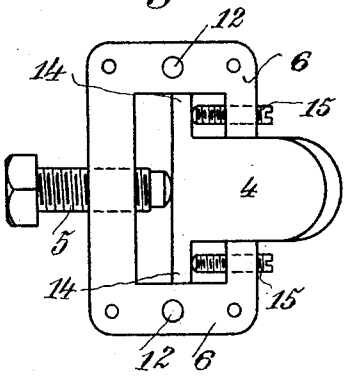


Fig. 5



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by [signature] Atty.

UNITED STATES PATENT OFFICE.

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MACHINE FOR THE PRODUCTION OF WROUGHT-IRON RIBBED PIPE.

1,404,122. Specification of Letters Patent. Patented Jan. 17, 1922.

Application filed September 14, 1920. Serial No. 410,272.

To all whom it may concern:

Be it known that I, KLAS HOFWING, a citizen of Sweden, residing at Jönköping, Sweden, have invented a certain new and useful Improvement in Machines for the Production of Wrought-Iron Ribbed Pipes, of which the following is a specification.

It has already been proposed in the production of wrought iron ribbed pipes to wind the ribs in the form of a strip upon a rotating pipe whereby the rib strip before the winding is passed through a furnace, by means of which it is heated to a red heat temperature and in such a manner crimped around the cold pipe.

In the production of ribbed pipes in the manner thus described the guiding of the red hot rib strip at the winding around the pipe causes great difficulties, and earlier it has been proposed to carry out the guides in the form of fixed plates or rollers facing the rib strip. Both of these ways have also been combined so that the guide at the one side of the strip consists of a plate and at the other side of one or more rollers. Under all circumstances a very great friction must be taken into consideration, which no doubt is greatest in the case first mentioned and lower, but still rather great, in the latter case. Besides the heated rib strips, when heated and cooled down again, form slag crusts impeding the function of the guiding devices and, when consisting of rollers, preventing them from rotating whereafter they work as fixed guides, so that the use of rollers is of no special value.

Thus the heavy friction and the rapid wearing of the guide members caused therefrom cannot be overcome and therefore the present invention does not refer to the lessening of said friction or wearing but instead thereof to make the guide members adjustable in relation to each other, so that they easily may be adjusted according to the wearing.

The invention, in two modifications, is illustrated in the accompanying drawing. Fig. 1 shows the one modification in side elevation. Fig. 2 shows the same seen from beneath, and Fig. 3 is a section along the line *a—b* in Fig. 2. Fig. 4 shows the other modification in side elevation and Fig. 5 shows the same seen from beneath.

The guide members are carried by a support 1 in a known manner, by means of which they may be raised or lowered in relation to the axis of the pipe to be wound, and the one guide member consists of a plate 2 exchangeably fixed to the support 1 by means of screws 3 or in any other suitable way. This plate is intended to form the guide at the one side of the heated rib strip.

According to the invention the guide member at the opposite side of the strip consists of a head 4, which by means of an adjusting screw 5 may be slid towards or from the plate 2 as required when adjusting the space between the guide members, said head being guided in transverse direction by the walls 6 placed at the lower end of the support. The surfaces of the head 4 and the plate 2 facing each other converge a little from the axis of rotation of the pipe, i. e. they diverge somewhat downwards or towards said pipe, as shown in Figures 1 and 4, so that the space between the same obtains approximately the same shape as the cross sectional area of the rib strip. Besides the working surface of the head 4 is suitably somewhat convex (see Figures 2 and 5), so that it rests against the rib strip along one generatrix only, as in the greatest possible degree to prevent the accumulation of slag crusts and their jamming between the guide members.

In the modification shown in Figures 1–3 the guides 6 are carried out in one piece with the rest of the support 1 and the screw 5 is arranged within a threaded hole in the same. Said screw by means of a head 7 rests against the bottom of a recess at the inner end of the head 4 and is connected to said head by means of a plate 8, provided with a groove 9 surrounding the screw behind the head 7. The groove 9 (Fig. 3) has an upwardly directed open end, so that the head 4 and the plate 8 may be removed from the guides 6 after removing a bottom plate 10 fixed by means of screws at the lower end of the support 1 and together with the guides 6 forming a closed chamber, from one end of which the head 4 extends towards the plate 2. For fixing the screw 5 and thereby the head 4 in a desired position the screw is provided with a locking nut 11.

In the modification shown in Figures 4 and 5 the guides 6 are carried out in the form of a removable end piece fixed to the support 1 by means of strong screws 12 and if necessary provided with edges or knobs engaging corresponding recesses in the support as to remove the pressure from the head

4 upon the screws 12 when using the device. Also in this case the guides 6 from beneath are covered by a plate 13, which together with said guides forms a closed chamber, from which the head 4 extends, but the closing plate 13 need not necessarily be removable, although this may be the case, while an exchange of the head 4 may be effected by removing the whole guide piece 6. For locking the head in desired positions the same is provided with lugs 14 for set screws 15 as shown in the drawing.

By means of the arrangements described above the guide members for the rib strip will be easily adjustable in relation to each other, and the wearing may be compensated in a suitable manner. Besides the head 4 is easily removable and exchangeable in order to alter and correct the form of its guiding surface if the same has been deformed on account of wearing.

Slag crusts and the like cannot intrude upon the action of the adjusting members and the form of the guiding surfaces prevents the jamming of the device in the largest possible extent.

Of course a great number of other modifications based upon those described above may be used without departing from the spirit of the invention and it is to be understood that the invention is not limited to the modifications described. Thus more than one head 4 may be used for the cooperation with one and the same plate 2 and the adjusting means described above may be changed for equivalents having the same effect. Springs of one kind or another may be arranged between the adjusting means and the head or heads, so that the latter are spring pressed against the rib strip.

Having now described my invention and the manner in which the same is to be performed, I declare that what I claim is:

1. A rib guide for ribbed pipe making machines comprising a supporting member having a recess in the lower end thereof, a guide plate removably mounted on the supporting member, a guide member movably mounted in the recess, a plate secured to the lower end of the support adapted to hold the guide member in place, means for adjusting the guide member toward and away from said guide plate, and means for locking the guide in adjusted position.

2. A rib guide for ribbed pipe making machines comprising a support having a recess in the bottom thereof, a guide plate removably mounted on the support extending over one end of the recess for engaging and guiding one side of a rib, a bottom plate removably secured to the support covering the bottom of said recess, a guide member slidably mounted in the recess in said support, and adapted to engage the other side of the rib, an adjusting screw mounted in the support for adjusting the guide member and means for locking the adjusting screw and guide member in adjusted position.

3. A rib guide for ribbed pipe making machines comprising a support having a cut-away portion at one bottom edge and a recess formed in the bottom communicating with said cut-away portion, a guide plate secured to the support extending over the cut-away portion to guide a rib, a guide member slidably mounted in the recess having the end opposed to the guide plate rounded and adapted to guide a rib, and means for adjusting the guide member toward and away from the guide plate.

4. A rib guide for ribbed pipe making machines comprising a support having a cut-away portion in one lower edge thereof and a recess in the end communicating with the cut-away portion, a guide plate removably secured to the support extending over the cut-away portion to guide a rib, a guide member slidable in the recess formed at the end nearest the guide plate for guiding a rib and at the opposite end with an adjusting member having a head adapted to project into the recess formed in the guide member, and a plate secured to the guide member for holding the head of the adjusting member in the recess formed therein.

5. A rib guide for ribbed pipe making machines comprising a support formed with a cut-away portion in one lower edge and a recess in the end communicating with the cut-away portion, a plate secured to the end of the support for covering the bottom of the recess, a guide plate removably secured to the support extending down over the cut-away portion to guide one side of a rib, a guide member slidable in the recess in the support having the end opposed to the guide plate rounded for guiding the other side of the rib and formed with a recess in the other end, an adjusting screw threaded in the support having a head projecting into the recess in the guide member and a plate formed with a slot adapted to receive the screw secured to the guide member for holding the head in the recess formed therein.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

KLAS HOFWING.

Witnesses:
H. BRANZELL,
G. PETERSSON.