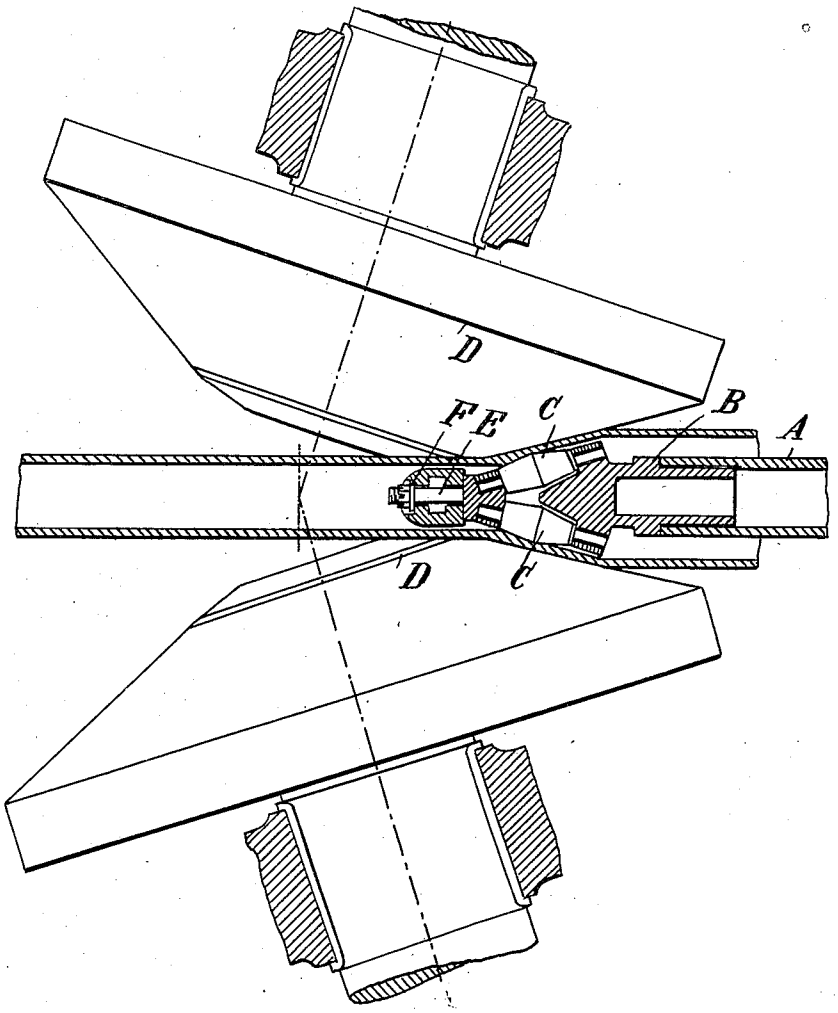
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MANDREL FOR USE IN ROLLING MACHINES

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UNITED STATES PATENT OFFICE

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MANDREL FOR USE IN ROLLING MACHINES

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My invention relates to rolling machines of the kind employed for rolling, widening or expanding and smoothing tubes, and more particularly to an improved mandrel or core upon which the tubular metal is rolled, expanded or smoothed.

Rolling machines for expanding and smoothing operations especially those which work in two bevelling or inclined planes, usually possess a conical mandrel on which the metallic tube is rolled for the expanding or smoothing purpose.

Rolling mandrels of this type usually consist of a solid body of iron or steel shaped to conform to the shape of the co-operating rolls or the dimension, width or cross-sectinal area of the tubes to be rolled. The mandrel is mounted in the required position between the inclined rolls and firmly connected or integral with a rod the free or opposite end of which is supported in an abutting or thrust bearing so as to be revoluble about its axis.

The tube to be rolled receives a rotary movement and at the same time a feeding movement lengthwise, by the revolving action of the two co-operating inclined rolls.

Mandrels of this common type, however are objectionable for the disadvantage or reason that they oppose a considerable resistance to the said rotary movement and feeding movement of the tube and that such resistance entails the prejudice of inaccuracies and injuries to the inner surfaces of the tubes.

The chief object of my invention is to remedy this defect and to accordingly provide a mandrel which will greatly assist in producing tubes devoid of inner inaccuracies or injuries.

With this object in view the mandrel according to the present invention is attached to a rod which is stationary and fixed so as to be incapable of rotating about its axis and in the body of the mandrel there are accommodated two or several rollers journaled in a plane or on the slant, that is at an angle to each other. Further the end or head of the mandrel is extended to form a pin on which an entering or guiding mandrel is mounted so as to be readily revoluble thereon.

I shall now proceed to describe my invention more in detail in connection with the embodiment thereof illustrated on the accompanying drawings, it being intended and understood that the invention is illustrated by, but not limited to the embodiment thereof so illustrated and described.

In the drawings only those parts of a rolling machine of the type concerned are shown, partly in section which seem necessary for a clear description of the invention.

Firmly attached to the stationary immovable rod A is the mandrel B having recesses for the accommodation of two rollers C which are of biconical shape and supported in suitable bearings so as to be readily revoluble. The rollers C are preferably mounted and adjusted to conform to the direction of the compression exerted by the two cooperating rolls D. The rollers may be disposed askew as required by or in accordance with the slant rolling process in order to facilitate and promote the feeding movement of the finished tube or tube portion lengthwise. For the purpose of facilitating the centrical introduction of the tube to be rolled, the frontal end of the mandrel is provided with a pin E with a readily revoluble entering or guiding mandrel F thereon.

What I claim is:

A mandrel for use in rolling machines of the character referred to comprising a stationary rod incapable of rotation, a mandrel body firmly connected with the said rod and provided with a plurality of recesses therein, a corresponding plurality of rollers mounted and supported in said recesses, a fixed pin at the front end of the mandrel body and a guiding mandrel mounted on the pin so as to be readily revoluble thereon.

In testimony whereof I affix my signature.

EMIL KELLER