No. 831,184. PATENTED SEPT. 18, 1906.

A. H. PEHRSON.

REFRIGERATING DEVICE FOR THE HOT METAL IN THE PRODUCTION OF RODS AND THE LIKE DIRECTLY FROM MELTED METAL.

APPLICATION FILED SEPT. 8, 1905.

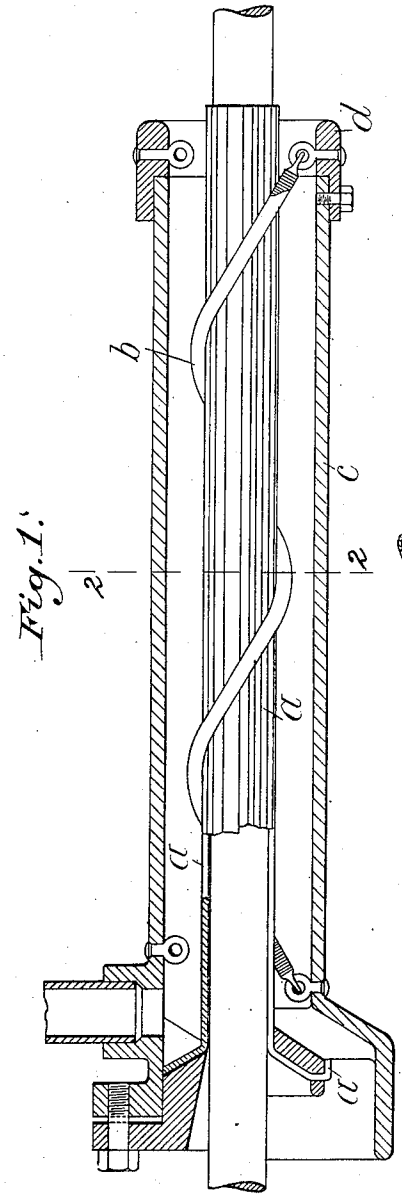


Fig. 1.

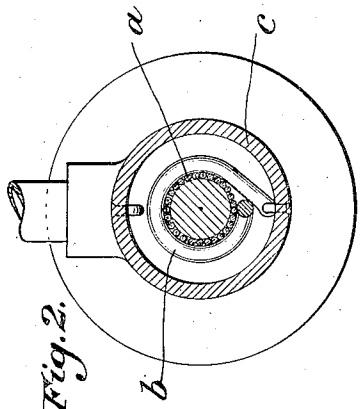


Fig. 2.

Witnesses:
Harry Fleischer,
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UNITED STATES PATENT OFFICE.

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REFRIGERATING DEVICE FOR THE HOT METAL IN THE PRODUCTION OF RODS AND THE LIKE DIRECTLY FROM MELTED METAL.

No. 831,184. Specification of Letters Patent. Patented Sept. 18, 1906.

Application filed September 8, 1905. Serial No. 277,653.

To all whom it may concern:

Be it known that I, ADAM HELMER PEHRSON, engineer, a subject of the King of Sweden, residing at Centralpalatsch, Stockholm, Sweden, have invented new and useful Improvements in Refrigerating Devices for the Hot Metal at the Production of Rods and the Like Directly from Melted Metal, of which the following is a specification.

The present invention has for its object a device for a rapid refrigeration of a metal of high temperature when in motion, especially of metal rods or the like, produced directly from melted metal which is drawn out through a mouthpiece and cooled. In the devices hitherto used for that purpose in which a current of water is used as a refrigerating medium the inconvenience arises that a cover of steam is formed around the hot metal and prevents the further access thereto of the refrigerating water. If, on the other hand, a refrigerating-tube be used, it occurs that the metal rod becomes stuck in the tube, owing to the varying conditions of expansion.

These inconveniences are overcome by the present device, which consists of metal surfaces refrigerated by water or another refrigerating medium and pressed against the metal to be refrigerated by means of springs or the like in such a manner that they do not obstruct the movement of the metal.

In the drawings accompanying and forming a part of this specification, Figure 1 illustrates a longitudinal section, and Fig. 2 is a cross-section at right angles to that shown in Fig. 1.

Similar characters of reference designate like parts throughout both views.

The metal or the metal rod cooled in a mouthpiece or the like (not illustrated on the drawings) passes through a tube composed of strips *a* or the like, which are held together to a tube by means of one or more springs *b* or the like wound spirally around the tube formed by the strips. The strips may be arranged longitudinally or spirally or in any other way to form a yielding tube of the desired cross-section and with the wall closed as much as possible. The said tube is surrounded by another tube *c* for the passage of the refrigerating medium. On the said outer tube *c* the one end of the spring or springs *b* may be fixed, the other end of said spring or springs being connected to a ring *d*, by the turning of which in relation to the tube *c* the tension of the spring or springs *b* may be regulated. The metal passing from the mouthpiece enters into the yielding tube, which is refrigerated by a water-current or the like passing through the tube *c*, whereby the strips *a*, within which the metal rod, owing to the action of the spring or springs *b*, cannot stick, conduct the heat from the metal. The particles of water which accidentally enter through the joints between the strips *a* and come into contact with the metal will of course be transformed into steam; but they will cover so small portions of the metal surface that they cannot practically prevent the refrigeration.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. An improved device for refrigerating a metal of high temperature in motion, consisting of a plurality of refrigerated metal strips which are yieldingly pressed against the metal by a spring spirally wound around the same.

2. An improved device for refrigerating a metal of high temperature in motion, consisting of refrigerated metal strips, forming a tube and held yieldingly together by a spring.

3. In an improved device for refrigerating a metal of high temperature in motion, a tube formed of metal strips, a spring surrounding the said tube and an outer tube for the passage of the refrigerating medium.

4. An improved device for refrigerating metal of high temperature in motion, consisting of strips of metal held together by spirally-wound resilient means.

5. In a device of the class specified, the combination of an outer tube, an inner tube

composed of a plurality of metal strips yieldingly held together and pressed against the metal by spirally-wound resilient means, and means for applying tension to the spirally-wound resilient means.

6. In a device of the class specified, the combination of a cooling-jacket, a fluid-inlet, a tube within said cooling-jacket composed of a plurality of strips of metal yieldingly held together by means of a spring, and means for applying tension to said spring.

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

ADAM HELMER PEHRSON.

Witnesses:

CARL FRIBERG,

EDWARD L. ADAMS.