

UNITED STATES PATENT OFFICE.

EDUARD SCHÜRHOFF, OF WEISSENSEE, NEAR BERLIN, GERMANY.

PROCESS OF MAKING COMPOUND RODS OR WIRES.

1,044,264.

Specification of Letters Patent.

Patented Nov. 12, 1912.

No Drawing.

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To all whom it may concern:

Be it known that I, EDUARD SCHÜRHOFF, engineer, citizen of the German Empire, residing at Weissensee, near Berlin, Germany, have invented certain new and useful Improvements in the Process of Making Compound Rods or Wires, of which the following is a specification.

The present invention is a process for producing rod shaped bodies, particularly wires of rolled stock consisting of a slowly melting and of a comparatively fusible metal. By preference, the tubular jacket or outer cover of such bodies consists of the slowly melting metal and the core or inner part is composed of the more fusible metal.

The process in its preferred embodiment consists in first heating the tubular jacket in a heating furnace approximately to its melting temperature, after which the core is introduced in a cool state into the jacket while the latter is in the heating furnace, and then both jacket and core are allowed to remain in the furnace until the outer zone of the core has reached the melting temperature. The jacket and core are then removed from the furnace and subjected in a known manner to a rolling operation for the purpose of welding the two metal bodies together.

The present process is particularly adapted for the production of wires consisting of an outer layer or jacket of copper and an inner core or filling of aluminium. To this end a copper tube and a corresponding core of aluminium are produced. The copper tube is first placed in a heating furnace which is heated up to 1000° C., and after being brought to this temperature is left in the furnace in which the temperature is uniformly maintained. The aluminium core without previous heating is then forced into the copper tube while in the furnace by pressure. After a short time the outer layer of the aluminium core commences to melt, while the interior of the core has a temperature of about 300° C. By subsequently rolling the two parts, the two metals are welded together. Since during the heating of the core in the copper tube no air can

enter between the jacket and the core, whereby oxidation of the contacting surfaces of the two metal bodies is excluded, this welding is effectively accomplished.

Owing to the fact, that the jacket or outer body of a higher melting point is first of all alone heated in the heating furnace nearly to its melting temperature and that the cold core is introduced into the jacket only at this stage of the process, the advantage is obtained that only the outer layer of the core is brought up to its melting temperature while the inner portion remains relatively cool and thereby is prevented from melting and flowing out. Moreover, as above stated the oxidation of the contacting surfaces between jacket and core is prevented owing to their union being effected within the furnace.

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. In a process of making compound rods or wires having a jacket of slowly melting metal and a core of more fusible metal, the steps which consist in heating a tube of the slowly melting metal to a temperature above the melting point of the core metal, introducing the core in a non-fused state into said tube, maintaining the temperature until fusion of the peripheral portions only of the core occurs, and then welding the core and jacket.

2. In a process of making compound rods or wires having a jacket of copper and a core of aluminum, the steps which consist in heating a tube of copper approximately to its melting point, introducing thereinto a solid aluminum core, maintaining the temperature until fusion of the peripheral portions only of the core occurs, and then welding the core and jacket.

In testimony whereof, I affix my signature in presence of two witnesses.

EDUARD SCHÜRHOFF.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.