Jan. 6, 1925.

1,522,092

A. BACHER

YARN HEATER AND STEAMER

Filed Jan. 22, 1923

Fig. 1

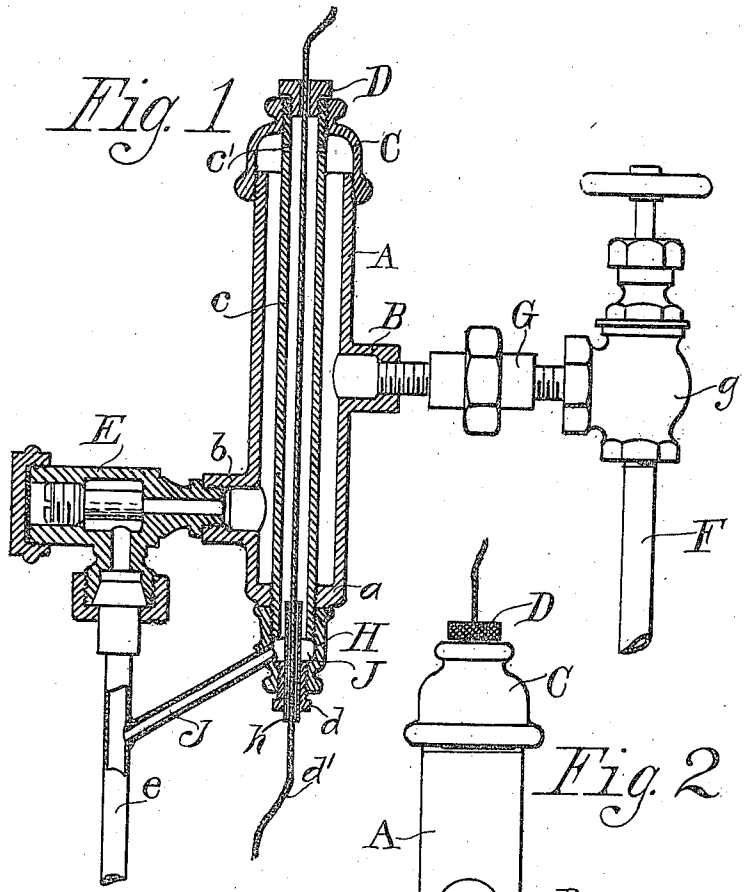
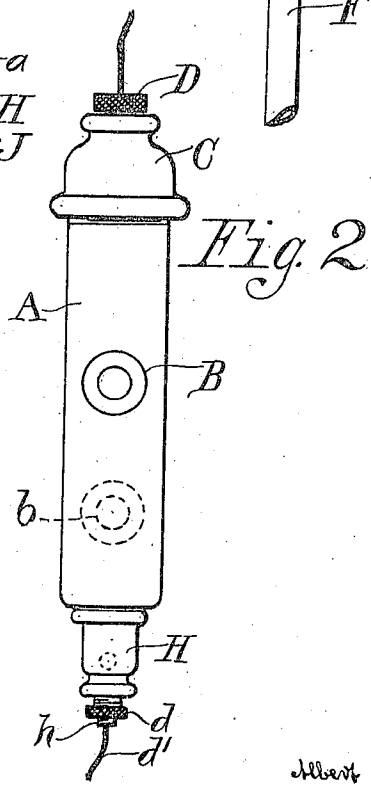


Fig. 2



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UNITED STATES PATENT OFFICE.

ALBERT BACHER, OF NEW YORK, N. Y.

YARN HEATER AND STEAMER.

Application filed January 22, 1923. Serial No. 614,213.

To all whom it may concern:

Be it known that I, ALBERT BACHER, a citizen of the Republic of Germany, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Yarn Heaters and Steamers, of which the following is a specification.

This invention relates to yarn heaters and steamers, and generally to devices for steaming and heating by steam any thread-like material served to knitting or weaving machinery of any character.

The object of this invention is the production of a contrivance for heating the yarns led to knitting machines, and especially spring needle knitting machines, in such a way as to prevent the yarns from becoming damp or wet, and to provide means whereby any water of condensation that may run down the yarn when steamed will be evaporated by the heated tube through which the yarn is passing. This invention in practice is intended to do away with the usual oiling or any other treatment for preventing breaking, such as blowing dry steam upon the yarn before it goes to the needles. The treatment of the yarn with steam in the practice of this invention softens the yarn, and is believed to fully replace in effect and in operation all methods heretofore in common use, and to result in a saving of time. One method in use for softening the yarn is to place it for a certain time in a vapor of oil or the like. By the employment of this invention the yarn can be used right away without losing any time in preparing it for use. This invention is also obviously adapted for using any mixture of steam and other desired and suitable substances, and is not limited to the use of steam only.

A preferred arrangement of the parts and the construction thereof are illustrated in the accompanying drawings, of which Fig. 1 represents a view chiefly in vertical section, showing all parts assembled. Fig. 2 is an external side view of the casing with the steam and draining connections omitted.

Throughout the drawings and description, the same letter is used to refer to the same part.

Considering the drawings, the casing A has its bottom *a* formed integrally and closed. About midway between the bottom and top of the casing is a steam connection B, and a drain connection *b* is arranged in communication with the lower portion of the casing. The top of the casing is closed by a screw cap C.

Within the casing and passing through the bottom *a* and the screw cap C steam tight is the heater tube *c*, and near the upper end thereof within the casing will be noted the steam ports *c'*. Closing the exposed ends of the heater tube are the guides or stoppers D and *d*, through which the yarn *d'* passes on its way to the knitting machine.

A drain cock E is screwed into the connection *b*, and any water of condensation may be permitted to escape by way of the drain pipe *e*. It will be noted in Fig. 1 that the outer end of the valve in the drain connection E is covered by a removable cap. The valve is thus protected from accidental displacement, which is necessary as the knitting machines in practice are usually provided with a number of sets of devices such as this invention, all connected with the same steam service and a common drain outlet, and it is not desired that steam shall pass through one more freely than through another set.

The casing A and all parts are mainly supported by the steam pipe F, joined by means of the pipe coupling G with the steam connection B, and including the valve *g*.

As best illustrated in Fig. 1 of the drawings, the screw cap H engages the lower end of the heater tube *c*. In this Fig. 1 is also shown the lower yarn guide comprising the tube *h* passing through the screw plug *d*. It will also be noted that the cap H is constructed to afford a drip chamber J at the lower end of the heater tube *c*, and that this chamber H is in communication by means of the inclined drain tube *j*, with the vertical drain tube *e*.

In the operation of this invention, the yarn passes through the heater tube as illustrated, and dry steam is intended to be used. In order to steam the yarn without wetting it, the dry steam is admitted into the heater tube by way of the ports *c'*. If there is any condensation it runs down the yarn or the interior of the heater tube and is evaporated by the hot tube, or the water of condensation collects in the drip chamber J and flows therefrom by way of the inclined tube *j*. The casing A is drained by the drain valve E in the usual manner.

While the preferred construction and ar-

rangement of parts are illustrated and described in this application, it is thought to be clear that many structural modifications may be devised by those familiar with the knitting trade, without departing from the purview of this invention.

Having now described this invention and explained the manner of using it, what I claim is:—

In a device of the character described, the combination with a casing, of a steam connection located midway between the ends of the casing, a drain cock connected with the lower portion of the casing, the said casing having its lower end closed and its upper end provided with a removable screw cap, a heater tube passing steam tight through the said cap and through the bottom of the casing, and yarn guides closing the exposed end of the said tube.

In testimony whereof I affix my signature.

ALBERT BACHER.