

(No Model.)

E. ADT.
BOBBIN.

No. 414,474.

Patented Nov. 5, 1889.

Fig. 1.

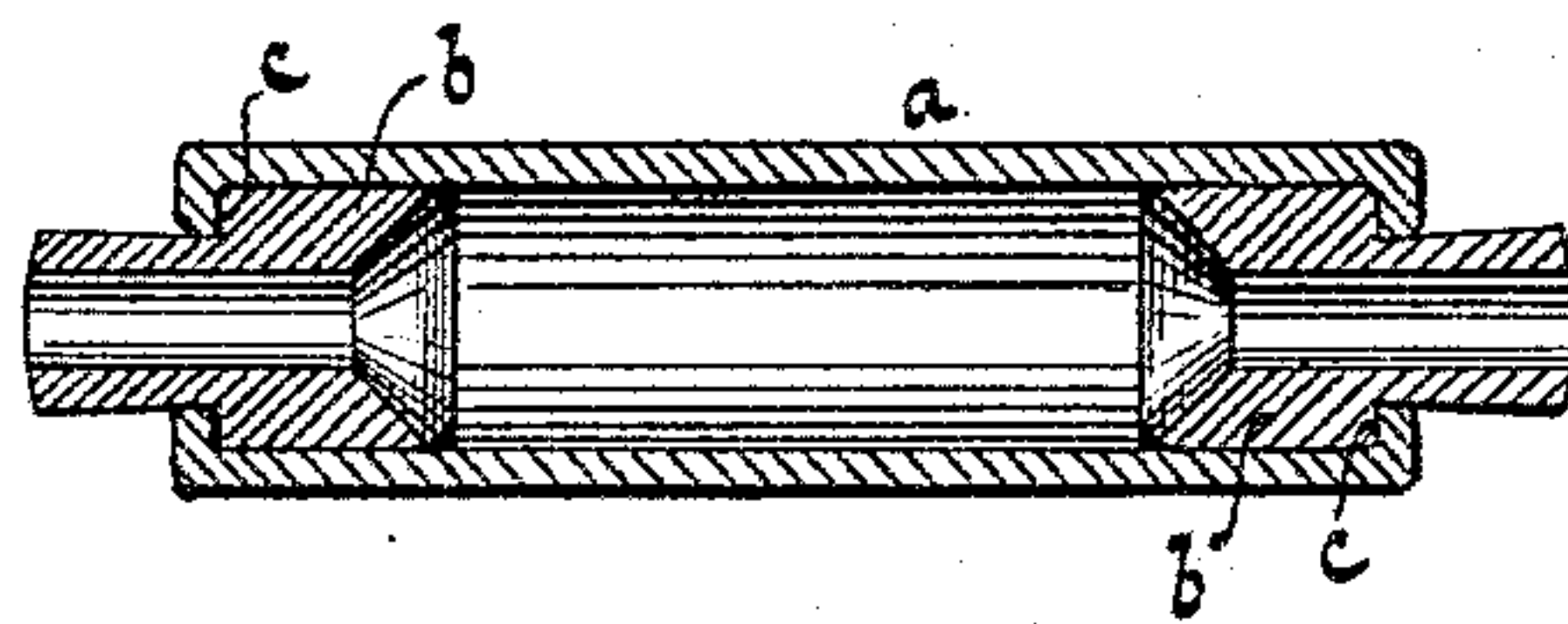
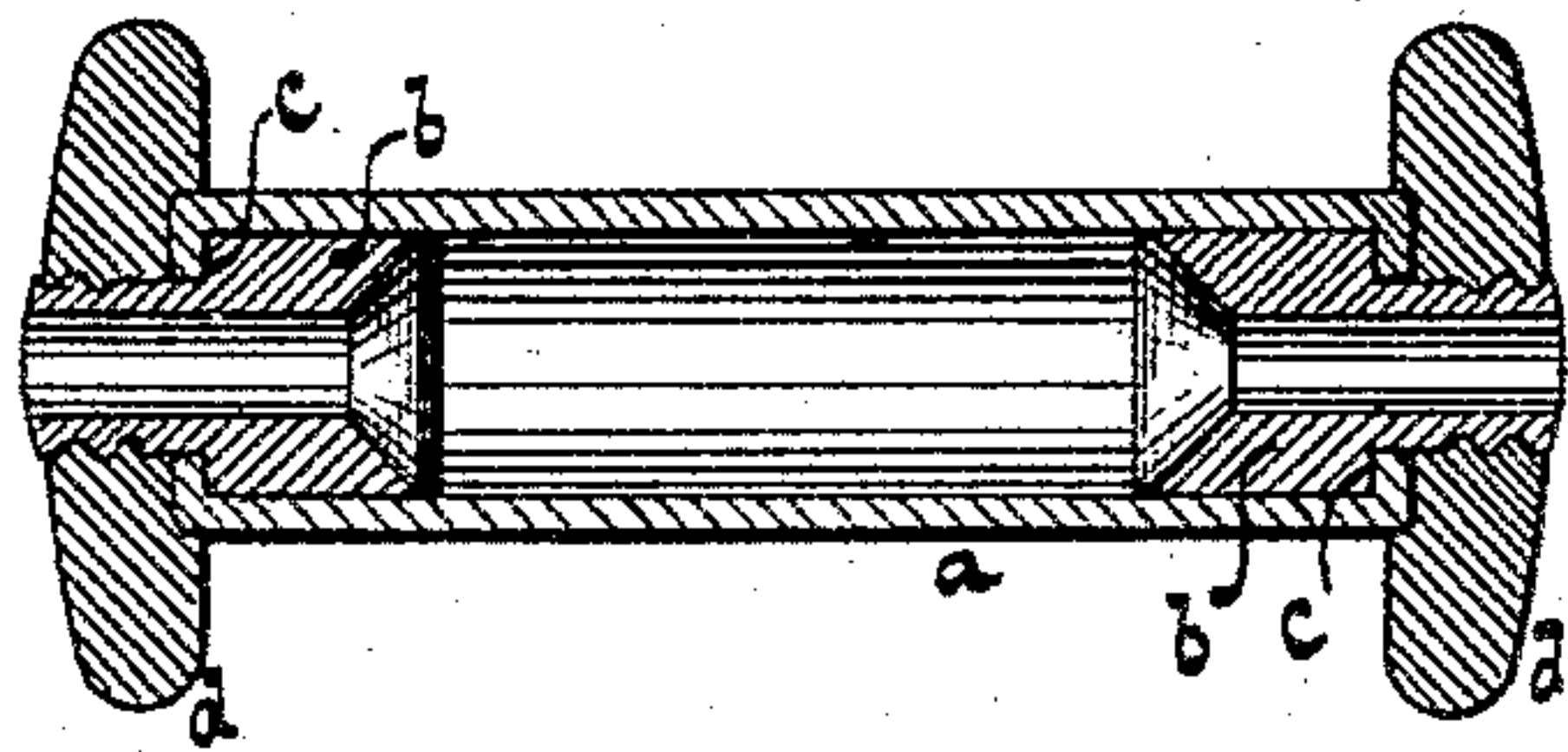


Fig. 2.



WITNESSES:

William Miller
Edward Wolff

INVENTOR:

Eduard Adt

BY

Van Santvoord & Huff

ATTORNEYS

UNITED STATES PATENT OFFICE.

EDUARD ADT, OF ENSHEIM, BAVARIA, GERMANY, ASSIGNOR TO THE MESSRS.
ADT BROTHERS, OF SAME PLACE.

BOBBIN.

SPECIFICATION forming part of Letters Patent No. 414,474, dated November 5, 1889.

Application filed June 6, 1889. Serial No. 313,405. (No model.)

To all whom it may concern:

Be it known that I, EDUARD ADT, a subject of the King of Bavaria, residing at Ensheim, in the Kingdom of Bavaria, Germany, have invented new and useful Improvements in Bobbins, of which the following is a specification.

Bobbins made of compressed paper offer great advantages as compared with wooden ones.

Although compressed-paper bobbins do not often need repairing, yet it has been found necessary to construct them in such a manner that it is possible to easily and rapidly replace a head when broken. A construction similar to that of the ordinary wooden bobbin cannot be employed, as paper and wood cannot be connected together by means of ordinary glue, so as to afford the required strength. It is therefore necessary to fix the paper by other means to the wooden part.

According to the present invention the connection is effected as set forth in the following specification and claim, and illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of a bobbin partly completed. Fig. 2 is a longitudinal section of a completed bobbin.

The stem or shaft of the bobbin is composed of the paper tube *a* and the wooden bushes *b*. The tube *a* is made from paper or thin pasteboard, which is suitably cut to the required length and rolled. The bushes *b* are made from wood by means of any suitable machine. The bushes, coated with an adhesive substance, are first forced into the tubes by means of any suitable device, so that they occupy

the place corresponding to the required length of the bobbin. The ends of the tubes *a* are allowed to project slightly beyond the shoulders *c* of the bushes, and these projecting ends are lapped or turned over the shoulders *c*, so that the bushes *b* are firmly connected with the tubes *a*. The projecting ends can be turned over by any suitable mechanism—as, for example, by mounting the tubes *a* and bushes *b* on a machine and causing suitable rotating rubbers to advance from both sides toward the projecting ends of the tube and turn them over upon the shoulders *c*. The heads or disks *d* can be connected to the bushes *b* by any suitable means. A convenient way of securing the heads is to provide the heads with screw-threads and screw the heads onto the bushes. The bushes can have corresponding screw-threads; or, if the wood of the bushes is soft enough, the screw-thread on the head will cut or form a corresponding screw-thread on the bush when the head is screwed into place.

What I claim as new, and desire to secure by Letters Patent, is—

A spool or bobbin consisting of a paper tube having its ends lapped over wooden bushings in said tube, and heads or disks secured to said bushings, substantially as described.

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

EDUARD ADT.

Witnesses:

MAX FOUQUET,
B. ROI.