No. 778,662. PATENTED DEC. 27, 1904.

E. M. HALL.

PLUG.

APPLICATION FILED APR. 26, 1904.

Fig 1

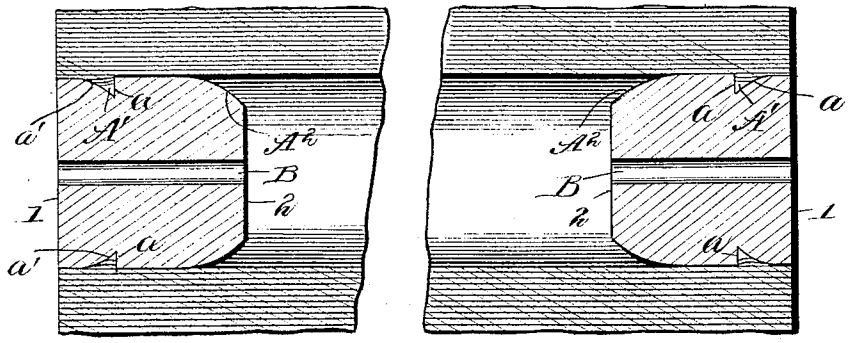
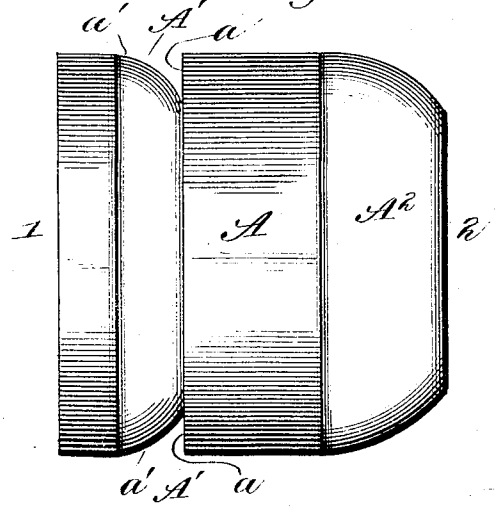


Fig. 2.

Fig. 3.



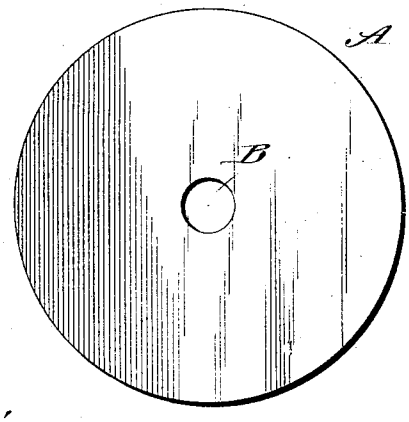
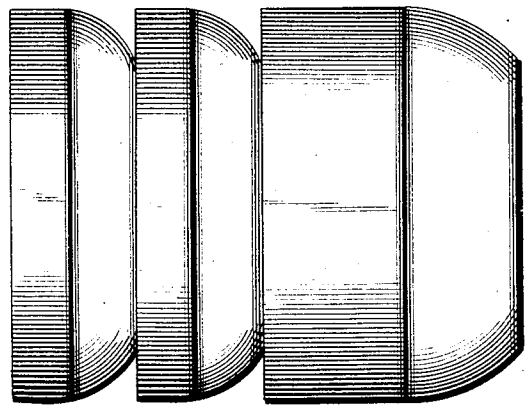


Fig. 4.



WITNESSES:

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No. 778,662. Patented December 27, 1904.

UNITED STATES PATENT OFFICE.

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PLUG.

SPECIFICATION forming part of Letters Patent No. 778,662, dated December 27, 1904.

Application filed April 26, 1904. Serial No. 204,988.

To all whom it may concern:

Be it known that I, EDWARD MARYON HALL, a citizen of the United States, and a resident of Raymondville, in the county of St. Lawrence and State of New York, have invented certain new and useful Improvements in Plugs, of which the following is a specification.

My invention is an improvement in plugs for use in rolls of paper, and has for its object to provide a novel construction whereby to prevent the plug from slipping out of the roll during storage and shipment of such paper-rolls; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a sectional view showing two of my improved plugs as in use. Fig. 2 is a side view of the plug. Fig. 3 is an end view of same, and Fig. 4 shows a somewhat different construction from that shown in Figs. 1 and 2.

Plugs for paper-rolls are ordinarily smooth on their outer sides and offer no resistance to the slipping of the plug out of the roll as the roll is being conveyed to the consumer, as during such transit the plugs shrink and drop out or otherwise slip out of the paper-roll, and the latter will close and cannot be reopened, and much loss is occasioned thereby.

By my invention I seek to so construct the plug that it will be gripped by the paper-roll and cannot drop out of place. To this end I form the plug A, which may be of wood or other suitable material, with a circumferentially-extending groove A′, having a square wall *a*, forming a shoulder facing the outer end 1 of the plug, the other wall, *a*′, of the plug being preferably sloped, as shown, to facilitate the introduction of the plug into the paper-roll. This sloped wall *a*′ of the groove A′ is similar to the sloped surface A^2 at the outer or point end 2 of the plug, which end is reduced so the plug may be readily inserted in the paper-roll. The groove A′ is preferably annular, extending entirely around the plug, and may be quickly and accurately formed by turning in the usual way without increasing to any considerable extent the cost of the plug.

If desired, V-grooves may be employed in series of two or more, as illustrated in Fig. 4 of the drawings.

The paper surrounding the plugs operates by its pressure to press or crimp portions of the paper into the grooves A′ and prevent the plugs from dropping out.

The invention will be found especially useful on bag-paper, which is not usually wound on a core, but is wound on a shaft, the shaft being pulled out and plugs inserted in the ends of the roll, the plugs keeping the hole in the roll open so the man who runs the bag-machine can insert his shaft to wind the paper off the roll.

The plugs are provided with holes B to receive a hook for pulling the plugs out.

By my invention it will be noticed I provide, as shown in Fig. 1, a wound roll of paper provided in its ends with plugs, which are provided with annular grooves and on opposite sides of such grooves with smooth unobstructed cylindrical portions, which extend in a direction parallel to the axis of the wound paper-roll and support the roll, as shown in the said Fig. 1.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A wound roll of paper provided in its ends with plugs having between their ends annular grooves one of whose walls form shoulders facing the outer end of the plug and whose other walls are sloped, and provided on opposite sides of said groove with cylindrical surfaces fitting in the bore of the roll, substantially as and for the purposes set forth.

2. A plug for use in paper-rolls provided with an annular groove one of whose walls forms a shoulder facing the outer end of the plug and whose other wall is sloped, and provided on opposite sides of said groove with cylindrical surfaces fitting within the bore of the roll, substantially as set forth.

3. A plug for use in paper-rolls provided with an annular groove one of whose walls forms a shoulder facing the outer end of the plug and provided adjacent to said groove with a cylindrical surface to fit within the bore of the roll, substantially as set forth.

EDWARD MARYON HALL.

Witnesses:
FLORENCE H. FINNEGAN.
HARRY C. CAMPBELL.