

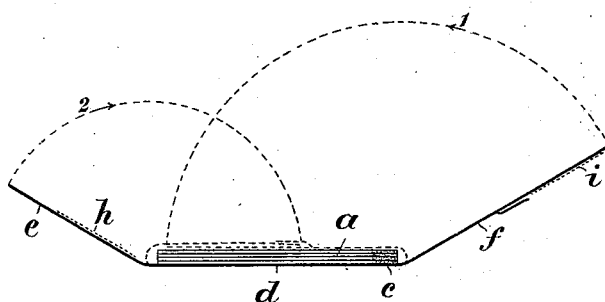
(No Model.)

P. LORENZ & R. WUPPERMANN.  
MATCH.

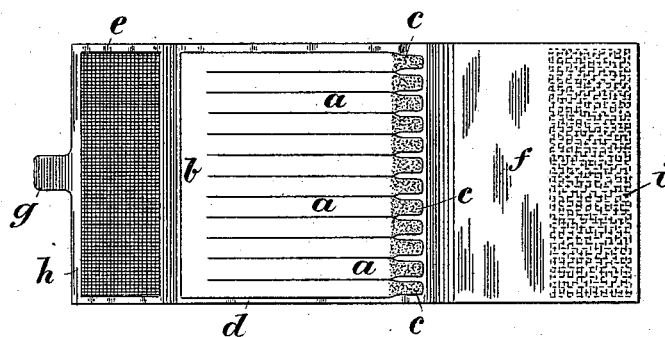
No. 525,150.

Patented Aug. 28, 1894.

*Fig. 1.*



*Fig. 2.*



*Attest:*  
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Paul Lorenz & Reinhold Wuppermann  
by  
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Attys

# UNITED STATES PATENT OFFICE.

PAUL LORENZ, OF BERLIN, AND REINHARD WUPPERMANN, OF BARMEN,  
GERMANY.

## MATCH.

SPECIFICATION forming part of Letters Patent No. 525,150, dated August 28, 1894.

Application filed February 21, 1893. Serial No. 463,158. (No model.) Patented in Belgium April 15, 1892, No. 99,046, and in France July 12, 1892, No. 220,934.

*To all whom it may concern:*

Be it known that we, PAUL LORENZ, residing at Berlin, and REINHARD WUPPERMANN, residing at Barmen, Kingdom of Prussia, German Empire, subjects of the King of Prussia, have invented certain new and useful Improvements in and Relating to Matches, (for which we have obtained patents in Belgium, dated April 15, 1892, No. 99,046, and in France, dated July 12, 1892, No. 220,934,) of which the following is a specification.

The object of the present invention is to provide a match in which some disadvantages of the present matches—viz., flying off of the head on ignition, glowing after the flame has been extinguished and dropping of the glowing heads—may be avoided.

The invention further consists in a device for more conveniently packing matches than heretofore.

The matches forming the present invention are formed of a peculiar kind of paste board and are cut or stamped from one piece, after the manner of a fringe, being narrowed at the point, so as to prevent the heads rubbing against each other. Such leaf contains preferably about ten to twelve matches and several of these leaves are united to form a block and attached in a wrapper of strong paper, the ends of which fold over each other and are closed in the form of an envelope. The inside of the overlapping end of the wrapper and the outside of that part covered by the said overlap, are provided with igniting surfaces, so that to ignite a match the head is placed between the two igniting surfaces, the latter lightly pressed together and the match drawn out quickly when the same will be ignited.

In order to make this specification more easily intelligible reference is had to the accompanying drawings in which similar letters denote similar parts throughout both views.

Figure 1 is a side elevation showing the wrapper open. Fig. 2 is a plan of Fig. 1.

The matches *a* are cut on sheets of card board or paste board in the form of a fringe, the head ends being narrowed down at *c* to prevent the same from rubbing together, the stems being integral at *b*. Several such sheets

are fixed together at *b* to form a block and this block is then stuck on to the part *d* of the wrapper. The latter has two flaps *e* and *f*, adapted to fold or close one over the other in the manner shown by dotted lines and arrows 1—2 in Fig. 1. The overlap *e* has a projecting piece *g* which is adapted to slip into a slot in the flap *f*. The said flap *f* is provided with an igniting surface *i* onto which the igniting surface *h* of the cover *e* closes when the wrapper is folded up.

In order to light a match it is first torn off the block, the head is then placed between the prepared surfaces, the latter pressed lightly together and the match quickly withdrawn.

Matches of this kind are manufactured by cutting strips of the paste board in the manner hereinbefore described so that the tail ends of the matches are integral; the heads which are made narrower are then placed in a frame and paraffined and impregnated in the usual manner. After each operation the matches are allowed to dry and dipped in the igniting mass which may consist of an aqueous solution of a suitable chlorate, a suitable binding agent such as gum, being added. Although this process is substantially the same as hitherto employed, it possesses the great advantage that during the whole treatment the matches remain in the same frame.

The mass for the igniting surfaces is the same as that used for safety matches which consists mainly of amorphous phosphorus.

We claim as our invention—

1. As a new article of manufacture, a book-like wrapper consisting of a body portion *d* provided at one edge with folding flap *f* adapted to be folded down upon the body portion, and at the opposite edge with flap *e* adapted to be folded down upon flap *f*, a coating *i* of igniting composition upon the upper side of the flap *f* and a similar coating *h* on the under side of the flap *e*, and a match card or cards slit longitudinally to provide matches *a* and strip *b* for connection to said body portion *d*, substantially as described.

2. As a new article of manufacture, a book-like wrapper consisting of a body portion *d* provided at one edge with folding flap *f* adapted to be folded down upon the body por-

tion, and at the opposite edge with flap *e* adapted to be folded down upon flap *f*, a tongue *g* on flap *e* and a corresponding slot in flap *f*, a coating *i* of igniting composition upon the upper side of the flap *f*, and a similar coating *h* on the underside of flap *e*, and a match card or cards slit longitudinally to provide matches *a* and strip *b* for connection to said body portion, substantially as described.

In testimony whereof we have hereunto set to our hands in the presence of two subscribing witnesses.

PAUL LORENZ.  
REINHARD WUPPERMANN.

Witnesses:

ERASMUS PAUL,  
EMIL SAVOR.