(No Model.)

L. A. MAYALL.

DIE FOR CREASING PAPER, STRAW-BOARD, &c.

No. 416,115. Patented Nov. 26, 1889.

Fig. 1.

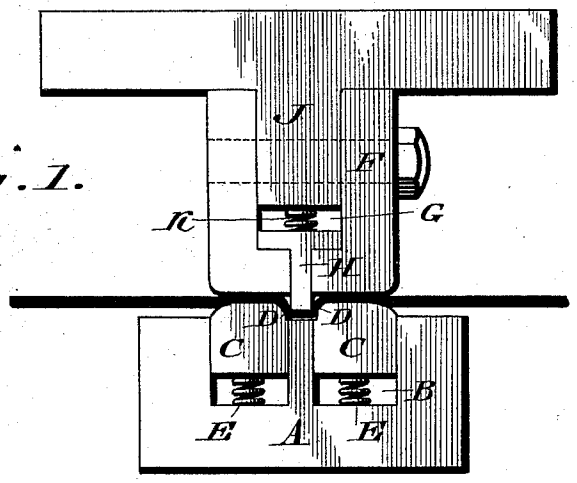


Fig. 2.

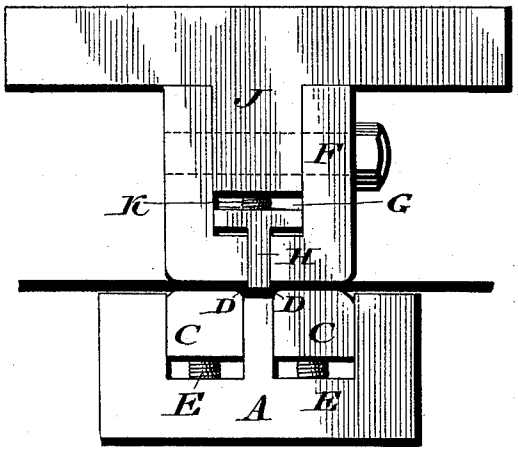


Fig. 3.

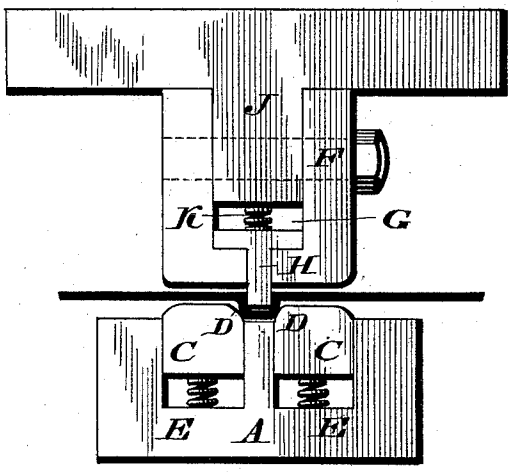
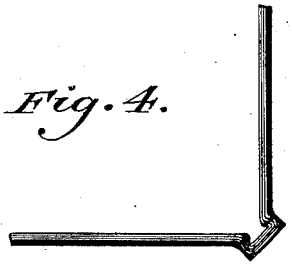


Fig. 4.



Witnesses
P. F. Eagle.
A. P. Jennings.

Inventor
Lewis A. Mayall.
By his Attorneys
Diedenheim & Kuhner

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

LEWIS A. MAYALL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO BROWN & BAILEY, OF SAME PLACE.

DIE FOR CREASING PAPER, STRAW-BOARD, &c.

SPECIFICATION forming part of Letters Patent No. 416,115, dated November 26, 1889.

Application filed March 18, 1889. Serial No. 303,679. (No model.)

To all whom it may concern:

Be it known that LEWIS A. MAYALL, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Dies for Creasing Paper, Straw-Board, &c., which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in dies for creasing paper, straw-board, &c., the object being to provide a dieing arrangement which, while making a smooth uniform crease, will at the same time loosen the fiber and open it on each side of said crease, whereby the material at those points shall be rendered elastic and pliable, so as to bend freely without cracking or breaking the surface of the paper or straw-board.

To attain the desired object, the invention consists in a bed carrying formers or dies capable of a yielding action and a follower having a tongue for pressing or forcing the paper or material between the formers or dies, said tongue also being capable of a yielding action, whereby, when the tongue and dies contact, the tongue forces the material to be creased between the dies, and by their combined peculiar yielding action the material at the sides of the tongue is forced together edgewise and the fiber is loosened or opened.

Figures 1, 2, and 3 represent end views of a die embodying my invention, the parts being in different positions in the respective figures. Fig. 4 represents a side view of the material as operated on.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A designates the bed of the die provided with recesses B, in which latter are placed the formers C, having working-faces D. Between the formers and the bed are springs E, for forcing said formers in upward direction.

F designates the follower provided with a recess G, in which is placed the tongue H, adapted to force the paper, straw-board, &c., between the faces D of the formers. Between the head of the follower and the tongue H are springs K, which force said tongue downward.

The operation is as follows: The material is placed on the bed, and the follower is depressed, and the tongue H is forced downwardly against the material. When the tongue H has forced the material to the bottom of the groove which is made by forming-faces D D, the faces of the follower F and of D D are brought into contact, whereby the material is firmly clamped on each side of the tongue H, as well as underneath the face of said tongue, at the bottom of the groove. As the dies and the followers are forced still closer or more firmly together, the springs K and E E allow the tongue H and the forming-dies D D to give back. The effect of this is to crowd together edgewise the material at the sides of the tongue H and loosen and open the fiber in it at those points, whereby two butts of elastic or pliable hinges are formed in the material, while the fiber immediately underneath the tongue H remains firm and unchanged.

The great advantage of the present construction is the ability to open and loosen the material at the points named, while forming a uniform and unbroken-surfaced crease, and the resultant hinge may be bent without breaking.

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

1. A die consisting of a bed having two yielding formers, and a follower having a yielding tongue intermediate of the working-faces of said formers, substantially as described.

2. A die consisting of a bed with formers in recesses thereof, a follower having a recess with a tongue therein, and provided with a spring between said tongue and the head of the follower, said parts combined, substantially as described.

3. A die consisting of a bed with yielding formers moving in recesses in said bed, and a follower with tongue adapted to operate between said formers, said parts being combined substantially as described.

LEWIS A. MAYALL.

Witnesses:
JOHN A. WIEDERSHEIM,
A. P. JENNINGS.