

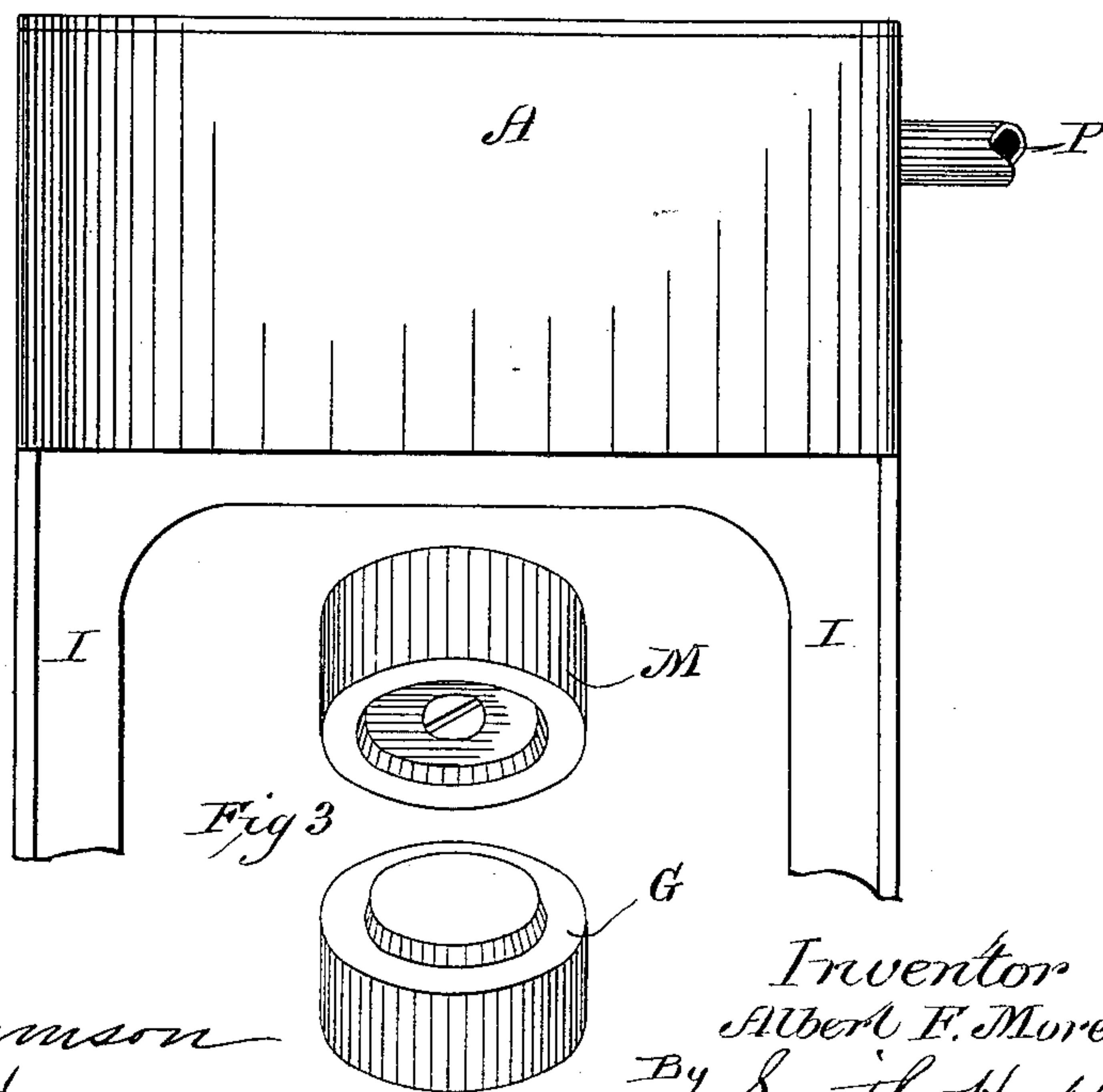
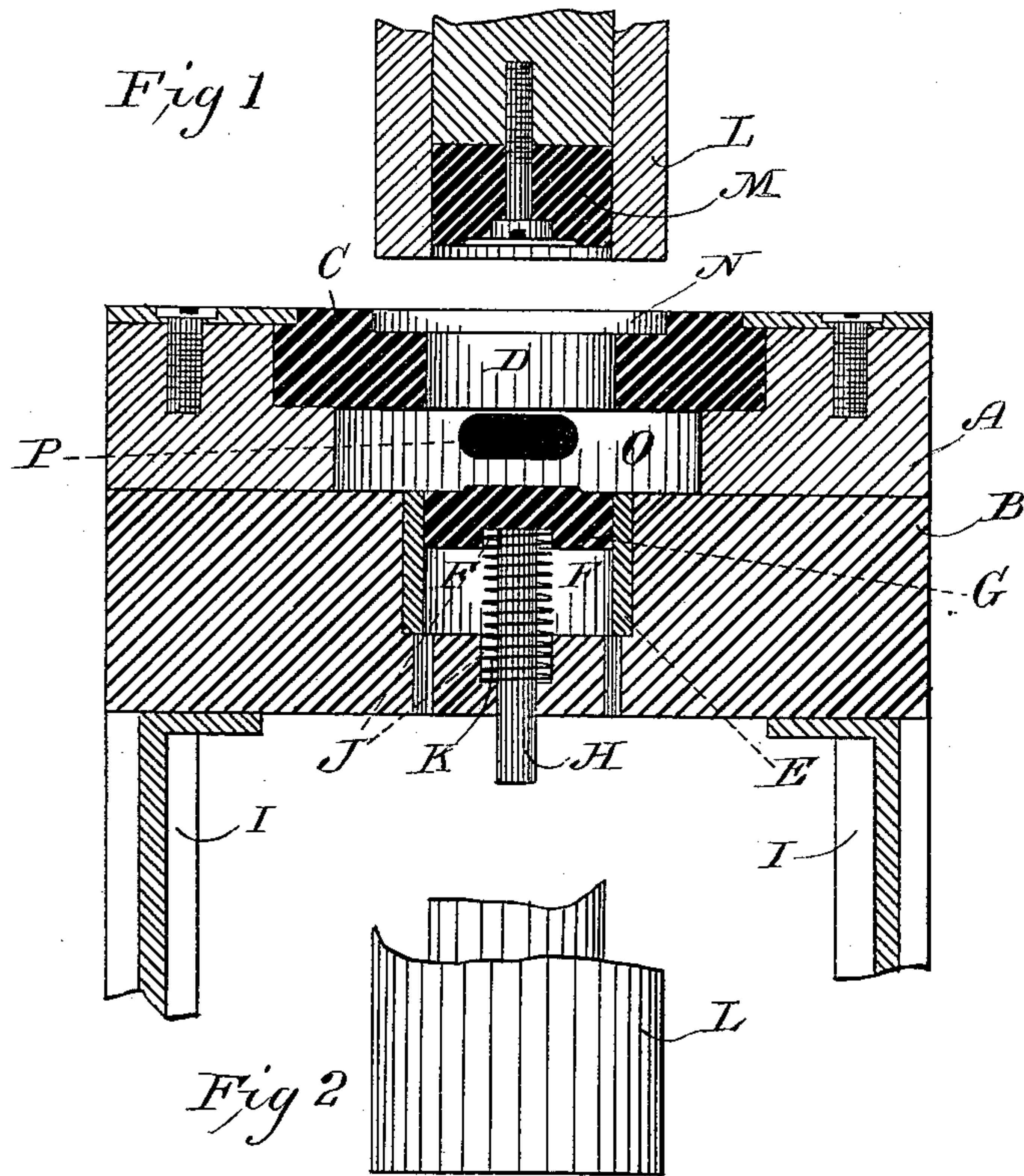
(No Model.)

A. F. MOREE.

MACHINE FOR MANUFACTURING BOXES.

No. 336,340.

Patented Feb. 16, 1886.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ALBERT F. MOREE, OF MILFORD, CONNECTICUT.

## MACHINE FOR MANUFACTURING BOXES.

SPECIFICATION forming part of Letters Patent No. 336,340, dated February 16, 1886.

Application filed October 4, 1884. Serial No. 144,687. (No model.) Patented in Canada August 31, 1885, No. 22,315.

*To all whom it may concern:*

Be it known that I, ALBERT F. MOREE, a citizen of the United States, residing at Milford, in the county of New Haven and State of Connecticut, have invented certain new and useful improvements in Machines for Manufacturing Boxes from Straw-Board, Pasteboard, and the like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain novel and useful improvements in machines for manufacturing boxes from paste or straw board, and has for its object to form the edge turned up at the side of the box at a perfect right-angle to the body of the box, and to so strip the boxes from the upper die that the shape will be preserved, and, furthermore, to greatly increase the production by a single machine; and with these ends in view my invention consists in the details of construction and combination of elements hereinafter fully and in detail described, and then specifically designated by the claims.

In order that those skilled in the art to which my invention appertains may understand more fully how to make and use my improvement, I will proceed to describe the same in detail, referring by letter to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a central vertical section of my machine; Fig. 2, a side elevation, and Fig. 3 a detail perspective, of the faces of the dies.

Similar letters denote like parts in the several figures.

A is a platform, supported on a standard, B. Secured within this platform in any ordinary manner is a hardened plate, C, having central vertical opening, D. Within the standard is a hardened ring, E, having a central opening, F, of the same diameter and nature in cross-section as the opening D. Within this opening F closely fits a die, G, adapted to have a vertical play therein. This die is attached to the upper extremity of a spindle, H, which extends upward through the standard. The under surface of the die and the die-seat I are countersunk or recessed, as shown at J, to accommodate a coil-spring, K, placed around

said spindle and confined between the die and seat, for the purpose of giving a spring action to said die within the ring E.

L is a punch, having interiorly arranged therein a die, M, adapted to be reciprocated vertically within said punch. N is a seat for said punch, formed in the upper face of the plate, C.

The die M and punch are reciprocated vertically independent of each other by means of any ordinary double-acting eccentric or follower cams common in presses. Immediately below the plate and through the wall of an internal recess, O, in the platform is an opening, P, which communicates directly with an air-blast.

The operation of my improvement is as follows: The straw or paste board is fed in between the punch and its seat. The punch then descends and cuts the blank, forcing it within the seat. The die M is now thrown down, thereby cupping the said blank and forcing it down through the opening D against the die G. The latter yields, owing to its spring movement, and the cup or box formed is forced within the ring E, the die G abutting against the seat I. The die M now returns to its normal position, and the cup or box is stripped from said die by the lower edge of the opening D and carried by the air-blast out into any desired receptacle. Very often the box will stick within the ring E, and in this event the die G will as it returns upward, by virtue of its spring action, throw the box without the ring into the blast. The upper die is countersunk, as shown, and the lower die is raised at its central portion, so that a central depression will be formed in the body of the cup or box for the purpose of giving it additional strength. In my improved method no heat whatever is introduced as an agent in preserving the angular shape of the box; but I accomplish this most desirable result by forcing the box within the ring against the lower die, thereby causing the angle in which the sides and top or bottom of the box meet to be perfectly sharp. On the return of the upper die to its normal position the box is always loosened from said die, so that a very slight concussion against the edge of the opening D is sufficient to detach it and allow it to be carried by the air-blast. By using a



punch and dies of different shapes, and by correspondingly changing the shapes of the openings through which said punch and dies operate, I am enabled to make any kind of box desired.

By the use of a resilient lower die I am enabled to make boxes without forcing them entirely through the ring, as is most frequently done, and also more boxes can be made by a single machine than heretofore, for the reason that the comparatively short play of the dies and the absence of all auxiliary stripping devices enables the machine to be speeded very high.

I do not wish to confine myself to the exact location of the air-blast shown and described, as said blast may be introduced immediately above the platform, in which case I would arrange the lower or spring die within the opening in the plate in such manner that the latter would form a seat for said die and enable the spring to be properly arranged, as in the manner shown in the drawings, and hereinbefore described. The stripping would in this case be effected by the concussion of the edge of the box against the blanking-punch, and the air-blast would carry off the completed box.

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

1. In a machine for making boxes from paste or straw board, the combination, with a cutting-punch and shaping-die arranged in-

terior thereof, of a plate having therein a seat for the punch, and an opening through which the said die passes, and a spring-actuated lower die adapted to reciprocate within a corresponding opening and seat within the standard, substantially as set forth.

2. In a machine for making boxes from straw or paste board, the combination, with the forming and cupping dies, of means, substantially as described, by which an air-blast is supplied to discharge the box.

3. The combination of the platform having therein at the lower central portion thereof an internal recess, O, communicating directly with an air-blast, plate C, secured to the platform immediately over said recess, and having seat N and central opening, D, punch L, having interior thereof the cupping-die M, said punch and die adapted to have a separate and independent vertical reciprocation, ring E, seated within the standard B, and containing the lower die, G, spindle H, secured at its upper end to said die, and spring K, arranged around said spindle and confined between recesses in said die and standard, substantially as shown, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT F. MOREE.

Witnesses:

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W. J. HAVILAND.