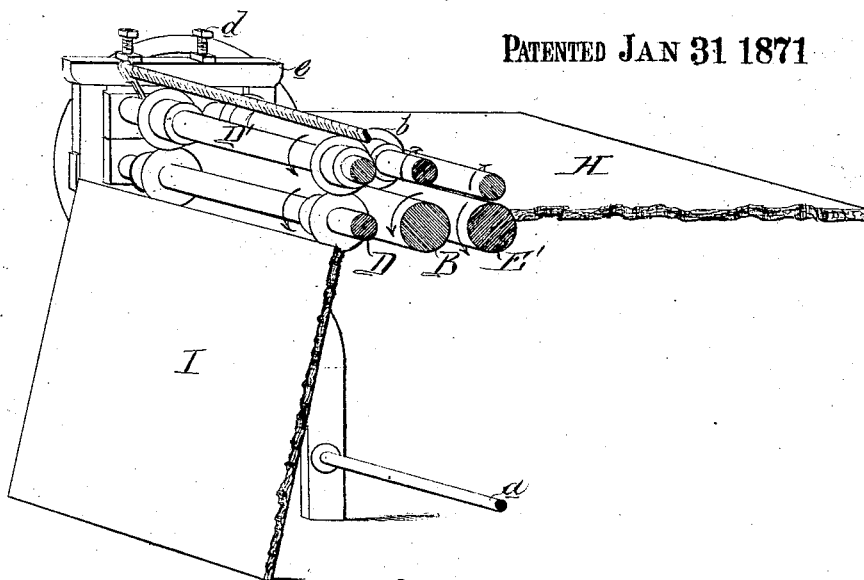


Geo. Bates Drawing No. 1  
*Impd Cutting and Scoring Machine for Paper Boxes.*

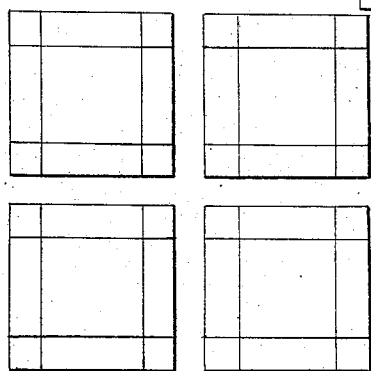
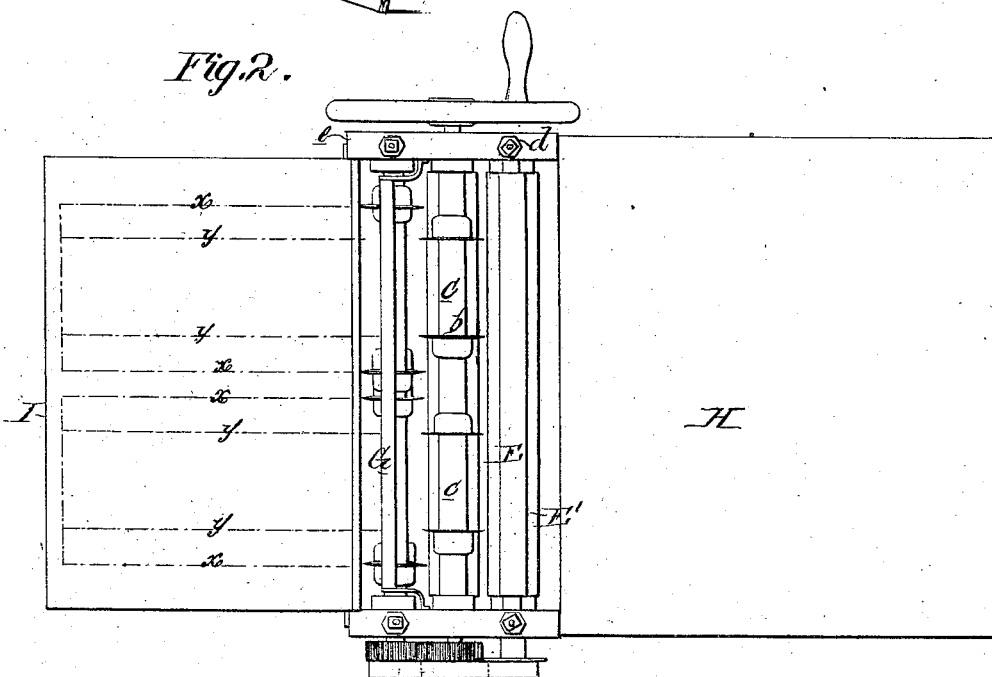
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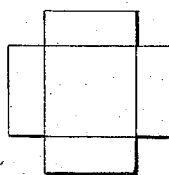
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



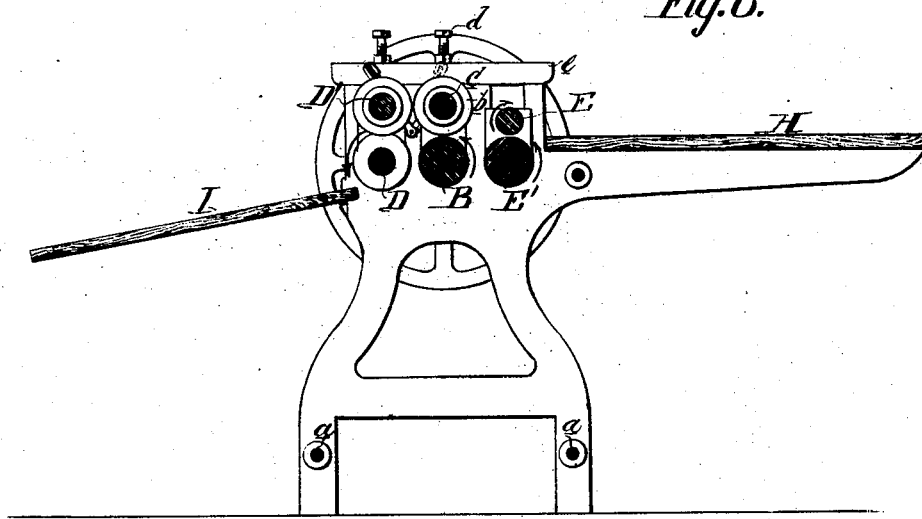
*Fig. 5.*

Witnesses { *Jos. B. Harding* *Geo. Bates*  
*John Parker* *By his Atty*  
*Johnson & Son*

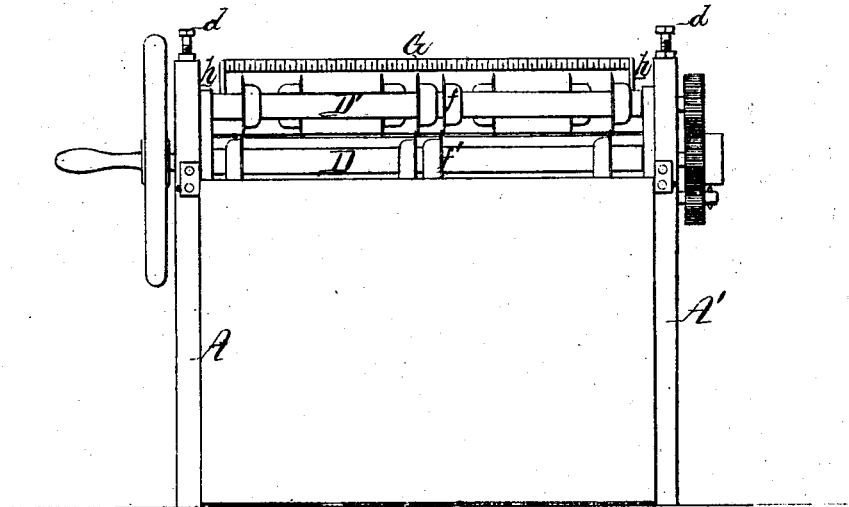
Drawing No. 2

*Geo. Bates*  
*Imp'd Cutting and Scoring Machine for Paper Boxes.*

*Fig. 6.*



*Fig. 7.*



Witnesses { *Jno. B. Harding*  
*John Parker*

*Geo Bates*  
*By Mrs. A. W. Bates*  
*Glowson & Son*

# United States Patent Office.

GEORGE BATES, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 111,423, dated January 31, 1871.

## IMPROVEMENT IN PAPER-CUTTING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

I, GEORGE BATES, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improved Cutting and Scoring-Machine for Paper-Boxes, of which the following is a specification.

### *Nature and Object of the Invention.*

My invention relates to machines for cutting and scoring pasteboards or straw-boards preparatory to converting the same into paper-boxes; and

My invention consists of devices too fully described hereafter to need preliminary explanation, whereby the cutting and scoring may be readily effected, and whereby the cutting and scoring-disks may be readily and properly adjusted.

### *Description of the Accompanying Drawing.*

Figure 1, sheet No. 1, is a sectional perspective view of my improved cutting and scoring-machine for paper-boxes;

Figure 2, a plan view of the same;

Figures 3, 4, and 5, diagrams illustrating the operation of the machine;

Figure 6, sheet No. 2, a transverse sectional elevation; and

Figure 7, a view of the rear end of the machine.

### *General Description.*

A and A' are the opposite side-frames of the machine, and are connected together by suitable cross-bars, a a.

In bearings in these frames turns the driving-shaft or roller B, above which is a shaft, C, furnished with scoring-disks b, the edges of which are nearly in contact with the said roller, the upper bearings of the latter being arranged to fit snugly, but slide freely, in vertical slots in the opposite side frames, and being acted on by set-screws d, in the caps e e of the said frames.

D and D' are two shafts, turning in suitable bearings in the opposite side frames of the machine, the bearings of the lower shaft being fixed and those of the upper shaft being acted on by set-screws in the caps e e of the frames.

These shafts are provided with cutting-disks, the shaft D' with disks f, and the shaft D with disks f'.

Each disk may be provided with a feather adapted to a groove in the shaft, and may be secured by a set-screw after adjustment, the said screw passing through the hub of the disk and bearing with its end against the shaft.

The driving-roller B, shafts C, D, and D', as well as

the feed-rollers E and E', are so connected by suitable gearing or straps that on turning the said driving-roller in the direction of its arrows, figs. 1 and 6, the other shafts and feed-rollers will revolve in the direction of their arrows.

A bar, G, is so hung, by arms h h, to the opposite side frames of the machine that its lower edge can be brought into contact with the edges of the cutting-disks f of the shaft D', or with the edges of the scoring-disks b on the shaft E, or the rod may be so adjusted as to be clear of both the cutting and scoring-disks.

The bar G is marked on both sides with inches and fractions of an inch, so that it will serve as a guide in adjusting both the cutting and scoring-disks.

The disks having been properly adjusted and the rollers and shafts being caused to revolve in the direction of their arrows, a board of the proper size is first placed on a platform, H, in front of the machine, and presented to the feed-rollers, which carry the board forward so that it will pass between the scoring-disks b and the roller B, and thence between the cutting-disks of the shafts D and D', the scored and severed boards being finally deposited on the inclined platform I at the rear of the machine.

If the cutting and scoring-disks be adjusted to the relative positions shown in fig. 2, the dots y y y y will represent the scoring-lines, and the dots x x x x the lines on which the board is severed.

If the two scored strips into which the board has now been converted be removed from the rear to the front table, and be placed at right angles to the position the board first occupied on the platform, and these strips be subjected to the action of the machine, the result will be the conversion of the boards into four square pieces, fig. 3, each piece being scored near all of its four edges, so as to be readily converted into a paper-box in a manner which will be clearly understood by reference to figs. 4 and 5.

### *Claim.*

The combination of the cutting and scoring-disks and a graduated bar, G, so suspended that it can be brought opposite either of the scorers or cutters, as set forth.

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

GEORGE BATES.

Witnesses:

JNO. B. HARDING,  
LOUIS BOSWELL.