(Model.)

A. E. ELMER.

PAPER SCORING MACHINE.

No. 267,849. Patented Nov. 21, 1882.

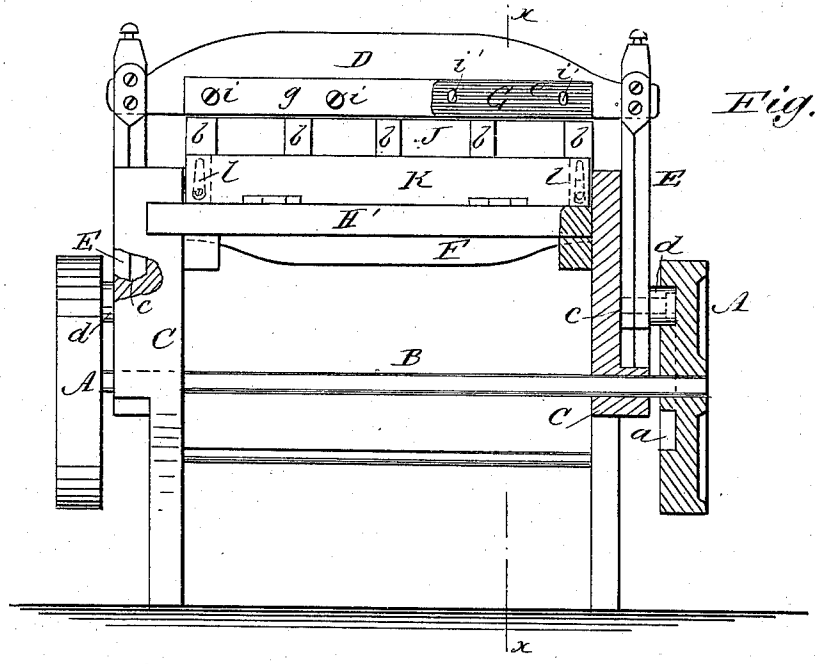


Fig. 1

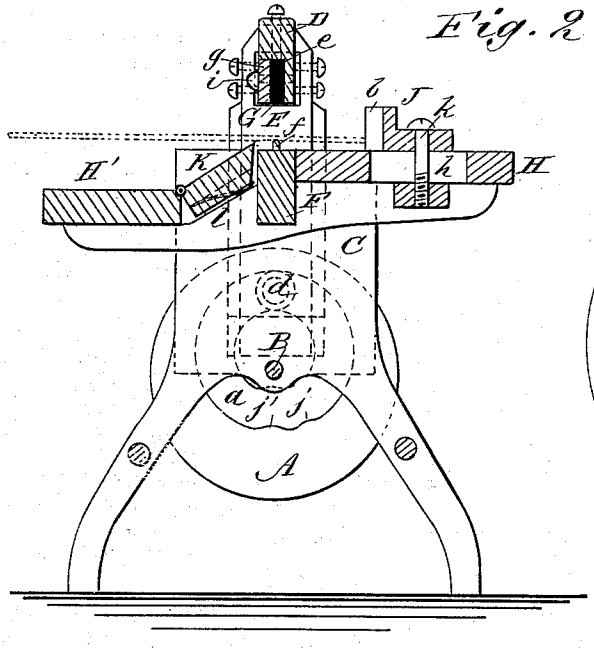


Fig. 2

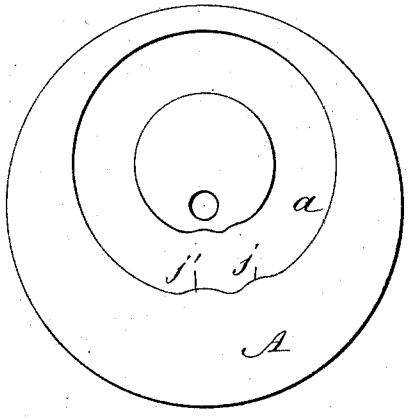


Fig. 3

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UNITED STATES PATENT OFFICE.

ALBERT E. ELMER, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO WILLIAM H. H. ROGERS, OF BROOKLYN, NEW YORK.

PAPER-SCORING MACHINE.

SPECIFICATION forming part of Letters Patent No. 267,849, dated November 21, 1882.

Application filed May 5, 1882. (Model.)

To all whom it may concern:

Be it known that I, ALBERT E. ELMER, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Paper-Scoring Machines, of which the following is a full, clear, and exact description.

This invention relates to a machine for forming the "scores" or "breaks" in sheets of straw-board or other paper preparatory to bending the sheets for forming paper boxes or for other purposes.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation, partly in section, of my new and improved scoring-machine. Fig. 2 is a sectional elevation of the same, taken on the line *x x* of Fig. 1; and Fig. 3 is a plan view of one of the cam-wheels used for reciprocating the compressing head or bar of the machine.

A A represent the cam-wheels, which are secured upon the ends of the main shaft B, which is journaled in the main frame of the machine, and D represents the compressing head or bar which is secured to or has secured to it at its ends the bars E E, which slide in suitable ways, *c c*, formed in the side pieces, C C, of the frame. These bars E E are provided at their lower ends with the cam studs or rollers *d d*, which fit in the gutters *a a* of the cam-wheels A A, which reciprocate the said bars and compressing-head D. Immediately below the compressing-head is secured in the main frame the cross-piece F, which is formed or provided with the rib *f*, upon which the sheets of paper or other material are scored or broken by being pressed over and upon the rib by means of the compression-head D being brought forcibly down upon them. To prevent the material being cut or injured from being compressed between the rib and compression-head, and to cause the machine to make a good and perfect score in the material, I provide the face of the compression-head with the strip of rawhide or some other yielding material, G, which forms the contact-surface of the head with the material being scored. This yielding material is placed in the recess *e*, formed in the compression-head, and is held in place by the plate *g* and screws or other fastenings *i*, and the yielding material may be adjusted in the recess by means of the elongated screw-openings *i'*, formed through the same, through which the screws pass.

The cam-gutters *a a* of the cam-wheels A A are by preference formed with the two (though one may be used with good effect) inwardly-projecting swells or steel cams *j j'*, situated at that part or portion of the gutters which comes nearest the shaft, which swells or cams cause the compression-head at the time it comes in contact with the material being scored to have two sudden and distinct downward movements or thrusts. One of the swells or cams—*j'*, for example—is made larger than the other, so that the second downward movement of the compression-head will be greater than the first. By this means the paper or other material being scored is given two hard blows or compressions by the compression-head across and upon the rib, one harder than the other, which causes the material to be well and perfectly scored.

In rear of the cross-piece F is placed, in the main frame of the machine, the table H, which carries the guide or stop J, and is formed with the slots *h h*, (at both ends of the table,) through which the bolts *k k*, which hold the guide or stop upon the table, pass for the adjustment of the said guide or stop. In front of the cross-piece F is placed, in the main frame, the table H', which has hinged to its forward edge the leaf K, which has secured to its under side the springs *l l*, which support the leaf, so that its upper edge will come about on a line with the upper edge of the rib *f*, and thus furnish a yielding support in front of the rib for the material being scored to rest upon, thus indicating to the attendant the proper position of the sheet.

The stop or guide J serves to indicate and limit the distance of insertion of the material to be scored into the machine, so that when properly set the scores will always be made in the proper place in the sheets, and the front edge or face of the stop or guide is formed with the projections *b b*, leaving considerable spaces between them, which spaces form clearances or chambers to receive any trash that might collect on the table and obstruct the proper facing

of the edges of the sheets against the guide or stop.

It will be understood that I do not confine myself to the particular construction and arrangement of the parts of my new and improved scoring-machine herein shown and described, as various changes might be made and not depart from the principles thereof which constitute my invention.

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

1. The combination, with the compressing-head D, of the cam-wheels A A, having the gutters *a a*, with successively-increasing swells *j j'*, and the bars E E, having end studs or rollers *d d* fitting said gutters, whereby the compressor is made to give successively harder blows, as described.

2. The combination, with the guttered cam-wheels A, having successively-increasing swells, and the bars E, having end studs, of an intermittent compressor, D, having elastic facing-strip G in a recess, *e*, with a cross-piece, F, having rib *f*, whereby the material is scored by two successive blows upon the rib without cut or injury, as described.

3. The combination, with the compressor and strip F, having rib *f*, of the table H', having the hinged leaf K, supported on springs to give a yielding support to the material while it is being scored, as described.

ALBERT E. ELMER.

Witnesses:
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