F. J. Austin.

Paper Cutting Mach.

No. 2134. Patented Jun. 16. 1841.

Fig. 1

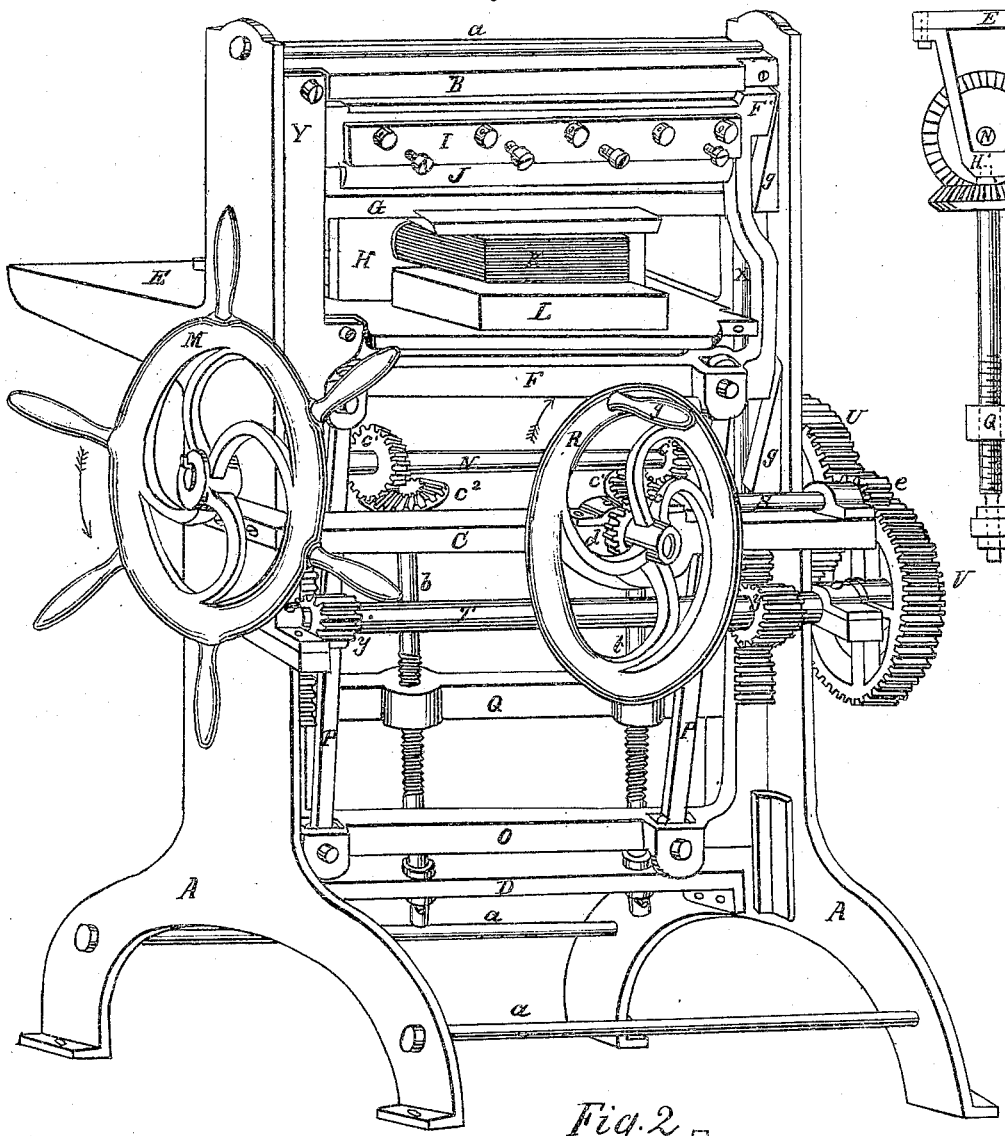


Fig. 3

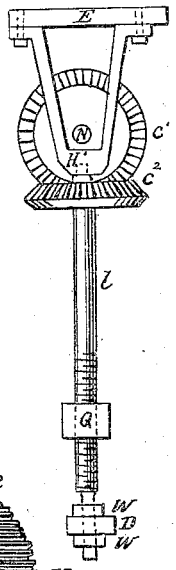
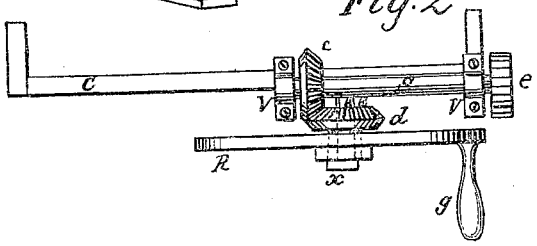


Fig. 2



Inventor

Frederick J. Austin

UNITED STATES PATENT OFFICE.

FREDERICK J. AUSTIN, OF NEW YORK, N. Y.

MACHINE FOR CUTTING PAPER AND TRIMMING BOOKS.

Specification forming part of Letters Patent No. 2,134, dated June 16, 1841; Reissued June 22, 1852.

To all whom it may concern:

Be it known that I, FREDERICK J. AUSTIN, of the city and county and State of New York, have invented a new and useful Improvement in Machines for Trimming the Edges of Books, Cutting Paper, &c.; and I do hereby declare the following to be a full and exact description thereof.

The nature of my invention consists in giving the knife a lateral or end motion at the same time that it is forced down parallel to the bed plate on which the books or paper is laid to be cut, by which means the whole cutting edge is presented to the mass at the same time and by a slight motion end ways the edge is relieved and the paper cut more smoothly and with less labor than is required in the ordinary machine.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation reference being had to the drawings which accompany and make a part of this specification.

The frame, or machine itself may be made of any material that may be thought most suitable. I would make it of cast iron. The ends or sides of the machine A, A, are two upright pieces spreading at the bottom to form the feet and an arm projecting back to support back plate or table E. The sides A, A, are connected together at the bottom by the cross piece D fastened to the sides with bolts, and the collar rods *a*, *a*, and at the middle by the bed plate E the bolts passing through the sides and screwing into the plate, and at the top by the brace B and the bolt *a*. On the inside of each of the sides are cast flanges or ribs to form the guides to the gate or frame to which the knife is bolted. The upper part of this frame is marked I, and the lower part F. Its ends pass through notches cut in the bed plate. On the ends of this frame are formed cams as seen at F′, and on the sides A A are screwed corresponding cams *g*, *g*. Two front plates are fitted and bolted to the front edges of the sides and bed plate to keep the frame in its place, one of which is marked Y, and the other is left out in the drawing in order to show the cams. In the lower part of the machine is another frame marked O which extends across the machine, its ends reaching upward, on which are formed teeth into which the pinions *y*, *y*, engage. This frame slides in grooves or between flanges cast on the sides A, A, as at Z. This frame is connected to the frame F by the straps P, P. These straps are fastened by means of pins or bolts fitted so that they can oscillate or swing freely that when the frame O is raised or lowered by the action of the pinions *y*, *y*, as hereafter described, it shall carry the frame F up and down with it, and these straps (P, P) working on their centers allow the frame F to be governed by the cams F′ G, which produces the lateral or end motion to the knife.

T is a shaft extending across the front of the machine. Its boxes are formed on the edges of the sides. On this shaft is fitted the pinions *y*, *y*, so as to work into the racks on O, and on the end of it, the wheel V is fitted and keyed fast.

C is a cast iron bar extending across the front of the machine and bolted at the two ends; the object of which is to support the fly wheel R, and the shaft S. This wheel (R) is fitted on the hub of the bevel pinion *d* which is made to project on its back for that purpose as represented in Fig. 2 by the dotted lines, and keyed fast to it, (the hub).

E is a stud or pin made fast to C on which the pinion *d* is fitted so that it can revolve freely but kept from coming off by the nut *x*. On the top edge of C is fitted the boxes V, V, of the shaft S. In one end of this shaft (S′) is fitted a bevel pinion *c* which works into *d*, and on the other end, a pinion *e*. On the back part of the machine is another shaft having on one end of it, a wheel U, which works into the pinion *e*, and also, a pinion not seen in the drawing but which works into the wheel V. By this combination when the fly wheel R is turned around by the handle *g* it carries *d* which engage in *c* and turns the shaft S as also the pinion *e* which engage in U, which by means of the pinion described, react on V and through it the pinions *y*, *y*, and thus forces down the knife J which is bolted to the frame F.

There is also a press attached to the machine for holding the books or paper firm while the cutting operation is performed. This press consists of two screws *b*, *b*, which work in female screws cut in the cast iron piece Q and are supported at the lower ends by the center pins which pass through

D and are fastened by means of the adjusting nuts *w*, *w* as seen in Fig. 3. The upper ends work in sockets or holes drilled in the end of the hangers H′, which is made to straddle the shaft N and is bolted to the under side of the bed plate E. The piece Q has grooves cut in its ends, which correspond to ribs cast on the sides A, A, which serves as guides for it as it moves up and down on the screws. From each end of (Q) is a rod of round iron passing up through the bed plate, one of which is seen at X and connect at the top to the piece G which is also cast iron and guided at the end by ribs.

N is a shaft passing through the center of the machine and directly over the centers of the screws *l*, *l*. On this shaft (N) are two bevel pinions C′, C′. These pinions work into corresponding pinions C^2, C^2, on the top end of the screws *l l*. The shaft N passes through the left side of the machine and has the fly wheel M fitted and keyed fast on the end of it. By turning this wheel (M) the screws *l*, *l*, are made to revolve by the action of the pinions C′, C^2 and these screws being held firm from moving endways, the piece Q moves up and down on them, and this piece being connected to the piece G by the rods X carries it with it and thus presses the books which may be represented by K, L being merely a board upon which the books are laid to be cut to preserve the edge of the knife.

H is a gage made to slide on the bed plate and held by a bolt and nut so as to give the required size to the book.

In operating the machine, the knife having been run up, and also the press G the books, or paper (as K) is placed upon the board L and pressed by the hand against the gage H. The wheel M is then turned in the direction of the arrow, which turns the screws *l*, *l*, which force down Q, and with it by means of the rods X the top of the press G and thus presses the books very firmly. The operator then applies his hand to the wheel R and turns it also in the direction of the arrow which carries the pinion *d* with it, and through the medium of the gear *e*, U and V, the pinions *y*, *y*, act upon the racks and force down the piece O. This piece being connected to the gate or frame F by the straps P P draws it down also, and the knife J being bolted to the frame as at I trims the edges of the books, and the cams F′ sliding down on the cams *g* forces the knife endwise which produces a drawing motion, relieves the edge and cuts the paper clean (or free from turning the edges over) and with much less labor than would be required to cut without the end motion of the knife the wheel R is then turned back which raises the knife up again. The wheel M is then also turned back which opens the press that the books may be taken out.

What I claim as my invention and desire to secure by Letters Patent is—

1. The peculiar mechanical combination used to give a lateral or sliding motion to the knife which consists of the inclines or cams formed on the frame F working on the cams *g*, *g*, the connecting rods P, P, and the frame O for the purpose and in the manner specified.

2. Also I claim the mechanical construction of the press, as arranged and combined with the parts for cutting, thereby forming an entire machine for the purpose described.

FREDERICK J. AUSTIN.

Witnesses:

JAMES L. MILLER,

WM. TUSHINGHAM.

[FIRST PRINTED 1913.]