

No. 672,526.

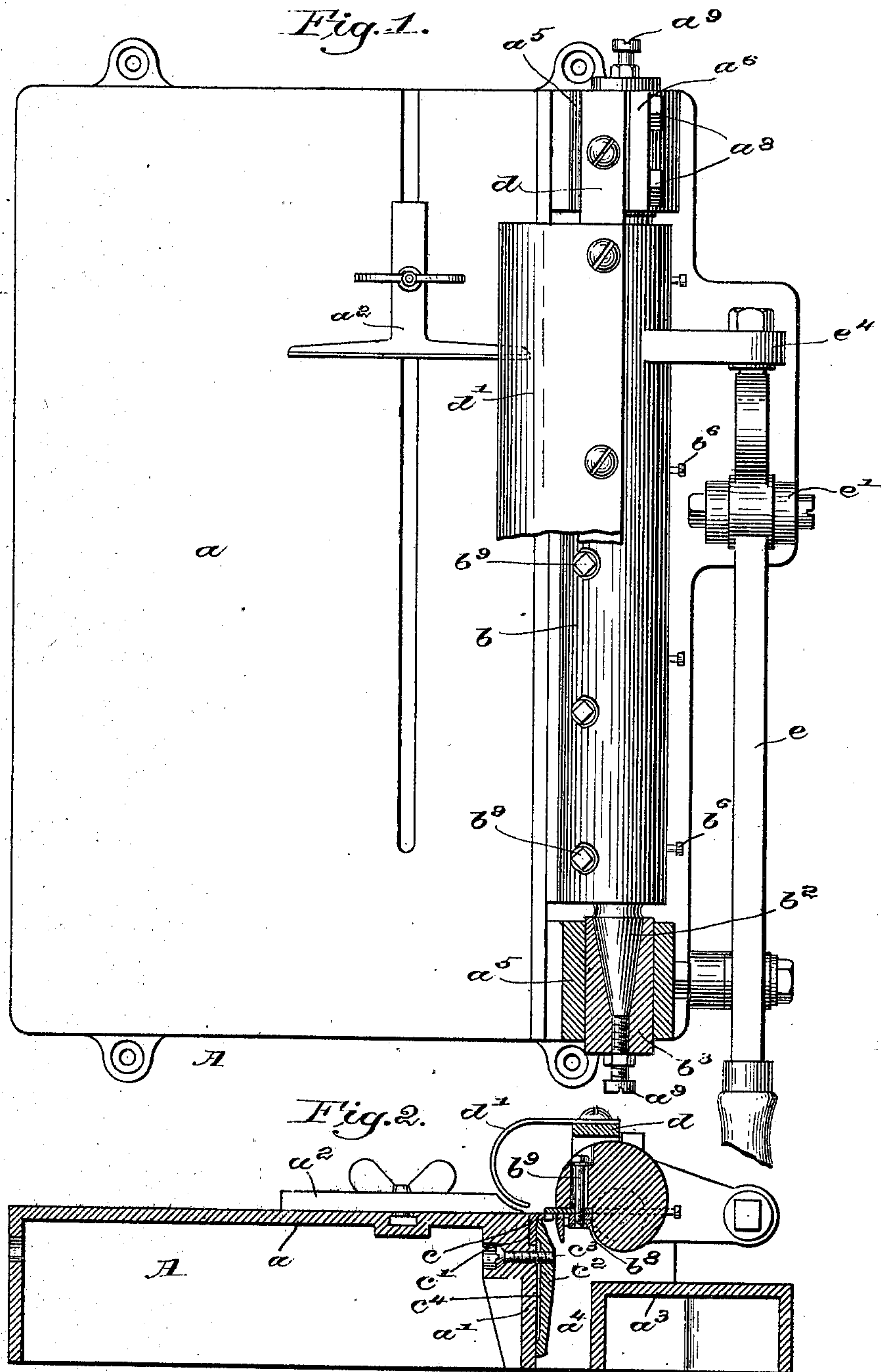
Patented Apr. 23, 1901.

D. E. HUNTER.
MACHINE FOR CUTTING CARDS.

(Application filed Feb. 19, 1900.)

(No Model.)

2 Sheets--Sheet 1



Witnesses.
Thomas J. Drummond.
Edward F. Allen.

Inventor.
David E. Hunter,
by Crosby & Gregory
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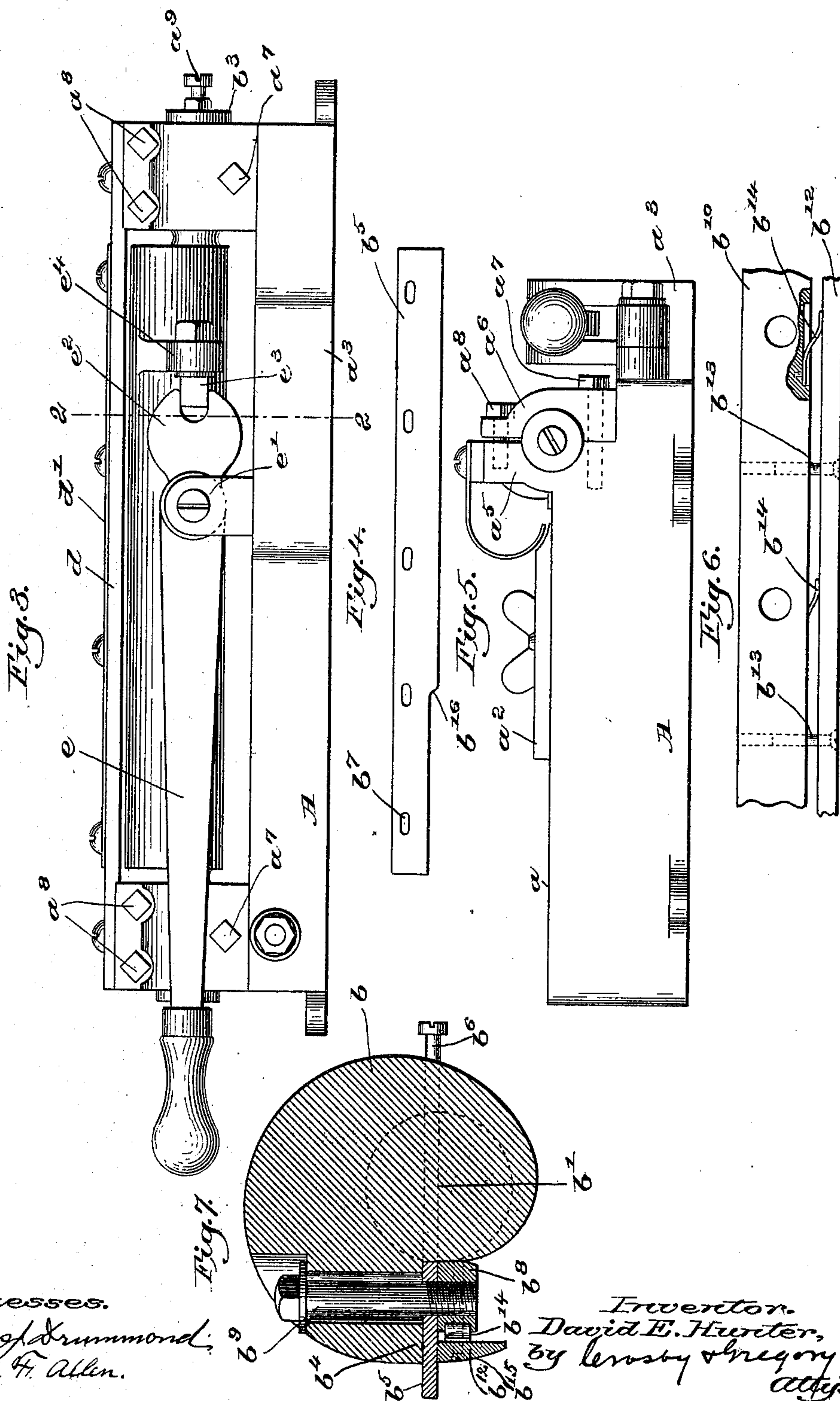
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UNITED STATES PATENT OFFICE.

DAVID E. HUNTER, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR TO
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MACHINE FOR CUTTING CARDS.

SPECIFICATION forming part of Letters Patent No. 672,526, dated April 23, 1901.

Application filed February 19, 1900. Serial No. 5,669. (No model.)

To all whom it may concern:

Be it known that I, DAVID E. HUNTER, a citizen of the United States, residing at Cambridge, county of Middlesex, State of Massachusetts, have invented an Improvement in Machines for Cutting Cards, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My present invention is a device for cutting cards or paper, and is particularly intended for cutting tab ends or special shapes, such as are required in modern card-indexes or card-records.

In the class of devices referred to it is absolutely necessary that the cards shall be precisely alike, modern requirements making it necessary that accuracy shall not be approximated merely, but shall be actually attained, and accordingly the old paper-cutters and shearing devices, in which a knife is caused to rise and fall in vertical guides, like a guillotine, or with a partially-sliding cut, like shears, will not answer, as these old forms of devices are more or less liable to shift the stock being cut, and, moreover, they require constant attention and adjustment, which if not attended to persistently results in more or less inaccuracy. Accordingly I have devised a cutter which proceeds on entirely different lines from those mentioned, my cutter being rotary and bringing the knife or cutting edge over with a rocking movement, so that when it strikes the paper it nips it off with somewhat the same movement as the teeth of a human being nip or bite through an article, excepting that my cutting edges do not meet within the article, but just escape each other.

In the particular embodiment of my invention which I prefer and have herein shown I have reduced the mechanism to the greatest simplicity, so that the wear of the parts is capable of quick and accurate adjustment without necessitating repeated measurements and trials to see if it is correct.

Further details and an entire description of my invention will be set forth in the following portion of the specification, and the invention will be more particularly defined in the appended claims, also forming a part of this specification, reference being had to the ac-

companying drawings, in which I have shown said preferred embodiment of my invention.

In the drawings, Figure 1 is a top plan view, partly broken away and in section, of a card-cutter embodying my invention. Fig. 2 is a vertical transverse section thereof. Fig. 3 shows the same in rear elevation. Fig. 4 is a plan view of the movable cutting-knife. Fig. 5 is an end elevation. Fig. 6 is a broken plan view of the retaining or clamping bar in its preferred form. Fig. 7 is an enlarged vertical cross-section of the cutting-blade and its mounting.

It will be understood that the base A of the machine may be of any size, shape, and construction adapted to the particular purpose for which the machine is intended, being herein shown as comprising a horizontal table a , having an inner vertical side a' to receive the stationary cutting-blade and provided on its upper side with an adjustable straight-edge or guide a^2 for directing the cards, and a rear support a^3 , on which the moving parts of the machine are mounted, the clippings or shavings falling down in an open space a^4 between the parts a a^3 .

At the rear side of the machine in suitable ears or lugs a^5 I mount my special cutter-bar b , said bar having its center of movement at b' and being shown in cross-section in Fig. 7, from which it will be seen that its peripheral surface is on an eccentric curve, this shape being extremely strong and practical for the purpose intended. At its opposite ends the cutter-bar has conical bearings b^2 , (see Fig. 1,) which rotate freely in a journal-box b^3 , clamped between the ears a^5 and properly-recessed plates a^6 , secured by bolts a^7 a^8 , end bearing-bolts a^9 being provided in the ends of the journal-blocks b^3 to prevent any possibility of longitudinal movement or wedging action of the cutter-bar b . By means of this bearing it will be seen that any wear of the parts may be taken up instantly and with absolute accuracy. No wear can come between the clamping-plate a^6 and the cooperating ear a^5 , for the reason that the journal-block b^3 does not move therein, but is simply clamped fixedly in position. If any adjustment is necessary because of the wear of the conical bearing b^2 in its journal-block, all that

is necessary is simply to loosen the bolt a^8 slightly, so as to shift the block b^3 enough to take up said wear, and then again clamp the block b^3 in place. This adjustment cannot possibly affect the alinement of the cutting edges in the slightest, because the wear is taken up in absolute parallelism to the said cutting edges. Also this construction permits of ready renewal of parts when worn out.

The cutter-bar has a substantially radial shoulder b^4 slightly out of line with the center, against which the movable cutting-blade b^5 rests, the lower edge of said blade being in exact radial alinement with the center b' , adjusting-screws b^6 being provided to bear against the rear edge of said blade in order to aline the front edge therewith with the greatest accuracy with the adjacent edge of the L-shaped stationary blade c . The blade b^5 is slotted at b^7 , said slots being preferably elongated longitudinally, as shown in Fig. 4, and held in place by a clamping-bar b^8 and bolts b^9 , passing through and being preferably adjustable transversely in the cutter-bar and threaded into the clamping-bar. The latter is preferably of special construction, as shown in Figs. 6 and 7, and comprises a rear part b^{10} or clamping part proper and a front part b^{12} , which serves to guide or stop the cards, said two parts being held together by bolts b^{13} , countersunk flush into the front edge or face of the part b^{12} and fixed in the part b^{10} , the forward part being held against the heads of said bolts by suitable springs b^{14} for permitting accurate adjustment simply by tightening or loosening the bolts b^{13} . The front edge b^{15} of the stop part b^{12} is curved concentrically on the center of movement b' .

Referring now to the stationary blade c , it will be seen that it occupies a cut-away part or recess c' , being clamped in fixed position by a plate c^2 and bolt c^3 , said plate being preferably cut away at c^4 , so that it bears against the side a' of the base at its upper and lower edges only, thereby permitting of being sprung slightly, so as to tenaciously grip the blade c .

A bar d is secured at its ends to the machine, spanning over the cutter-bar, and has fastened to it a downwardly-curved guide and protector d' , said guide being adapted to rest on the tops of the cards as they are pushed against the stop b^{12} to be cut and also serving to prevent any injury to the operator's fingers.

I have herein shown the machine as operated by hand, a handle or lever e being pivoted on the base a^3 at e' and having a jaw e^2 at its inner end in loose engagement with a stud e^3 at the end of a rocker-arm e^4 on the rear side of the cutter-bar; but it will be understood that my machine may be operated by power if desired.

The cutter-blade, as herein shown, has an irregular cutting edge, including an offset b^{16} , which with the blade may be shifted by the slot construction b^7 for forming a tab or in-

dexing projection at the top of a card, and it will be understood that it may have any other form or that it may be straight.

In use the operator slides the cards beneath the guide b' and against the stop b^{12} , whereupon the lever e is depressed, bringing the cutting edges of the blades b^5 c into nipping engagement with the card and the latter is bit off instantly and accurately, this biting being done not by a vertical up-and-down movement, as heretofore, but by a swinging movement on the pivots b^2 as a center, and I have found that with this movement the cutting is much more accurate and is entirely without any tendency to shift the card out of position. By this means the cards are cut with perfect smoothness, evenness, and exactness. The stop b^{12} , having its surface against which the card abuts concentric with the center of movement b' , maintains the card in perfect position until the edges of the two cutting-blades simultaneously nip and cut the card. The movable cutting-blade having its under surface or cutting edge in exact radial alinement with the pivotal center b' comes down on the card with a perfect swinging movement from b' as a center, so that the card has its edge simply snipped off.

I am aware that many changes and substitutions in form, combination, and arrangement of parts may be resorted to without departing from the spirit and scope of my invention, and accordingly I do not limit myself to the embodiment thereof otherwise than as expressed in the following claims, certain of which I intend to be substantially pioneer or of great breadth.

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

1. In a machine for cutting cards, a base, and a cutter-bar pivoted at its ends on said base, said bar having its peripheral surface extending in an eccentric curve about the pivotal axis, the two ends of said eccentric surface being integrally joined by a substantially radial shoulder, a cutting-blade secured to said shoulder, and clamping-bolts for securing said blade, said blade having longitudinally-elongated slots for the bolts and the latter extending through the cutter-bar perpendicularly to the shoulder and being transversely adjustable relatively to the cutter-bar.

2. In a machine for cutting cards, a base, and a cutter-bar pivoted at its ends on said base, said bar having its peripheral surface extending in an eccentric curve about the pivotal axis, the two ends of said eccentric surface being integrally joined by a substantially radial shoulder, a cutting-blade secured to said shoulder and clamping-bolts for securing said blade, said blade having longitudinally-elongated slots for the bolts and the latter extending through the cutter-bar perpendicularly to the shoulder and being transversely adjustable relatively to the cutter-bar, and adjusting-screws extending through

and to the rear of the bar substantially diametrically and bearing against the rear edge of the cutting-blade.

3. In a machine for cutting cards, a pivoted cutter-bar having an overhanging, substantially radial shoulder, a cutting-blade adjacent said shoulder, a clamping-bar beneath said blade for clamping the latter against said shoulder, and means for tightening said bar in clamping position, said clamping-bar consisting of two parts, the inner part receiving said tightening means, and the forward part being yieldingly mounted thereon.

4. In a machine for cutting cards having a rotary knife, a shield secured above said knife and curved downwardly in front of the knife, said shield hanging out away from the knife excepting at its lower edge where it bends inwardly toward the knife and extends close to the work so as to rest on the cards as they are pushed in toward the knife.

5. In a machine for cutting cards, a cutter-bar pivoted in fixed supports, said cutter-bar

having at its front side a cutting-blade, and provided at its rear side with a rigid radial arm, and a stud extending longitudinally of the bar, and a lever pivoted transversely of said pivoted cutting-bar and connected to said stud for rocking said cutter-bar.

6. In a machine for cutting cards, a pivoted cutter-bar, a cutting-blade mounted therein, an L-shaped stationary blade having a cutting edge at the rear projecting part of the blade, the other part of the blade being clamped in place on the bed of the machine, a clamp being provided engaging said blade at one end and engaging the bed of the machine at the other end, and means for tightening said clamp in position.

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

DAVID E. HUNTER.

Witnesses:

GEO. H. MAXWELL,
GEO. W. GREGORY.