L. M. BENEMELIS.

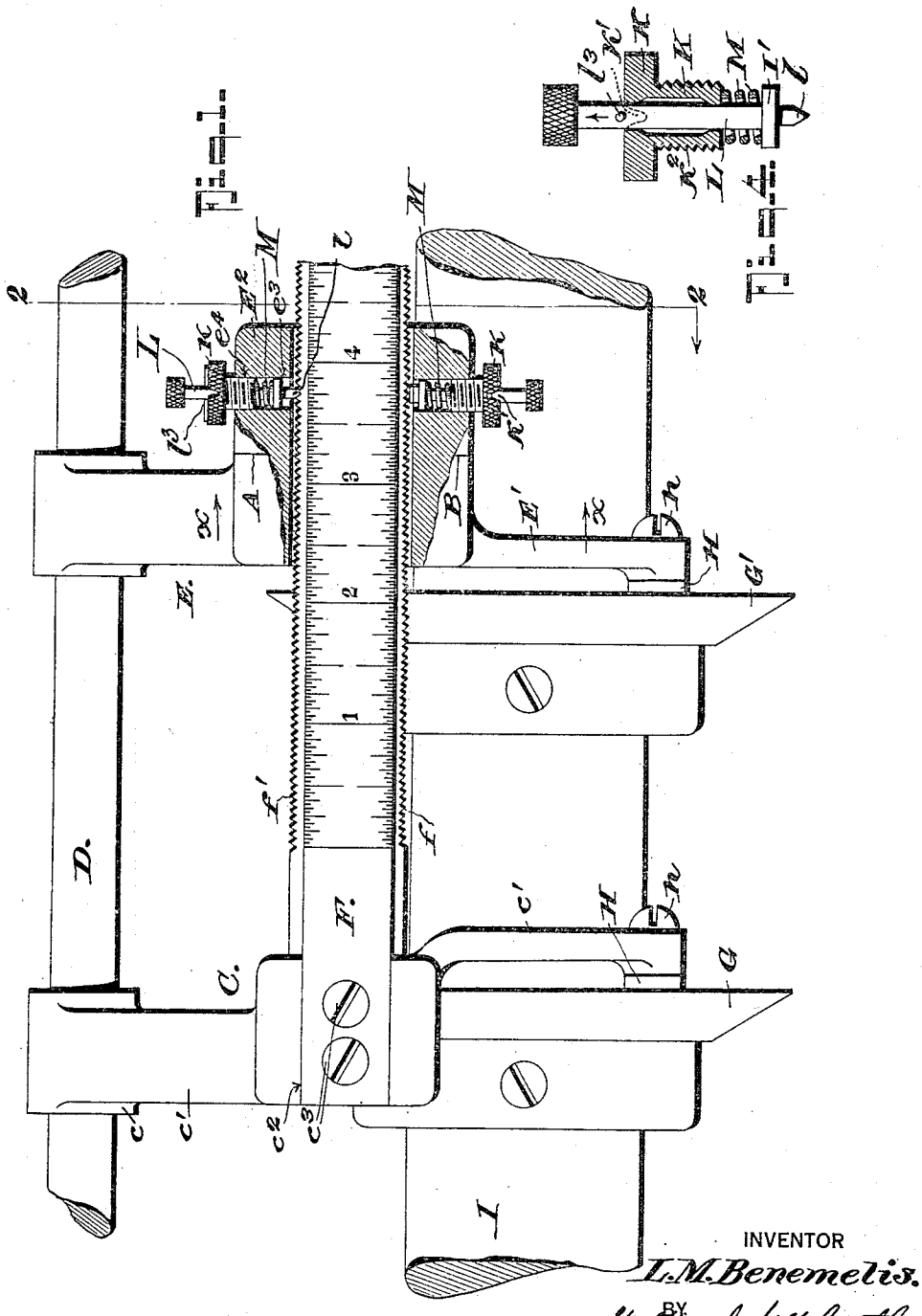
MEASURING GAGE.

APPLICATION FILED AUG. 16, 1917.

1,282,030.

Patented Oct. 22, 1918.

2 SHEETS—SHEET 1.



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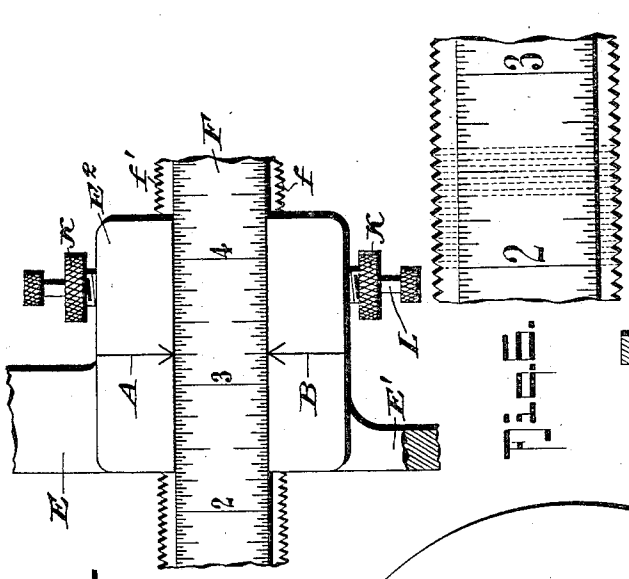


Fig. 3.

Fig. 5.

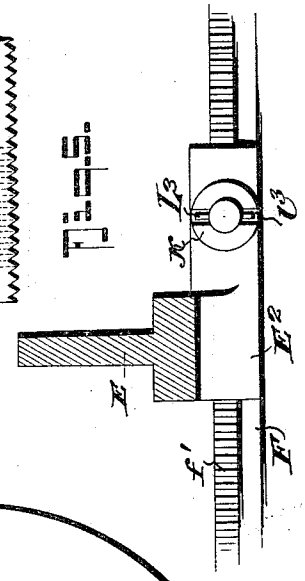


Fig. 4.

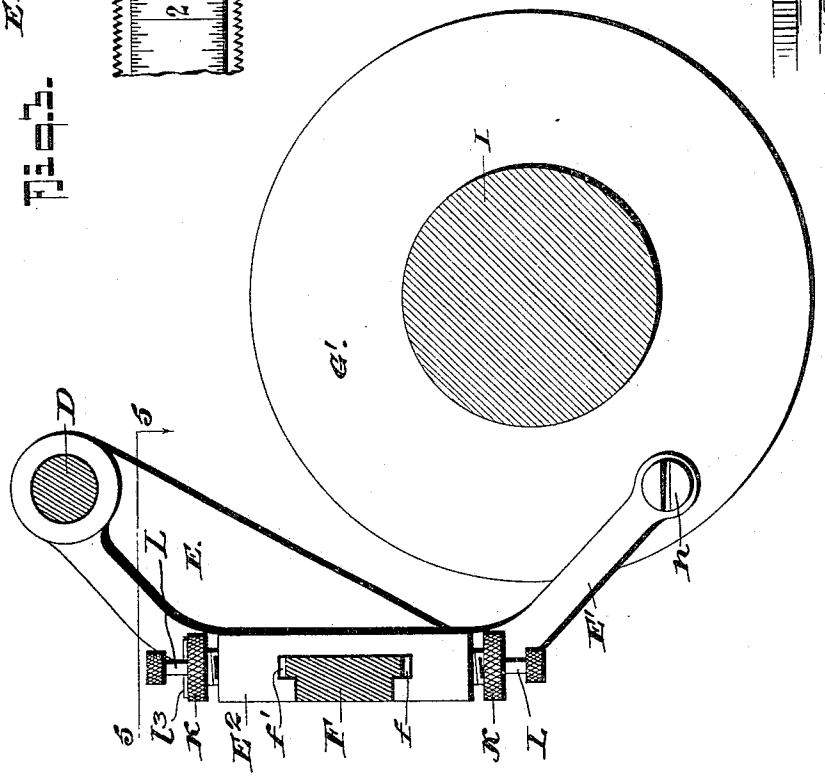


Fig. 2.

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UNITED STATES PATENT OFFICE.

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MEASURING-GAGE.

1,282,030. Specification of Letters Patent. Patented Oct. 22, 1918.

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To all whom it may concern:

Be it known that I, LORENZO M. BENEMELIS, a citizen of the United States, residing at Pittsfield, in the county of Berkshire and State of Massachusetts, have invented a new and Improved Measuring-Gage, of which the following is a specification.

My invention has for its purpose to provide an improved construction of measuring gage particularly designed for setting up rotary machines or scoring machines having one or more rotary knives where the distance between the cutting edges must measure exactly alike and by the use of which a saving of time and labor is effected and a higher standard of the product is obtained as for example, in cutting visiting, birthday, Christmas or other fancy cards on which there is one or more operations to be done, as printing, scoring, engraving, stamping lithography in one or more colors, or plate marking, single or in gang sizes.

Another object of my invention is to provide an improved measuring means of the general character stated in which the adjustment can be conveniently and quickly made, so that all strips and all margins on cards, after printing or engraving, will be exactly alike, thereby making it unnecessary to upset a gage, as is required when setting the rotary machine by the usual or old method, since by that way card strips vary anywhere from one-sixty-fourth to one-thirty-second of an inch and sometimes more.

With other objects in view that will hereinafter appear, my invention consists in an improved measuring gage of the general character stated that embodies the peculiar features of construction and novel arrangement of the parts to be first described in detail, specifically pointed out in the appended claims and illustrated in the accompanying drawings, in which:

Figure 1 is a front elevation, parts being in section, of a rotary or scoring machine with my improvements operatively applied.

Fig. 2 is a transverse section thereof taken on the line 2—2 on Fig. 1.

Fig. 3 is a face view of a portion of one of the brackets or castings, the locking pins holding member and a portion of the rule with the oppositely notched edges.

Fig. 4 is a detail section of one of the locking pins with its coöperating nut and bushing, the pin being shown at its lifted or unlocked position.

Fig. 5 is a detail horizontal section taken practically on the line 5—5 on Fig. 2.

Fig. 6 is a diagrammatic face view of a portion of the gage rule or member hereinafter specifically referred to.

In the drawings, so much of a rotary or scoring machine is shown as is necessary to illustrate a practical application of my invention and, in the said drawings, I designates the shaft on which the rotary knives G—G^1 are adjustably set and D a guide rod of the rotary or scoring machine on which my gage devices are endwise slidably adjusted.

C is an end bracket that includes a tubular bearing c which slidably engages the rod D and a downwardly extending arm c^1 that is provided with a flat bearing portion in parallelism with the shaft I and formed with an angled socket c^2 in which one end of the rule bar F is secured by the screws c^3—c^3, as is clearly shown in Fig. 1 of the drawings.

The rule F also extends in parallelism with the shaft I and slidably engages a suitably shaped cross groove in a second end bracket E that slidably engages the rod D. The rule F has its opposite edges formed with tapering notches one-sixteenth of an inch wide and the two sets of notches f and f^1 are relatively so arranged that the center of the notches on one edge of the rule and the center of the notches on the other edge of the rule are spaced one-thirty-second of an inch apart.

To facilitate the proper setting or measuring operations, the rule or gage member F is scaled with the usual one inch spaces, divided at each edge, into thirty-seconds of an inch.

G and G^1 designate the rotary knives attached to the shaft I and the said knives have their beveled or cutting edges arranged to provide an inside and an outside cutting edge between which the measurements are made.

Each bracket C and E includes a pendent arm c^1 and E^1, one of which c^1 projects over one face of the adjacent cutter G, while the other arm E^1 projects over one face of the other or adjacent cutter G^1 and each of the said bracket arms c^1 and E^1 carries a flat

disk H for measuring surfaces, said disks being removably attached to their respective arms c^1 and E^1 by screws h—h, as shown.

A designates a setting line on the outer face of the casting or block E for reading dimensions in sixteenths and B a setting line for reading the dimensions in thirty-seconds as is clearly shown in Fig. 6. By reference to Fig. 1 it will be also noticed that the bracket E has a longitudinal extension E^2 provided with a pair of oppositely disposed vertical apertures e^3—e^3, the purpose of which will presently appear.

For conveniently and accurately effecting the different predetermined adjustments of the cutter G^1, a pair of locking pin devices, of novel design, are mounted for coöperation with the notched edges of the rule or gage F and each of the said devices includes a bushing K having a milled head k provided with a transverse groove or seat k^1 and threaded as at k^2 for engaging the internal threads e^4—e^4 in the apertures e^3—e^3 in the extension member E^2, as shown.

In each bushing K is mounted a locking pin L and the inner end of each of said pins is beveled as at l, the bevels of the two opposing pins being angled to suit the taper of the notches with which they engage.

Each cross pin l^3 has a fixedly held washer or disk l^1 at the inner end that forms an end bearing for one end of a coil spring M, the other end of which bears against the inner end of the bushing, as is best shown in Figs. 1 and 4, which also show the lock pin that coöperates with the sixteenth inch taper notches in the upper edge of the rule or gage F as being in interlocked engagement with the said gage F, the other, or opposite pin being shown as pulled out of engagement with the adjacent notches and held up against the tension of its spring by a cross pin l^3 that rests on the bushing and out of the groove k^1 to thereby bring the tapered or beveled end of the said pin on a plane at right angles to the said notches. See upper lock pin on Fig. 1.

From the foregoing taken in connection with the drawings, the complete construction, the manner of use and the advantages of my invention will be readily apparent to those skilled in this art.

When measuring in thirty-seconds, the lower edge of the rule is used and, when measuring in sixteenths, the lower locking pin L is pulled up (as indicated on Fig. 4) until the cross pin l^3 is out of the cross slot k^1 and by then giving the said lock pin a half turn, the said cross pin l^3 will then rest on the head of the bushing K and the pin then held as shown in Fig. 1, which indicates the measuring gage as set at $3\frac{1}{4}$ inches.

As before stated, the pin L used for measuring thirty-seconds is shown as out of engagement with the lower row of notches and turned at right angles to the said notches, out of the way as it were. The parts as positioned indicate a $3\frac{1}{4}$ or $3\frac{8}{32}$ inches space between the cutting edges of the cutters G and G^1. If a $3\frac{9}{32}$ inch measurement is wanted, all that is necessary is to pull out the bottom locking pin and give it a half turn to hold it out of the way and then give the other or upper locking pin a half turn which would then bring the cross pin l^3 in line with the cross groove k and on then releasing the said pin l, the spring tension will pull said upper pin inwardly and cause its beveled edge to engage a notch in the now stationarily held gage F and in seating in the said notch, the bracket E will be moved in the direction indicated by the arrows x—x one-thirty-second of an inch, thus setting the member H as the stop against which the cutter G^1 can be shifted and to bring the cutting edge of the two cutters $3\frac{9}{32}$ inches apart, it being understood that when thus set and the cutter G^1 is made fast to the shaft I by its set screw until a further spacing of the two cutting edges is required.

By referring more particularly to Fig. 6, it will be noticed that both the upper and the lower edges of the member F have like tapered notches, in practice, each one-sixteenth of an inch wide and the opposing sets of notches are relatively so formed that the center or apex point of the notches at one side comes on the one-sixteenth—one-eighth—three-sixteenths—one quarter and so on, and on the other side the center or apex points of the notches come on the one-thirty-second—three-thirty-seconds—five-thirty-seconds—seven-thirty-seconds and so on.

By reason of such correlation of the two sets of notches, in making the gage member F, after all the notches are cut on the lower edge of the said member F, it is only necessary to set the table of the machine back one-thirty-second of an inch and then cut the notches on the upper edge of the rule or member F, thus making a difference of one-thirty-second of an inch sidewise from center of the bottom notch to the center of the top notch.

The locking pin for the upper set of notches locks one in every other one of the thirty-second notches.

While I have shown and described my improved measuring gage devices as especially designed for use in connection with a pair of spaced cutters, it is to be understood that the same may be adapted for use either with one pair or any multiple pairs of such cutters, as there might be two or twelve cutters on the same cutter carrying shaft, that depending upon the class of work the machine would have to do.

While I have particularly referred to rotary or stripping machines more particu-

larly used for stripping card stock, such machines, in some machine shops, are also used for stripping light weight and very thin metal.

They are also used in the manufacture of leather goods, photo mounts, book binding and paper box machines.

My improved gage can also be used on creasing machines or any machines which have one or more knives on a shaft and where the knives have to be spaced an equal distance apart.

What I claim is:

1. In a measuring gage for machines of the character stated, which machines include a rotary shaft and a pair of rotary cutters, one of which is fixed on the shaft and the other slidably mounted thereon; a bracket stationary relatively to the fixed cutter and having a member for engaging the fixed cutter, another bracket that is movably mounted with respect to the first mentioned bracket and has a member for engaging with the movable cutter, a gage member secured to the first mentioned bracket and projected in a plane parallel with the aforesaid rotary shaft, and said movable bracket being slidably mounted on the gage member and means cooperative with the movable bracket and the gage member for detachably securing the movable bracket and the slidable cutter in adjusted positions.

2. A measuring gage for machines of the character stated, which machines include a rotary shaft and at least one pair of spaced cutters mounted thereon, one of which is fixed on the shaft, the other of the said cutters slidably engaging the shaft; a bracket fixedly held relatively to the stationary cutter, another bracket movable to and from the other bracket and having engagement with the slidable cutter, a gage member secured to the first mentioned bracket in parallelism with the cutter carrying shaft, the said gage member having V-shaped notches and a device on the movable bracket adapted for being shifted to engage the beveled faces of the notches of the gage member for moving the said movable bracket and the slidable cutter engaged thereby along the cutter carrying shaft.

3. In a measuring gage of the character stated, comprising a gaging bracket, a ratchet bar projected from the said bracket, the ratchet elements being cut to a definite scale, a second gaging bracket relatively slidable along the ratchet bar to and from the first mentioned bracket, and coöperative latch devices on the said bracket for engaging the said ratchet bar to shift the movable bracket and hold it definitely spaced apart from the other bracket.

4. In a measuring gage for scoring and stripping machines comprising a gaging bracket, a ratchet bar projected from the said bracket, the ratchet elements being cut to a definite scale, a second gaging bracket relatively slidable toward and from the first bracket and coöperative latch devices on the said second bracket for engaging the said ratchet bar to hold the said brackets definitely spaced apart, said second bracket having a passage through which the bar projects, the said bar including a graduated scale section, the face of which is exposed through the said passage in the said second bracket, the said second bracket having a fixed indicator mark coöperating with the said scale.

5. A gage for scoring and stripping machines consisting of a gaging bracket, a ratchet bar projected from said bracket, the ratchet elements being cut to a definite scale, a second gaging bracket relatively slidable toward and from the first bracket and a cooperative latch device on the said second bracket for engaging the ratchet bar to hold the said brackets definitely spaced apart, the said ratchet bar having two like series of teeth along the opposite edges thereof, the teeth along one edge being arranged in staggered relation with the teeth along the other edge.

6. In a gage mechanism for scoring and stripping machines and which includes a rotary shaft and a pair of scoring cutters mounted thereon, one of which is fixedly held and the other one slidable on the shaft to and from the other cutter, a gaging bracket fixedly held relatively to the fixedly held cutter, a gaging arm attached to the said fixed bracket and projected in parallelism with the cutter carrying shaft, said gaging arm having a central scale surface and the opposite edges provided with like spaced notches, a second gaging bracket in which the gage arm extends, the said second bracket being slidably mounted to move to and from the other bracket, the said second bracket having a member for engaging the slidable cutter, the said notches in the opposite edges of the gage bar arranged in staggered relation for effecting different distant spacing of the slidable bracket and individual devices for each set of notches mounted upon the slidable bracket for engaging the sets of notches and the gage arm, each of the said individual devices operating independently of the other set and including a member for holding the device out of cooperative engagement with the respective gage notches as the other device is in engagement with its respective set of gage notches.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."