No. 683,472. Patented Oct. 1, 1901.

F. KLUGE.

APPARATUS FOR FORMING NOTES OF SPIRAL NOTE DISKS.

(Application filed Aug. 17, 1900.)

(No Model.) 5 Sheets—Sheet 1.

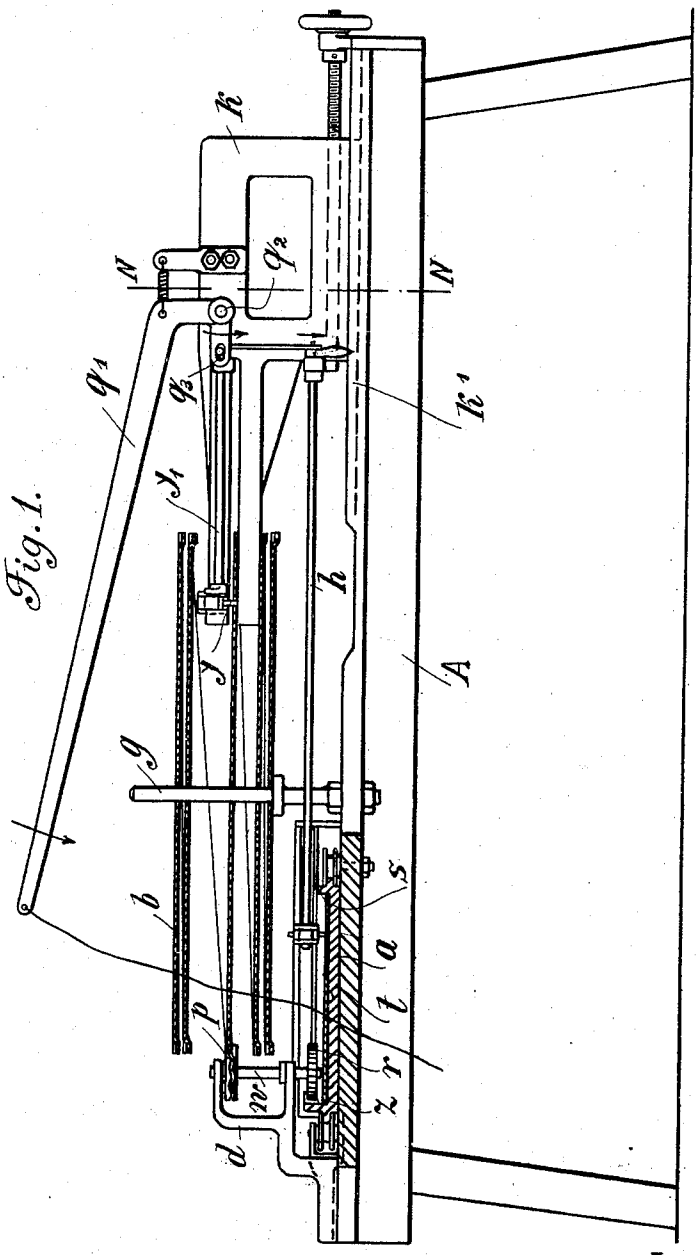


Fig. 1.

Witnesses:
Geo. W. Breitung
Louis Bolas

Inventor:
Franz Kluge
by Eustace W. Hopkins.
Atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 683,472. Patented Oct. 1, 1901.

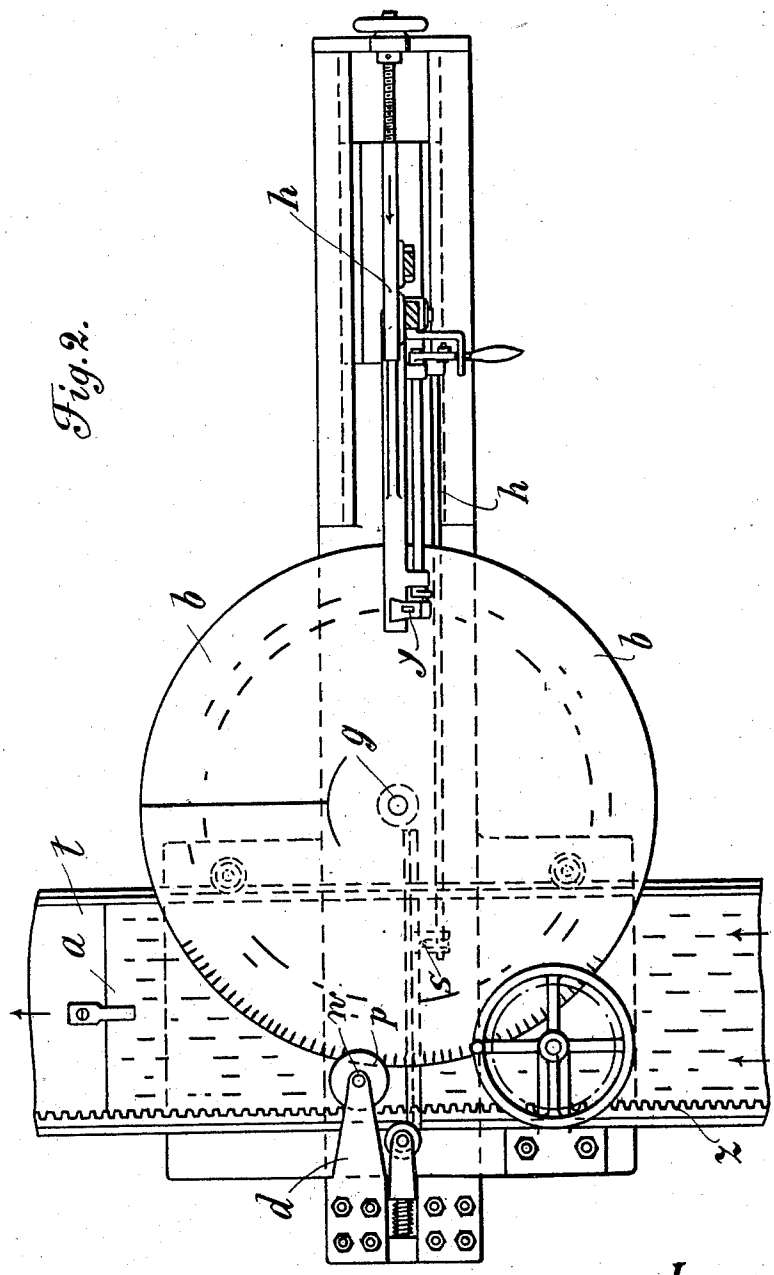
F. KLUGE.

APPARATUS FOR FORMING NOTES OF SPIRAL NOTE DISKS.

(Application filed Aug. 17, 1900.)

(No Model.) 5 Sheets—Sheet 2.

Fig. 2.



Witnesses:

Inventor:
Franz Kluge
by Enshaw & Hopkins
Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 683,472. Patented Oct. 1, 1901.

F. KLUGE.

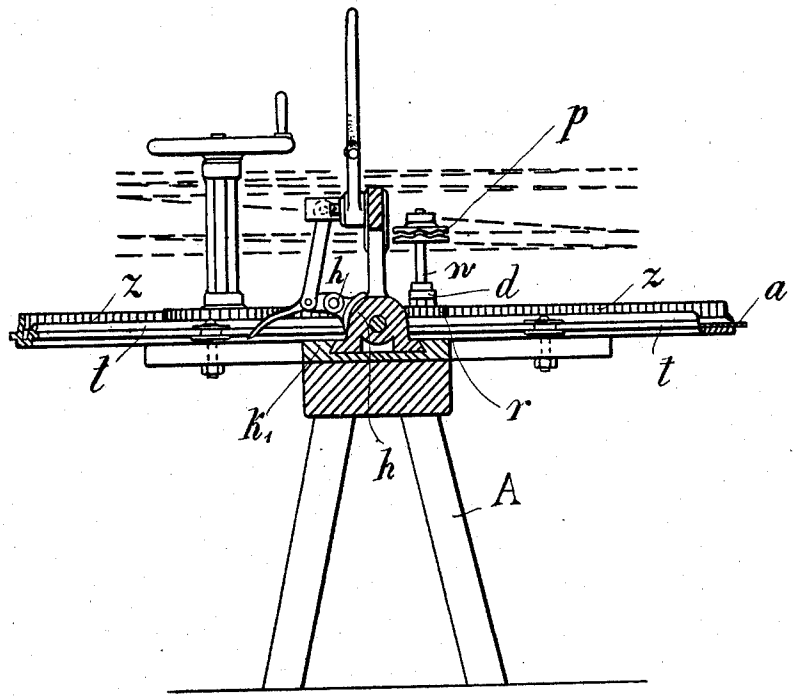
APPARATUS FOR FORMING NOTES OF SPIRAL NOTE DISKS.

(Application filed Aug. 17, 1900.)

(No Model.) 5 Sheets—Sheet 3.

Fig. 3.

Section N-N. (Fig. 1)



Witnesses:

Alexander Wheeler

Hans Barlach.

Inventor:

Franz Kluge

by Eustace W. Hopkins

Atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 683,472. Patented Oct. 1, 1901.

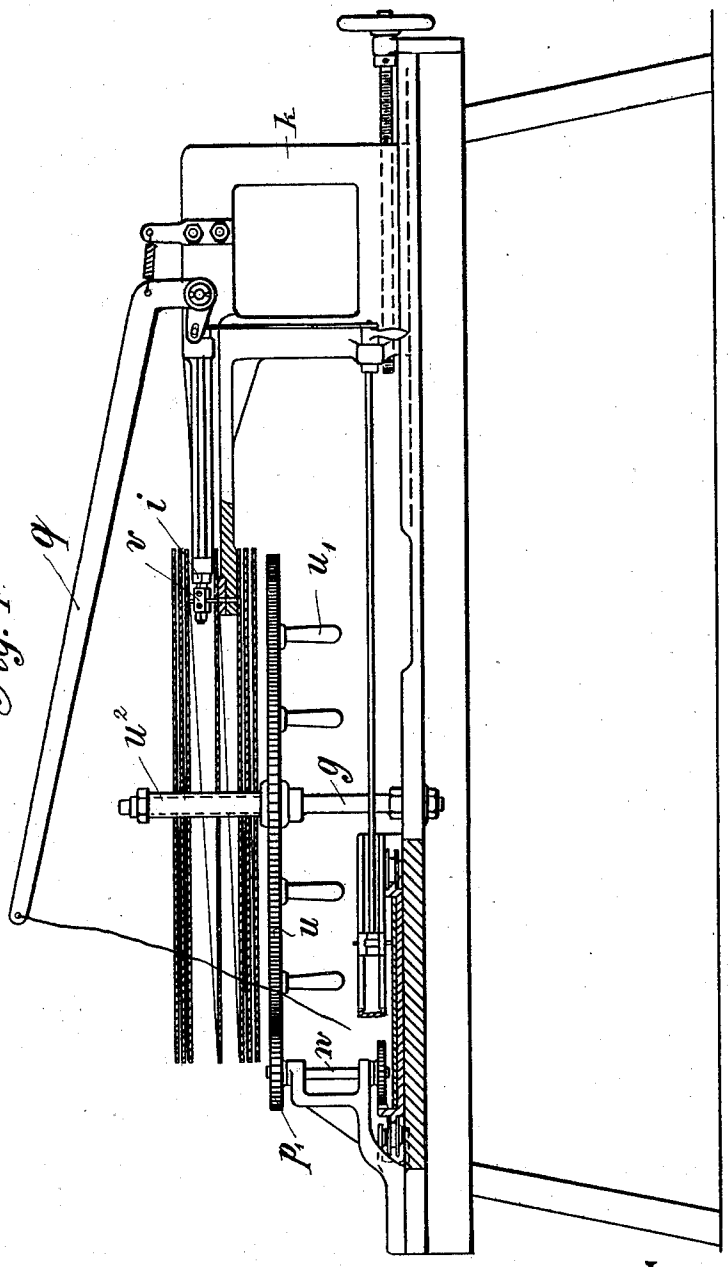
F. KLUGE.

APPARATUS FOR FORMING NOTES OF SPIRAL NOTE DISKS.

(Application filed Aug. 17, 1900.)

(No Model.) 5 Sheets—Sheet 4.

Fig. 4.



Witnesses:

Inventor:
Franz Kluge
by Eustace W. Hopkins
Atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 683,472. Patented Oct. 1, 1901.

F. KLUGE.

APPARATUS FOR FORMING NOTES OF SPIRAL NOTE DISKS.

(Application filed Aug. 17, 1900.)

(No Model.) 5 Sheets—Sheet 5.

Fig. 5.

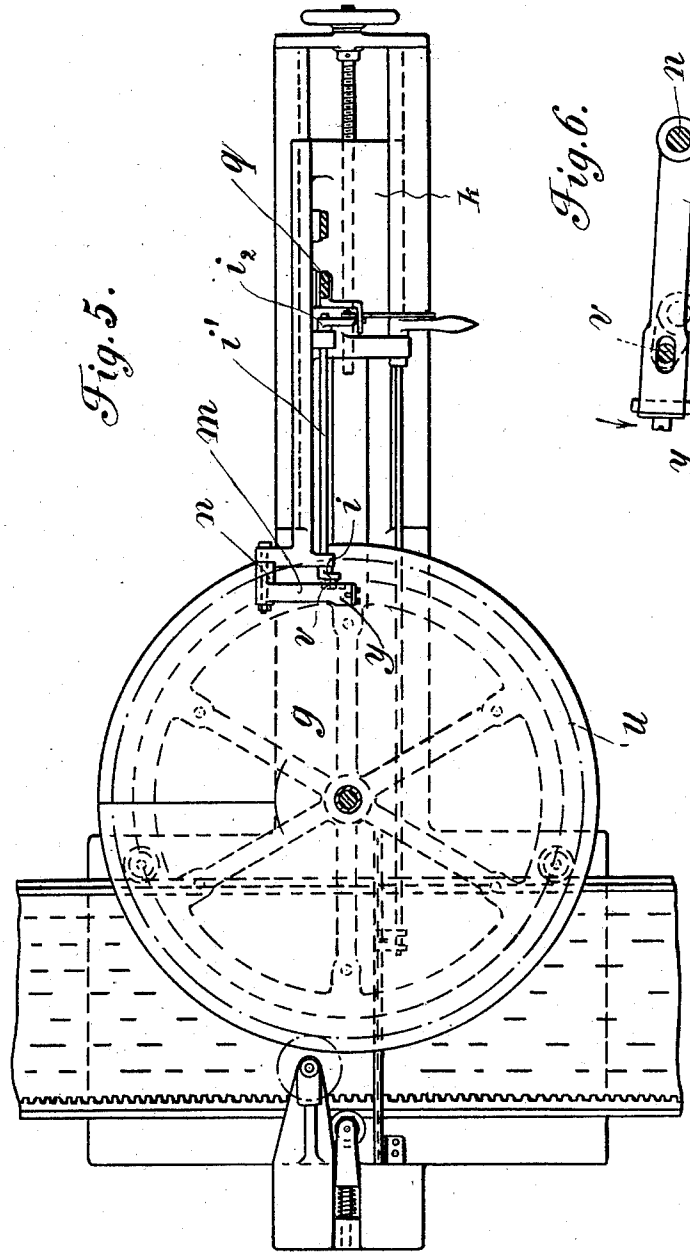


Fig. 6.

Witnesses:

Inventor:
Franz Kluge
by Eustace W. Hopkins
Atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANZ KLUGE, OF LEIPSIC-GOHLIS, GERMANY, ASSIGNOR OF ONE-HALF TO ADOLPH STAFFELSTEIN, OF LAUSEN, NEAR MARKRANSTADT, GERMANY.

APPARATUS FOR FORMING NOTES OF SPIRAL NOTE-DISKS.

SPECIFICATION forming part of Letters Patent No. 683,472, dated October 1, 1901.

Application filed August 17, 1900. Serial No. 27,221. (No model.)

To all whom it may concern:

Be it known that I, FRANZ KLUGE, manufacturer, a subject of the King of Saxony, and a resident of Leipsic-Gohlis, in the Kingdom of Saxony, German Empire, have invented a certain new and useful Improved Apparatus for Forming the Notes of Spiral Note-Disks, of which the following is a full, clear, and exact description.

The present invention consists of an apparatus for stamping out the notes of spiral note-disks, and comprises, essentially, means whereby the orifices forming the notes of the spiral disk are stamped in the same from a rectangular pattern note-sheet.

In order to render the present specification easily intelligible, reference is had to the accompanying drawings, in which similar letters of reference denote similar parts throughout the several views.

Figure 1 is a side elevation, partially in section, of the apparatus; Fig. 2, a plan, and Fig. 3 a cross-section on line N N of Fig. 1. Fig. 4 is a side elevation of the apparatus, showing a slightly-modified form. Fig. 5 is a plan of Fig. 4, and Fig. 6 a detail hereinafter referred to.

Referring to Figs. 1 to 3, the pattern note-sheet a, of rectangular form, is clamped to a table t, having an inwardly-projecting rack z along its side, in which a pinion r engages. The latter is mounted on a vertical spindle w, mounted in a suitable standard d, fast on the machine-frame, so that when the said spindle is rotated the table t will be correspondingly moved. The note-disk b to be perforated consists of a series of disks having radial slots and having one edge of the top disk affixed to the edge of the slot of the disk below it, so that a long spiral will be formed, which is gradually turned around step by step beneath the stamp or punch y, which will be hereinafter described. This spiral note-disk is mounted on the central supporting-spindle g, fixed in the machine-frame A, and the said disk is turned on its spindle in exact proportion to the movement of the sheet a by means of the wheel p, mounted on the spindle w and having a series of teeth corresponding to those of the pinion r, but arranged on its adjacent faces and adapted to grip the edge of the spiral disk and turn the same in proportion to the longitudinal movement of the sheet a. In cases where it is advantageous to employ a smaller pattern-sheet or to arrange the notes of the pattern-sheet closer together than the notes should appear on the spiral the wheels r and p may be differently geared, so as to attain a correspondingly larger travel of the spiral than of the pattern-sheet. In stamping the spiral in this manner the travel of the parts of the same approaching the center will be less than that at the periphery or driving point of the disk, and thus the notes will be correspondingly nearer together toward the center than at the periphery, so that when the piece is played off the spiral disk the effect will be the same on the rotation of the disk as it would be on the passage of the sheet, owing to the different speeds of the various parts of the said disk, according to their various distances from the center of the disk.

As will be seen from Fig. 1, the sheet or disk being operated on will be held a certain distance apart from the disks above and below it, according to the space occupied by the punching mechanism.

The pin or pointer for marking the position of the notes to be stamped is indicated by s and is mounted on a rod h, attached to a sliding block k, adapted to slide toward and from the center pin g of the disk in guideways k', fixed on the machine-frame. Thus this block k, and with it the stamp or punch y, may be moved toward and from the center of the disk, according to the position of the notes to be punched. The hand-lever q' is pivotally supported at q^2 and carries a slotted arm q^3, which engages a radially-projecting arm of the spindle y', carrying the punch. Thus when the arm g' is depressed after the position of the punch has been adjusted by the marking-pin s the spindle y' will be turned and force the punch y through the metal of the spiral disk, thus forming the note.

In Figs. 4 to 6 a slightly-modified form of the invention is illustrated. In this case instead of the clamping-wheel p a positive gear p' is employed, which engages a tooth-gear u, mounted on a sleeve u^2 on the spindle g, and thus adapted to positively drive the spiral

disk. The stamp or punch y is mounted on a lever m, supported on a sleeve mounted on a pin n, and the lever g is adapted to operate a spindle i', mounted in bearings longitudinally disposed on the block k and having a radial arm i^2, with which the slotted arm of the said lever engages. At the forward end of the said spindle a second arm i is provided, carrying a pin v, Fig. 6, which engages a slot or recess in the end of the arm m, carrying the punch, and thus the mechanism for working the punch is of a more rigid nature. These alterations are, however, merely constructional, and the machine might be modified in a variety of ways without departing from the nature of the present invention. The wheel u may be provided with a series of handles u', by means of which the pattern-sheet, and with it the spiral disk, may be turned. The block k may be worked backward and forward, according to requirement, by means of a hand-wheel and screw-spindle, as illustrated, in the well-known manner.

I claim as my invention—

1. In a machine for perforating spirally-formed note-disks, means for locating the position of the stamp or punch on the spiral disk from a rectilineally-advancing pattern note sheet or strip in the manner and for the purpose substantially as described.

2. In a machine for forming the notes on a spirally-formed note-disk, the combination of a pattern note sheet or strip, a spindle to carry a spirally-shaped note-disk, means for perforating the latter, means for moving the pattern-sheet longitudinally and for rotating the note-disk operated on simultaneously therewith at its periphery and in the same proportion, an indicating-pin or marker for the pattern-sheet and means for transmitting its movement to the punch or perforating device substantially as described.

3. In a machine for forming the notes on a spirally-formed note-disk, the combination of a pattern note-sheet and means for imparting to the same rectilinear motion, means controlled by the driving mechanism of the pattern-sheet for moving or rotating a spiral disk-punching mechanism for perforating a spiral disk, mounted above the same a slide-block to support said punching mechanism, a marker or pin connected to said slide-block and adapted to be moved on the pattern-disk and to control the movement of said block and punching mechanism substantially as described.

4. The combination of a pattern note-sheet and means for moving the same in a straight line, means, controlled by the moving mechanism of the pattern-sheet to move a spiral note-disk, punching mechanism to punch the said note-disk, a slide-block to support the same and an indicating-pin or marking-point, said marking-point, block and punching mechanism being movable in a direction at right angles to the path of movement of the pattern-sheet substantially as described.

5. The combination of a pattern-disk and means for moving the same in a straight line, means, controlled by the pattern-disk-operating mechanism to engage the periphery of a spiral note-disk and rotate the same in proportion to the movement of the pattern-disk, a punching-head mounted on a lever-arm supported on a pivot by means of a sleeve a slide-block to support said pivot, a marker or indicating-pin connected to said slide-block and mechanism operated by hand to depress said punch-holding lever after the position of the punch has been located by the aid of the marker in the manner and for the purpose substantially as described.

6. The combination of a pattern note-sheet, a table to support the same having a rack arranged longitudinally thereon, a pivot to support a spirally-shaped note-disk, a spindle mounted vertically in proximity to the said rack and having a pinion to engage the said rack, a gear mounted below the note-disk and adapted to rotate the same and a second pinion mounted on the vertical spindle to engage said pinion, a punching mechanism and an indicating-pin and means for adjusting the same in a direction at right angles to the path of movement of the pattern-sheet in the manner and for the purpose substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

FRANZ KLUGE.

Witnesses:
HERM. SACK,
RUDOLPH FRICKE.