

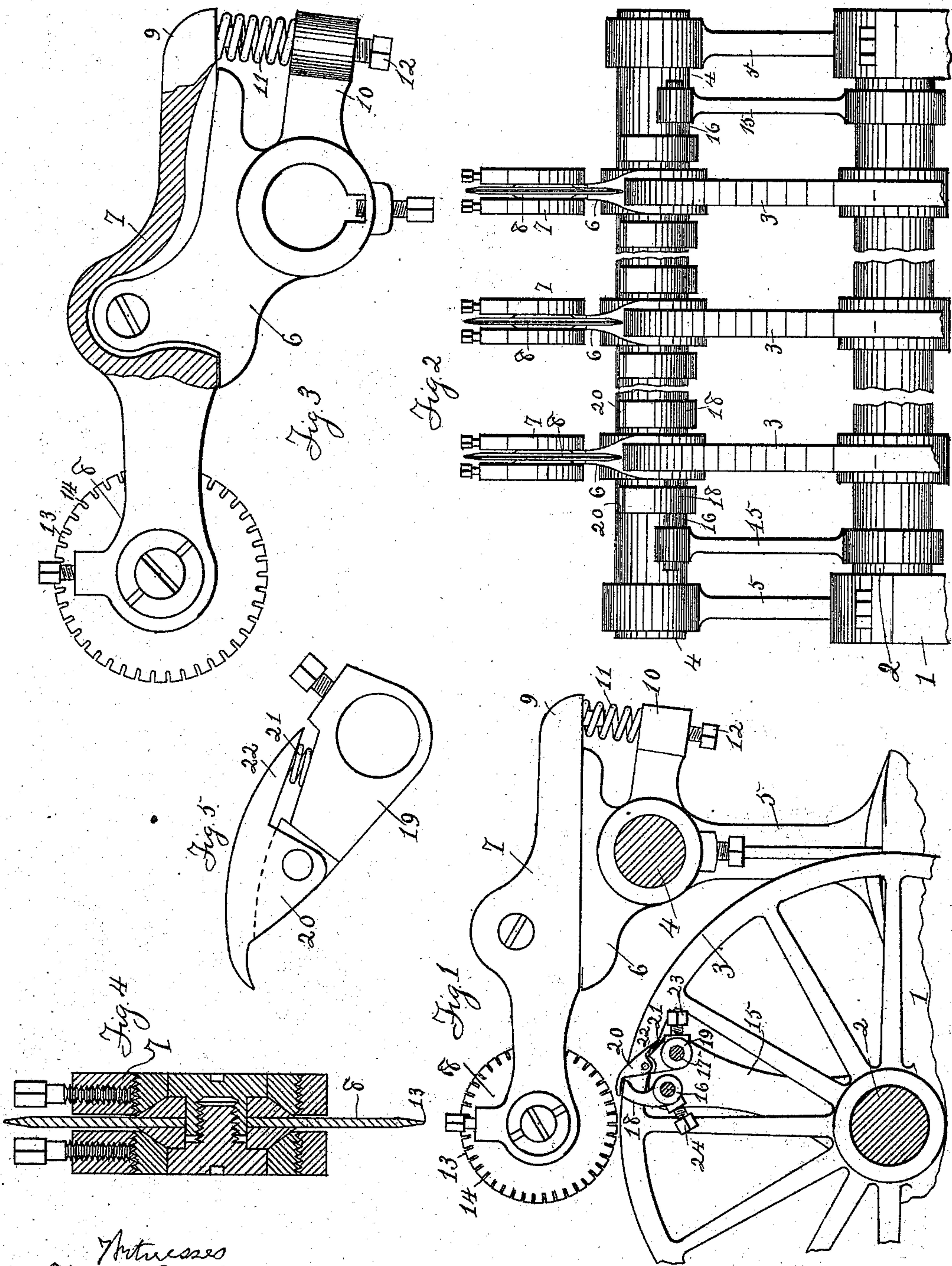
No. 714,667.

Patented Dec. 2, 1902.

C. CARLTON.  
IMPRESSING MACHINE.  
(Application filed Aug. 8, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
Thos. H. Riddle  
Arthur Pennell

C. Carlton—Inventor  
by  
J. L. Brown  
Attorney



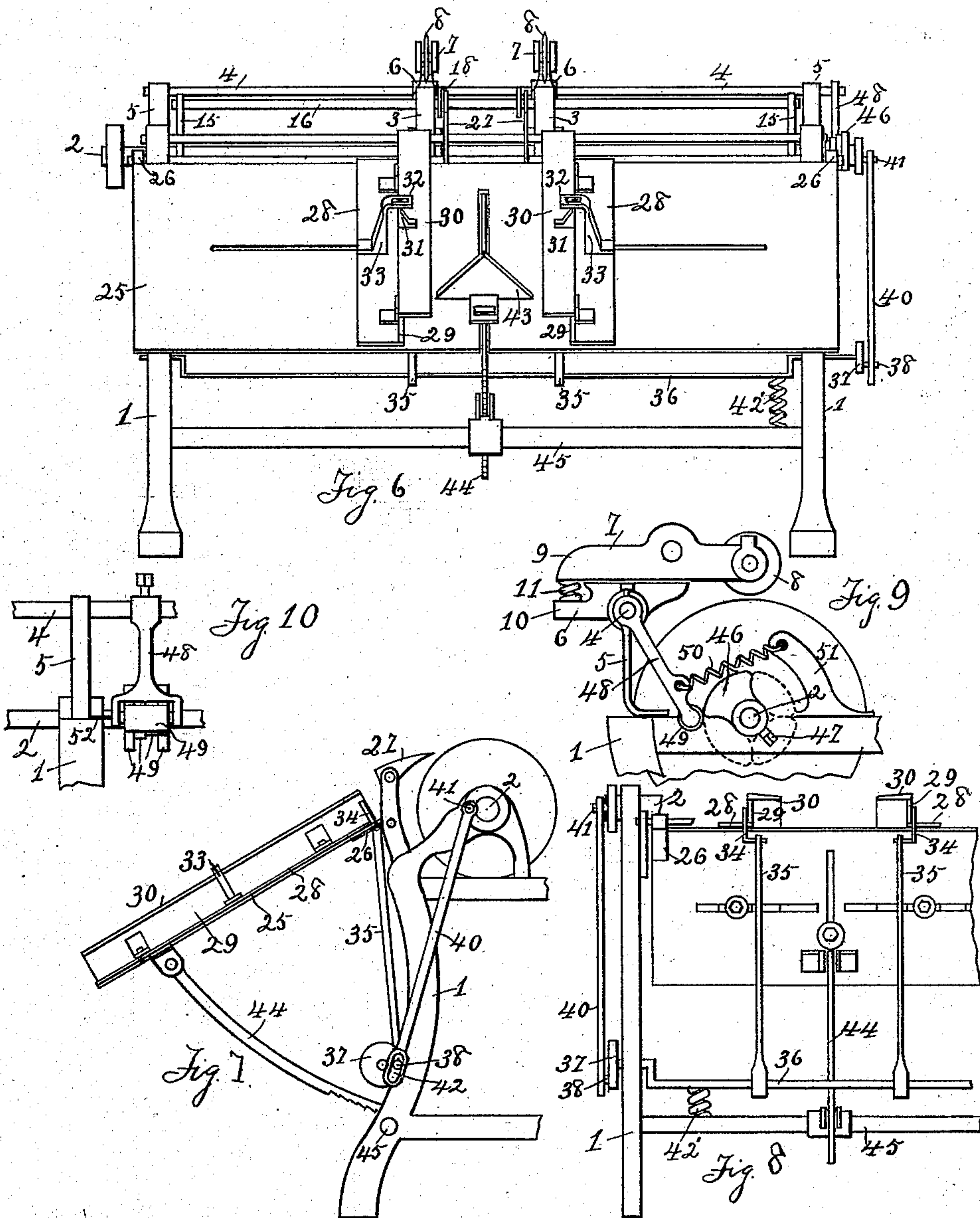
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Witnesses  
Thos. H. Ridgell  
Sethur Prall

Inventor  
C. Carlton  
By J. S. Brown  
Attorney



# UNITED STATES PATENT OFFICE.

CORTLAND CARLTON, OF KANSAS CITY, MISSOURI.

## IMPRESSING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 714,667, dated December 2, 1902.

Application filed August 8, 1901. Serial No. 71,373. (No model.)

*To all whom it may concern:*

Be it known that I, CORTLAND CARLTON, of Kansas City, in the county of Jackson, in the State of Missouri, have invented certain new and useful Improvements in Impressing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in machines for impressing lines upon sheets of paper for the purpose of facilitating the division of such sheets upon the impressed line. This work has heretofore been performed by perforating or punching series of holes in the paper upon the line upon which division is desired and has been done by a disk having a serrated periphery provided either with a sharp cutting or a blunt punching edge working in a matrix or upon a platen of soft material capable of being indented by the serrations of the disk to permit punching or perforating the holes in the paper; but when the perforations are made in this manner the under surface of the sheet of paper is marked by a broken ridge formed by the uneven, rough, indented margin of the perforations, which prevents the sheet from moving freely from the perforator to and over the preceding sheets upon the receiving-table or paper-rack in a manner very objectionable and annoying. Also when a number of sheets perforated in this manner are laid together to be bound in book form or otherwise a succession of ridges is formed, giving an uneven surface to the face of the paper, which is very seriously objectionable in filling out the blanks in the spacing and preparation of which such machines are most usually applied. To obviate these objections in my improved machine, the divisional line is formed by a disk having its periphery divided into blunt impress surfaces acting upon the hardened peripheral face of a rotating platen, whereby a line is impressed in the paper and the fiber of the paper broken up by the pressure, so that the division of the sheet can be easily made upon the impressed line, while the under side of the paper remains perfectly smooth and free from any ridge or rough surfaces.

My invention also relates to improvements in the gripper for drawing the paper from the feed-table over the platen and also in providing a jogger for carrying and laying the finished sheet upon the receiving-table; and to accomplish these and other objects hereinafter noted my invention consists in certain features of novelty hereinafter described, and pointed out in the claims.

Figure 1 represents a side elevation showing the manner of mounting the impress-disks and the grippers. Fig. 2 represents a front elevation of the same. Fig. 3 represents a detail side elevation of the impress-disk and its carriage. Fig. 4 represents a cross-section on the line *xx* of Fig. 3. Fig. 5 represents a detail side elevation of the outer gripper-jaw. Fig. 6 represents a front elevation showing the receiving-table and the joggers mounted thereon. Fig. 7 represents a side elevation of the same. Fig. 8 represents a rear view of the receiving-table, showing the means for operating the joggers. Fig. 9 represents a side elevation showing the lever and cams for operating the impress-disks. Fig. 10 represents a rear elevation of the same.

Similar numerals refer to similar parts throughout the several views.

The machine herein illustrated as embodying my invention is in general construction and operation and in its particular construction, except as herein shown and described, the same as the machine shown and described in Letters Patent of the United States issued to me on the 1st day of June, 1897, No. 583,616, and the parts omitted and not shown herein are parts which are familiar to the mechanic in the construction of such machines.

1 represents the frame of the machine. 2 represents a shaft rotatably mounted upon said frame, and upon said shaft are mounted the rotating platens 3, said platens having a flat hard peripheral surface. A shaft 4 is journaled in standards 5, mounted upon the frame. Upon said shaft is mounted the carriage 6, being adjustable longitudinally and circumferentially upon said shaft. Such adjustment is one of the leading features of my invention. In the machines heretofore in use



the disks are adjustable longitudinally upon the shaft; but the adjustment of the disks with relation to the matrix is effected solely by adjustment of the shaft, so that to adjust one disk all must be adjusted in the same degree, and if one disk becomes more worn out than the others there is no means whereby to adjust or compensate such difference in wear. With the construction above noted, however, each disk is independently adjustable both longitudinally and circumferentially with relation to the platen, so that it may be adjusted with the greatest nicety to make the proper impression upon the paper.

Upon said carriage is pivotally mounted a head-block 7, in which is journaled the disk 8. Between an extension 9 on the head-block an arm 10 on the carriage is arranged a tension-spring 11, the tension of which is regulated by a set-screw 12. The purpose of said spring is to regulate and control the pressure of said disk upon the paper after adjustment of said carriage upon the shaft. Said disk is beveled at its edge, and its periphery is divided into a series of blunt or narrow impress-surfaces 13, separated by gaps 14 in the periphery, so that as the paper passes between the platen and the disk a broken line is impressed upon or in the paper by the blunt or narrow surfaces and the fiber of the paper disintegrated and broken up in such manner that the sheet may with facility be divided upon the impressed line, while the under surface of the paper by reason of its bearing upon the hard flat surface of the platen remains smooth and even. To control the bearing of the disk upon the platen and prevent it bearing thereon when a sheet of paper is not interposed, and thereby needlessly and uselessly wearing the impress-surface of the disk, upon the platen-shaft is mounted a series of segmental cams 46, independently adjustable upon said shaft by means of set-screws 47, and a lever-arm 48 is adjustably mounted upon the shaft 4, carrying the disk and provided with a roller 49, arranged to be engaged by said cams and operated against the tension of a spring 50, connected with a fixed arm 51 on the frame of the machine. The arrangement is such that by spreading the cams, as shown in dotted lines in Fig. 9, the disks may be held down upon the sheet during the entire rotation of the platen, or by adjustment of said cams such length of line may be impressed as may be desired or the length of the paper permit. A stop 52, mounted upon the frame, is arranged to limit the movement of the lever-arm 48 when not in engagement with the cams.

The rotation of the disks is effected by the frictional contact of the disk upon the paper on the platen, and herein is an important economical feature of this machine, as in all other machines, so far as I am aware, gearing is introduced to rotate the disks, the cost of which is saved in this construction. Also the rotation being controlled by contact of

the disk with the paper on the platen such rotation is regulated by and adapts itself to the thickness of the paper, and a regular and uniform impressed line is produced upon different thicknesses of paper, which cannot be done when gearing running at the same speed for all thicknesses of paper is interposed to operate the disks, and also the difficulty of adjusting the gearing to obtain the proper rotation of the disk relative to the rotation of the platen is obviated and removed.

15 represents standards mounted upon the platen-shaft and rotating therewith. Upon said standards are carried the gripper-rods 16 and 17. Upon the rod 16 is mounted the inner gripper-jaw 18. Upon the rod 17 is mounted a hub 19, upon which is pivotally mounted the outer gripper-jaw 20, a spring 21, arranged between the hub and an extension 22 upon the jaw 20, acting to press said jaw closely upon the paper resting upon the inner jaws. Said jaws are adjustable upon the rods 16 and 17 and are held in place thereon by set-screws 23 and 24. Such pivotal spring-controlled outer jaw is an important feature of my invention. Heretofore the outer gripper-jaw has been rigidly connected with its carrying-rod, and hence to enable it to grip and hold paper of various thicknesses upon the inner jaw very nice adjustment of the outer jaw is required, and when a number of such jaws are to be adjusted a large amount of time is taken up in making the proper adjustment. With the spring-controlled jaw herein set forth the necessary adjustment may be quickly made and with sufficient accuracy by setting the outer against the inner jaw the thickness of the paper being accommodated by the tension of the spring.

25, Fig. 6, *et seq.*, represents the receiving-table or paper-rack hinged, as shown at 26, upon one of the rods carrying the delivery-slides 27. Bridges 28 are mounted and adjustable longitudinally upon said table. Upon said bridges are hinged upright gates 29, upon which are hinged delivery-boards 30, extending when the gates 29 are closed parallel with the plane of the table. Said boards are operated and retained in position by pins 31 engaging eyes in lateral arms 32 of brackets 33, mounted upon the bridges 28, and are oppositely disposed in such relation as to receive the paper as it is delivered over the delivery-slides from the platens. Upon said gates are mounted brackets 34, connected by connecting-rods 35 with a crank-shaft 36. Upon said crank-shaft is mounted a disk 37, provided with a wrist-pin 38, and a pitman-rod 40 connects said wrist-pin with a wrist-pin 41, mounted upon the platen-shaft 2. Said pitman-rod is slotted at its crank-shaft end, as shown at 42, so that with the rotation of the platen-shaft said crank-shaft is not given a complete rotation, but with a partial rotation of said platen-shaft is simply turned through such arc as is necessary to open the



gates and with the further rotation of said platen-shaft is released and returned through the same arc by the action of a tension-spring 42', connected to said shaft and a stationary portion of the press, and the gates closed. The arrangement and relation of the parts are such that as the sheet is delivered from the platens the delivery-boards are in elevated position to receive the paper. Then as the paper is received upon said boards the pitman-rod engages the crank-shaft and opens the gates, when by engagement of the bracket-arms 32 with the pins on the delivery-boards said boards are turned down and the sheet delivered on the pile, and then with the continued rotation of the platen-shaft the crank-shaft is released, and by the action of the spring 43 the gates are closed and the delivery-boards returned to receiving position.

In the use of machines of this character as usually constructed it is a familiar objection and an annoyance that as a sheet is delivered from the platens upon the pile of sheets upon the table the friction of the oncoming sheet upon the sheet or sheets already delivered will cause its advance edge to stick and the sheet will become rolled and crumpled up, and as successive sheets are afterward delivered the pile will become a disorderly mass, requiring much time to straighten out. With the construction and arrangement above described such objection and difficulty are entirely obviated and removed and each sheet evenly and smoothly delivered upon the pile. 43 represents a stop-block adjustably mounted upon the table to retain the paper thereon.

The table is elevated and retained at the desired inclination by means of a rack-bar 44, pivotally connected with the table and adapted to engage a detent on the cross-bar 45 of the frame in the usual manner.

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

1. In a machine of the character described, having a suitable frame, the combination with a rotating platen, of a shaft by which said platen is carried, a series of cams shiftably mounted on said shaft to place them in varying positions, a rock-shaft mounted upon said frame, a disk mounted upon said rock-shaft, and a spring-controlled lever-arm carried by said rock-shaft and adapted to ride against said cams to rock said disk into intermittent bearing upon said platen, substantially as set forth.

2. In a machine of the character described, the combination with a suitable frame of a rotating platen mounted thereon having a flat hardened peripheral face, of a shaft mounted upon said frame, a carriage adjustably mounted upon said shaft, a spring-controlled head-block pivotally mounted upon said carriage, a disk mounted in said head-block and means for oscillating said shaft whereby said disk is intermittently brought to bear upon the pe-

ripheral face of said platen; substantially as set forth.

3. In a machine of the character described, having a suitable frame, the combination with a rotating platen and segmental cams adjustably mounted upon the shaft of said platen, of a shaft mounted upon said frame, a disk adjustably mounted upon said shaft, and a spring-controlled lever-arm adjustably mounted upon said shaft and arranged to be engaged by said cams for oscillating said shaft whereby said disk is intermittently brought to bear upon the face of said platen; substantially as set forth.

4. In a machine of the character described having a suitable frame, the combination with a rotating platen and segmental cams adjustably mounted upon the shaft of said platen, of a shaft mounted upon said frame, a disk adjustably mounted upon said shaft, and a spring-controlled lever-arm adjustably mounted upon said shaft, having an anti-friction-roller in its end arranged to be engaged by said cams for oscillating said shaft whereby said disk is intermittently brought to bear upon the face of said platen; substantially as set forth.

5. In a machine of the character described in the combination with a rotating platen having a flat, hardened peripheral surface, of a disk having blunt or narrow separated, peripheral impress-surfaces arranged to impress a broken line in the paper as distinguished from puncturing or perforating the same; substantially as set forth.

6. In a machine of the character described having a rotating platen over which the paper is carried, gripper-rods mounted upon the platen-shaft and rotating therewith, an inner gripper-jaw adjustably mounted upon one of said rods, and a spring-controlled outer gripper-jaw adjustably mounted upon the other of said rods; substantially as set forth.

7. In a machine of the character described having a rotating platen over which the paper is carried, gripper-rods mounted upon the platen-shaft and rotating therewith, an inner gripper-jaw adjustably mounted upon one of said rods, a hub adjustably mounted upon the other of said rods, an outer gripper-jaw pivotally mounted upon said hub, and having an extension extending over the hub, and a tension-spring arranged between said extension and the hub; substantially as and for the purpose set forth.

8. In a machine of the character described, having a suitable frame, the combination with a receiving-table, of oppositely-disposed swinging gates hinged at their lower edges above said table and drop folding delivery-boards hinged to the upper edges of said gates and arranged to receive the sheet and deliver the same upon the table; substantially as set forth.

9. In a machine of the character described, having a suitable frame, the combination with a receiving-table, of oppositely-disposed



bridges adjustably mounted on said table, swinging gates hinged at their lower edges upon said bridges; drop swinging delivery-boards hinged to the upper edges of said gates, 5 brackets on said bridges engaging pins on said delivery-boards for folding the same as the gates are opened and closed, and means for swinging said gates outwardly; substantially as set forth.

CORTLAND CARLTON.

Witnesses:

THOS. H. RIDDLE,  
ARTHUR PENNELL.