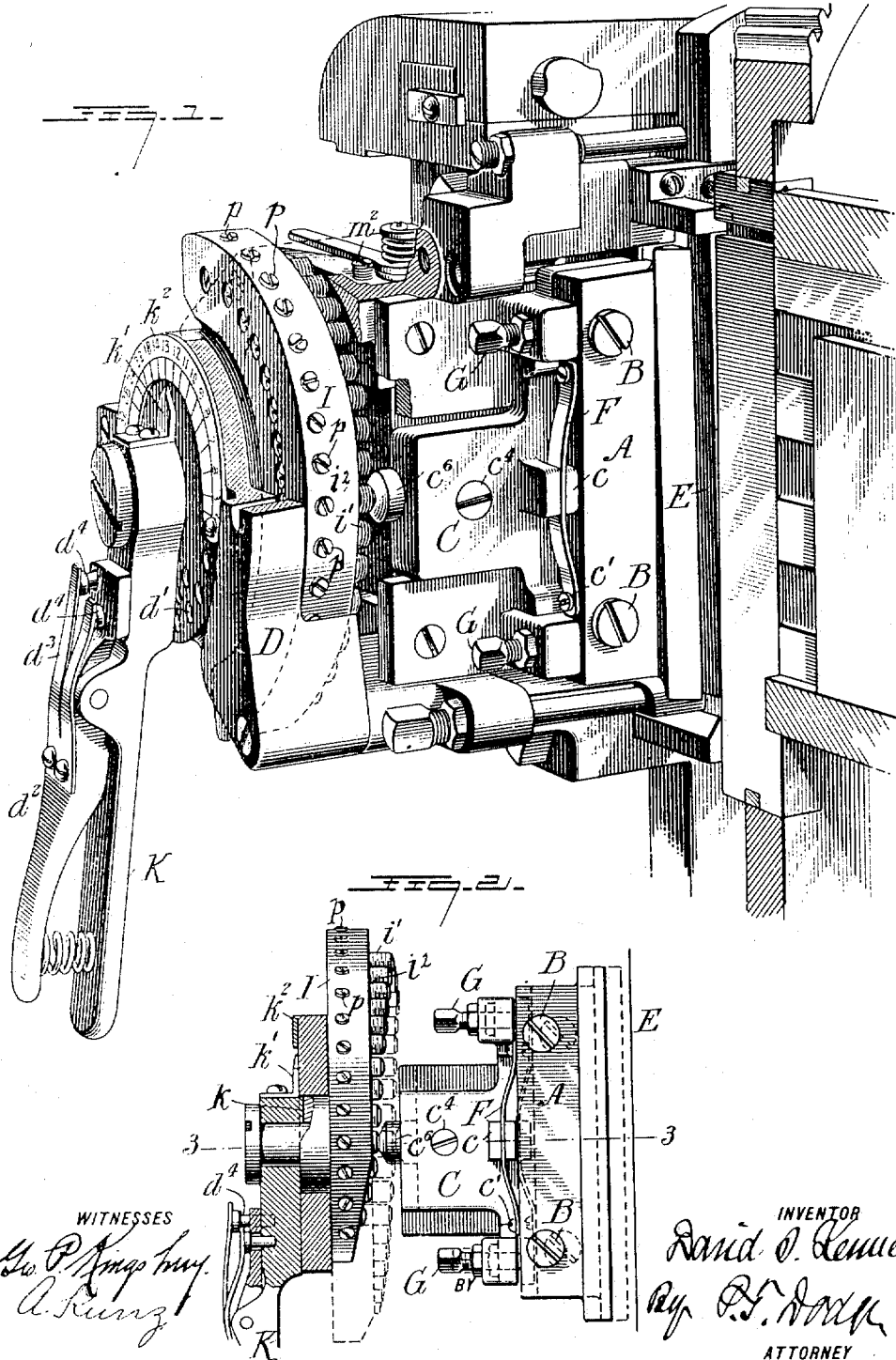


D. S. KENNEDY.
 LINE CASTING MACHINE.
 APPLICATION FILED APR. 6, 1910.

1,002,281.

Patented Sept. 5, 1911.

3 SHEETS-SHEET 1.



WITNESSES

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INVENTOR

David S. Kennedy

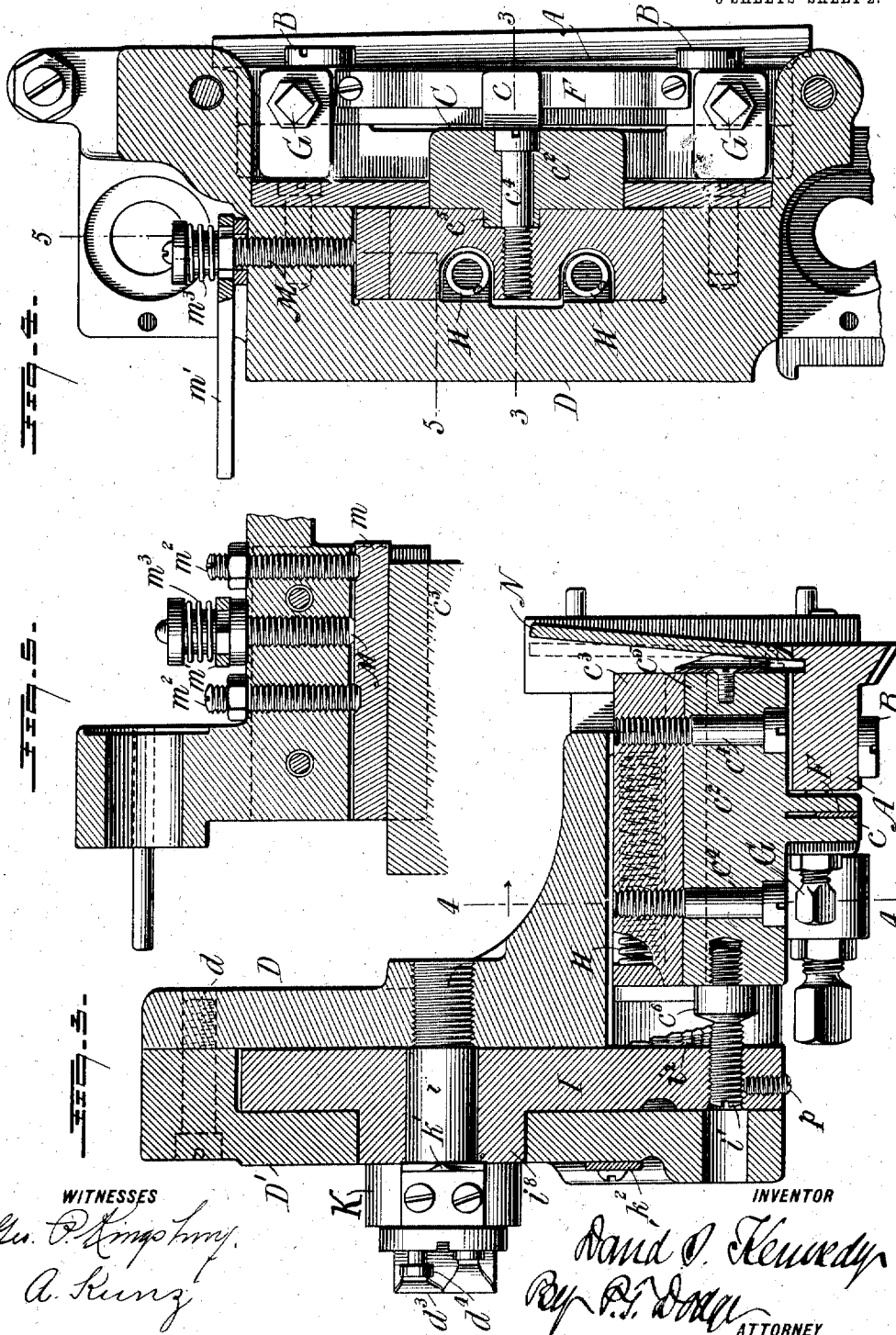
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3 SHEETS-SHEET 2.

1,002,281.



WITNESSES

Geo. P. Thompson
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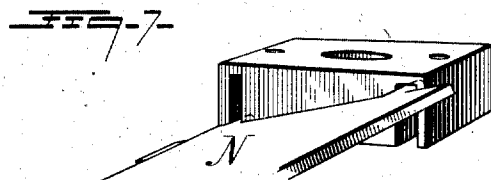
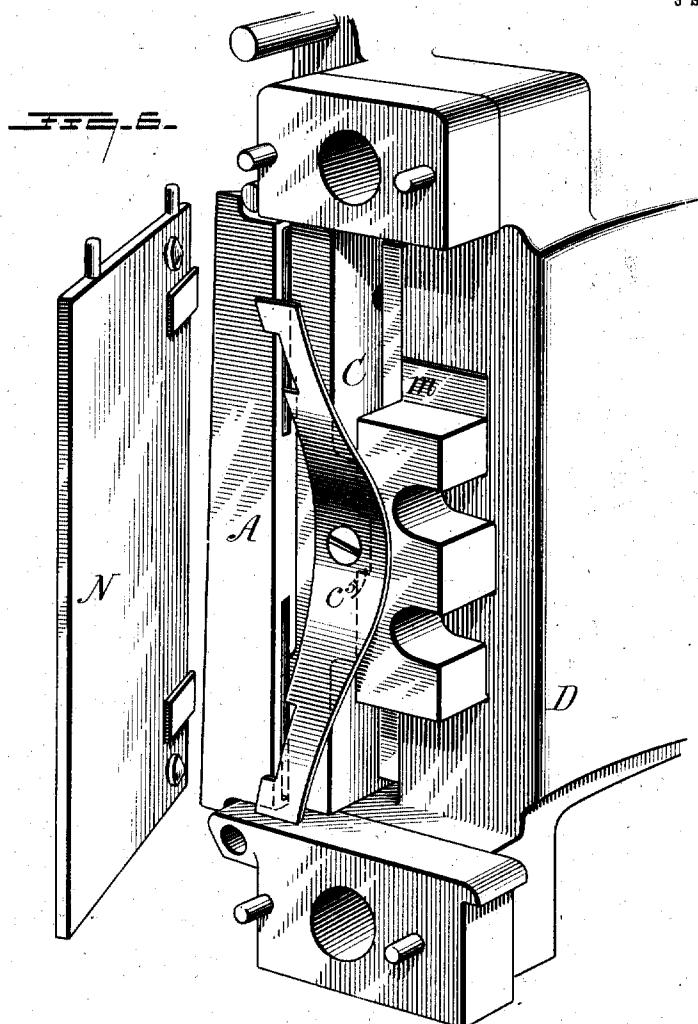
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3 SHEETS-SHEET 3.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

DAVID S. KENNEDY, OF BROOKLYN, NEW YORK, ASSIGNOR TO MERGENTHALER
LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

LINE-CASTING MACHINE.

1,002,281.

Specification of Letters Patent.

Patented Sept. 5, 1911.

Application filed April 8, 1910. Serial No. 553,829.

To all whom it may concern:

Be it known that I, DAVID S. KENNEDY, of the borough of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Line-Casting Machines, of which the following is a specification.

My invention has reference to adjustable trimming knives for use in line casting machines of the Mergenthaler type and kindred machines, in which metal slugs or type bars, cast in a mold, are ejected therefrom between two knives, which insure the parallelism of their opposite side faces and also insure the exact thickness required.

The invention is intended more particularly as an improvement in the structure represented in Letters Patent of the United States to D. S. Kennedy, No. 853,801. Two parallel knives are employed, one fixed and the other movable, in order that the distance between them may be varied at will. In the original patent the movable knife is secured to a slide urged in one direction by a spring, and moved in the opposite direction by studs projecting on a vertical slide, these studs serving to advance the knife toward its companion definite distance and to maintain it in the required position.

In the improved structure, the subject of the present invention, I employ in place of the slide a rotary sector plate provided with adjustable studs to move the slide, and also provided with an actuating handle by which it may be turned, devices being also provided to indicate the distance between the knives and to lock the parts in the positions desired.

At the present day the adjustable knife and the attendant devices for supporting and adjusting the same are commonly known as a knife block.

In the drawings,—Figure 1 is a perspective view of my knife block viewed from the front, minor portions being broken away to show the internal construction. Fig. 2 is an elevation looking from the front, showing the knife supporting slide and the actuating devices. Fig. 3 is a horizontal section on the line 3—3 of Figs. 2 and 4. Fig. 4 is a vertical cross section on the line 4—4 of Fig. 3. Fig. 5 is a vertical cross section on the line 5—5 of Fig. 4. Fig. 6 is a perspective view looking in the direction of the

arrow 6 in Fig. 3. Fig. 7 is a perspective view showing a detail.

Referring to the drawings, A represents the upright, adjustable knife, secured by horizontal screws, B, to a slide, C, mounted to move horizontally in a supporting frame, D, which is bolted rigidly to the main frame of the machine. The knife A is arranged opposite to and parallel with a fixed knife, E, as indicated in Fig. 2. The holes in the knife through which the screws B pass are of such size as to permit a slight forward and backward adjustment of the knife slide. The knife is urged backward on the slide by a spring, F, seated in a stud, *c*, on the slide, connected at opposite ends to the knife by screws, *c*¹, so that when the screws B are loosened the spring will tend to draw the knife backward. The knife is advanced and adjusted on the slide, in order to maintain its edge in exact parallelism with the opposing knife, E, by means of horizontal screws, G, seated in ears on the slide and bearing against the back of the knife.

The slide C may be made in one piece, but for manufacturing reasons it is preferred to construct it as shown in the drawings, of two parts or plates, *c*² and *c*³, connected by horizontal screws, *c*⁴. The plate *c*² may also be provided with a rib, *c*⁵, to enter the companion plate, as shown in Figs. 3 and 4, in order that the two parts may be held the more rigidly together. The slide is urged constantly backward to move the knife A away from the opposing knife, by horizontal, spiral springs, H, seated in the recesses in the back of the slide, and bearing at one end against the slide and at the opposite end against a rigid projection on the body plate D.

In order to advance the slide and knife positively and to definite positions and to sustain them in such positions, I provide a sector plate, I, arranged to turn about a horizontal stud, *i*, on the body plate, and provided with a series of transverse screws, *i*¹, *i*², etc., projecting different distances beyond its vertical face, so that as the plate is turned one screw after another will be brought in contact with a hardened stud, *e*, on the rear end of the slide. It will be understood that these screw studs act in opposition to the springs to advance the slide, so that the slide and knife will stand in one

adjustment or another according as one stud or another is brought into action. In practice the studs are arranged progressively, or so that each projects a slightly greater distance than the next, the difference being usually one "point," as known to the printing art.

The disk I is constructed on the outer side with a central hub, i^3 , and is held in place by an outer plate, D^1 , extending at its edges past the periphery of the disk, in order to bear firmly against the outer face of the body plate D, to which it is firmly secured by horizontal screws, d , the two plates D and D^1 forming in effect a rigid frame within which the plate I is seated.

The plate I has its outer surface accurately finished and firmly seated against the inner face of the plate D^1 , by which it is rigidly and accurately supported so that the screws i^1 etc., will hold the slide and the movable knife firmly and in the precise positions required, that the slugs delivered from the machinery may be of exact and uniform thickness.

For the purpose of turning the sector plate, a hand lever, K, is secured rigidly to the hub i^3 , the lever being provided on its inner side with a transverse rib, k , to interlock with the hub of the plate I, against which it is held by the screw i before mentioned.

In order to aid the operator in adjusting the knife to produce slugs of different thicknesses and to indicate the adjustment, the lever K is provided, as shown in Fig. 1, with a pointer, k^1 , arranged to travel over a circular, graduated plate, k^2 , secured to the plate D^1 . For the purpose of locking the lever and plate I in their different positions, the stationary plate D^1 is provided with a series of holes, d^1 , and the lever K provided with a secondary lever, d^2 , pivoted to its side and provided with springs, d^3 , having at their inner ends studs, d^4 , passing through the lever K to enter the holes d^1 . In order to admit of small adjustments being made, the holes are staggered, or arranged in two rows, and the studs d^4 are so positioned that they will act alternately and enter the successive holes. In effecting the adjustment of the knife, the operator grasps the lever K, depresses the lever d^2 in order to withdraw the locking pins, and then turns the lever K and thereby plate I, until the pointer indicates the desired thickness of slug. As the disk I is turned, it carries the proper supporting screw into operative position behind the slide C, and the latter, moving forward or backward, places and supports the knife in the required position.

In order to clamp the slide rigidly in the adjusted position, I may provide the block D with a vertical clamping screw, M, arranged to bear a plate, m , resting on the

upper edge of the slide. This plate or gib, which assists in guiding the slide, may be held down in its normal position snugly, but not tightly, on the slide by vertical screw m^2 . These devices permit of compensation for wear, and insure close and accurate guiding of the slide. The clamping screw M will be provided with an operating handle, m^3 , in the nature of a wrench, fitted over an angular portion of the screw and held down thereon by a pressure spring, m^4 . This admits of the handle being lifted out of engagement, turned and applied to the screw in a new position, so that the same may be worked upward or downward to any required extent, although the handle is capable vibratory motion only.

N represents a vertical plate to assist in guiding the outgoing slugs, and is connected at its forward edge with the movable knife. As this feature is old and forms no part of my invention, a further description thereof is unnecessary.

It will be observed that the slide adjusting and supporting screws, i^1 , i^2 , etc., are adjustable independently, so that each one may be caused to set the knife in any position required. By their adjustment the block may be caused to produce slugs of standard or of bastard thicknesses, and the wear as to any one of the screws may be taken up without affecting the others. Radial screws, p , are provided in the edge of the disk I, to hold the screws, i^1 , etc., in their adjusted positions.

Having described my invention, what I claim is:

1. In combination, a knife supporting slide C, a supporting frame therefor, and a rotary plate, journaled in said frame and provided with an operating handle and with studs acting against the slide.

2. A knife block for line casting machines, comprising a fixed frame, the knife supporting slide C therein, a spring urging the same in one direction, and a plate provided with an operating handle and pivoted to the frame at right angles to the slide, said plate having projections to act upon the slide and determine its position.

3. In combination with the rotary plate I, having the series of projections, a slide C, acted upon by the plate, a spring urging the slide toward said plate, a knife movably secured to the slide, a spring F, carried by the slide and urging the knife backward, and screws G carried by the slide, and acting in opposition to said spring to adjust the knife upon the slide.

4. In combination with the knife bearing slide, the rotary plate, the lateral projections to move the slide, the plate operating handle, a pointer k^1 , and a fixed scale co-operating with the pointer to indicate the position of the knife.

5. In combination with the fixed frame and the knife bearing slide seated and guided therein, the rotary plate I and projections to adjust the slide, and the outer plate D¹, embracing and supporting the plate I and secured to the main frame, substantially as described.

6. A supporting frame D, D¹, having the knife supporting slide C and the rotary plate I seated therein, in combination with the external handle K, rigidly secured to the hub of plate I, as described.

7. In combination with the slide C, its

supporting frame D, and the rotary plate I, the fixed plate D¹, one face seated against and supporting the plate I and the other face provided with the graduations k², and the operating lever K having a pointer to traverse the graduations. 15

In testimony whereof I hereunto set my hand this fourth day of April, 1910, in the presence of two attesting witnesses. 20

DAVID S. KENNEDY.

Witnesses:

JOHN R. ROGERS,
LUCY E. SMITH.