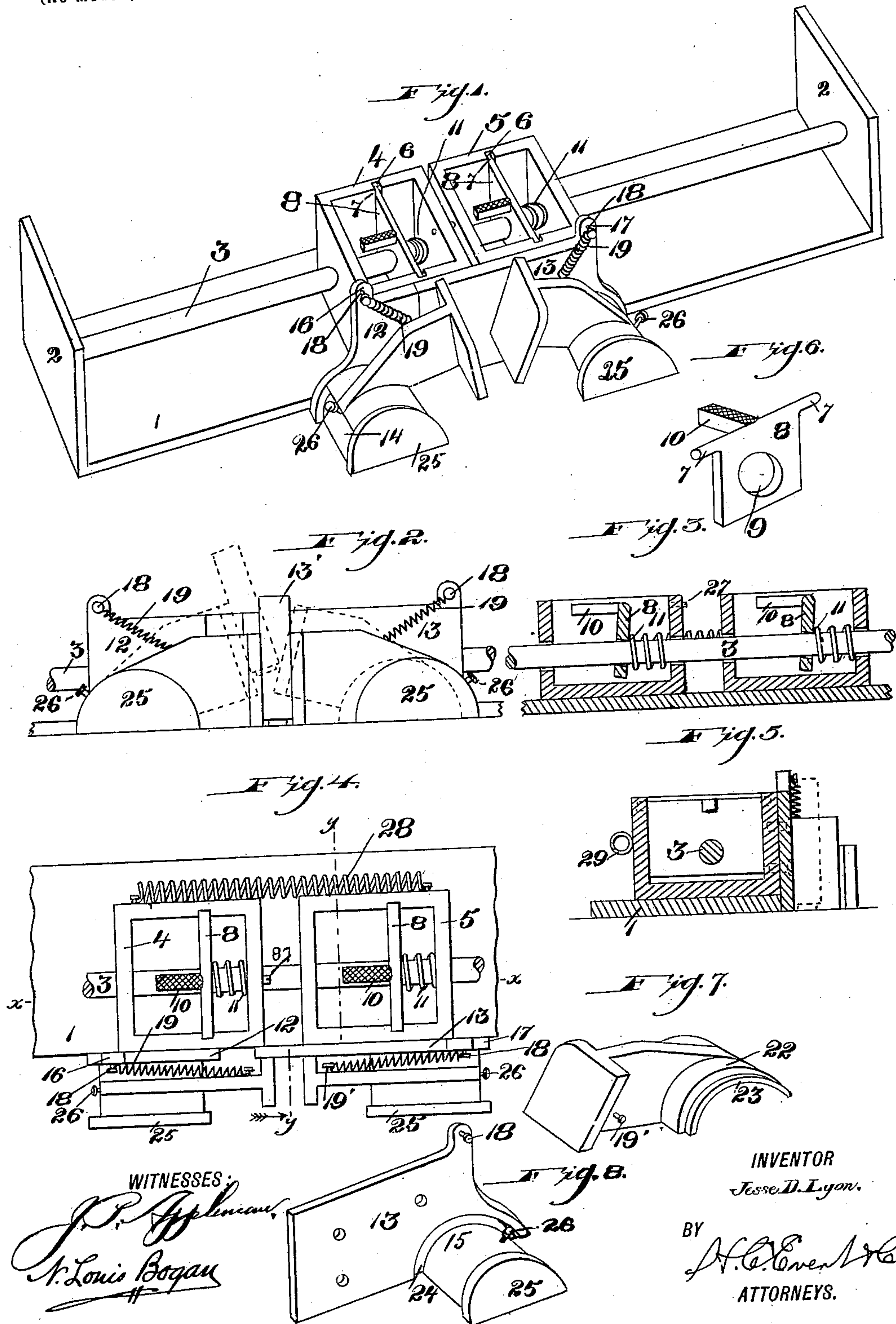


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Patented Jan. 2, 1900.

J. D. LYON.
SPACING INSTRUMENT.
(Application filed Jan. 6, 1899.)

(No Model.)



UNITED STATES PATENT OFFICE.

JESSE D. LYON, OF PITTSBURG, PENNSYLVANIA.

SPACING INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 640,678, dated January 2, 1900.

Application filed January 6, 1899. Serial No. 701,379. (No model.)

To all whom it may concern:

Be it known that I, JESSE D. LYON, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Spacing Instruments, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain new and useful improvements in spacing instruments.

The object of my invention is to construct a spacing instrument which when operated will give the true width or space of a letter carried by a die or other object.

My invention is particularly adapted for use in obtaining the proper space between different sizes of dies or other objects from which an impression is to be made.

My invention finally consists in the novel combination and arrangement of parts hereinafter more fully described, and particularly pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, wherein like numerals of reference indicate corresponding parts throughout the several views thereof, and in which—

Figure 1 is a side view of my improved spacing instrument. Fig. 2 is a side view of a portion thereof, showing in heavy lines the position of the spacing-jaws when operated and in dotted lines the same in an elevated position after the operation. Fig. 3 is a longitudinal sectional view of a portion of the operating mechanism. Fig. 4 is a top plan view thereof, a portion of the guide-rod and supporting-plate being broken away, as shown. Fig. 5 is a cross-sectional view of one of the carriages for the operating mechanism. Fig. 6 is a perspective view of one of the friction-ratchets. Fig. 7 is a perspective view of one of the spacing-jaws. Fig. 8 is a perspective view of one of the supports for the spacing-jaws.

Referring to the drawings by reference-numerals, 1 indicates an oblong supporting-plate on which the carriages carrying the spacing-jaws are adapted to slide, the sliding movement of the carriages being arrested by means of a portion of the sides of the supporting-

plate 1, bent at right angles, as at 2, forming stops.

3 indicates a fixed guide upon which the carriages carrying the spacing-jaws are mounted and is secured in any desirable manner to the sides or stops 2.

The carriages to which the spacings-jaws are connected are formed of a pair of rectangular frames 4 5, constructed of any suitable material and provided with a centrally-arranged opening through the sides of the frame, by which they are mounted upon the guide-rod 3. The carriages are also provided on their upper edges with suitable recesses 6, diametrically opposite each other, and are adapted to receive the lugs 7, which are formed integral with the upper corners of the friction-clutches 8. The lugs 7 are loosely mounted within the recesses 6 to allow of a lateral motion of the friction-clutches.

The friction-clutches 8 are substantially square in contour and are provided with the opening 9, the edge thereof being inclined, forming a gripping-jaw, or, in other words, to allow of the clutches frictionally engaging the guide-rod 3 to prevent the motion of the carriages.

The clutches 8 have formed integral therewith a projection 10 on one side thereof to allow of their operation, the upper face of the projection 10 being knurled or milled to prevent the slipping of the fingers and to allow of the obtaining a grip thereupon.

Arranged on the guide-rod 3, between one side of the friction-clutch and the inner face of one of the sides of the carriages, is a coil or resistance spring 11 for the purpose of keeping the clutches normally in engagement with the guide-rod.

Suitably secured to one side of the carriages, as shown, are the supporting-plates 12 13 for the spacing-jaws, the supporting-plate 13 being of greater length than the plate 12, and each of these plates being of a height equal from the lower edge of the supporting-plate 1 to the upper edge of the carriages. The plate 13 acts as a guide for the die 13' during the spacing operation. (For illustration see Fig. 1 of the drawings.)

The plates 12 13 have formed integral at their lower ends the outwardly-extending semispherical extensions 14 15, to which the

spacing-jaws are adapted to be pivotally mounted thereon, and these plates are also provided, at one of the corners thereof, with an upwardly-extending portion 16 17, having a pin 18 secured thereto, and to this pin is connected the one end of the coil or resistance spring 19, and the opposite end thereof is connected by means of the pin 19' to one side of the spacing-jaws. This spring 19 will normally keep the spacing-jaws in an elevated position. The spacing-jaws are substantially T-shaped in formation and are constructed of a horizontal plate 20. This horizontal plate 20 has formed integral therewith at its upper end the vertical plate 21 and at its lower end a semicircular flange 22. This semicircular flange 22 is adapted to operate on the semicylindrical bearings 14 15, and the edge thereof is cut away, as shown at 23, which cut-away portion is inserted in the groove 24, formed in the plates 12 13, directly above the bearings 14 15. By this arrangement the elevating and lowering movement of the spacing-jaws will be easily obtained. The spacing-jaws are held in position on the bearings 14 15 by an upright 25, which is secured to the outer end of each of the bearings and extends above the same. This upright 25 prevents the circular flange of the spacing-jaws from slipping off the bearing when mounted between the same and the plate 12 or 13.

26 indicates stops which are arranged in the bearings 14 15 and consist of ordinary set-screws, the bearings being provided with openings (not shown) to receive the screws, which serve to adjust as well as limit the upward movement of the spacing-jaws.

It will be observed that owing to the arrangement by which the spacing-jaws are mounted on the bearing 14 and owing to the connection between the edges of the supports by means of the springs 19 the spacing-jaws will always be in upright position when not in operation, and, as heretofore stated, the upward movement thereof will be limited by means of the set-screw 26.

The carriage 4 is provided near the upper edge with a lug or pin, as shown, which may be of any desired length, for the purpose of adjusting the jaws when different-sized dies are used. This adjustment is obtained by keeping apart the carriages a requisite distance and may be readily understood by referring to Fig. 1 of the drawings, which shows the carriages separated a certain distance.

The carriages 4 5 are normally held together by means of a coiled tension-spring 28. This spring 28 is secured to one side of the carriage by means of the eyes 29, which are secured to each end of the spring and are connected to the side of the carriages, as shown.

The operation of my improved device is as follows: By forcing the die 13' downwardly between the plates 21 the same will slide the carriage 4 away from the carriage 5 on the guide-rod 3 until an impression is made upon the paper or other object, and when the pres-

sure upon the die is released the same will rise up between the vertical plates, and as the friction-clutch arranged in the carriage 4 will engage the guide-rod the movement thereof will be prevented. The carriage 5 then will be drawn toward the carriage 4 by means of the spring 28. It will be observed that, owing to the friction-clutch arranged in the carriage 5, on the downward movement of the die the friction-ratchet will securely hold the same in position—that is, to prevent it from sliding in the opposite direction from the carriage 4; but immediately when the pressure is released upon the die the carriage 5 will, as heretofore stated, by means of the tension-spring, be drawn toward the carriage 4, and the jaws will be in position for the next operation. The operation of the spring 19 will always normally hold the spacing-jaws in an elevated position. Furthermore, the stop 26 will arrest the movement of the jaws as they are elevated by means of the spring 19. After the carriages have been arrested by one of the stops 2 by pressing upon the projections 10 the friction-clutches will be released, and the carriages can be readily removed to the opposite end of the guide-rod and be in position for the next line or spacing matter desired. The use of the semicylindrical bearings for the spacing-jaws allows the curve described by the jaws to converge from the point at which the impression of the jaws is made, or, in other words, allows a free downward or upward movement during the operation of the jaws, thereby preventing the ends of the same abutting during their movement.

It is thought that the many advantages of my improved device can be readily understood from the foregoing description, taken in connection with the accompanying drawings.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a spacing device a pair of semicylindrical bearings, a spring-actuated spacing-jaw mounted on each of the said bearings adapted to elevate the die or other object after an impression has been made, substantially as set forth.

2. In a spacing device a pair of semicylindrical bearings, a pair of spring-actuated spacing-jaws, and means for limiting the movement thereof, substantially as set forth.

3. In a spacing device a pair of carriages operating on a fixed guide, a pair of semicylindrical bearings connected to the said carriages, a spacing-jaw mounted on each of the said bearings, and means for elevating said jaws after the spacing operation, substantially as set forth.

4. In a spacing device a pair of carriages operating on a fixed guide, a pair of semicy-

lindrical bearings connected to the said carriages, a spacing-jaw mounted on each of the said bearings, and means for limiting the movement of the said jaws, substantially as set forth.

5. In a spacing device a pair of carriages operating on a fixed guide, a pair of semicylindrical bearings connected to the said carriages, a supporting-plate therefor, a spacing-jaw mounted on each of the said bearings, friction-clutches arranged in the said carriages adapted to engage the said guide, and means for normally keeping the said carriages in an abutting position, substantially as set forth.

6. In a spacing device a pair of carriages mounted on a fixed guide, adjusting means for the said carriages, a spring for normally keeping the said carriages in an abutting position and a pair of spacing-jaws suitably connected to the said carriage, substantially as set forth.

7. In a spacing device, a fixed guide, a pair of carriages mounted thereon, means for keeping the said carriages in an abutting position, a friction-clutch mounted in each of the said carriages adapted to engage the said guide, means for locking one and releasing the other during a spacing operation, a pair of semicylindrical bearings suitably connected to the said carriages, a spacing-jaw mounted on each of the said bearings, and means for normally keeping the said jaws in an elevated position, substantially as described.

8. In a spacing device a supporting-plate having stops arranged at each end thereof, a fixed guide suitably secured to the said stops, carriages operating upon the said guide, friction-clutches arranged therein and adapted to engage the said guide, spacing-jaws mounted on suitable bearings connected to said carriages, and means for normally keeping said carriages in an abutting position, substantially as set forth.

9. In a spacing device, a pair of carriages, friction-clutches mounted therein, a semicylindrical bearing connected to each of the said carriages, and a spacing-jaw mounted on each of the said bearings, substantially as set forth.

10. In a spacing device a pair of carriages operating on a fixed guide, a pair of semicylindrical bearings connected to the said carriages, and a spring-actuated spacing-jaw mounted on each of the said bearings, substantially as set forth.

11. In a spacing device a pair of carriages operating on a fixed guide, friction-clutches arranged in said carriages adapted to engage the said guide, means for normally keeping said carriages in an abutting position, semicylindrical bearings suitably connected to the said carriages, and a pair of spring-actuated spacing-jaws mounted on the said bearings, substantially as set forth.

12. In a spacing device a fixed guide, a pair of carriages mounted thereon, a friction-clutch arranged in each of the said carriages adapted to engage the said guide, means for normally keeping the said carriages in an abutting position, semicylindrical bearings suitably connected to the said carriages, a pair of spacing-jaws, and means formed integral with the said jaws for suitably connecting the same to the bearings, substantially as set forth.

13. In a spacing device, a pair of carriages operating on a fixed guide, a pair of spacing-jaws, a pair of semicylindrical bearings, means for connecting the spacing-jaws to the bearings, and means arranged on the said bearings for limiting the movement of the said spacing-jaws, substantially as set forth.

14. In a spacing device, a fixed guide, a pair of spring-actuated carriages mounted thereon, a friction-clutch mounted in each of the said carriages, semicylindrical bearings suitably connected to the said carriages, spacing-jaws connected to the said bearings, and a stop arranged on the said bearings for limiting the upward movement of the spacing-jaws, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

JESSE D. LYON.

Witnesses:

H. C. EVERT,
WILLIAM E. MINOR.