(No Model.)

C. A. TERRY.

PARALLEL RULER.

No. 455,779. Patented July 14, 1891.

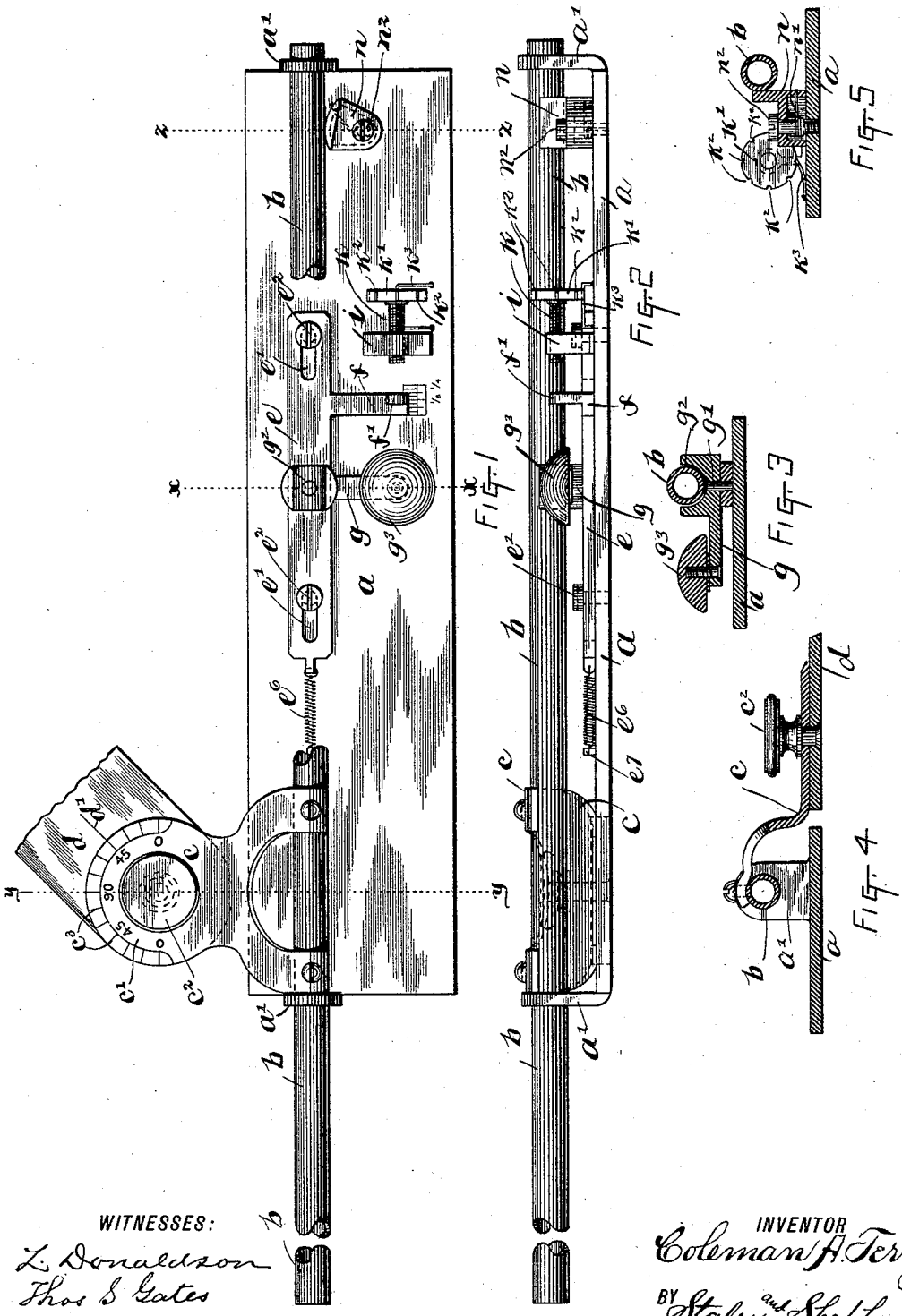

FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5

WITNESSES:

L. Donaldson

Thos S Gates

INVENTOR

Coleman A. Terry

BY Staley and Shepherd

ATTORNEYS

UNITED STATES PATENT OFFICE.

COLEMAN A. TERRY, OF COLUMBUS, OHIO.

PARALLEL RULER.

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To all whom it may concern:

Be it known that I, COLEMAN A. TERRY, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Drawing-Instruments, of which the following is a specification.

My invention relates to drawing-instruments, and has particular relation to that class of drawing-instruments known as "liners."

The objects of my invention are to produce a superior form of drawing-instrument of this class by means of which a lining-ruler may be made to travel a uniform distance at the completion of each line; to provide in connection therewith means for adjusting or limiting the movement of the ruler; to provide for the retention of the ruler in the new position imparted thereto; to so construct the device as to support the ruler at the desired angle from the bed-plate, and to so construct and arrange said device as to insure speed and accuracy. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my improved instrument. Fig. 2 is a side elevation thereof. Fig. 3 is a transverse section on line $x\,x$ of Fig. 1. Figs. 4 and 5 are similar views taken, respectively, on lines $y\,y$ and $z\,z$ of Fig. 1.

Similar letters refer to similar parts throughout the several views.

a represents a flat rectangular metallic bed-plate, provided on its upper side adjoining each of its ends and near one of the lateral edges thereof with projecting lugs or keepers a'.

b represents a ruler-supporting rod, which, as shown, is of a length greater than the length of the bed-plate a, and which bears movably in suitable guideways or holes formed in said lugs a'. This sliding rod b is shown in the drawings for the sake of clearness with a portion of its body broken away. Rigidly connected with the central portion of the rod b are the arms of the bifurcated end of a protractor-plate c, which extends outwardly from said rod at right angles therewith, as shown. This projecting plate c is so bent as to bring the under side of its outer disk-shaped portion approximately in a line with the upper surface of the bed-plate. To the under side of the outer disk-shaped end or head c' of the arm c is adjustably connected by a clamping-screw c^2 one end of a suitable ruler d, the under side of said ruler being in line or flush with the under surface of the bed-plate a. Upon the upper surface of the plate-head c^2, and adjoining the curved end thereof, are formed radial scale marks or lines c^3. The ruler d, as shown in the drawings, is provided with a central indicating-line d', which is adapted to be brought into alignment with the desired one of the scale-marks c^3.

e represents a sliding plate, which is movably supported upon the bed-plate a, near the center of the length thereof, beneath the rod b. This plate e has formed therein, near each end thereof, a short longitudinal slot e', through each of which passes loosely, as shown, a short vertical screw or pin e^2, which is provided with an enlarged head and which has its lower end fixed in the bed-plate.

g represents a rocking arm, which extends outwardly at right angles with the rod b, and which has its inner and thickened end portion pivotally supported upon a pivot-pin g', which projects upwardly from the upper side of the center of the length of the sliding bar e. The upper thickened portion of the arm g is provided, as shown, with a central groove or seat g^2 of such width and depth as to admit of the rod b, or the lower half thereof, passing therethrough without contact with the arm-body when the latter is projecting at right angles from said rod. The outer end of the arm g is provided with a suitable finger piece or button g^3. Formed with the sliding plate e in the forward half thereof is an outwardly-projecting arm f, which is provided on its outer end with an upwardly-projecting stop finger or lug f'. Projecting upwardly from the upper surface of the plate a, a short distance in front of the outer end portion of the plate-arm f, is a screw-supporting lug i, the central screw-hole of which supports a horizontal stop-screw k, the forward end of which is provided with a disk-shaped head or finger piece k', the latter having its periphery notched, as shown at k^2.

k^3 represents an approximately U-shaped spring-catch, which is formed of spring-wire, has its end portions secured to the upper sur-

face of the bed-plate, and has its central portion engaging with the desired one of the notches k^3 of the screw-head k^2.

Engraved or otherwise formed upon the upper face of the plate a and extending longitudinally between the lug i and arm f is a scale m, graduated to represent the desired distance-divisions.

The rear end of the plate e is connected by a coiled spring e^6 with a suitable projection e^7 on the upper face of the bed-plate a, beneath the rod b, the tension of said coiled spring being such as to normally hold the forward end of the plate-slots e' against the stop-pins e^2. n represents a cam-shaped body recessed in its under side and pivoted at one end at a point near the forward end of the bed-plate a, and near the rod b. The outer and upwardly extended end of the cam n is rounded, as shown, said rounded end or head being pressed into frictional contact with the rod b by the tension of a spring-wire n'. This spring-wire n' has its end coiled about and secured to a pivot-pin n^2, which secures, as shown, the cam n to the bed-plate, the connection of the spring n' being made with said pin within the recessed portion of the cam, and the outwardly-extending end of said spring engaging with a small opening in the head of the cam, as shown in Fig. 5 of the drawings. The tension of the spring n' is such as to cause its outwardly-projecting arm to normally press the head of the cam into engagement with the rod b, by which means, as hereinafter described, said cam acts as a brake for said rod.

When it is desired to use my improved instrument for producing section or other equidistant lines, the instrument is first set to produce the desired space between the lines to be drawn by pressing the arm f forward until its forward edge is in line with or opposite that graduating-mark of the scale m which indicates the desired distance-division. The screw k is then turned until its outer end comes in contact with the finger-piece f' of the arm f, the end of said screw thus being set to limit the forward movement of the arm f to the desired distance. The rule or straight-edge d is then turned to the desired angle with the protractor-head c', the degree of said angle being indicated by the indicating-line d' of the ruler, which is brought into line with the desired scale-mark c^3. These parts having been set, as described, and the bed-plate so laid as to bring the ruler d in the desired position upon the drawing-paper, the outer edge of the ruler d is utilized as a guide for the lining-instrument in one hand of the operator, while with his remaining hand he presses forward upon the outer end of the rocking arm g as each line is completed. This movement of the arm g will result, through the binding of its grooved head g^2 therewith, in a forward movement of the rod b and sliding plate e, this forward movement being limited only by the contact of the arm f and screw k. The bearing of the head of the cam n against the rod b being on one side of the center of said cam-head and the pressure thereof being toward the rear end of said rod, it will be seen that the forward movement of the rod b, above described, will not be interfered with by said cam-head, but the latter will operate to automatically prevent the return of the rod to its old position, thus resulting in the shifting of the ruler d at each pressure of the arm f to a new position. As the forward movement of the sliding plate and rod is completed the former automatically returns to its former position through the action of the spring e^6.

From the construction shown and described it will not only be seen that the production of equidistant lines at any angle is facilitated, but that the rod b, being pivoted in the bearings a', admits of the ruler and its protractor-plate being elevated from the work, when desired, for examination or other purposes.

It will be seen from the above description that my improved drawing-instrument is of simple and substantial construction and positive in its operation, and that the same may be produced at a reasonable cost of manufacture.

It is obvious that the herein-shown instrument may be utilized in surface-shading, section-lining, &c., and will result in the speedy production of lines of such uniform arrangement as to greatly add to the appearance of the drawing.

In case it is desired to produce shade or other lines, the distance between which it is desired to gradually increase or decrease, it is obvious that the operator may accurately produce such lines by turning the screw-head k' an increased or diminished distance at the completion of each line. In so doing the operator is enabled to compute the desired accurate gradations by the number of clicks resulting from the contact of the U-shaped spring and the notches k^2.

It is obvious from the means shown and described that in setting the device for the production of lines the operator is not confined to any standard scale or fixed division thereof, but that he may by turning the screw k set the device for any division of distance embraced by said screw movement.

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

1. In a drawing-instrument, the combination, with the bed-plate a, a sliding rod b, journaled thereon, and a protractor-plate connected with said rod, of a ruler d, adjustably connected with the protractor-head, and means for moving said rod forwardly upon said plate, substantially as specified.

2. In a drawing-instrument, the combination, with the bed-plate a, a sliding rod b, journaled upon said bed-plate, a protractor-plate connected with said rod, and a ruler adjust-

ably connected with said protractor-plate, of a pivoted rocking arm *g*, through which said rod passes loosely, and a spring-actuated cam *n*, as described, pivoted adjacent to said rod *b* and bearing against the latter on one side of its center, substantially as described.

3. In a drawing-instrument, the combination, with the bed-plate *a*, sliding rod *b*, journaled upon said bed-plate, a protractor-head rigidly connected with said rod, and a ruler *d*, adjustably connected with said protractor-head, of a spring-actuated sliding plate *e*, having slots *e'* and stop-pins e^2 projecting therethrough, rocking arm *g*, pivotally supported upon said sliding plate and loosely embracing rod *b*, as described, and a spring-actuated cam *n*, one side of its center bearing against the rod *b*, substantially as and for the purpose specified.

4. In a drawing-instrument, the combination, with the bed-plate *a*, sliding rod *b*, journaled upon said bed-plate, a protractor-head rigidly connected with said rod, and a ruler *d*, adjustably connected with said protractor-head, of a spring-actuated sliding plate *e*, having slots *e'* and stop-pins e^2 projecting therethrough, arm *f*, projecting from plate *e*, rocking arm *g*, pivotally supported upon plate *e* and loosely embracing the rod *b*, stop-screw *k*, adjustably supported, as described, from the plate *a* in front of the arm *f*, a scale *m* in said bed-plate, and a spring-actuated cam bearing on one side of its center against the rod *b*, as described, substantially as and for the purpose specified.

5. In a drawing-instrument, the combination, with the bed-plate *a*, sliding rod *b*, journaled upon said bed-plate, a protractor-head rigidly connected with said rod, and a ruler *d*, adjustably connected with said protractor-head, of a spring-actuated sliding plate *e*, locking arm *g*, pivotally supported on said sliding plate and loosely embracing rod *b*, as described, arm *f*, projecting from the plate *e*, stop-screw *k*, adjustably supported, as described, from the plate *a* in front of the arm *f*, notches k^2 in the periphery of said stop-screw head, and spring-wire k^3, adapted to engage with said notches k^2, substantially as specified.

COLEMAN A. TERRY.

In presence of—
BARTON GRIFFITH,
A. N. HILL.