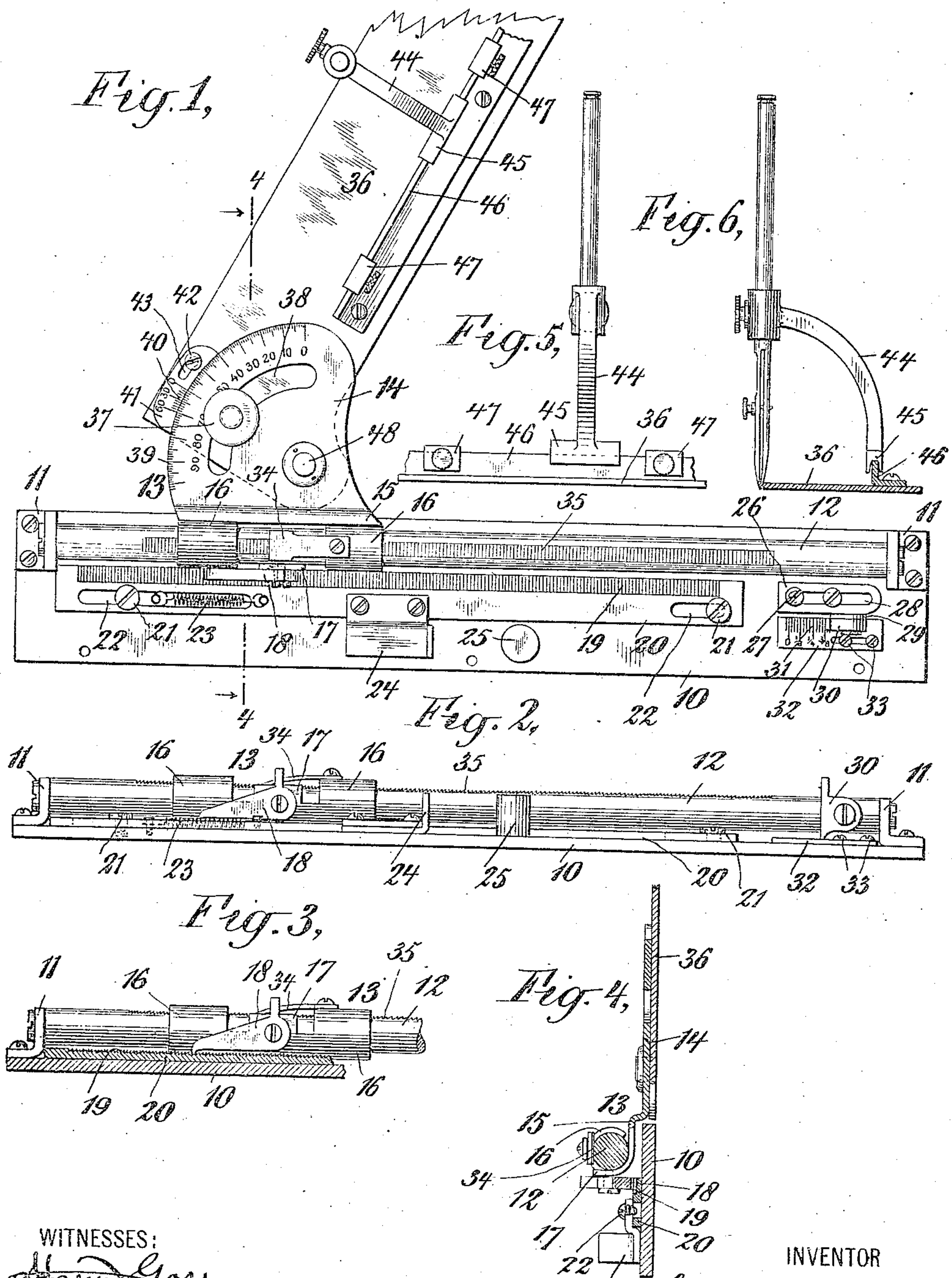


No. 855,734.

PATENTED JUNE 4, 1907.

C. A. TERRY.
DRAWING INSTRUMENT.
APPLICATION FILED JULY 10, 1906.



WITNESSES:
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DRAWING INSTRUMENT.

No. 855,734.

Specification of Letters Patent.

Patented June 4, 1907.

Application filed July 10, 1906. Serial No. 325,462.

To all whom it may concern:

Be it known that I, COLEMAN A. TERRY, a citizen of the United States of America, and a resident of the borough of Manhattan, city of New York, county and State of New York, have invented certain new and useful Improvements in Drawing Instruments, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in drawing instruments, and particularly to improvements in that class of parallel rulers known as section liners.

The main objects of my invention are to increase the accuracy of the instrument, to simplify the mechanism of same so as to reduce the cost of manufacture and decrease the liability of the instrument getting out of order. To attain these various objects, I provide in the first place that all movements of the instrument shall be positive between stops in either direction, and I provide for adjustments to correct any inaccuracies which may appear from wear and the like.

I have also designed the machine throughout so that the parts may be in the main stamped up from flat sheet steel.

My invention also consists in many novel details of construction and combination of parts, including means for preventing tipping of the ruling pen employed with the instrument, and longitudinal stops for controlling the length of lines ruled.

In order that my invention may be fully understood, I will now proceed to describe an embodiment thereof with regard to the accompanying drawings, and will then point out the novel features in claims.

In the drawings: Figure 1 is a face view of an instrument embodying my invention, with a portion of the ruling blade broken away. Fig. 2 is a view in front elevation of the same. Fig. 3 is a detail view in longitudinal vertical section. Fig. 4 is a view in vertical transverse section substantially upon the plane of the line 4—4 of Fig. 1. Fig. 5 is a detail edge view of the blade showing the pen guide and a ruling pen employed in connection therewith. Fig. 6 is a view in transverse section through the blade, showing the parts illustrated in Fig. 5 at right angles to the point of view of such figure.

The base of the instrument comprises a flat plate 10, preferably of sheet steel. Two

brackets 11, 11 are secured to this plate 10, said brackets forming a support for a longitudinal bar or rod 12.

Mounted to slide longitudinally upon this bar or rod 12 is a bearing member 13, said bearing member comprising a plate 14, a part 15 offset therefrom, flanges 16 embracing the bar or rod 12 and accurately fitted thereto, and a lug or ear 17. The lug or ear 17 forms a support for an operating pawl 18, which is pivotally mounted thereto. This pawl engages teeth 19 in a plate 20. The plate 20, which is preferably formed of a flat piece of sheet metal, as shown, is mounted to slide longitudinally for a limited distance upon the base plate 10, screws 21 fitted to the base plate 10 and passing through slots 22 in the said plate 20, forming means for securing the parts together and permitting the said limited movement. A spring 23, secured at one end to the plate 20 and at the other end to the base plate 10, tends to normally press the said plate 20 in one direction. A finger piece 24 is secured to the plate 20 at a point about midway thereof, and another finger piece, comprising an upright stud 25, is secured to the base plate 10 at a point a short distance away from the finger piece 24.

Arranged opposite one end of the plate 20, and in the path of movement thereof, is a stop piece 26, secured to the base plate 20 by means of screws 27, which pass through a slot 28 in the part 26. The part 26 has an uprising lug 29 to which is pivotally secured a pawl 30, said pawl arranged to register with graduations 31, which may be in the form of slight depressions, in a plate 32, itself secured by screws 33 to the base plate 10. The plate 32 is also preferably slotted where engaged by the screws 33, whereby a limited adjustment of the said plate 32 may be effected. The stop piece 26 may be adjusted by loosening the screws 27, the pawl 30 thereof being caused to register with the required graduation, by which the extent of longitudinal movement permitted to the plate 20 may be accurately regulated.

In order to compensate for wear of the plate 20 either at the end thereof or at the part which engages the screw 21, which acts as a stop in one direction, or to compensate for wear of the screw or of the stop 26 itself, the plate 32 may be adjusted whereby the graduations 31 will properly indicate the extent of movement permitted to the plate 20 by the stop piece 26. The plate 20 is oper-

ated by pressure of the thumb and finger between the two said finger pieces 24 and 25, and the teeth 19 in the plate 20 are arranged in such a direction that the bearing member 15 will be carried with the plate 20 when the said plate is so moved. The plate 20 will be moved until it is stopped by the stop piece 26, when a relaxation of pressure upon the finger pieces will permit the plate 20 to return to a normal position under the influence of the spring 23, the teeth of the plate 20 freely riding beneath the pawl 18 at this time.

The bearing member 13 is provided with a spring finger 34, which bears upon the rod or bar 12 so as to oppose accidental rearward movement of the same when the plate 22 is returning to its normal position, and, if desired, the said rod or bar 12 may be provided with teeth 35, with which the end of the spring finger may be engaged.

The bearing member 13 carries a blade 36 pivotally connected thereto by a stud 48, and secured in its proper relative position by means of a clamping screw 37. The clamping screw 37 passes through a slot 38 in the member 13 arranged concentric with the center of the stud 48, whereby movements of adjustment of the blade 36 with respect to the member 33 around the pivotal stud 48 are permitted. The member 13 is provided with graduations 39 arranged to register with a graduation or graduations 40 upon the blade 36. The graduation or graduations 40 are preferably formed in a plate 41 secured to the surface of the blade 36 by means of a screw 42 which passes through a slot 43 in the plate 41, and engages the blade 36 at the rear thereof. This will permit a slight adjustment of the plate 41 with respect to the blade so as to accurately adjust the graduation or graduations thereof with respect to the graduations upon the member 13. The plate 41 may conveniently be of the same thickness as the part 14 of the member 13, so that the surfaces thereof will be in register, whereby extreme accuracy may be easily attained in the adjustment between the blade 36 and the member 13 carrying it.

The instrument above described is, it will be seen, especially adapted for ruling parallel lines at predetermined distances from each other. In section liners heretofore designed for this purpose there has been a common fault, which is that the draftsman in using them might destroy the accuracy of the work by tipping the ruling pen forward or backward with respect to the vertical plane in which the edge of the machine lies. To overcome this defect, I have provided means for holding the pen in the said vertical plane, comprising a bracket 44 to which the pen is arranged to be secured, said bracket having a bearing element 45 adapted to engage a track 46 secured upon the blade 36. This is

clearly shown in Figs. 1, 5 and 6 of the drawings, and it will be apparent that, by means of this device, an inexperienced draftsman will be prevented from developing any inaccuracies through tipping the pen. I have also provided stops 47, secured to the track 46 or to other parts stationary with the blade, which stops will act to limit the throw of the bracket 44, and hence of the pen, in one or both directions. By the use of these stops properly adjusted lines of section or other parallel lines at predetermined distances apart, may be accurately commenced and completed with a minimum of conscious attention, and hence at a maximum speed.

It will be also apparent from the foregoing that the device as a whole is capable of extremely accurate work with a minimum of care on the part of the user; that all parts of the machine are capable of ready and delicate adjustment so as to correct any inaccuracies that may develop through wear or the like; that the machine is a very inexpensive one to build, owing to the fact that almost all of the parts may be struck up from sheet metal or formed from round bars, and, further, that the machine as a whole is an extremely compact one of but few parts, and those light in weight yet but little likely to get out of order.

What I claim is:

1. An instrument of the class described comprising a base plate, a stationary rod or bar arranged longitudinally thereon, a bearing member arranged to slide longitudinally upon said bar from substantially one end to the other, a plate mounted upon said base plate arranged to have a limited longitudinal movement thereon, means connecting said plate and bearing member together when the former is moving in one direction, and a spring for returning said plate to a normal position.

2. An instrument of the class described comprising a base plate, a bearing member arranged to slide longitudinally with respect thereto, a toothed plate mounted upon said base plate arranged to have a limited longitudinal movement thereon, a pawl mounted upon said bearing member and engaging the teeth of said plate, a finger piece by which said plate may be moved in one direction, and a spring for moving the same in the opposite direction.

3. An instrument of the class described comprising a base plate, a bearing member arranged to slide longitudinally with respect thereto, a toothed plate mounted upon said base plate arranged to have a limited longitudinal movement thereon, a pawl mounted upon said bearing member and engaging the teeth of said plate, a finger piece by which said plate may be moved in one direction, an adjustable stop for limiting the movement of said plate in such direction, and a

spring for moving the same in the opposite direction.

4. An instrument of the class described comprising a base plate, a stationary rod or
5 bar arranged longitudinally thereon, a bearing member arranged to slide longitudinally upon said bar from substantially one end to the other, a plate mounted upon said base plate arranged to have a limited longitudinal
10 movement thereon, means connecting said plate and bearing member together when the former is moving in one direction, means carried by said member engaging said bar to prevent movement of the bearing member
15 when the plate is moved in the opposite direction, and a spring for moving the said bar in the said opposite direction.

5. An instrument of the class described comprising a base plate, a rod or bar secured
20 longitudinally thereon, a bearing member comprising a flat plate having flanges 16 bent up therefrom and around said rod or

bar to accurately fit same, a pawl carried by said bearing member, a plate mounted upon said base plate arranged to have a limited
25 longitudinal movement thereon, the said plate having teeth engaged by the pawl upon said bearing member, a spring for moving the said plate in one direction, and an adjustable stop for limiting the movement of the plate
30 in the other direction.

6. In an instrument of the class described, the combination with a reciprocating plate and a bearing member adapted to be operated thereby in one direction, of a stop for said
35 reciprocating plate, said stop comprising two members, one adjustable with respect to a fixed point in the device, and the other adjustable with respect to the first said member.

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Witnesses:

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