July 6, 1926. 1,591,485

A. M. GUILLET

LINING BLOCK AND MEASURE FOR LEVELING AND LINING MACHINERY

Filed August 25, 1925

Fig. 1.

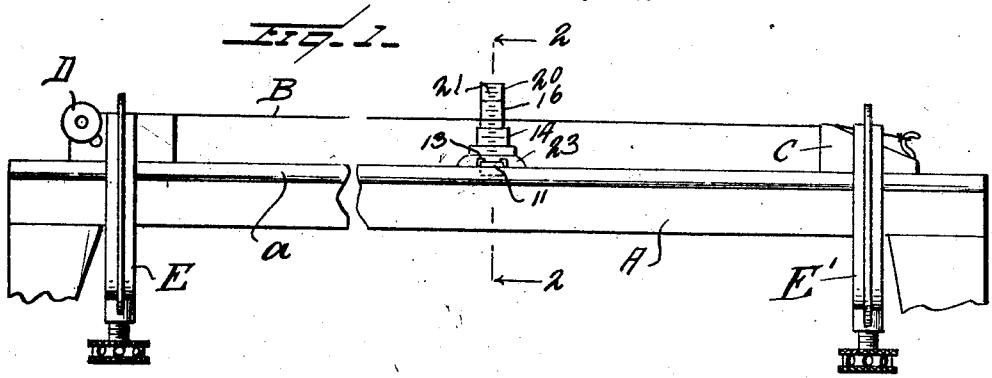


Fig. 4.

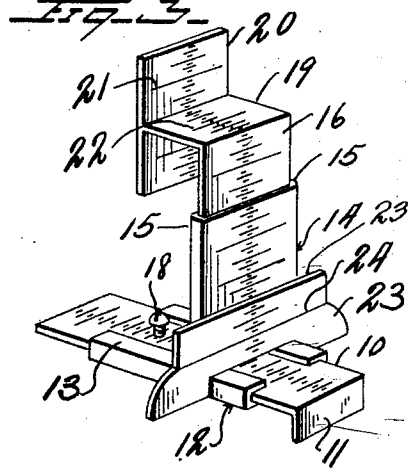


Fig. 2.

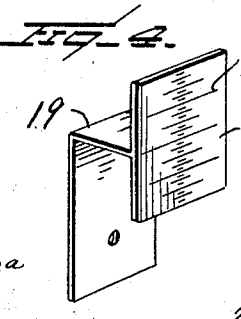


Fig. 3.

Fig. 5.

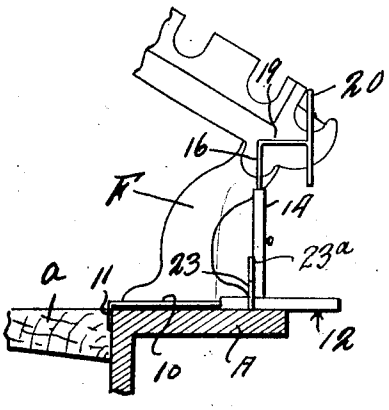
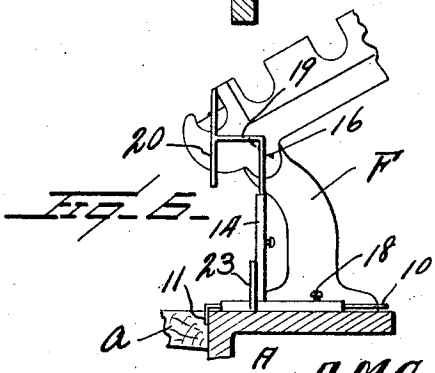


Fig. 6.



Inventor

A. M. Guillet

By Watson E. Coleman

, Attorney

Patented July 6, 1926. 1,591,485

UNITED STATES PATENT OFFICE.

ALBERT M. GUILLET, OF CHARLOTTE, NORTH CAROLINA.

LINING BLOCK AND MEASURE FOR LEVELING AND LINING MACHINERY.

Application filed August 25, 1925. Serial No. 52,424.

This invention relates in a general way to the rail gauges for spinning frames and like machinery shown in my patent #1,531,652, granted on the 31st day of March, 1925, and the invention relates more particularly to the movable gauge shown in that patent which is shiftable along the rail or beam of a spinning machine and is used in connection with a taut lining and leveling wire.

Generally speaking, the mechanism disclosed in this prior patent includes oppositely disposed clamps adapted to be engaged at two separated points with a beam or equivalent member and engaged with these clamps is a wire, one of the clamps having means whereby the wire may be tightened up so that the wire is extremely taut and is, therefore, parallel with the upper face of the beam. In the process or system of overhauling spinning and card room machinery and particularly spinning machines, it is necessary that the beams and rails should be absolutely horizontal and that all parts of the spinning machinery should be in line as, for instance, the spindle rails, the creel, the roll stands, roller beam, ring rail, etc., and in accomplishing this overhauling work the wire is stretched taut, as heretofore described, above the beam to be tested and adjusted and then the gauge, which is shown in this patent, is shifted along the beam and if the bottom of the beam is truly horizontal the wire will strike the gauge always at the same point as the gauge is shifted if the beam is not horizontal at any one point the screws at the lower ends of the legs are adjusted to raise or lower any particular leg so as to adjust the beams.

The general object of the present invention is to provide a gauge adapted to be used in connection with a taut wire, as heretofore described, which will show not only a deviation of the beam or other part from the horizontal but will also show any deviation of this beam or other part or series of parts from a true alignment.

A further object in this connection is to provide a very simple gauge of this character which is not only particularly adapted for use in overhauling and lining up spinning and like machinery but may be used by masons, carpenters, builders and others who are obliged to line up and test work for horizontality as well as vertical alignment.

A still further object is to provide a device of this character which may be used either in the way in which the old testing blocks were used for testing the horizontality of beams, spindle rails, etc., or after the manner of the gauge shown in my prior patent and which is adapted to be used in connection with all makes of spinning machines, whether the roll stands be extended forward or rearward or extended straight upward, and which is so graduated that it will show any deviation in vertical alignment simultaneously with any deviation in horizontal alignment so that this lining up of the beams, rails or other parts both horizontally and vertically may be accomplished in one operation instead or two, as is at present necessary.

Another object is to provide a device of this character which is adapted to move over the face of the roller beam which supports the roll stands and thread board and has a portion which extends downward into the slight crack or space between the thread board and the roller beam so that the guide may be guided in its movement longitudinally along the roller beam, this portion also acting as a guide for the gauge along any rail to which it may be applied so that the gauge will always be disposed at a certain definite distance from the edge of the rail or beam which is used as the basis for the readjusting operation.

Still another object is to provide a gauge of this character in which the vertically extending portion of the gauge is adjustable longitudinally along the base, which is adapted to engage the beam, and in which the vertical portion of this gauge is likewise adjustable upward or downward so as to accommodate itself to any desired height between the upper face of the beam or rail upon which the gauge rests and the taut wire, and in which the gauge is so constructed that the gauging face, as it may be termed, may be disposed to project forward of the standard of the gauge or liner of the standard of the gauge to thus adapt the gauge to suit the outward or inward projection of roll stands relative to the side of

the beam, the vertical faces of the gauge being graduated for horizontal lining up of the beam, rail or other parts and the horizontal faces being graduated for vertical alignment of the parts.

My invention is illustrated in the accompanying drawing, wherein:—

Figure 1 is a front elevation of a portion of a roll stand supporting beam of a spinning machine showing the wire stretching clamps applied thereto and showing my improved gauge in connection therewith.

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is a perspective view of the gauge shown in Figure 1;

Figure 4 is a perspective view of the upper section of the gauge showing it reversed with relation to the position of the upper section in Figure 3;

Figures 5 and 6 are sectional views of a roll stand supporting beam showing two forms of roll stand thereon and showing the manner in which the gauge will be set for these two different forms.

In the drawing, I have illustrated a portion of a spinning machine and shown in connection therewith means such as shown in my Patent No. 1,531,652 granted on March 31, 1925, whereby a wire may be rendered taut and parallel to the upper face and edge of the main beam or roll stand supporting beam of the spinning machine, A in this figure indicating the beam, B the wire, C an anchor at one end engaging one end of the beam, and D a reel mounted upon a suitable clamp E (there being a like clamp E′ for the anchor C) and disposed at the other end of the beam, this reel having means whereby the wire may be wound up to tighten it so that the wire may be entirely taut. The gauge which will now be described, however, is to be used in connection with any wire supporting and tightening mechanism, either that shown in my patent or the mechanism which is shown in my copending application filed of even date herewith or any other means for supporting the wire, Figure 1 being purely illustrative of the general features of a wire supporting means.

Referring to the drawing, it will be seen that the gauge consists of a base 10 which is preferably made of steel, brass or like material having a thickness of about an eighth of an inch, this base at one end having a downwardly turned portion 11 which is relatively thin, being only about a thirty-second of an inch thick, and this downwardly turned portion having ordinarily a depth of about one fourth of an inch. The thinness of this portion 11 is important, as it must be of such thinness that it will extend between the roller supporting beam of a spinning machine and the thread board.

Sliding upon this base 10 is the slide 12 having inwardly turned guide flanges 13 which snugly embrace the margins of the base 10 so that this slide may be shifted accurately and without any play along the base 10. Rigidly engaged with or formed integral with the slide is an upwardly extending standard 14, as it may be termed, the lower portion of which is laterally extended for a purpose which will be later stated, so that it extends out laterally beyond the base. This standard from top to bottom is formed with the inwardly turned guide flanges 15, and operating within these guide flanges is a standard section 16, it being understood that these guide flanges so closely embrace the margins of this slide section that the slide section shifts accurately and without play. This slide section 16 is held in connection with the section 15 of the standard by means of a set screw 17 or any other like device and the slide 12 is held in engagement with the base 10 at any desired point by means of a set screw 18 or any equivalent device.

The upper end of the standard section 16 is bent at a right angle so as to form a portion 19 extending in a plane at right angles to the plane of the section 16 and the extremity of this portion 19 carries upon it a vertical plate 20 which is exactly parallel to the portions 15 and 16. The outer face of this plate and the inner face of this plate 20 are graduated by longitudinal lines preferably disposed a thirty-second of an inch apart, and preferably this plate extends approximately one inch above the angular portion 19 and one inch below the angular portion 19, and preferably the upwardly extending portion of the plate 20 on both faces is formed with a relatively heavy, longitudinally extending line 21. The horizontal portion 19 is also graduated into thirty-seconds of an inch and also has a depth of one inch and is divided on its upper face by a medially disposed, longitudinally extending, heavy line 22.

At the lower end of the part 14 the standard is laterally extended as previously described by soldering, welding or otherwise attaching to one face of the portion 14 a plate 23 which is made of material approximately an eighth of an inch in thickness so that there is a ledge 23^a formed at the junction of the section 14 with this plate, which ledge is about an eighth of an inch thick. This plate 23 is one inch deep and one-half inch from its lower edge there is a longitudinal, heavy line 24. That portion of the plate 23 above this line 24 has a length of two inches and the outer face of this plate is graduated by graduations one thirty-second of an inch apart. The lower portion of this plate 23 below the line 24 extends outward laterally beyond

the upper portion thereof and may be also longitudinally graduated in thirty-seconds of an inch, but it is essential that the plate be one inch from its upper edge to its lower edge and that the width of the upper half of the plate shall be two inches, for the reason that the ordinary block used by overhaulers and repairers of spinning machinery prior to the invention of my lining mechanism illustrated in my prior patent above referred to consisted of a block of wood or metal having a length of two inches and a height of one inch and this constituted a standard gauge, as it were, which was disposed upon the upper face of the rail to be gauged for horizontality in connection with a more or less taut string and this gauge was shifted up and down the beam or rail to gauge the deviation from accurate horizontality and show at what points the Samson screws had to be turned to raise the supporting frame of the machine to bring the beam into accurate horizontal position. It will be understood that both faces of the plate 20 are to be graduated and that the under face of the portion 22 might be graduated as well as the upper face thereof. It will further be understood that the graduations may be less than one-thirty-second of an inch apart or other scales used.

In the use of this device for the purpose of truing and lining up the beams and rails of a spinning machine, the gauge is disposed upon the face of the beam A with the lug 11 disposed in the slight space between the thread board *a* and the roller supporting beam A, assuming that the roller supporting beam is the beam which is being gauged. Where the device is used on any other rail, however, as, for instance, on the ring rail and spindle rail, the lug 11 extends downward over the outer face of the rail. Assuming now that if it be desired to test not only the horizontal alignment of the beam throughout its entire extent (which rail is usually about forty-five feet long) but that it be desired to test the vertical alignment of the rail, it is obvious that the gauge is first disposed adjacent one end of the spinning machine with the plate 20 or with the face of the members 14 or 16 disposed against the stretched wire B, as illustrated in Figure 1, this wire being disposed at a certain predetermined height. The position of the wire is then read upon any of the vertical graduations and the slide 12 is shifted inward or outward so as to bring the wire against one of the vertical faces of the gauge. If now this gauge be shifted along the beam, it is obvious that if the beam is horizontal throughout its entire length that the wire will always touch the same horizontal graduation.

If, on the other hand, the beam or the frame of the spinning machine has sagged at any point, the wire will be above the graduation with which the wire has been initially read, and vice versa if the beam is upwardly bulged at any point the wire will be below this graduation. The Samson screws may be then lowered or the machine otherwise adjusted to bring this portion of the beam into a proper horizontal position. At the same time that the horizontal accuracy or deviation of the beam is being read, its vertical alignment may be also read upon this gauge because if the beam is vertically true and in line, the vertical portion of the gauge which was originally against the wire will be against the gauge throughout the entire extent of its movement, and if there is a deviation it is readily observable and this deviation corrected.

Under some circumstances it is desired to gauge the alignment of the roll stands, as described more fully in my co-pending application, Serial #99,125 filed April 1, 1926. Sometimes these roll stands F project forward and sometimes rearward and sometimes the stands are practically vertical. In this case the wire is to be stretched so as to touch the end stands at certain definite points, as shown in Figures 5 and 6, and the gauge may then be shifted along the roller beam in the manner heretofore described. By removing the upper portion of the gauge and shifting it so that the blade 20 is disposed toward that end of the base 10 which carries the lug 11, the device is fitted for those stands which project forward and, on the contrary, by reversing the position of the upper portion of the gauge so that the plate 20 projects rearward, the gauge is fitted for use with stands that project rearward.

While I have particularly designed this gauge for the purpose of truing up spinning machines, it is obvious that it may be used for leveling and aligning all sorts of machinery or may be used by builders, masons, carpenters and other workers in connection with a taut wire or string with which certain parts or elements must be placed in parallel relation, and by moving the gauge along the work an indication will be given as to whether this parallel relation has been secured at any or all points and also just how much the work is out of parallel or out of alignment either horizontally or vertically. The device is, therefore, of general use as well as being particularly designed for the purpose described in my co-pending application above referred to.

I claim:—

1. A leveling and lining gauge of the character described including an elongated relatively wide flat base having a lug at one end disposed at right angles to said base,

and a member extending perpendicular to and slidably carried on the base for movement longitudinally thereof, said base rearward of the lug and perpendicular member being provided with graduations extending lengthwise thereof.

2. A leveling and lining gauge of the character described including an elongated, wide flat base having a lug at one end disposed at a right angle to said base and a wide and flat member extending perpendicular to and carried on the base, said base and perpendicular member being provided with graduations extending lengthwise thereof, and the perpendicular member at its end remote from the base being extended at right angles to provide a wide flat portion parallel to the base, one face of this last named portion being longitudinally graduated.

3. A leveling and lining gauge of the character described including a base having a lug at one end disposed at a right angle to said base, and a member perpendicular to and carried on the base, the base and perpendicular member being provided with graduations extending longitudinally thereof, the perpendicular member at its end remote from the base being extended parallel to the base and having one face of this portion provided with longitudinal graduations, and a plate carried upon the extremity of this angularly disposed portion, said plate being disposed at right angles to the base and being extended above and below the angularly disposed portion and having graduations.

4. A leveling and lining gauge of the character described including a base having a lug at one end extending at a right angle to the base, a member extending perpendicular to the base and formed in two sections, one of said sections having sliding engagement with the other section, said last named section at its end remote from the base being extended at right angles to the section and at its extremity having a plate disposed at right angles to the base, the base, the perpendicular member, the right angularly extended portion and said plate being provided with longitudinal graduations.

5. A leveling and lining gauge including a base having at one end a lug extending at a right angle to the base, a slide mounted upon the base for sliding movement toward or from this lug, a section mounted upon said slide and movable therewith and extending perpendicular to the base, a second section perpendicular to the base and adjustably mounted upon the first named section, the faces of both of said sections being provided with longitudinal graduations, the section remote from the base having a portion extending at right angles and terminating in a plate disposed perpendicular to the base and extending in opposite directions beyond the right angularly extended portion of the section, the right angularly extended portion of the section and said plate being longitudinally graduated.

6. A leveling and lining gauge including a base formed of a relatively thin metallic strip having a lug at one end at a right angle to the base, a slide of thin metal mounted upon the strip and having a section perpendicular to the base, a second section slidably mounted within the first section and disposed perpendicular to the base, the faces of both of said sections being provided with graduations, the second named section at its end remote from the base being bent at right angles to provided a portion extending parallel to the base, said portion terminating in a plate extending at right angles to the base and extending beyond the angularly bent portion in both directions, the angularly bent portion having longitudinal graduations, and means for holding the slide and the second named section of the perpendicular portion in adjusted position.

7. A leveling and lining gauge including a base, a slide mounted upon the base, a member mounted upon the slide and extending perpendicularly from and transversely to the base and having an edge coincident with the reverse face of the base, said perpendicular member being longer than the width of the base and projecting beyond the same at each end, and the perpendicular member having a height of one inch and a width of two inches at its edge remote from the slide, a standard section perpendicular to the base and secured to the rear face of said member and having a width less than the length of said perpendicular member, a section slidably engaged with said standard section for longitudinal movement and being right angularly bent at its end remote from the base, and a plate attached to the extremity of the right angularly bent portion and extending perpendicular to the base, the faces of the plate and a face of the right angularly bent portion being longitudinally graduated, and the base being longitudinally graduated.

8. A leveling and lining gauge including a base having a lug at one end extending at right angles thereto, a slide mounted upon the base, a member perpendicular to the base and attached to said slide and formed in two telescopic sections, the section remote from the base having a right angular bend extending parallel to the base and at its extremity having a plate at right angles to the base, the right angularly bent portion and the plate being provided with longitudinal graduations, said section remote from the base being shiftably engaged with the other section to permit the plate to be

disposed in opposed relation to one face or the other of the lower section.

9. A gauge for leveling and lining the parts of spinning frames comprising a base adapted to be disposed on the face of a beam or rail and having a member extending perpendicular to the base and shiftable along the base, the end of the perpendicular member adjacent the base being formed to define an approximately rectangular figure having a ledge off-set one inch from the base and having a length of two inches, the portion of the perpendicular member remote from the base being angularly bent, the base, the perpendicular member and the right angular portion being provided with longitudinal graduations.

In testimony whereof I hereunto affix my signature.

ALBERT M. GUILLET.