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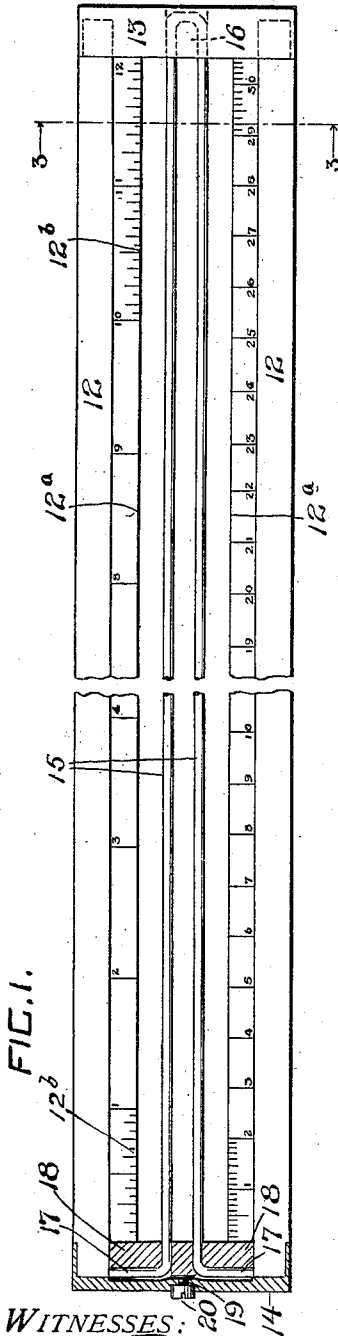
I. C. WALK.

RULER.

APPLICATION FILED JAN. 19, 1910.

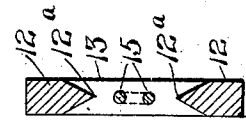
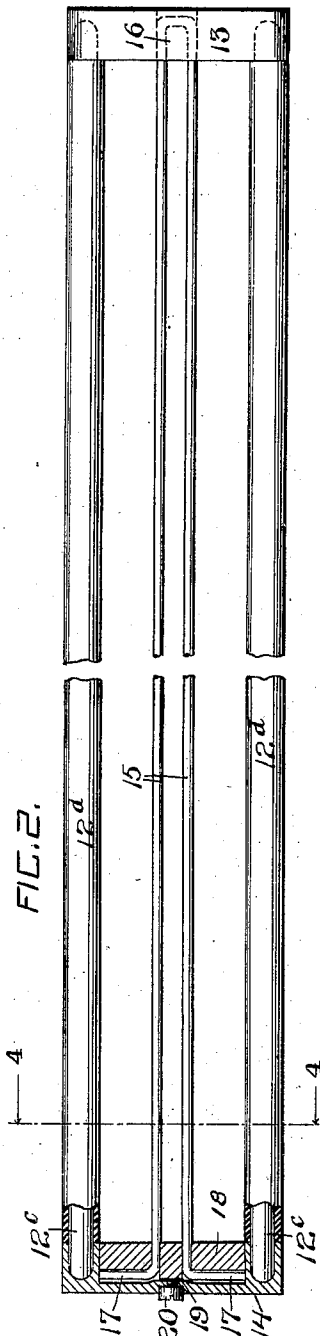
Patented Mar. 14, 1911.

2 SHEETS—SHEET 1.



WITNESSES:

H. F. Roy
W. J. Sweeney



INVENTOR:

BY

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RULER.

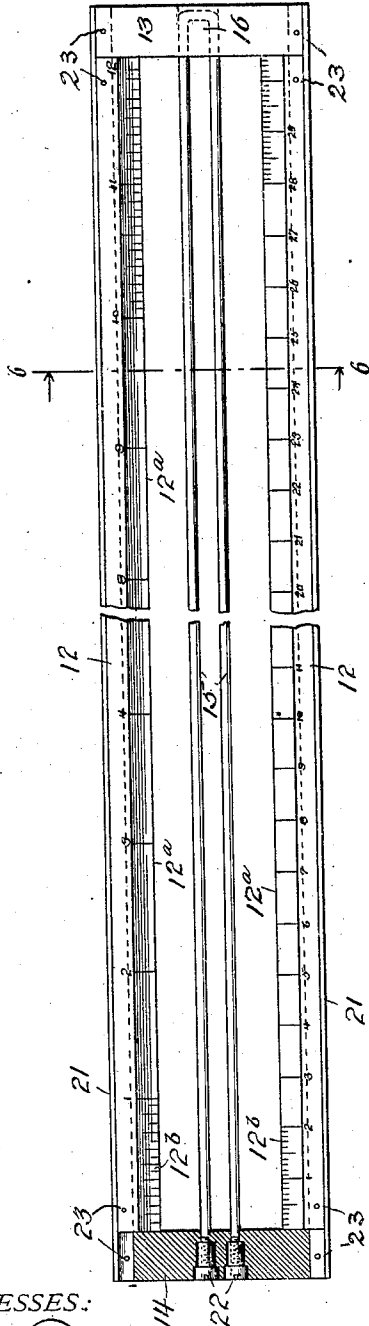
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2 SHEETS-SHEET 2.

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FIG. 5.



WITNESSES:

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FIG. 7.

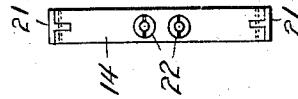
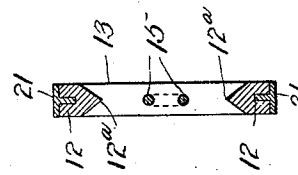


FIG. 6.



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UNITED STATES PATENT OFFICE.

ISAAC C. WALK, OF CHAMBERSBURG, PENNSYLVANIA.

RULER.

986,611.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed January 19, 1910. Serial No. 538,930.

To all whom it may concern:

Be it known that I, ISAAC C. WALK, a citizen of the United States, residing at Chambersburg, in the county of Franklin and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Rulers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to rulers and has for some of its objects to provide an implement of this character which will be simple and inexpensive in construction and convenient in use, which will admit of the ruling of several parallel lines without movement of the ruler, and which will obviate all danger of blotting, soiling of the fingers, slipping and other objections to devices of this character as heretofore constructed.

Other objects of the invention, together with means whereby the same may be carried into effect, will best be understood from the following description of certain forms or embodiments thereof illustrated in the accompanying drawings. It is to be understood, however, that the constructions shown and described have been chosen for illustrative purposes merely, and that many changes may be made therein without departing from the spirit and scope of the invention.

In said drawings, Figure 1 is a plan view of a ruler embodying one form of the invention, one end of the ruler being shown in section to illustrate the interior construction of the ruler. Fig. 2 is a similar view of another form of the invention. Fig. 3 is a transverse section taken substantially on the line 3—3, Fig. 1. Fig. 4 is a transverse section taken substantially on the line 4—4, Fig. 2. Fig. 5 is a view, similar to Fig. 1, of another and preferred form of the invention. Fig. 6 is a cross section on line 6—6, Fig. 5, and Fig. 7 is an end view looking from the left of Fig. 5.

The improved ruler in its preferred form comprises a frame consisting of two side pieces 12, and end pieces 13, 14, and having between its side pieces, and parallel thereto, one or more wires 15 forming additional ruling members. The side and end pieces of the frame are so proportioned as to make both of the outer faces thereof, or the parts upon which the ruler rests when in use, substantially flat and unobstructed. Between the planes of these outer bearing faces are

arranged the wires 15 and their securing devices. By this construction no part of the frame or wire-securing devices will interfere with a flat bearing of the ruler at either side, and the ruler may therefore be used either side up with equal facility. In other words, the securing and tightening devices are within the opposite flat or bearing faces of the rulers, so as not to prevent the rulers from lying flat and even on the surfaces to be ruled.

The wire 15 is preferably formed in one continuous piece looped or bent upon itself to form two substantially parallel, spaced ruling members. Means are provided for securing said ruling member to the end piece 13. To this end the following construction is preferably employed. The end piece 13 is provided with an aperture extending therethrough from its outer to its inner side, said aperture presenting at the outer side of said piece substantially the outline shown in dotted lines in Figs. 3 and 6. Within said end piece the said aperture is forked to provide two branches, leaving between them an abutment 16, as shown most clearly in dotted lines in Fig. 5. The wire 15 is inserted into said aperture from the outer side of the end piece 13, its two arms passing through the two branches of the aperture and the loop connecting them bearing against the abutment 16.

The opposite free ends of the wire 15 are, in the constructions illustrated in Figs. 1 and 2, provided with transversely arranged portions 17 shown as formed by bending these ends outwardly. These ends are preferably received within suitable recesses formed in the end pieces 14, and are in each instance held therein by a follower 18 having apertures for the passage of the wire and an outer, preferably recessed, face to engage said transverse portions. Means are provided for securing the followers 18 in place, preferably in an adjustable manner, such means, as shown in Figs. 1 and 2 comprising screw studs 19 entering apertures in the end pieces 14 and provided with nuts 20, whereby the wires 15 may be placed under suitable tension and tightened when required.

In the construction shown in Figs. 1 and 3 and also in Figs. 5 and 6 the side pieces 12 are oppositely beveled to provide intermediate ruling edges 12^a which are within the planes of the opposite flat faces of the ruler

and are graduated to furnish opposite scales 12^b.

In the construction shown in Figs. 2 and 4 the side pieces 12 are formed by rods or bars 12^a covered by a suitable frictional material 12^d, such as rubber tubing, preferably of a suitable diameter or thickness to bring the outer faces of said side pieces substantially flush with the outer faces of the end pieces. The frictional material 12^d obviates any tendency of the ruler to slip upon the surface to be ruled. In this construction the inner or ruling edges of the side pieces are also within the planes of the opposite flat or bearing faces of the ruler, as are also the intermediate wire ruling members of the rulers in all preferred forms of the invention.

In the form of the invention shown in Figs. 5, 6 and 7 the side pieces 12, which are preferably of hard wood, are reinforced by metal bars 21 herein shown as being T-shaped in cross-section, the inner ribs or flanges of said T-bars being received in grooves in the outer faces of the said side pieces 12 and in the ends of the end pieces 13 and 14, and being thus embedded therein. The metal T-bars are preferably of aluminum, for lightness, and these T-bars, embedded in the wooden side pieces 12, will serve to stiffen the said side pieces, and thus prevent the same from bending or buckling when the intermediate wire ruling members 15 are placed under tension, and the T-bars will also prevent the said side pieces from warping or bending when exposed to heat, as where the ruler is accidentally laid in the sun, or otherwise. In this preferred form of the invention the non-joined ends of the wire ruling members are screw-threaded for the reception of nuts 22 abutting against suitable seats in the end piece 14, so that said members 15 may be placed under proper tension. In this preferred form of the invention the pieces comprising the ruler frame are secured together by rivets 23 passing through the end and side pieces of the frame and through the central ribs or flanges of the metal T-bars.

As will be seen, the rulers above described each provide a plurality of ruling edges all of which are elevated above the surface upon which the ruler rests, and which are within the outer sides or outer faces of the ruler frame, and which are well adapted in every respect conveniently to fulfil the requirements of a desirable ruler. By reason of the fact that all of the ruling edges or ruling members of the improved rulers are within

the outer edges of the ruler frame all danger of soiling the fingers of the user by wet ink on the said ruling edges or ruling members is entirely avoided, the rulers being touched only at their outer edges by the fingers of the users, in ordinary handling, as will be understood.

Having thus described my invention I claim and desire to secure by Letters Patent:

1. A ruler comprising, in combination, a frame having side pieces and end pieces, one of said end pieces having an aperture extending therethrough and an abutment in said aperture, a continuous wire arranged intermediate said side pieces, said wire being looped or bent upon itself to form spaced ruling members extending through said aperture and arranged substantially parallel to said side members, the bent end of said wire engaging said abutment, and means for securing the free ends of said wire to the other of said end pieces.

2. A ruler consisting of a frame comprising wooden side pieces having oppositely beveled inner ruling edges, metal T-bars embedded in the outer edges of said wooden side pieces, and end pieces connected with said side pieces, combined with parallel wire ruling members between said side pieces and suitably secured to said end pieces.

3. A ruler consisting of a frame comprising end pieces and wooden side pieces, said wooden side pieces being reinforced and stiffened by metal bars attached thereto, combined with parallel wire ruling members between said side pieces and suitably secured to said end pieces, said wire ruling members being provided by a single bent or looped piece of wire.

4. A ruler consisting of a frame comprising end pieces and wooden side pieces, said wooden side pieces being reinforced and stiffened by metal bars attached thereto, combined with parallel wire ruling members between said side pieces and suitably secured to said end pieces, said wire ruling members being provided by a single bent or looped piece of wire, and screw-threaded parts comprising nuts which may be tightened to place said wire ruling members under proper tension.

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

ISAAC C. WALK.

Witnesses:

GEO. A. KYNER,
LYDIA M. KUMP.