

No. 694,185.

Patented Feb. 25, 1902.

J. PAGE.
PARALLEL RULER.

(Application filed Jan. 6, 1902.)

(No Model.)

FIG. 1.

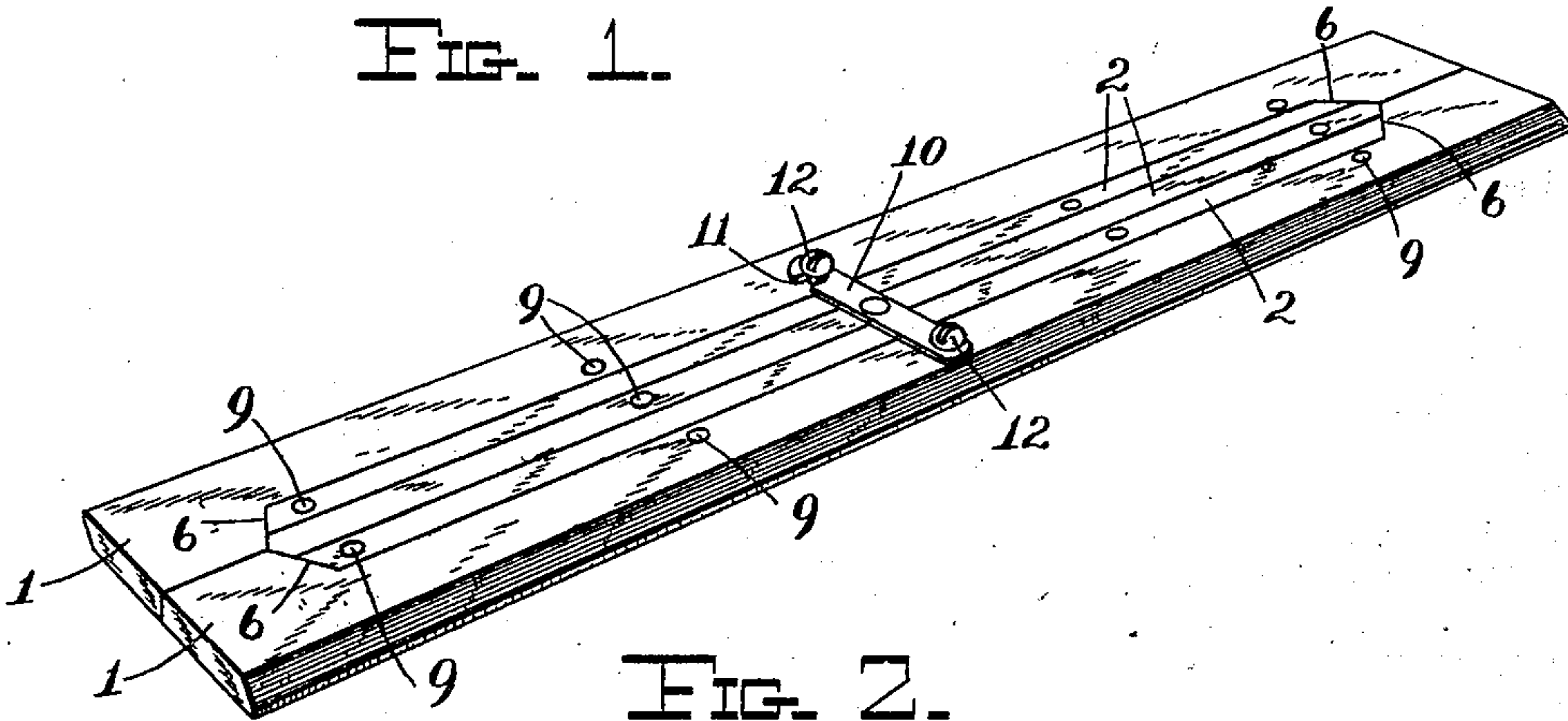


FIG. 2.

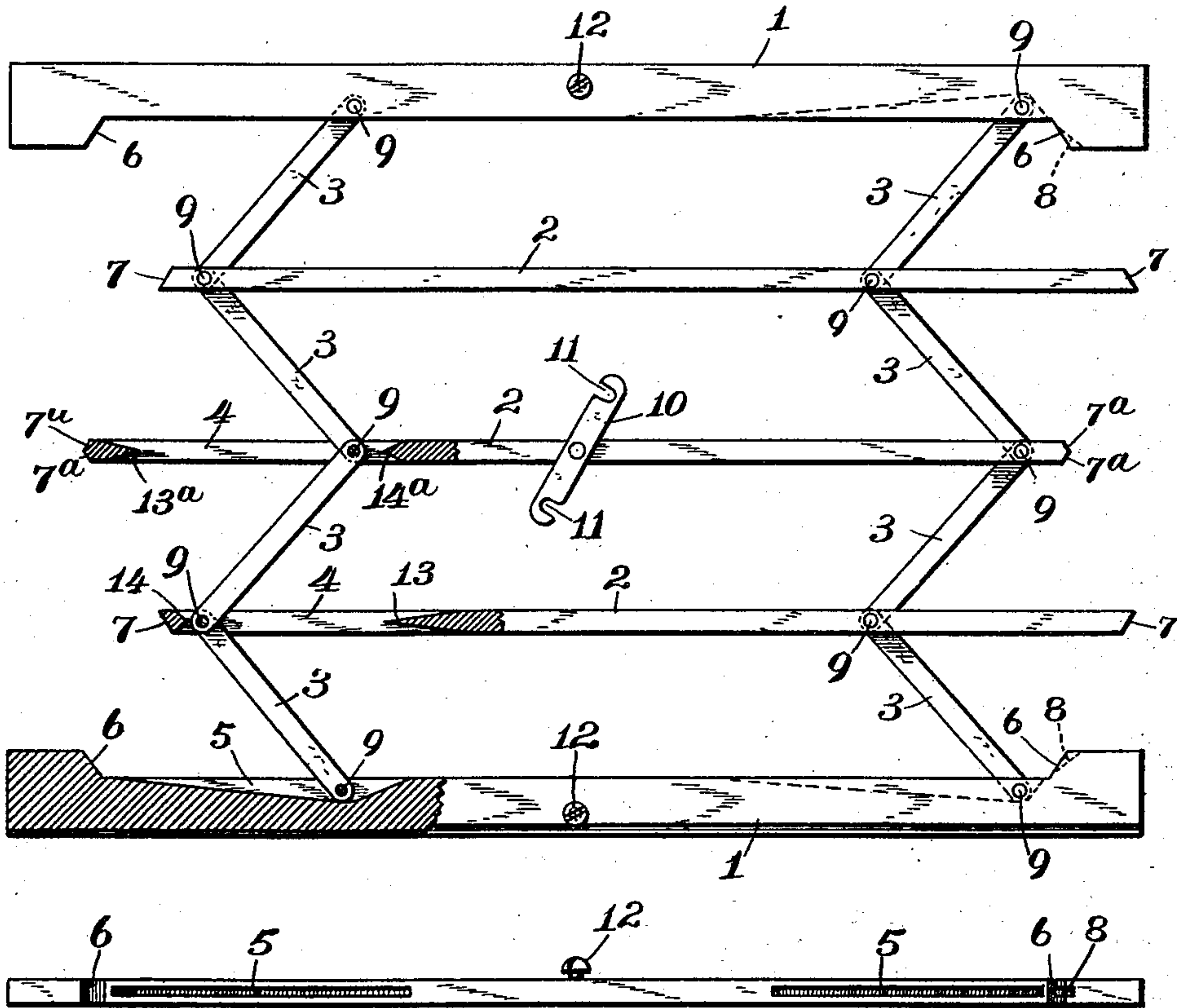


FIG. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

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PARALLEL-RULER.

SPECIFICATION forming part of Letters Patent No. 694,185, dated February 25, 1902.

Application filed January 6, 1902. Serial No. 88,627. (No model.)

To all whom it may concern:

Be it known that I, JAMES PAGE, a citizen of the United States, and a resident of Washington, District of Columbia, have invented a new and useful Improvement in Parallel-Rulers, of which the following is a specification.

My invention relates to parallel-rulers, and more particularly to such rulers as may be employed in laying off compass courses and for laying down or determining bearings on charts and for similar work.

In the use of parallel-rulers heretofore employed, more especially in laying off compass courses or bearings on charts, it frequently happens that the course or bearing to be laid off from a point of departure lies at such a distance from the compass-rose that it is necessary to move both straight-edges one or more times some distance from the compass-rose. In manipulating the rulers in this manner one hand must first be used to hold that straight-edge against the chart which was used for alinement with the compass-rose, so that in shifting the said straight-edges from the compass-rose by the alternate movements of the straight-edges there is great danger of throwing such straight-edges out of alinement with the course or bearing sought to be laid off from the compass-rose, and however slight this deflection may be it is readily apparent, in view of the scale upon which charts are necessarily made, the compass course or bearing which is ultimately laid from the point of departure by the opposite straight-edge of the rulers will be materially in error, thus creating a source of great danger to navigators. The same objections exist, possibly to a less extent, in the laying off of parallel lines from any given base in any kind of work where it is necessary, as it has been heretofore, to shift the alining straight-edge from its base and to move the two edges alternately until the desired position is attained.

The object of my invention, therefore, is to provide an improved pair of parallel-rulers in which it shall not be necessary to shift the straight-edge from its base and which shall be free from projections and shall occupy the minimum space when closed; and I accomplish these objects by the construction hereinafter set forth with reference to the accom-

panying drawings, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a pair of parallel-rulers made in accordance with my invention and shown in closed position. Fig. 2 is a top plan view thereof in opened position, partly sectional; and Fig. 3 is a detail side view of the inside of one of the straight-edges.

Referring now to the drawings, in which the same reference characters relate to the same or corresponding parts in all the views, the numeral 1 indicates the pair of straight-edges constituting the ruling and alining elements of the device. These straight-edges 1 are connected together by a parallel motion consisting of parallel bars 2, joined together by parallel links 3, the ends of which links are pivotally connected to the bars by pins 9 and to the straight-edges by similar pins, as shown in Fig. 2. The straight-edges are preferably recessed on the inside, so that when closed together the two recessed portions will form an elongated slot or opening, beveled at each end and inclosing the parallel bars and links, as shown in Fig. 1.

By providing a series of bars 2 and links 3 for connecting the two straight-edges together it will be observed that a wide range of movement is secured for one of the straight-edges with respect to the other without altering the position of the latter, which may be held by the hand or any suitable means in fixed relation to its base while the other straight-edge is being manipulated, and this result is accomplished in a device occupying a minimum space when closed.

In order to permit the rulers to be closed together, as shown in Fig. 1, when not in use and to occupy a minimum space, while at the same time providing a single straight-edge which may be used as such, I provide for the closing of the links 3 within the straight-edge 1 and the bars 2, so that when in closed position the joints formed between the adjacent bars and the straight-edges will be as close and even as it is possible to secure, while the upper and lower surfaces of the rulers so closed will be smooth and even and without any projecting parts. To accomplish these objects, I pivot the ends of the links 3 in slots 4, formed in the opposite ends of the bars 2,

those links 3 adjacent to the straight-edges 1 being pivoted in recesses 5, formed in the inner sides of such straight-edges.

The recesses in the straight-edges are made of such depth as to accommodate one half of the body of the links pivoted therein, the other half being accommodated by the slots 4, formed in the bar 2 adjacent to its respective straight-edge.

In order to secure a firm and rigid structure when closed, I bevel the bottoms of the recesses 5 upon such an incline as will cause the links 3 to lie closely in contact with said bottoms when the rulers are closed, the opposite sides of said links lying in contact with the beveled edge 13 of one end of the slot 4, such edge 13 having a double bevel, so that each side of said bevel will receive in contact therewith opposite sides of adjacent links 3.

As hereinbefore indicated, each of the straight-edges is provided with a recess on its inner side, the end walls of which are beveled, as shown at 6, so as to receive when closely confined the abutting bars 2, the opposite ends of which have beveled surfaces 7, adapted to lie closely in contact with the beveled end wall 6 when the rulers are closed, the center bar 2 being provided with opposite bevels 7^a, which lie, as shown in Fig. 2, against either end of the beveled incline 6 of each of the straight-edges.

In order to provide an abutment for the reception of the links adjacent to the straight-edges 1 of such a character as to hold and confine the said links from vibration or tendency to movement when the rulers are fully opened, so as to swing, for example, to an extreme position to the right, I provide in the beveled walls 6 of such straight-edges a groove 8 in alinement with the links 3, pivoted to said straight-edges, and hence as these links 3 are swung to the extreme position toward such beveled wall 6 they will engage said grooves 8.

In order to confine the several parts together when in closed position, as shown in Fig. 1, I provide a suitable latch or clasp, as indicated by the numeral 10, pivotally supported upon the central bar 2 and having jaws 11 in its opposite ends, which are adapted to engage stop-pins 12, secured to each of the straight-edges.

The slots 4 in the bars 2, it will be observed, are provided at each end with beveled edges, those indicated at 13 and 13^a having their surfaces substantially parallel to each other, so as to contact with the opposite edges of adjacent links when the device is closed, while those indicated at 14 and 14^a are suitably beveled to properly act as abutments for the adjacent links when swung to extreme positions to the right or left, as the case may be.

From the foregoing description it will be observed that by interposing a parallel motion comprising parallel links and bars between the straight-edges and recessing the latter, so as to provide an elongated slot

within which such parallel motion is closely confined, with no projections on either surface of the rulers, I furnish a pair of parallel-rulers capable of wide range of movement without moving the straight-edge from its base and in which the parts occupy the minimum space when closed and present a neat appearance with close joints between the parts, thereby forming practically a continuous surface on each side of the rulers.

I claim as my invention—

1. In a pair of parallel-rulers, the combination of two straight-edges, parallel bars interposed between said straight-edges, and parallel links pivotally connected to the inside of the straight-edges and the bars, so that said bars and links are so disposed with reference to the surfaces of the straight-edges, as to avoid projecting surfaces beyond the surfaces of the straight-edges.

2. In a pair of parallel-rulers, the combination of two straight-edges having recesses on their inner sides, parallel bars interposed between the said straight-edges having slots at the opposite ends, and links pivotally connected in the recesses of the straight-edges and in the slots of the bars, said links adapted to be inclosed within the slots of the bars and the recesses of the straight-edges when the rulers are closed, substantially as described.

3. In a pair of parallel-rulers, the combination of two straight-edges having recesses on their inner sides, parallel bars interposed between the straight-edges and provided with slots in their opposite ends, parallel links pivotally connected at one end to, and in the recesses of, the straight-edges, and at the other end to, and in the slots of, the bars adjacent to the said straight-edges, and other links pivotally connecting the bars, the said links and bars being adapted to be inclosed within the straight-edges and forming close joints, when the rulers are closed, substantially as described.

4. In a pair of parallel-rulers, the combination of two straight-edges having corresponding elongated recesses on the insides, so as to form an elongated slot with beveled ends when closed, parallel bars having slots in the ends thereof, parallel links pivotally connected with said bars in the slots thereof and with the straight-edges, said bars having their ends beveled to correspond with the beveled ends of the elongated recesses in the straight-edges, thereby forming a parallel motion connecting the two straight-edges, which is inclosed within the said elongated slot when the rulers are closed.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES PAGE.

Witnesses:

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