

No. 864,396.

PATENTED AUG. 27, 1907.

W. S. WESTON.

DRAFTSMAN'S TRIANGLE, STRAIGHT EDGE, AND LIKE INSTRUMENT.

APPLICATION FILED DEC. 10, 1906.

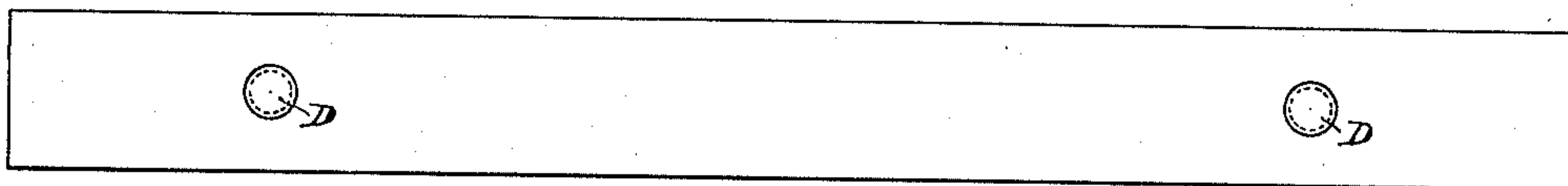


Fig. 1

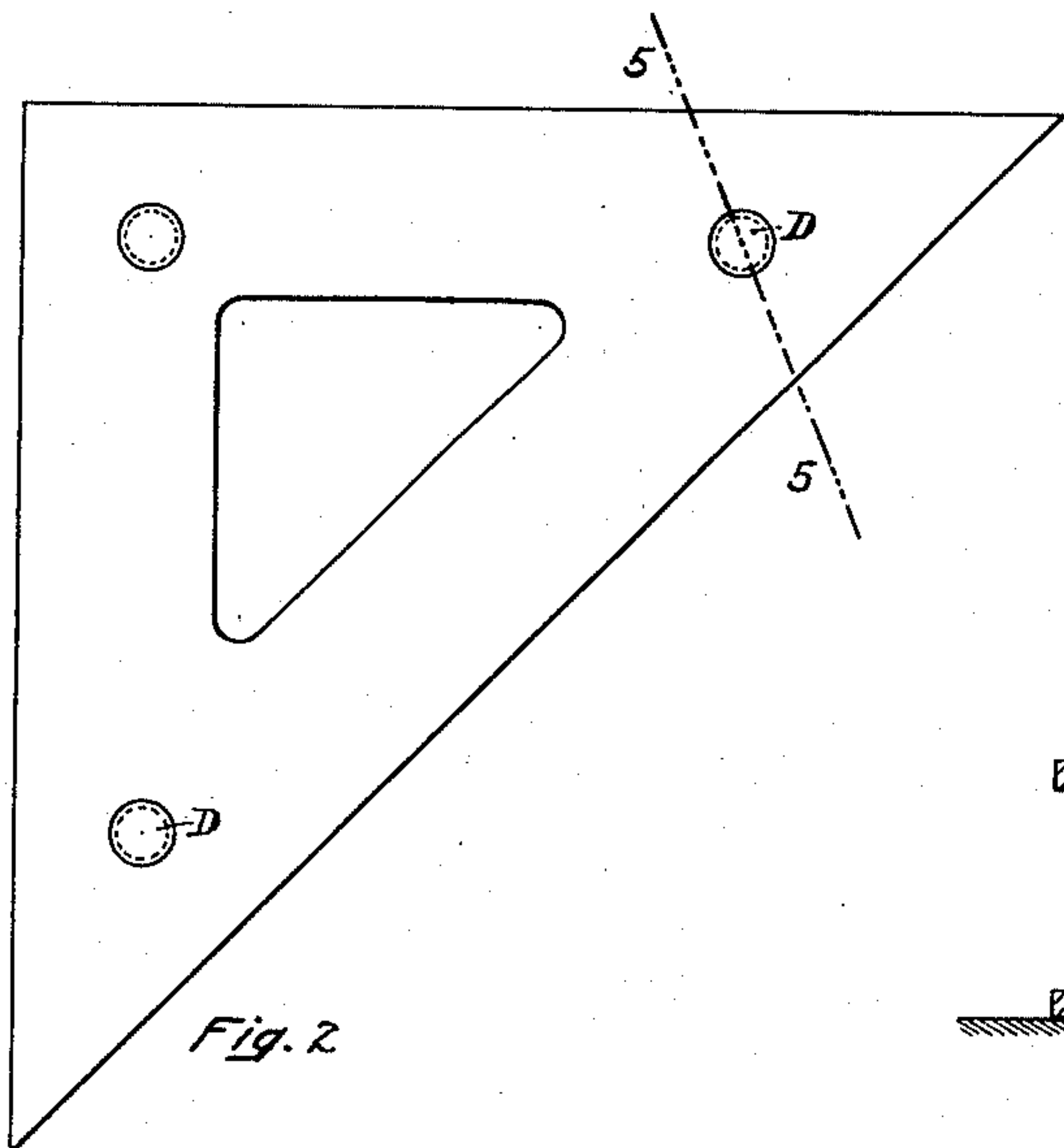


Fig. 2

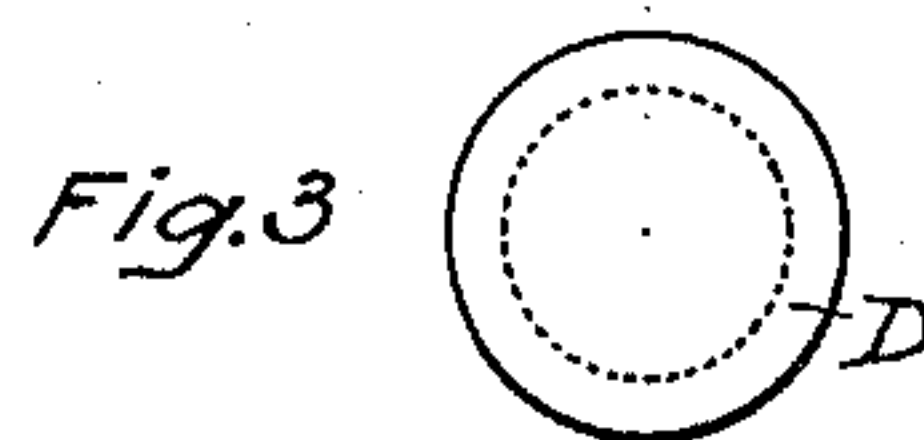


Fig. 3



Fig. 4



Fig. 5

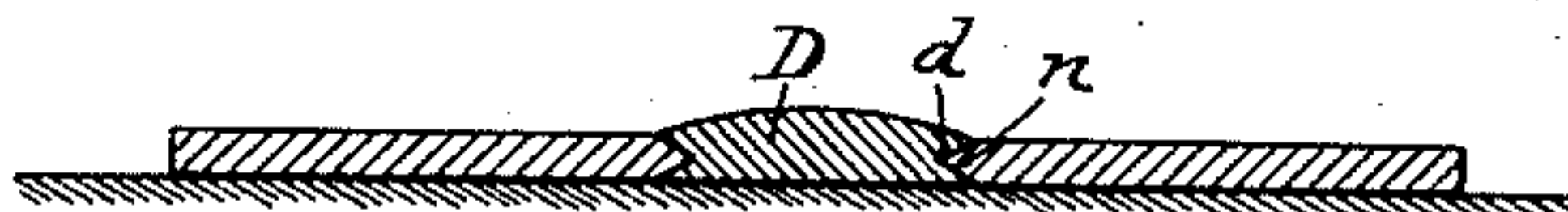


Fig. 6



Fig. 7

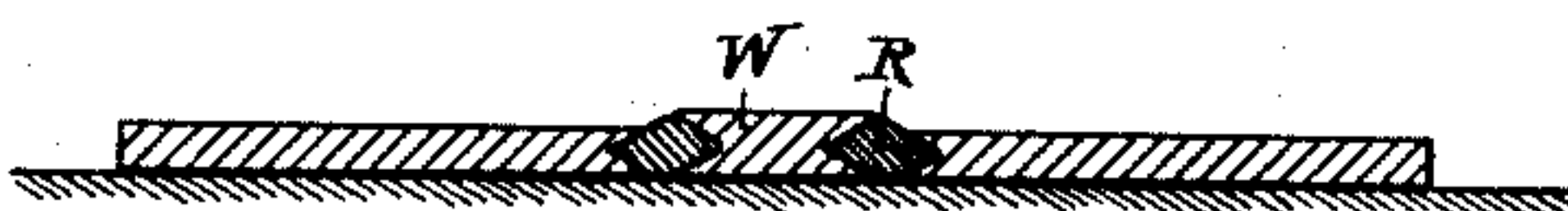


Fig. 8



Fig. 9



Fig. 10

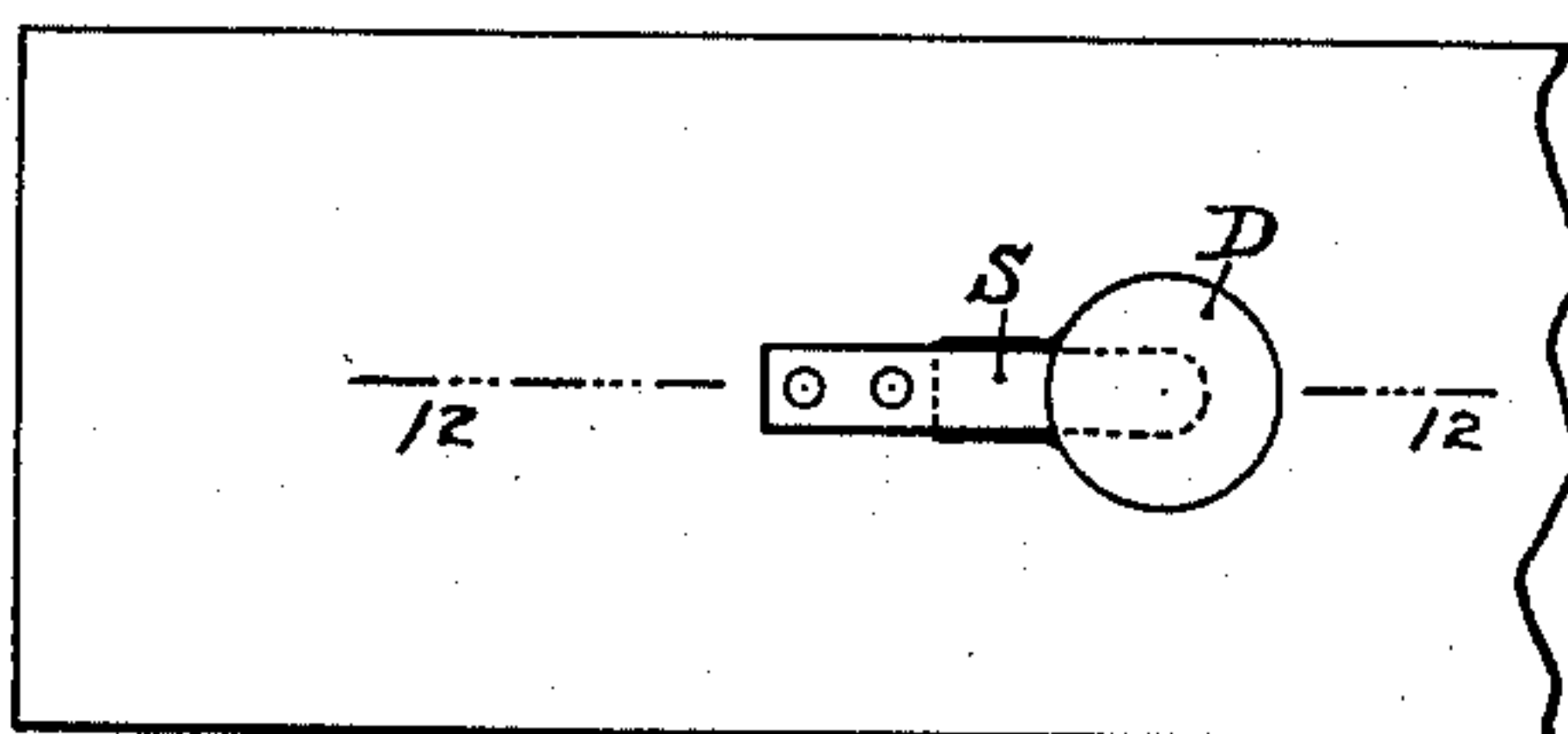


Fig. 11



Fig. 12

Witnesses:

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# UNITED STATES PATENT OFFICE.

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## DRAFTSMAN'S TRIANGLE, STRAIGHT-EDGE, AND LIKE INSTRUMENT.

No. 864,398.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed December 10, 1906. Serial No. 347,087.

*To all whom it may concern:*

Be it known that I, WILLIAM S. WESTON, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Draftsmen's Triangles, Straight-Edges, and Like Instruments, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification.

10 My invention relates to an improved attachment for draftsmen's triangles or straight edges, and has for its special object new and improved means whereby these tools may be held in position by a light pressure of the draftsman's hand with more certainty than has  
15 been possible heretofore.

It is a matter of common experience that a rubber or celluloid triangle having a polished surface resting on a hard, smooth surfaced paper or tracing cloth, has to be held with considerable pressure to avoid being shifted  
20 while being used as a straight edge or in connection with another triangle. By my invention this tendency to shift is very much reduced, the draftsman's time is conserved, and he is enabled to work with greater comfort.

25 My invention is clearly set forth in the following specifications and illustrated in the accompanying drawing.

Broadly stated, my object is accomplished, preferably, by means of small disks of soft rubber so fitted  
30 into and through holes in the triangle or straight edge, as to project a little distance above the surface on both sides. The projection of the disk insures its coming into contact with the drawing on which the triangle lays; the spongy surface of the soft rubber  
35 gives a high coefficient of adhesion; while the elasticity of the disk causes it to yield through the hole when pressure is applied to the triangle to bring it down to the surface of the drawing. The pressure necessary to do this increases the adhesive contact of the disk.

40 Figure 1 is a plan view of a straight edge having two disks. Fig. 2 is a plan view of a 45° triangle having three disks. Figs. 3 and 4 are separate views of the disk. Fig. 5 is a cross-section on the line 5—5 of Fig. 2. Fig. 6 is the same view as Fig. 5 showing in partial sec-  
45 tion the surface on which the triangle lays and is held down to by pressure from the draftsman's hand. Figs. 7 and 8 show an alternate construction of the disk and its method of setting in the triangle. Fig. 9 shows a disk projecting on one side only, set in a hole which may  
50 not go entirely through the triangle. Fig. 10 shows the shape into which the disk of Fig. 9 yields when the triangle is pressed down to the surface. Figs. 11 and 12, taken on line 12—12 of Fig. 11, show an alternate construction with a metal spring which embodies the  
55 principal features of my invention. Figs. 1 and 2 are

drawn to a smaller scale than the balance of the figures. Figs. 7, 8, 9 and 10 are all sectional views on the line 5—5 of Fig. 2.

The same letter refers to similar parts in the several views.

60 The rubber disk D as shown in Figs. 3 and 4, is convex on both sides, very much like a simple magnifying glass, and has the edge slitted around the entire circumference with a sharp V groove, as shown at d. The hole through the triangle is countersunk on  
65 both sides so as to form a knife edge n, Figs. 5 and 6. The rubber disk is held in place by being so proportioned relative to the size of the hole, that the V groove fits closely over the knife edge. By this construction the elasticity of the disk allows it to yield or spring  
70 up through the hole slightly when the triangle is pressed down to the surface of the drawing, as shown in Fig. 4, and at the same time to have a large portion of its surface brought into closer adhesive contact with the  
75 drawing. The adhesion of the rubber disks to the drawing reduces very much the tendency of the triangle or straight edge to slip or twist.

By the application of abnormal pressure against the disk itself, it may be forced into or out of the hole in which it is set, and renewed from time to time as it  
80 becomes worn out or hardened with age.

In the accomplishment of my object, I do not limit myself to the use of a disk of homogeneous rubber or to the exact form shown in Figs. 3, 4, 5 and 6.

85 In Fig. 7 I have illustrated an alternate construction in which the disk (shown in diametrical cross-section) is made up of a ring R of yielding rubber and a center portion W of wood or other material provided with a surface having a higher coefficient of adhesion than the surface of the triangle. In this form the ring  
90 portion of the disk fits into a groove r in the circumference of the center portion and into an opposing groove r' in the edge of the hole in the triangle. When the triangle is placed on the drawing and pressed down to contact the yielding of the ring causes the disk to take  
95 the shape shown in Fig. 8.

The construction illustrated in Figs. 9 and 10 consists of a rubber disk D set into one surface only of the triangle, and is so shaped that, while it normally projects slightly beyond the surface of the triangle in order  
100 to give adhesive contact with the drawing, yet there is space left into which it can yield when the triangle is pressed down on the drawing.

The construction illustrated in Figs. 11 and 12 consists of a disk D fitted snugly into a hole in a straight  
105 edge and is held in normal position therein by being sleeved or mounted on the free end of a flat metal spring S, the other end of which is riveted or otherwise suitably attached to the straight edge. As in the construction already described, the disk projects slightly  
110



beyond the surface, and the S is depended upon to yield sufficient to allow the straight edge (or triangle) to be brought down to the surface of the drawing. By the use of abnormal pressure against the disk the free end of the spring will yield far enough to permit the disk being thrust out of the hole so that it can be removed from the end of the spring and a new disk slipped on, as may be required from time to time.

I do not wish to limit myself to the use of a construction in which the adhesive contact surface projects above both surfaces of the triangle, as many draftsmen will prefer a triangle having this device effective on one side only, leaving the other side free to move or slide over the surface of the drawing.

Although I prefer the plain disk set into a hole in the triangle as shown in Figs. 1 to 6, yet it is obvious that other forms of construction in addition to those I have described, may be designed to embody the prime features of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. A friction attachment for a draftsman's triangle, straight edge, or the like, consisting of a body with a friction generating surface so mounted on the triangle that the friction surface projects beyond the surface of the triangle, the said body having a yielding structure whereby it does not prevent the triangle from being pressed down to the drawing.

2. A friction attachment for a draftsman's triangle,

straight edge or the like, consisting of a disk of soft, yielding rubber adapted to be mounted on the triangle so that its surface projects beyond the surface of the triangle when the triangle is suspended free from the drawing, and comes even with the surface when the triangle is pressed down to the drawing.

3. A friction device for attaching to a draftsman's triangle, straight edge or the like provided with an elastic structure which permits the triangle to be pressed down to the drawing after the said device has come in contact therewith.

4. An attachment for a draftsman's triangle, straight edge or like instrument, consisting of a body having both a friction generating surface and a yielding structure, the said friction generating surface being adapted to come in contact with the drawing and the said yielding structure being adapted to permit the triangle also to be pressed down to contact with the drawing.

5. A draftsman's triangle, straight edge or like tool, in combination with a friction holding device attached thereto, the said device having a yielding structure whereby the triangle or like tool may be pressed down to the drawing after said device has come in contact therewith.

6. A draftsman's triangle, straight edge or like tool, in combination with a soft rubber disk mounted in a hole passing through said triangle or like tool, the said disk being adapted to form a friction contact with the drawing and having a yielding structure whereby the triangle or like tool may be pressed down to contact with the drawing.

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