Nov. 18, 1924. 1,516,288

F. E. GODFREY

BEVEL PROTRACTOR

Filed Oct. 27, 1923

Fig. 1

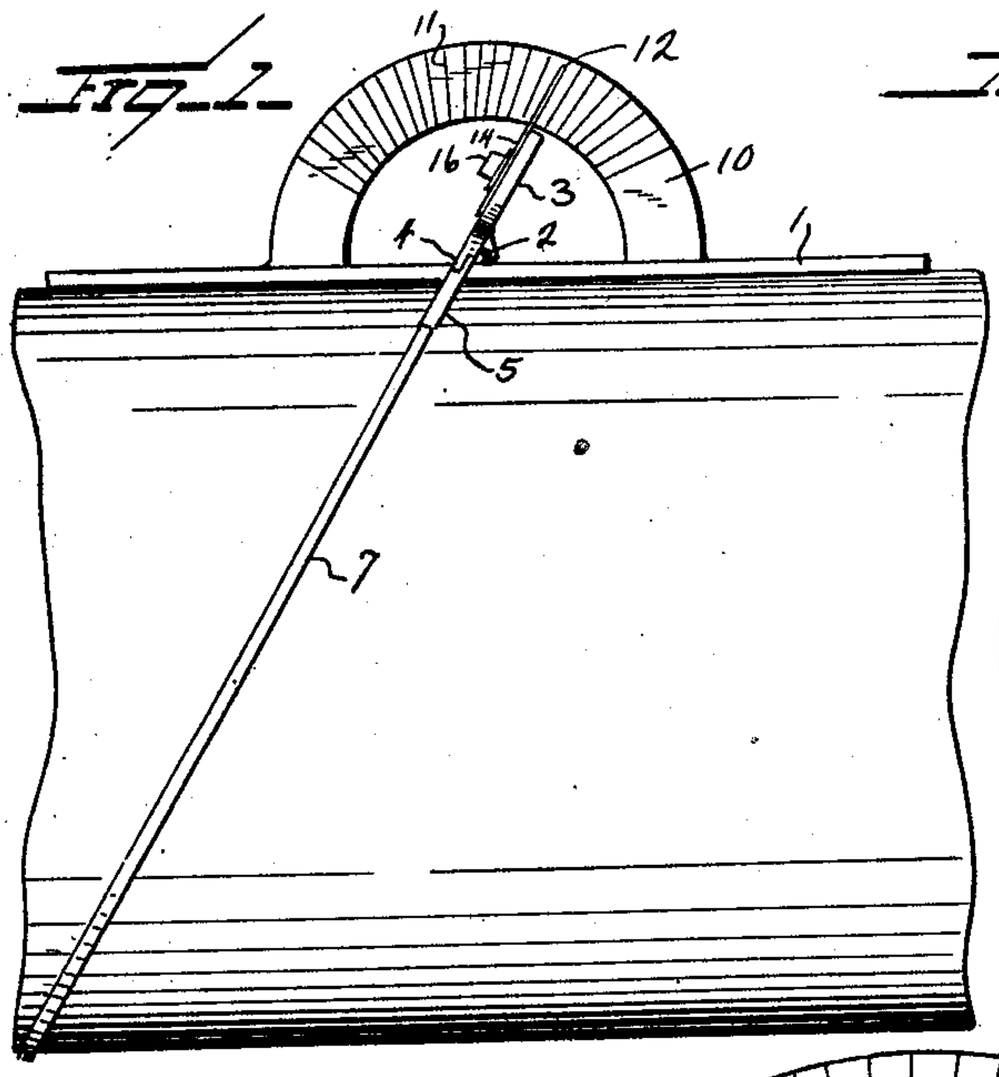


Fig. 2

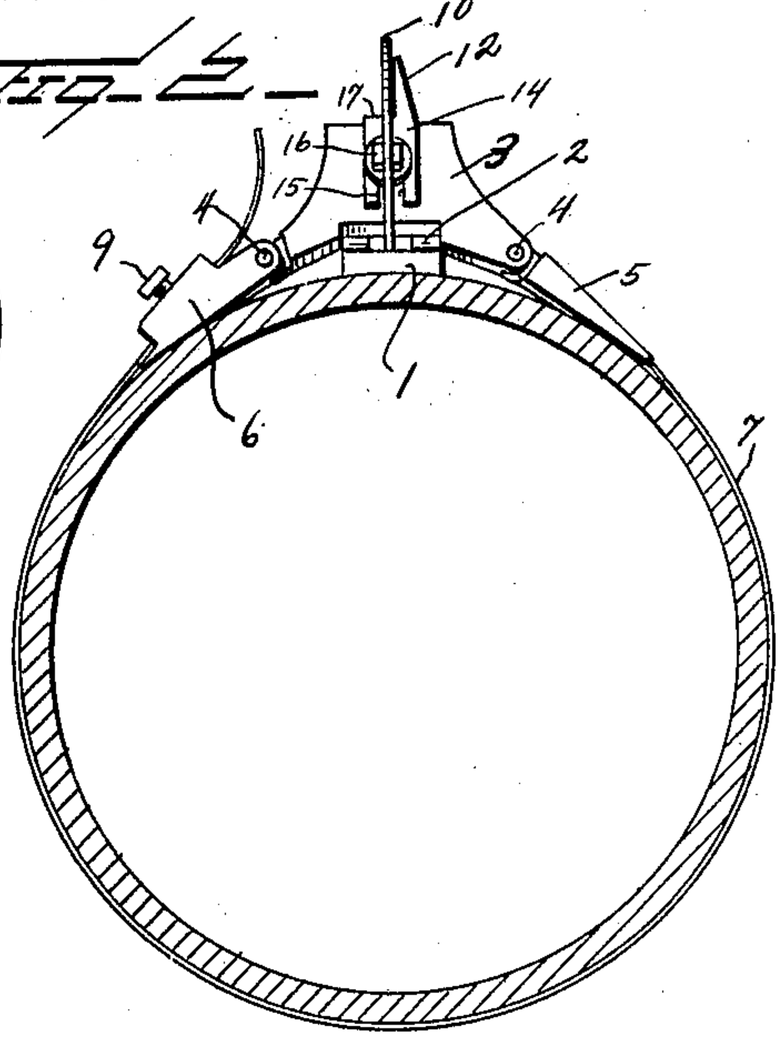


Fig. 3

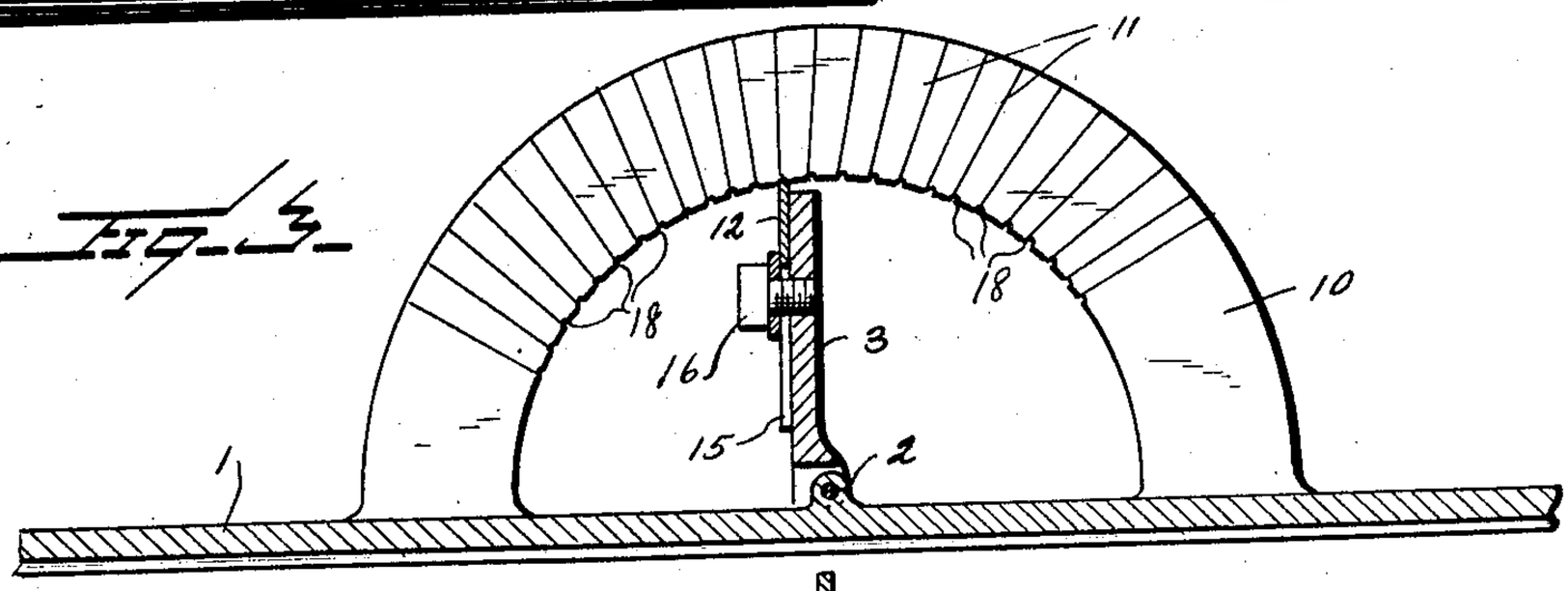


Fig. 4

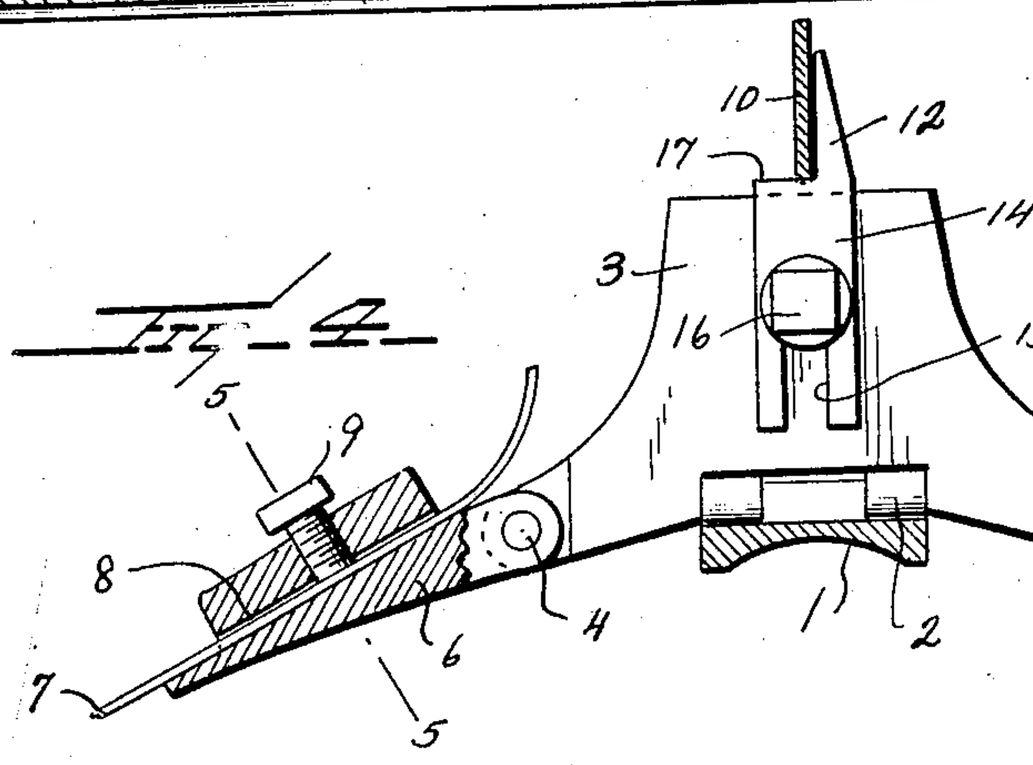
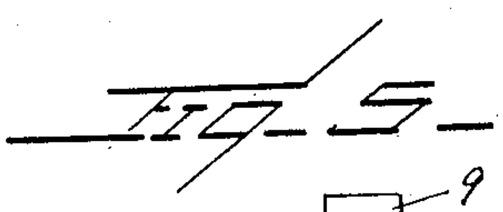


Fig. 5



INVENTOR.

F. E. Godfrey

BY

Watson E. Coleman

ATTORNEY.

Patented Nov. 18, 1924. 1,516,288

UNITED STATES PATENT OFFICE.

FRANK E. GODFREY, OF TONKAWA, OKLAHOMA, ASSIGNOR OF ONE-HALF TO AMERICAN IRON & MACHINE WORKS, INC., OF TONKAWA, OKLAHOMA, A CORPORATION OF OKLAHOMA.

BEVEL PROTRACTOR.

Application filed October 27, 1923. Serial No. 671,159.

To all whom it may concern:

Be it known that I, FRANK E. GODFREY, a citizen of the United States, residing at Tonkawa, in the county of Kay and State of Oklahoma, have invented certain new and useful Improvements in Bevel Protractors, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in bevel protractors and has relation more particularly to a device of this general character especially designed and adapted for use in connection with pipes or other round or cylindrical work and it is an object of the invention to provide a novel and improved device of this general character whereby it will be properly lined on the work for cutting off or the like.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved bevel protractor whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:—

Figure 1 is a view in side elevation of a protractor constructed in accordance with an embodiment of my invention and in applied position;

Figure 2 is a view in end elevation of the structure as illustrated in Figure 1, the associated work being shown in section;

Figure 3 is an enlarged view partly in section and partly in side elevation of the device as herein disclosed;

Figure 4 is a transverse sectional view taken through the device as disclosed in Figure 3;

Figure 5 is a sectional view taken substantially on the line 5—5 of Figure 4.

As disclosed in the accompanying drawings, 1 denotes an elongated member or bar of desired dimensions and material and which has hingedly connected thereto, as at 2, at a predetermined point intermediate its ends a cross head 3.

The cross head 3 has its hinged margin arcuately disposed and said head extends equi-distantly beyond opposite sides of the member 1. Hingedly connected, as at 4, and preferably by lap joints, with the opposite ends of the cross member or head 3 are the elongated members 5 and 6.

Welded or otherwise secured to the outer extremity of the member 5 is an end portion of an elongated tape 7 preferably of steel. The second member 6 has an opening 8 disposed longitudinally thereof and through which is threaded the tape 7, said tape being held against movement through said member 6 through the medium of the binding screw 9 threaded into the member 6 for direct contact with the tape 7.

Secured at its opposite ends to a face of the member 1 and bridging the cross head 3 is an arcuate plate 10 substantially perpendicularly related to the associated face of the member 1. A side face of the plate 10 has produced thereon the degree indications or graduations 11 with which is adapted to coact the index or pointer 12 secured to and extending outwardly beyond the cross head or member 3.

In practice, the member 1 is placed against the work with the tape 7 encircling such work. The cross head 3 is then swung to the desired angle as determined by the indications or graduations 11 and pointer 12 after which the tape 7 is tightened about the work. The tape then clearly indicates the angle or line of cut to be made through the work or the line upon which other work is to be performed and which line may be readily marked upon the work by using the applied device as a guide.

The pointer 12 is carried by a plate 14 provided in its end portion remote from the pointer 12 with the longitudinally disposed open slot 15. Disposed through the slot 15 and operatively engaged with the cross member 3 is a clamping nut 16.

The outer end of the plate extends to one side of the pointer 12 to provide a shoulder 17 which, upon requisite endwise adjustment of the plate 14 is adapted to selectively engage within a notch 18 produced in the inner marginal portion of the plate 10 whereby the cross member 3 will be locked in desired angular relation with respect to the member 1.

From the foregoing description it is

thought to be obvious that a bevel protractor constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understod as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:—

1. A protractor of the class described comprising an elongated member, a cross head hingedly connected therewith, a flexible member secured to one end of the cross head, means for adjustably connecting the flexible member with the opposite end portion of the head, an arcuate plate carried by the member and bridging the cross head, said plate being provided with degree indications, and a pointer carried by the cross head for coaction with the indications.

2. A protractor of the class described comprising an elongated member, a cross head hingedly connected therewith, a flexible member secured to one end of the cross head, means for adjustably connecting the flexible member with the opposite end portion of the head, an adjustable plate carried by the cross head, means for holding the plate against movement relative to the cross head, an arcuate plate carried by the head and bridging the cross head, said plate being provided with notches with which the first named plate is adapted to selectively engage, said plates having coacting indicating means.

3. A protractor of the class described comprising an elongated member, a cross head hingedly connected therewith, elongated members pivotally connected with the end portions of the cross head, a flexible member having one end portion secure to one of said last named members, the second of said last named members having an opening disposed therethrough and through which the flexible member is threaded, means carried by said last named member and coacting with the flexible member to hold the flexible member against movement through said opening, an arcuate plate carried by the first named member and bridging the cross head, said plate being provided with degree indications, and coacting indicating means carried by the first named member and cross head.

In testimony whereof I hereunto affix my signature.

FRANK E. GODFREY.