

V. KRASKE.

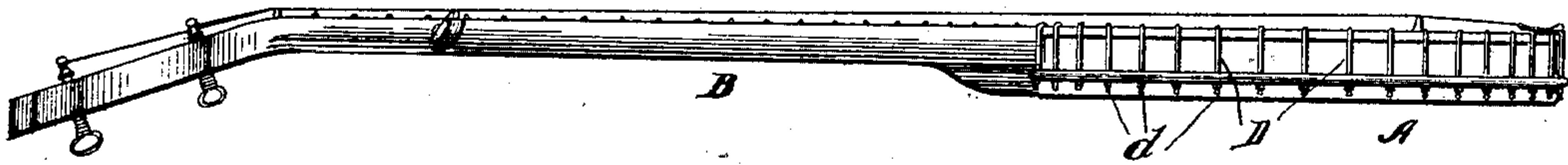
BANJO.

(Application filed Feb. 24, 1902.)

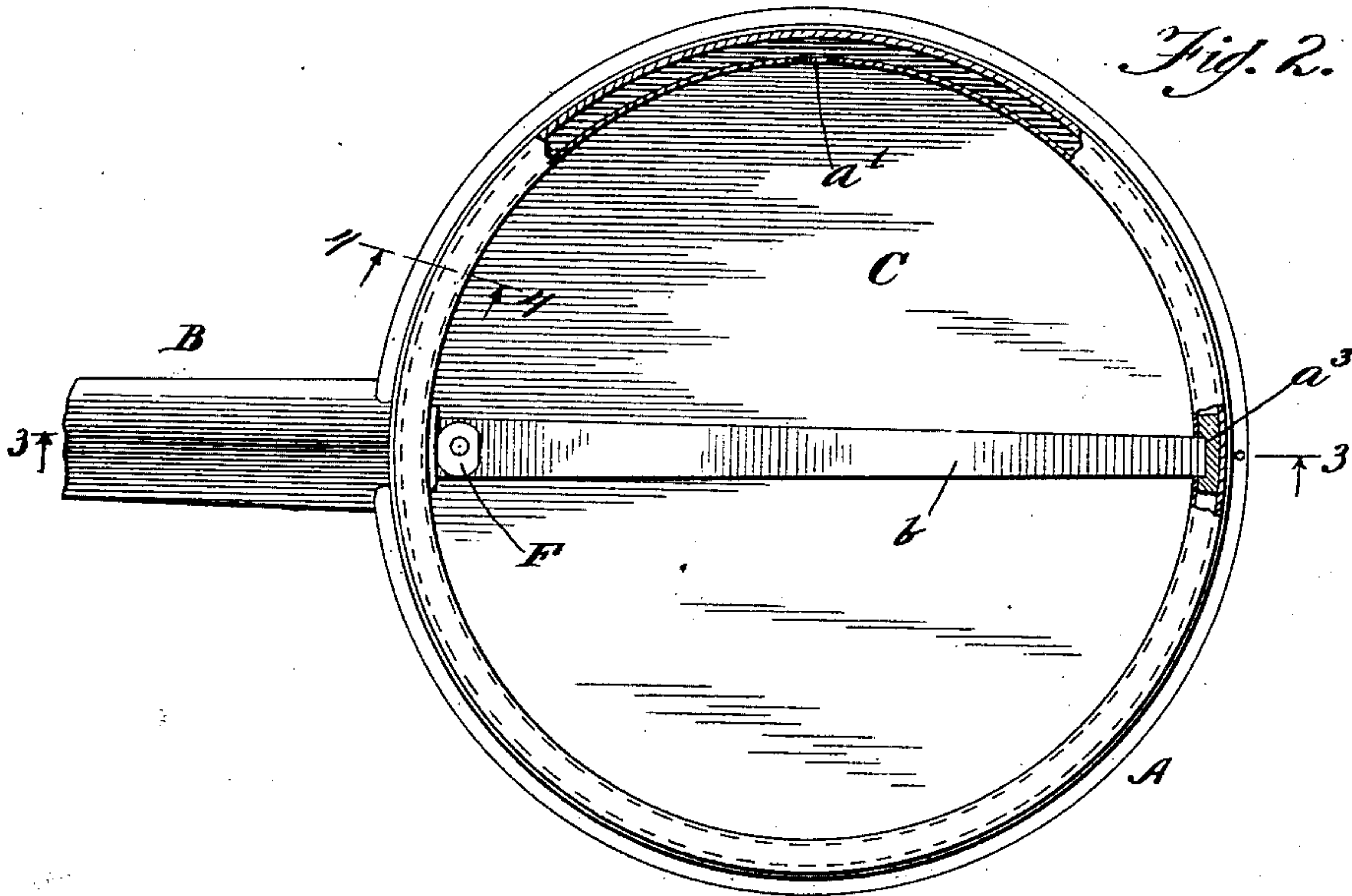
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2 Sheets—Sheet 1.

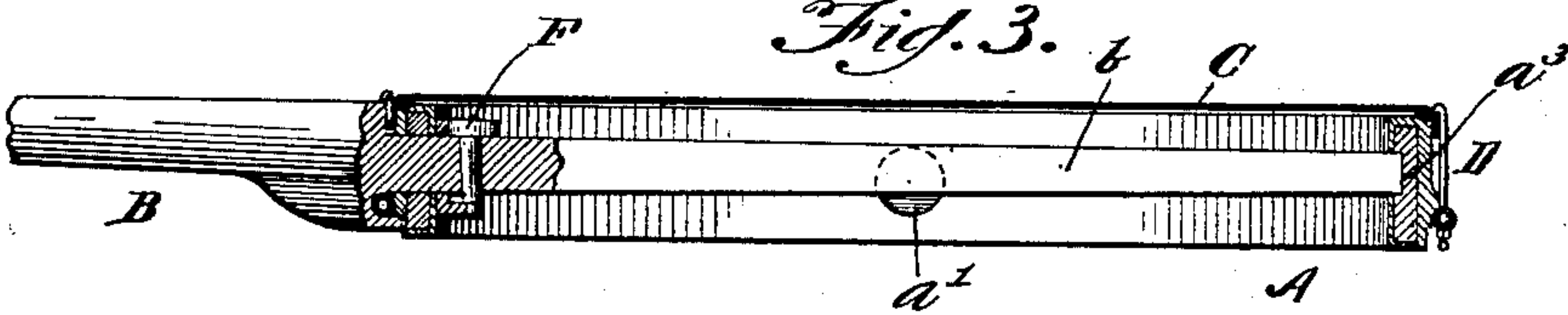
*Fig. 1.*



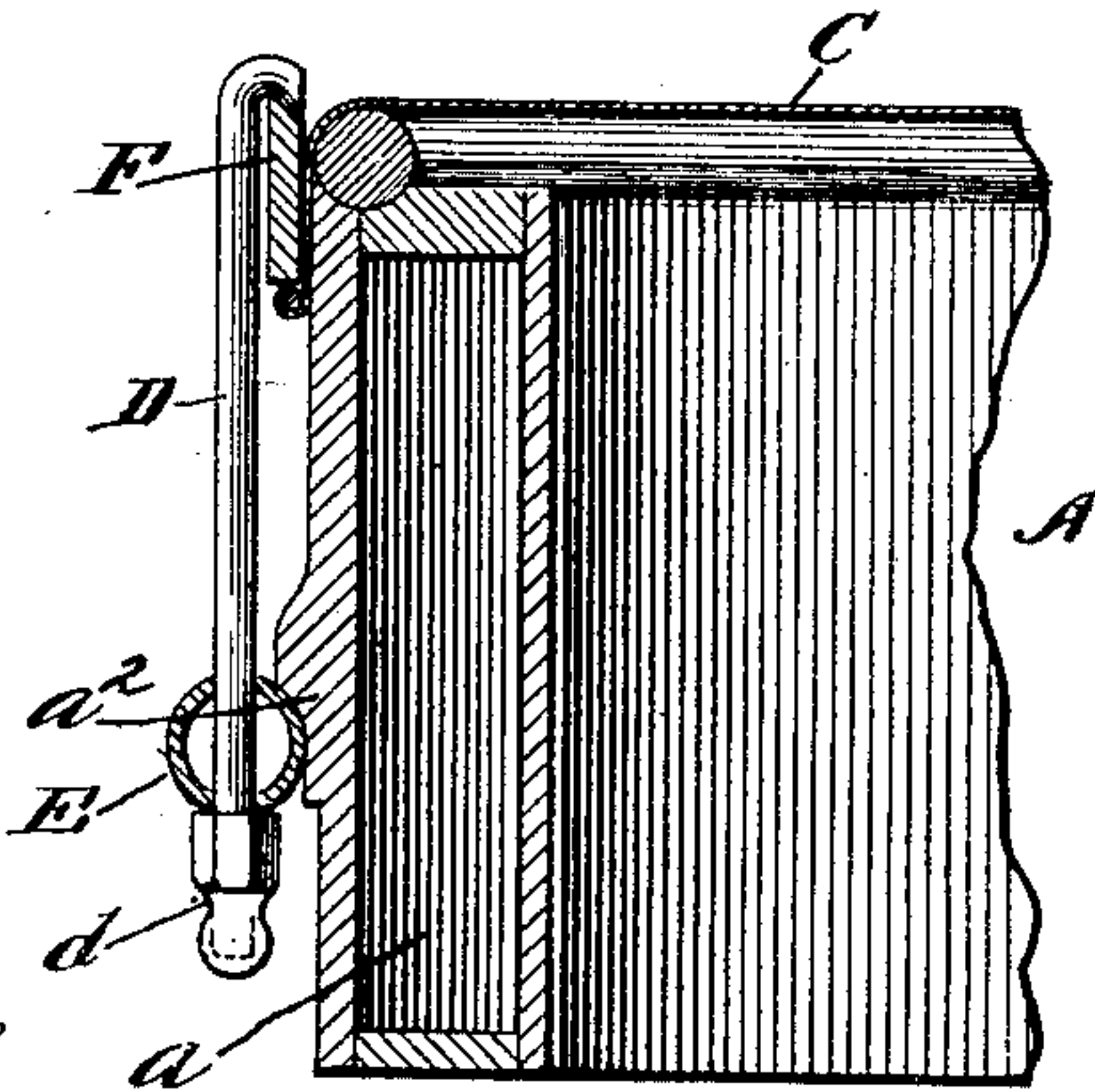
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

VICTOR KRASKE, OF CHICAGO, ILLINOIS.

## BANJO.

SPECIFICATION forming part of Letters Patent No. 715,587, dated December 9, 1902.

Application filed February 24, 1902. Serial No. 95,308. (No model.)

*To all whom it may concern:*

Be it known that I, VICTOR KRASKE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Banjos, of which the following is a specification.

Objects of my invention are to produce a banjo having highly-resonant properties and a brilliant quality of tone; to construct the rim of the banjo of wood and at the same time secure the aforesaid qualities; to materially decrease the weight of the instrument; to shorten the adjustable tension hooks or rods employed for stretching the flexible or parchment head upon the rim; to provide a light, novel, and improved bearing for the tension hooks or rods; to provide for such tension hooks or rods a bearing whereby boring into the rim can be avoided; to provide a novel and improved device whereby the neck of the instrument can be securely attached to the rim and also detached therefrom when desired, and to provide certain matters of improvement in the tuning pegs or keys whereby slip can be avoided and also whereby the bearing engagement of the tuning-peg with the instrument can be effectively adjusted in a simple and desirable way; to particularly adapt the tuning-pegs for the neck of a banjo and at the same time adapt them for service in connection with other instruments, and to provide means whereby connection between the tuning-pegs and the instrument shall be effectively maintained.

To the attainment of the foregoing and other useful ends my invention consists in matters hereinafter set forth.

In the accompanying drawings, Figure 1 is a side elevation of a banjo embodying my improvements. Fig. 2 is a bottom plan view of a portion of the instrument, on a larger scale, the rim being partially shown in horizontal section. Fig. 3 is a section through Fig. 2 on line 3 3. Fig. 4 is a section through a portion of Fig. 2 on line 4 4, on an enlarged scale. Fig. 5 is a sectional detail mainly illustrating a device for locking the neck to the rim. Fig. 6 is a section through a portion of the neck on line 6 6 in Fig. 7 and shows a couple of tuning-pegs, one in elevation and the other partially in section. Fig. 7 is a plan view of

the end portion of the neck. Fig. 8 is a plan view of a portion of the neck, partially broken away, so as to more clearly show a tuning-peg employed for the fifth string, and partially in section. Fig. 9 is a sectional detail on line 9 9, Fig. 8.

The banjo illustrated comprises a rim A, a neck B, to which the rim is attached, and a parchment or other flexible head C, which is stretched over the rim, as usual, and brought into and maintained in such taut or stretched condition by tension-rods D, arranged in series about the outer perimeter of the rim. The rim is made hollow, so as to provide it with an annular chamber  $a$ , which, as shown in Fig. 4, may be nearly equal in depth to the vertical height of the rim. This chamber  $a$  is provided with one or more sound-holes  $a'$ , formed by an opening or openings through the inner side of the rim. Broadly considered, the rim can be of metal or other suitable material; but as a matter of further improvement I construct the hollow rim of wood, thereby greatly increasing the resonance of a wood-rim banjo.

The hook-shaped tension-rods D, which serve to stretch and hold the flexible head C, as usual, are considerably shorter than in other banjos and have their bearings at points between the upper and lower edges of the rim. To such end I arrange about the rim a bearing E, consisting of a rod which fits against the outer side of the rim and which may be either solid or hollow. The rod E is, however, preferably hollow, so as to secure lightness, and as a simple way of holding such rod in place the outer side of the rim A has a shoulder or offset  $a^2$ , Fig. 4, against which the rod E is arranged to bear, it being observed that such offset may be continuous or interrupted. While a metal rim could be formed with this offset or shoulder, the provision of the latter is of particular value where the rim is of wood, herebefore mentioned, since by such arrangement I avoid boring through the wood rim in order to provide bearings for the adjusting-rods. In the arrangement shown the rods D have upper hook-shaped ends, as usual, whereby such ends can engage a ring or band F for holding the flexible head. The lower portions of the rods extend through



the annular bearing and have their ends which extend below such bearing threaded and provided with adjusting-nuts  $d$ .

The neck B is detachably connected with the rim, and to such end the rim has an opening through which the shank portion  $b$  of the neck can be inserted up to the point where a stop or shoulder is formed at the junction of such shank with the main forward portion of the neck. The inner side or wall of the rim is also provided with a socket  $a^3$ , Figs. 2 and 3, in which one end of the shank portion  $b$  of the neck can be fitted. The device for locking the rim to the neck comprises a cam or eccentric F, (see particularly Fig. 5,) having a spindle portion  $f$ , which is arranged to turn in a vertical opening in the shank portion of the neck, as shown in Fig. 5, said opening being on a line perpendicular to the plane of the flexible head C and opposite the inner side or wall of the rim, so as to be within the inner circle of the same. An angle-plate G, secured to the inner wall of the rim, provides a bearing-face against which the cam F can act, while the lower horizontal part of such angle-plate is provided with a bore or socket in which the lower end  $f'$  of the cam-spindle  $f$  can be temporarily stepped. The cam may also have a transversely-arranged opening  $f^2$ , in which a small rod or the like adapted to serve as a lever-handle can be inserted. By turning this cam in one direction the rim will be clamped against the shoulder  $b^2$  of the neck, and by turning the cam in the opposite direction the connected parts will be loosened and the cam, with its spindle, can be withdrawn, so that the shank portion of the neck can be drawn out through the opening in the rim.

The portion B' of the banjo-neck is provided with four tuning-pegs, respectively, for the usual four long strings. Each of these tuning-pegs comprises a string-winding spindle H, which has a tapered bearing portion arranged to fit in a corresponding bore or opening formed through the neck. The spindle H is provided at one end with a spool  $h$  or part having an opening for the end of the string and particularly formed for winding the string, the opposite end of the spindle being formed by or provided with a stem or shank  $h'$ , upon which a thumb-piece I is keyed and fitted for relative longitudinal adjustment. As a simple and preferred way the stem  $h'$  is transversely polygonal and received within a corresponding socket  $i$  in the thumb-piece. The relative adjustment of the spindle and thumb-piece is attained by a screw K, extending through a bearing in the thumb-piece and engaging in a threaded socket  $h^2$  in the spindle. The spindle is maintained in working connection with the neck by a retaining-plate or keeper L, which is secured to the neck and which has an opening through which the spindle extends. The spindle is provided with a shoulder  $h^3$ , arranged at one end of its tapered

bearing portion  $h^4$  or at the point of junction between such tapered bearing portion and its stem or shank portion  $h'$ . With such arrangement the shank or stem portion  $h'$  of the spindle extends through the opening in the retaining-plate or keeper L, so that when the spindle and thumb-piece are relatively adjusted by properly turning the screw K the retaining-plate or keeper L, which is secured to the neck, will be embraced between the shoulder  $h^3$  on the spindle and a washer or bearing  $i^2$ , which may be either loose on the stem and confined between the retaining-plate and thumb-piece or rigid and, if desired, integral with the thumb-piece. The shoulder  $h^3$  on the spindle is desirably countersunk in the neck, and preferably the retaining-plate L is also countersunk in the neck, so as to lie flush with one side thereof. In a banjo such as illustrated one retaining-plate L can serve for two tuning-pegs, as shown, two of such plates, respectively, for one and the other pair of tuning-pegs being illustrated by dotted lines in Fig. 7.

By the foregoing-described construction and arrangement of tuning-pegs the screw K of either peg can be adjusted so as to vary the degree to which the guard or keeper L is clamped between a shoulder  $h^3$  on the spindle and the inner end portion of the thumb-piece, and while I prefer to interpose a loose washer  $i^2$  between the keeper L and the thumb-piece such washer may be rigid or integral with the thumb-piece.

Figs. 8 and 9 illustrate a tuning-peg M for the fifth or E string of the banjo, it being observed that while the axes of the pegs for the four long strings are perpendicular to the plane of the neck the axis of the peg for the E string is parallel with the portion of the neck which provides the fret-board, as in Figs. 8 and 9. The peg shown in these two figures can consist simply of a tapered spindle  $m$ , having a shank or stem  $m'$ , which is received within a socket in the thumb-piece  $m^2$ , engaged by a screw N, having a bearing in the thumb-piece and arranged to engage in a suitable threaded socket in the outer end portion of the spindle-stem  $m'$ . In connection with this tuning-peg a socket-piece P is fitted within a recess in the neck and adapted to receive and provide a bearing for the tapered portion  $m$  of the peg-spindle. This socket can be keyed against rotation in any suitable way—as, for example, it can have laterally-projecting ribs or splines  $p$ , which fit in the neck. The inner end of the tapered bearing portion  $m$  of the peg-spindle has a contracted extension  $m^3$ , which extends through a corresponding opening in the inner end of the bearing P and which is threaded to receive a pair of nuts  $m^4$  and  $m^5$ . The nuts  $m^4$  and  $m^5$  are received upon the threaded spindle-terminal  $m^3$  and tightened to a suitable extent against the inner end of the bearing P, and the neck is recessed to receive said nuts, as shown in Fig. 8. It will be understood that



with such arrangement the spindle and bearing P are fitted together, as shown, and the bearing then driven into a suitable opening in the neck. The nuts  $m^4$  and  $m^5$  can be adjusted upon the spindle portion  $m^3$  prior to thus driving the bearing-socket P into the neck, and hence the frictional resistance in opposition to the rotation of the peg can be accurately determined.

10 With further reference to the banjo-rim considered as a hollow wooden structure it will be seen that it is formed of two wooden annular bands or hoops which are set and held apart by upper and lower flat annular  
15 rings, the whole being united to form a circular wooden rim having an annular chamber  $a$  nearly equal in depth to the perpendicular width of the rim. This construction is exceedingly simple, strong, and durable and  
20 permits each of the two hoops which are united to form the rim to be bent as in forming an ordinary wooden rim composed of a single annular band or hoop. The annular bearing E is made separate from the rim and is held  
25 upon the latter between marginal portions thereof. This annular bearing E, which is made separate from the rim, is held thereon by the tension-hooks, thereby avoiding the extremely objectionable use of bolts or  
30 screws, which if inserted into the wooden rim would injure the same.

What I claim as my invention is—

1. In a banjo an annular rim; a flexible head which is stretched upon the rim; adjustable tension-rods for stretching the flexible head upon the rim; and a hollow rod extending around and held upon the peripheral face of the rim between the marginal portions thereof and forming a bearing for the tension-  
40 rods.

2. In a musical instrument of the banjo class, an annular, hollow wooden rim; a flexible head which is stretched upon the rim; adjustable tension-rods; and a metal rod extending around and held upon the hollow wooden rim and forming a bearing for the tension-rods.

3. In a banjo, an annular wooden rim; a flexible head which is stretched upon the rim;  
50 adjustable tension-rods; and a hollow rod ex-

tending around and held upon the peripheral face of the rim between the marginal portions thereof and forming a bearing for the tension-rods.

4. In a banjo the rim having its outer peripheral face provided with a shoulder which is arranged between the edges of the rim; a flexible head which is stretched upon the rim; tension-rods for stretching the flexible head; and a rod held against the shoulder on the rim  
60 and forming a bearing for the tension-rods.

5. In a banjo, a hollow annular wooden rim having its peripheral face formed with a shoulder arranged between its edge portions; an annular rod surrounding the rim and fitting  
65 against the shoulder thereon; a flexible head; and tension-rods adapted for stretching the head upon the rim and having their bearings in the annular rod.

6. In a banjo, the rim; the neck having a shank portion  $b$  removably inserted through an opening in the rim, and provided with a shoulder arranged opposite the outer peripheral face of the rim; a rotary spindle extending through an opening formed through the  
75 neck at a point within the inner circle of the rim and perpendicular to the plane of a head which is stretched upon the ring, said spindle having a cam-head arranged in opposition to the inner wall of the rim; and a bracket se-  
80 cured to the inner wall of the rim and providing a bearing for one end of the spindle.

7. The combination with a banjo-neck having an inwardly-tapered recess; of a tapered sleeve wedged within the tapered recess in  
85 the neck, and keyed therein to prevent its rotation; a tuning-peg having a tapered portion fitted and bearing within the tapered sleeve, and provided with an inner end extension which projects inwardly beyond the sleeve  
90 into a portion of the recess in the neck back of the inner end of the sleeve; and a pair of nuts screwed upon the inner end extension of the peg and arranged to set up against the inner end of the sleeve.

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