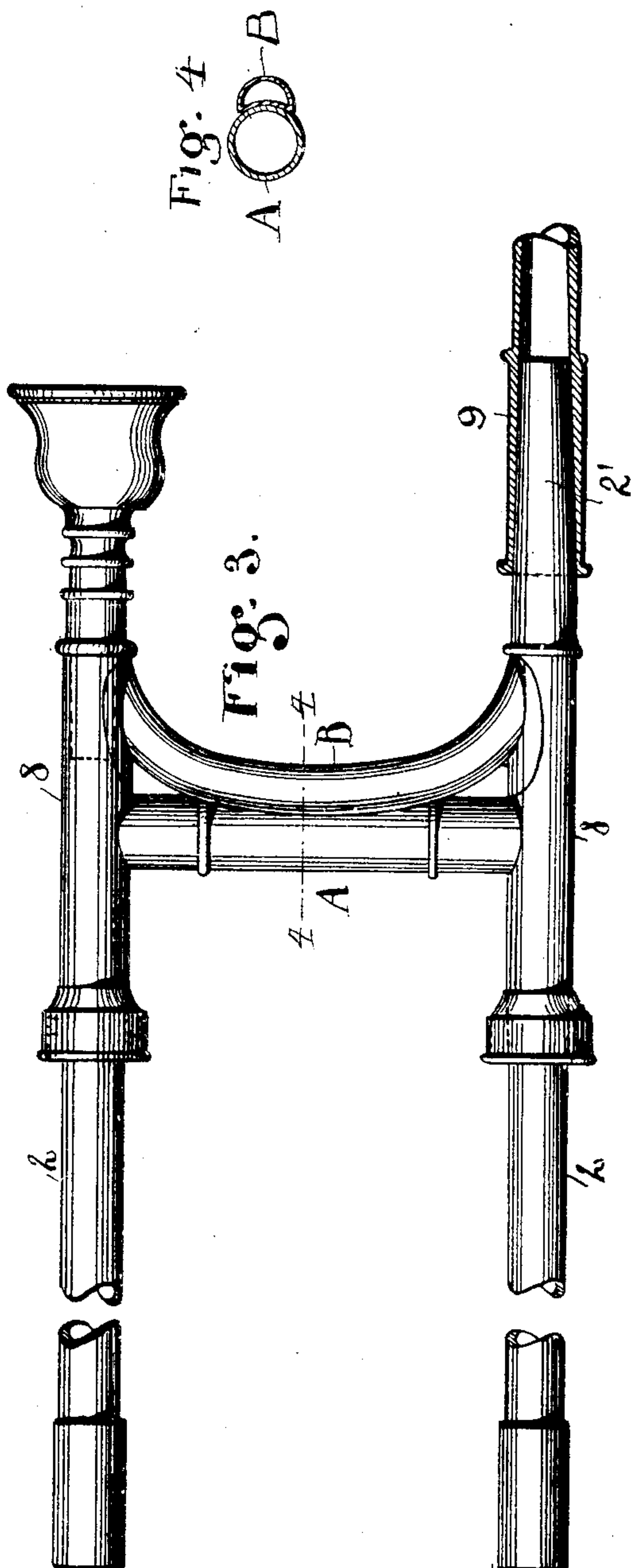
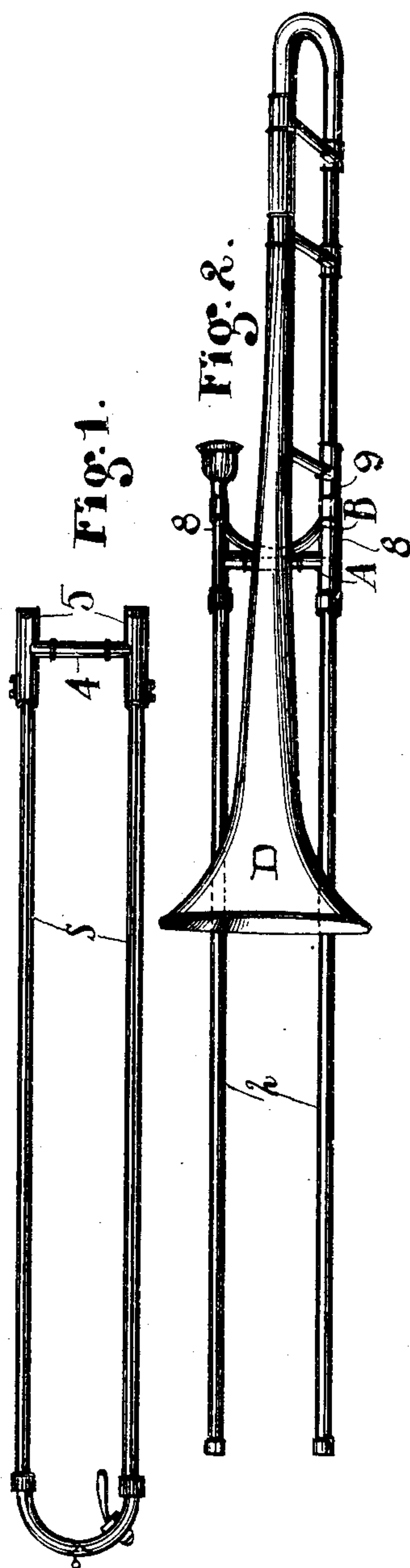


958,051.

H. N. WHITE.
SLIDE TROMBONE.

APPLICATION FILED SEPT. 22, 1908.

Patented May 17, 1910.



ATTEST
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HENDERSON N. WHITE, OF CLEVELAND, OHIO.

SLIDE-TROMBONE.

958,051.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed September 22, 1908. Serial No. 454,183.

To all whom it may concern:

Be it known that I, HENDERSON N. WHITE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Slide-Trombones, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in slide trombones, and the invention consists in the construction and combination of parts substantially as shown and described and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a plan view of the outer slide member of the trombone removed from the instrument, and Fig. 2 is a plan view of the instrument except said outer slide member. Fig. 3 is an enlarged plan view of the part of the trombone in which my improvement is especially located and as hereinafter fully described. Fig. 4 is a cross section taken on line 4—4 of Fig. 3.

The novelty herein resides specifically in the means for making the inner slide member operatively rigid and comprises a supplementary brace B, which operates in conjunction with the ordinary or usual brace A between the side supporting tubes 2 of the inner slide or slide member, so-called. The said outer slide or slide member S has the usual hand grip 4, and the side tubes 5 thereof fit and run as usual upon tubes 2, but the parts are separated in Figs. 1 and 2 more especially to make clear the character and importance of my invention. Thus, it will be seen that the inner or slide supporting tubes 2 are necessarily disconnected their entire outer length, or beyond grip brace A, as well as inward from said brace to afford room for the hand and forearm, so that so far as these two long and slender tubes are concerned they are, or have been, wholly dependent on this single comparatively light connecting part. It has followed as an unavoidable consequence that the instrument has been inherently weak at this point on this account, and remedy has not heretofore been deemed practicable, so far as I know and believe. Now, I have overcome this weakness or defect of construction by adopting a new brace consisting of a straight portion A and a longitudinally curved or bowed

portion B, which are built with especial reference to the point of weakness found heretofore at this point and so as to bridge across the angle between the ends of portion A and the side tubes 8 to which said ends are engaged and of which tubes 2 are a prolongation. Furthermore, said portion or part B comes into unitary relation with part A at the middle where the gripping occurs and is brazed or otherwise firmly attached along said middle to part A. The curvature of said brace part B from its ends to its middle and its incorporation with brace A is material not only to obtain the desired strengthening effect for tubes 2, thus making this part of the structure perfectly rigid, whereas it was very unstable before, but by bringing said parts together as shown, the grasp of the hand over the two parts is deemed to be much more satisfactory than with a single relatively small cross piece as formerly. This added to the decided improvement of having the inside tubes held rigidly in a direct line and without tendency to arch or bow as formerly, makes the operations as easy and uniform as if anti-friction balls or the like were introduced between the said inner and outer tubes.

It is to be observed that the reinforcing part B is curved between its ends, and especially at its ends, which are soldered or otherwise affixed to side tubes 2 independently of cross piece A and cross the angle between said tubes and cross piece at approximately 45 degrees. The immediate gripping portion of part B is in fact about straight, and is practically merged with cross piece A in fact as well as being rounded to make a single harmonious grip for the hand.

The weight of bell D is considerable, and as ordinarily constructed the inner bottom tube becomes arched or bowed while playing, the single brace being the fulcrum point which carries this weight. With my double brace or truss, the strain is distributed uniformly between the two connected slides or tubes. By eliminating this bowed or arched condition, the friction between the slides is obviously reduced to a minimum and no binding between the moving parts will occur to interfere with the easy action so requisite in instruments of this kind. The bell D is removable and has a tapered joint connection —9— with the end of lower slide 2'. Frequent breakage has heretofore occurred

between the single brace A where joined with the lower slide because of the strain imposed upon these parts at that point when the bell is removed or replaced. A rotary
5 action is used in separating and joining the parts and the twisting strain must be borne by the brace alone. As supplemented by brace B this strain is effectively met.

What I claim is:

10 In trombones, an inner slide member having opposite parallel tubes and a compound hand grip uniting said members consisting of a straight cross piece A and a tubular cross bow B rigidly secured to said tubes

at their respective ends, the ends of said 15 bow spanning the angles between said part A and said side tubes in bracing relation and the body of said bow depressed lengthwise and partially overlapping the sides of the said cross piece and united therewith by 20 soldering or otherwise.

In testimony whereof I sign this specification in the presence of two witnesses.

HENDERSON N. WHITE.

Witnesses:

E. M. FISHER,
F. C. MUSSUN.