

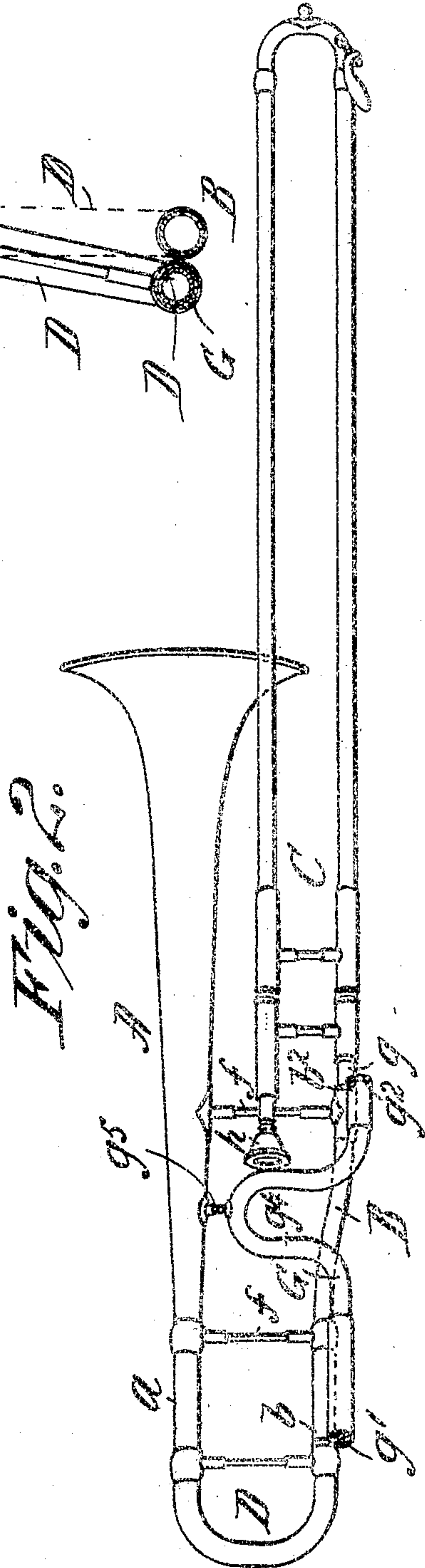
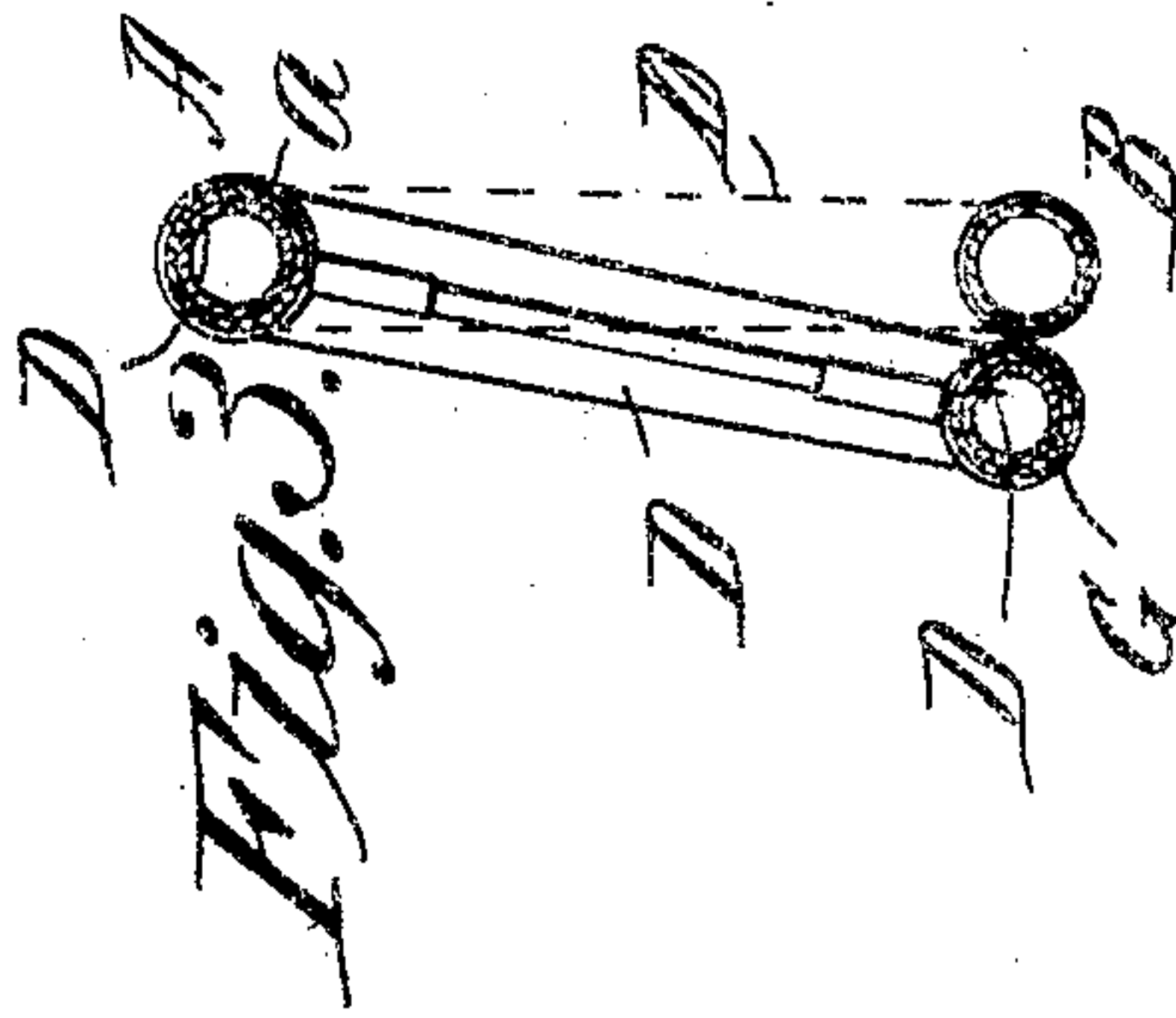
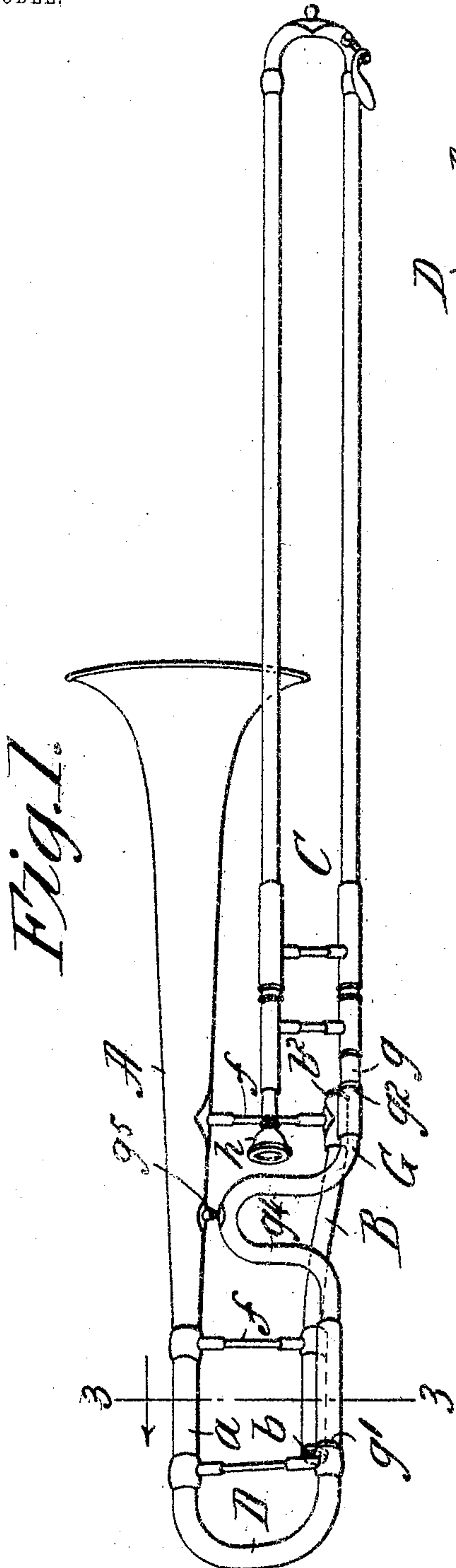
No. 771,012.

PATENTED SEPT. 27, 1904.

J. HEALD.
TROMBONE.

APPLICATION FILED JUNE 7, 1904.

NO MODEL.



Witnesses:

J. D. Garfield
A. V. Leahy

Inventor:
John Heald
by *W. F. Bellows*
Attorney

UNITED STATES PATENT OFFICE.

JOHN HEALD, OF SPRINGFIELD, MASSACHUSETTS.

TROMBONE.

SPECIFICATION forming part of Letters Patent No. 771,012, dated September 27, 1904.

Application filed June 7, 1904. Serial No. 211,557. (No model.)

To all whom it may concern:

Be it known that I, JOHN HEALD, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Trombones, of which the following is a full, clear, and exact description.

Trombones as commonly furnished by the manufacturer are made with a bow-shaped or return-bent tuning or pitch-changing slide, telescopically connecting and operating within a given limited range or scope at the rear open ends of the bell and tubular shank, (at the forward end of which shank the telescopic playing-slide having the mouthpiece has connection,) and an additional return bent or bowed tuning or pitch-changing slide having longer parallel limbs is provided as an extraneous part to be interchanged or substituted for the regular tuning-slide when desired to lower the pitch further than may be done with the regular tuning-slide. Such separate and interchangeable tuning-slide forming no permanent part of the instrument is oftentimes lost, forgotten, or at best imposes considerable care on the musician; and the object of this invention is to construct a trombone so that in an improved manner, while the usual degree of pitch changing may be accomplished by the regular tuning-slide, a still further changing or lowering of the pitch may be acquired by permanent appliances or provisions on the trombone which conduce to simplicity, convenience, and the avoidance of much annoyance from time to time in the continued use of the instrument.

The invention consists, in a trombone, in the combination, with the usual bell portion and usual tubular shank having their open rear end portions arranged opposite each other and a supplemental tubular pitch-changing tubular shank formed as a permanent part with the bell and primary shank and having its rear end adjacent the rear end of the primary tubular shank, of the bowed tuning-slide having one limb fitted in the bell portion and adapted to have its other end fitted in either the primary or the supplemental tubular shanks and the telescopic playing-slide having an end mem-

ber thereof adapted to be interchangeably fitted in the forward end of either the primary or the supplemental tubular shank.

In the drawings, Figures 1 and 2 are perspective views showing in the second figure the trombone adjusted for pitch-changing only within the range of the usual tuning-slide and in the first figure the instrument adjusted for pitch-changing in degree considerably beyond the capability of the tuning-slide. Fig. 3 is a cross-sectional view at the rear portion of the instrument and as taken on the line 3 3 and viewed in the direction of the arrow on Fig. 1.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the bell of the instrument, having its rear end portion *a* made tubular and open, as usual.

B represents the tubular shank arranged opposite and more or less nearly parallel with the bell portion and united thereto by the cross members *f f*.

C represents the telescopic playing or note-changing slide generally termed the "slide," the same having a limb *g* thereof fitted into the open forward end *b²* of the usual or primary tubular shank B and provided at its other end with the mouthpiece *h*, and D represents the return-bent tuning or pitch-changing slide, one limb thereof telescopically fitting in the open rear end portion *a* of the bell, while the other limb fits in the open rear end portion *b* of the tubular shank, as seen in Fig. 2.

G represents the supplemental tubular shank, the same ranging alongside the primary shank B and having its open rear and forward ends *g'* and *g²* terminating adjoining corresponding ends *b* and *b²* of the primary shank, this supplemental tubular shank being so made as to cause in the passage of the wind therethrough from the playing-slide and around to the bell instead of passing through the primary slide a change of pitch, such change of pitch in the present instance being occasioned by the increased length which the supplemental tubular shank has beyond the length of the primary shank, and in order that this increase of length may be acquired,

nevertheless permitting the open ends of the secondary shank to be located in substantially the transverse planes coincident with the open ends of the primary shank, such secondary shank is formed with a detour or intermediate bend g^4 , the back of which is in proximity to an intermediate part of the bell and united therewith in any suitable manner, as by the short brace or tie g^5 , while the portions ranging alongside the primary shank are preferably united thereto by soldering or by connecting-ferrules or otherwise.

When it is desired that the pitch of the trombone may be lowered farther than may be done by moving rearwardly outwardly the tuning-slide D, when the parts are adjusted as shown in Fig. 2, it becomes only necessary to shift the tuning-slide D so that its lower limb connects into the rear end of the supplemental shank G instead of into the rear open end of the primary shank B, the opposite limb still having connection telescopically in the rear open end of the bell portion, and to then shift the playing or note-changing slide C, having the mouthpiece in the open socketed end of the forward portion of the supplemental shank, and of course the normally low pitch may be now modified by the usual backward or forward motion of the tuning-slide.

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

1. In a trombone, the combination with the usual bell portion and usual tubular shank having their open rear end portions arranged opposite each other and a supplemental pitch-changing tubular shank formed as a permanent part with the bell and primary shank, and having its rear end adjacent the rear end of the primary tubular shank, of the bowed tuning-slide having one limb fitted in the bell portion, and adapted to have its other end fitted in either the primary or the supplemental tubular shanks, and the telescopic playing-slide having an end member thereof adapted to be in-

terchangeably fitted in the forward end of either the primary or the supplemental tubular shank.

2. In a trombone, the combination with the usual bell portion and usual tubular shank having their open rear end portions arranged opposite each other and a supplemental pitch-changing tubular shank formed bent and longer than the shank proper, and having its rear end adjacent the rear end of the primary tubular shank, of the bowed tuning-slide having one limb fitted in the bell portion, and adapted to have its other end fitted in either the primary or the supplemental tubular shanks, and the telescopic playing-slide having an end member thereof adapted to be interchangeably fitted in the forward end of either the primary or the supplemental tubular shank.

3. In a trombone, the combination with the usual bell portion and usual tubular shank having their open rear end portions arranged opposite each other, and said parts permanently united, and a supplemental tubular shank formed bent and longer than the shank proper, and having its rear and front ends adjacent the corresponding ends of the primary tubular shank, and permanently united at its bend to the bell portion and also united to the primary shank alongside which it ranges, of the bowed tuning-slide having one limb fitted in the bell portion, and adapted to have its other end fitted in the rear ends of either the primary or the supplemental tubular shanks, and the telescopic playing-slide having an end member thereof adapted to be interchangeably fitted in the forward end of either of said tubular shanks.

Signed by me at Springfield, Massachusetts, in presence of two subscribing witnesses.

JOHN HEALD.

Witnesses:

WM. S. BELLOWS,
A. V. LEAHY.