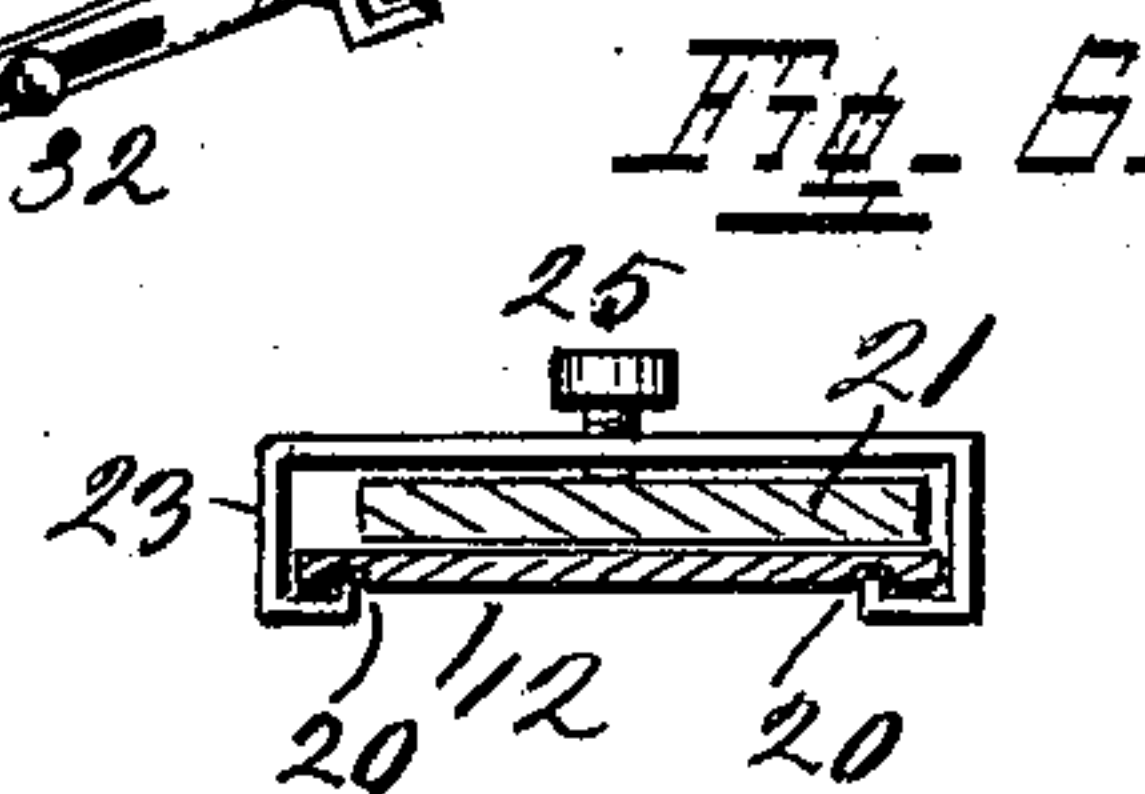
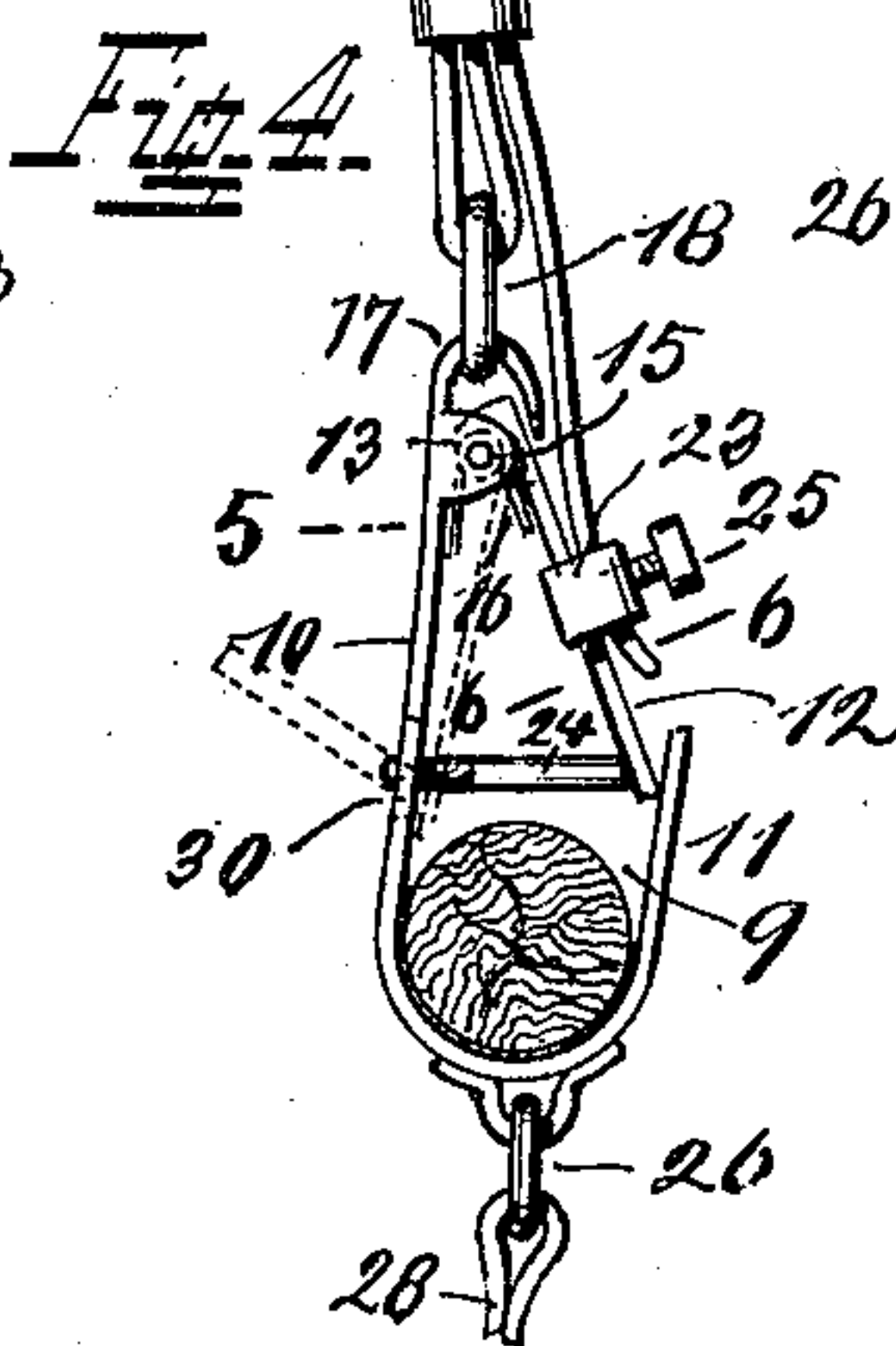
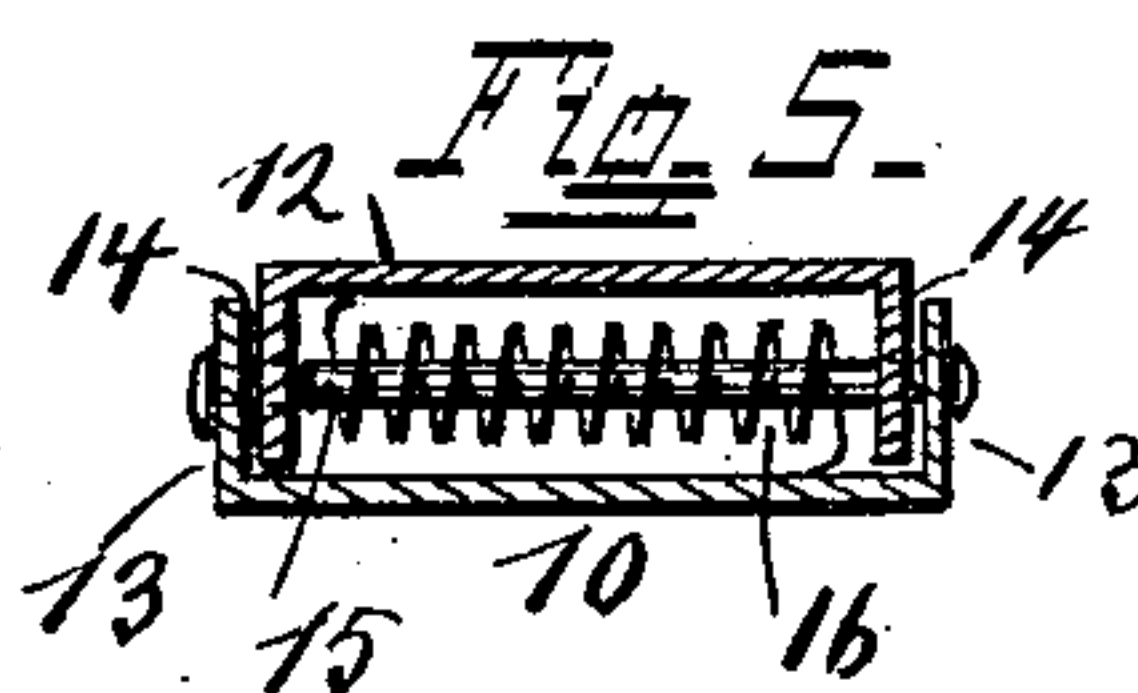
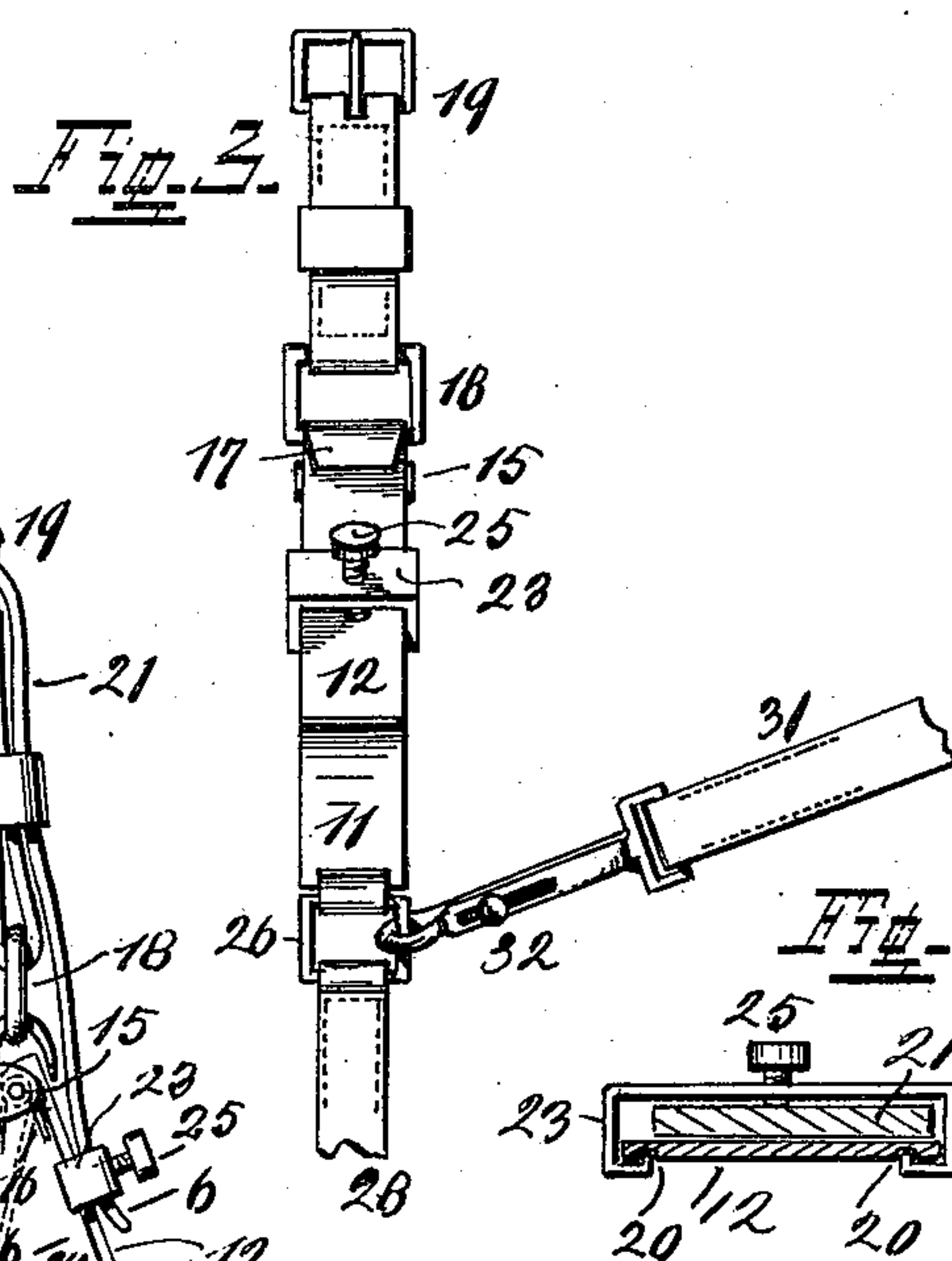
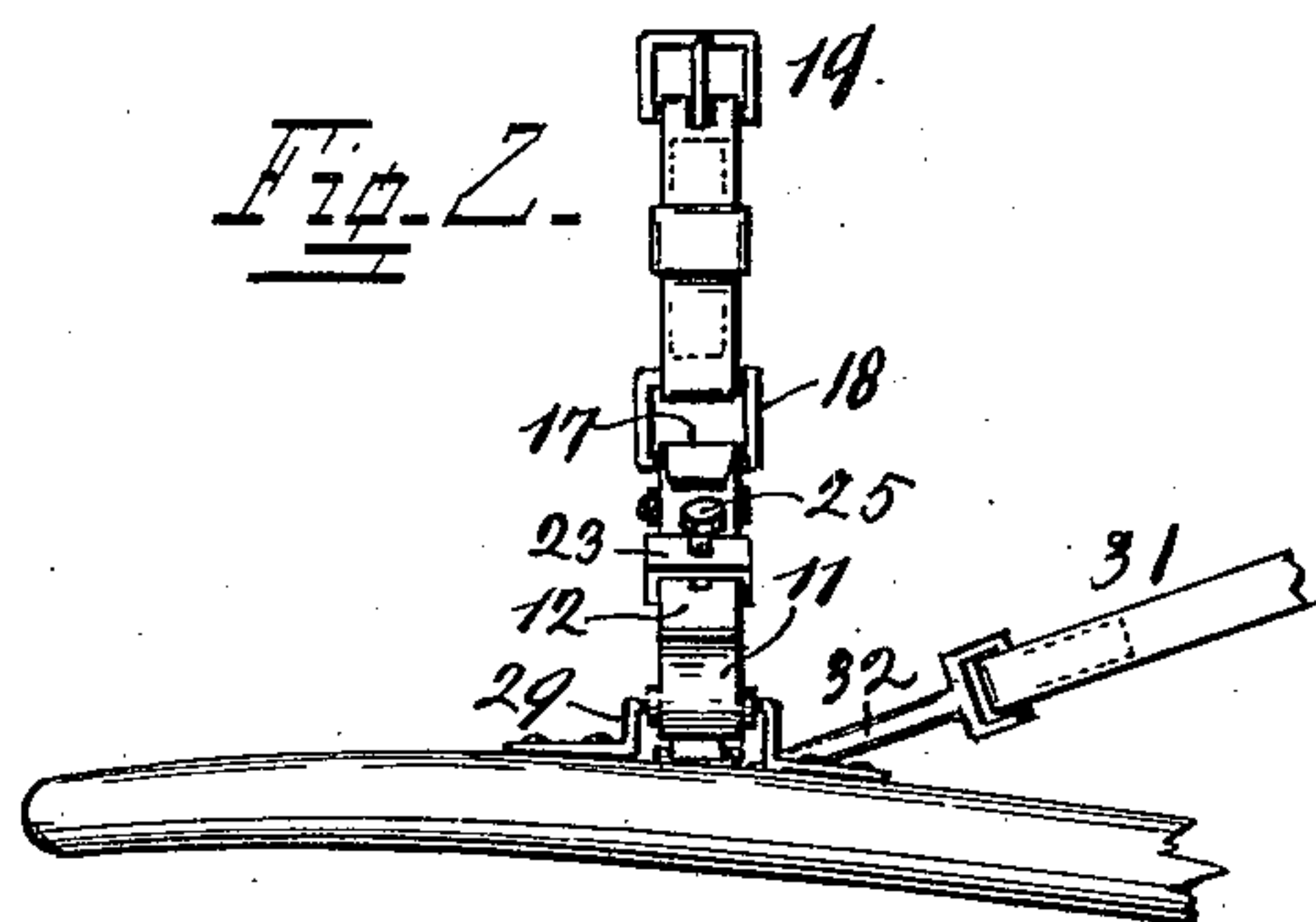
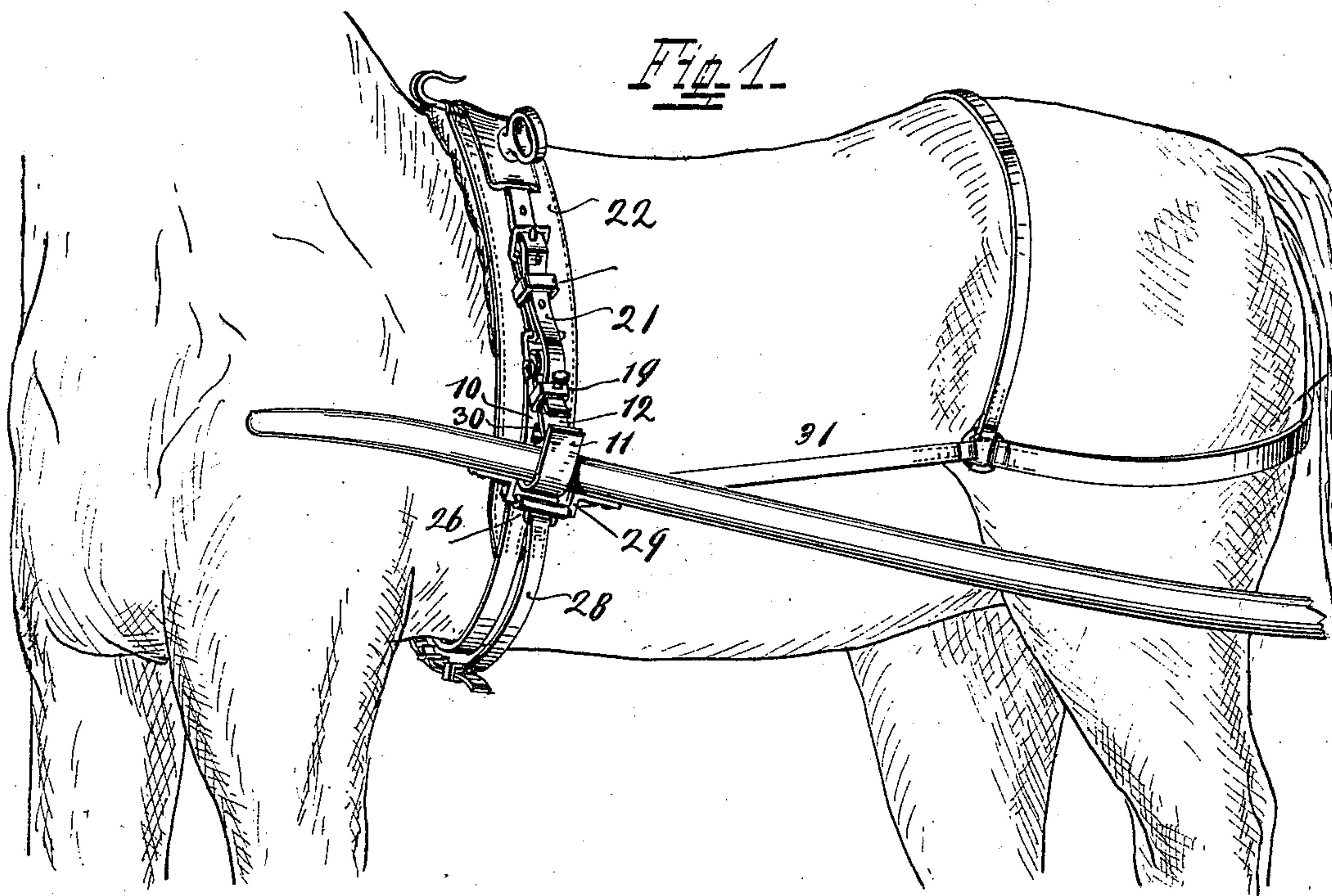


(No Model.)

H. A. BIERLEY.  
SHAFT TUG.

No. 602,050.

Patented Apr. 12, 1898.



Attest  
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# UNITED STATES PATENT OFFICE.

HENRY A. BIERLEY, OF PORTSMOUTH, OHIO.

## SHAFT-TUG.

SPECIFICATION forming part of Letters Patent No. 602,050, dated April 12, 1898.

Application filed July 19, 1897. Serial No. 645,014. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY A. BIERLEY, a citizen of the United States, and a resident of Portsmouth, Scioto county, State of Ohio, have invented certain new and useful Improvements in Shaft-Tugs; and I do declare the following to be a clear, full, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, attention being called to the accompanying drawings, with the reference-numerals marked thereon, which form a part of this specification.

This invention relates to improvements in shaft-tugs, which are devices forming a part of many kinds of harness used for hitching horses to and between the shafts of vehicles. The particular function of these tugs is to hold up the shafts to either side of the flanks of the horse.

My improved shaft-tug relates to that kind which are of metal and may be opened laterally for the purpose of admitting the shaft.

My invention consists of certain details of construction, which will be fully explained in the following specification, and particularly pointed out in the claim, which contains a complete description of the invention, its manner of use, parts, and construction, which latter is also illustrated in the accompanying drawings, in which—

Figure 1 shows my improved shaft-tug connected to a shaft and in position on the horse. Fig. 2, in a similar view, shows a modified manner of attachment to the shaft. Fig. 3, also in a similar view, shows a tug with shaft omitted and in its relation to other parts of the harness. Fig. 4 is an enlarged side view of the tug and adjacent parts of the harness. Figs. 5 and 6, still more enlarged, are cross-sectional views on lines 5 5 and 6 6 of Fig. 4.

The main part of the tug consists of a flat piece of metal shaped, as shown, to form a substantially semicircular bearing 9 in its lower part, which receives the shaft, and has two upwardly-projecting members 10 and 11, between which said shaft is introduced. The opening between these members is kept closed

by a spring-pressed locking-tongue 12, which is pivotally connected to the upper end of member 10, lugs 13 being provided on the latter and lugs 14 on tongue 12, all of which are connected by a pivot-pin 15, which passes through them. This pin between the lugs serves also as a means to support spring 16, which keeps tongue 12 normally closed by holding it against the upper end of member 11, one end of said spring bearing against the under side of the tongue, the other against member 10; as shown. The upper end of member 10 is bent over, as shown, to form a barrel 17, which covers and protects the spring and also serves as a means to connect a loop 18, to which in turn a buckle 19 connects, whereby the tug is attached to the side straps 21, depending from the saddle 22.

The end of strap 21 is received and secured by a box 23, adjustably supported on tongue 12 by having its ends sliding in grooves 20 on the under side of the latter and provided with a screw 25, whereby it may be locked with the end of strap 21 clamped between. To prevent the shaft from bobbing up and down within the tug, guard 24 is provided, which is carried by the lower end of tongue 12. When the latter is opened, this guard moves through an opening 30 in member 10, so as to be out of the way and permit insertion of the shaft. On the lower part of the tug is a loop 26, which receives the belly-band 28. To prevent lengthwise moving of the tug on the shaft, which by rubbing would injure the latter and cause wear of the parts, a loop 29 is provided on the latter, the tug being attached so as to pass through the loop, as shown in Fig. 1.

In Fig. 2 a smaller-sized tug is shown, which engages directly with said loop 29, the latter being in that case secured to the upper side of the shaft. The tug being thus fixedly held to the shaft the backing-strap 31, being provided with a suitable catch 32, may also be secured to the tug instead of to the shaft.

Having described my invention, I claim as new—

In a shaft-tug, the combination of the shaft-

bearing 9, upwardly-projecting members 10  
and 11, a tongue 12, a pin whereby it is piv-  
otally connected to the upper end of member  
10, a coil-spring supported on this pin, a loop  
5 18 secured to the upper end of the tug, and a  
barrel 17 formed thereat by bending and turn-  
ing over the upper end of member 10, said  
barrel forming means for protecting the coil-

spring mentioned and for securing loop 18 to  
the tug. 10

In testimony whereof I hereunto affix my  
signature in presence of two witnesses.

HENRY A. BIERLEY.

Witnesses:

ARTHUR KLINE,  
C. SPENGEL.