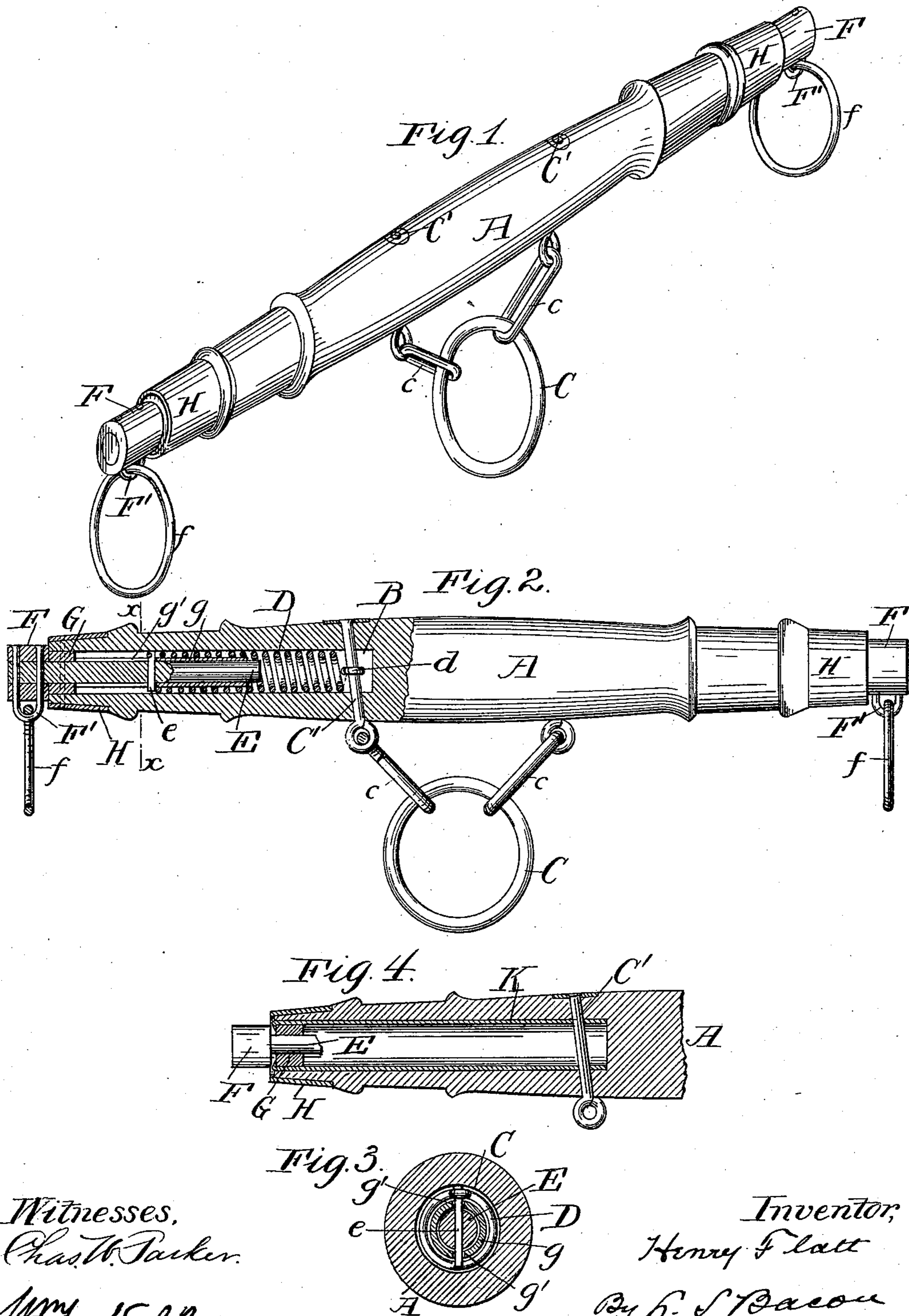


(No Model.)

H. FLATT.
NECK YOKE.

No. 548,119.

Patented Oct. 15, 1895.



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UNITED STATES PATENT OFFICE.

HENRY FLATT, OF BIJOU HILLS, SOUTH DAKOTA.

NECK-YOKE.

SPECIFICATION forming part of Letters Patent No. 548,119, dated October 15, 1895.

Application filed February 6, 1895. Serial No. 537,516. (No model.)

To all whom it may concern:

Be it known that I, HENRY FLATT, a citizen of the United States, residing at Bijou Hills, in the county of Brulé and State of South Dakota, have invented certain new and useful Improvements in Neck-Yokes; and I do hereby declare the following to be a full, clear, 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.

This invention relates to an improvement in neck-yokes; and it consists in the construction and arrangement of parts hereinafter described, and definitely pointed out in the claims.

The aim and purpose of the invention is the provision of a neck-yoke embodying in its structure improved means for resisting vibrations, for relieving the neck of the animal from undue shocks, and to permit of a changing or variation in the length of the yoke when necessity demands. These objects are attained by the construction illustrated in the accompanying drawings, wherein like letters of reference designate corresponding parts in the several views, and in which—

Figure 1 is a perspective view of the improved yoke. Fig. 2 is an elevation of the same, showing one end in longitudinal vertical section. Fig. 3 is a cross-section on the line $x x$, Fig. 2. Fig. 4 is a sectional elevation of the reinforced end of the yoke.

In the drawings, A designates the body of the yoke having longitudinal chambers B formed in opposite ends. In the drawings I have shown but one end in section to illustrate the chamber and its containing mechanism, but it is to be understood that the opposite end is identical in every respect.

C designates the pole-ring secured by links $c c$, which in turn are secured to the yoke on opposite sides of the center by eyebolts C', each passing through apertures in the body and through the inner ends of the chambers B. Within the chambers are secured the coiled spiral springs D, having their inner ends looped at d into rings, through which eyebolts C' pass. By this means a secure fastening for the inner ends of the springs is had. The forward ends of the springs are secured to reciprocating rods E by having their

ends secured to lateral pins e , rigid on the rods, and seated in grooves formed in the pins. These rods carry on their outer ends the heads F, forming reduced continuations of the body. From the under side of the heads the loops or rings f are secured, the same adapted in size to swing around the heads. By preference I secure the heads to the rods by passing staples F' through the heads after placing the rings f therein, and thence through the ends of the rods terminating at the opposite sides of the heads, where they are riveted or capped. This forms a very secure union.

It is necessary in such structures to maintain a perfect longitudinal movement of the rods E, so that all cramping will be avoided and the springs have full play and immediately effect the return of the rods. To accomplish this I form a metallic bushing G, with a tubular extension g thereon, which is inserted in the chamber. The bushings are secured in the outer ends of the chambers and then bolted or secured by pins or other suitable means, after which the ferrules H are placed over the ends. By this means the rods which pass through the bushings have rigid bearings. The sleeves g are grooved at g' along their tops or upper sides, and in this groove the pins e work, and owing to the diameter of the sleeves being less than that of the bushings there is space enough between the sleeves and walls of the chambers for the springs. The rods E are extended back beyond the pins e and closely fit in the sleeves, so that they are always held from rattling or moving laterally. By the employment of the sleeves the portion of the rod which is within the spring is kept from contact with the coils of the spring, which would otherwise tend to wear or cut the springs.

It will be noticed that the springs are expansion rather than compression springs and thereby tend to hold the rods against outward movement, being anchored or secured to the body back from the bushing.

In operation, when the pole vibrates one of the rods will be drawn out and the springs will serve to resist the sudden movement and will immediately return the rod. The limit of the outward movement of the rod is gov-

erned by the location of the pins, which strike the bushings when the limit is reached.

In some cases the sleeve may be omitted.

An important feature of the invention is the securing of the springs to the body back from the rods, so that the impact of the pins on the bushings is resisted by the spring connection between the rods and body. This construction is far better than a construction wherein the springs are simply sleeved on the rod and abut against the bushing, in which case the incessant pounding or vibration of the rods would soon loosen the bushing or break the retaining-flange, as well as soon wearing out the springs.

In some cases it may be necessary to strengthen the walls of the chambered ends of the yoke, especially when a wooden yoke is used. In such cases I insert in the chambers tightly-fitting metal tubes K, which, as shown in Fig. 4, extend back and are secured in place by having the eyebolts passed through their inner ends. The outer ends of the tubes extend slightly beyond the bushings, which in this case are inserted therein, and then these projecting ends are turned over onto the outer faces of the bushings and thus form a very sure means of securing the bushings against outward movement and further transferring the pounding strain of the rods from the ends of the yoke back to the center.

I am aware that minor changes can be made and substituted for features shown and de-

scribed without in the least departing from the nature and principle of my invention.

Having thus described my invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a neck yoke, the combination with the body having longitudinal chambers in its ends, of reciprocating rods in the chambers, rings on the outer ends of the rods, projections on the rods within the chambers, independent springs connected with the body at their inner ends and with the rods at their outer ends and having loops at their inner ends, bushings through which the rods pass, and lateral bolts passing through the inner ends of the chambers and loops on the springs, substantially as described.

2. In a neck yoke, the combination with the body, having chambered ends, of reinforcing tubes in the chambers, bushings in the outer ends of the tubes and secured therein, means at the inner ends of the tubes for securing them in the chambers, spring-actuated rods in the tubes having projections arranged to engage the bushings, the springs thereof having loops through which the tube securing means pass and fastening means on the outer ends of the rods, substantially as described.

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

HENRY FLATT.

Witnesses:

G. A. PENNINGTON,

L. S. BACON.