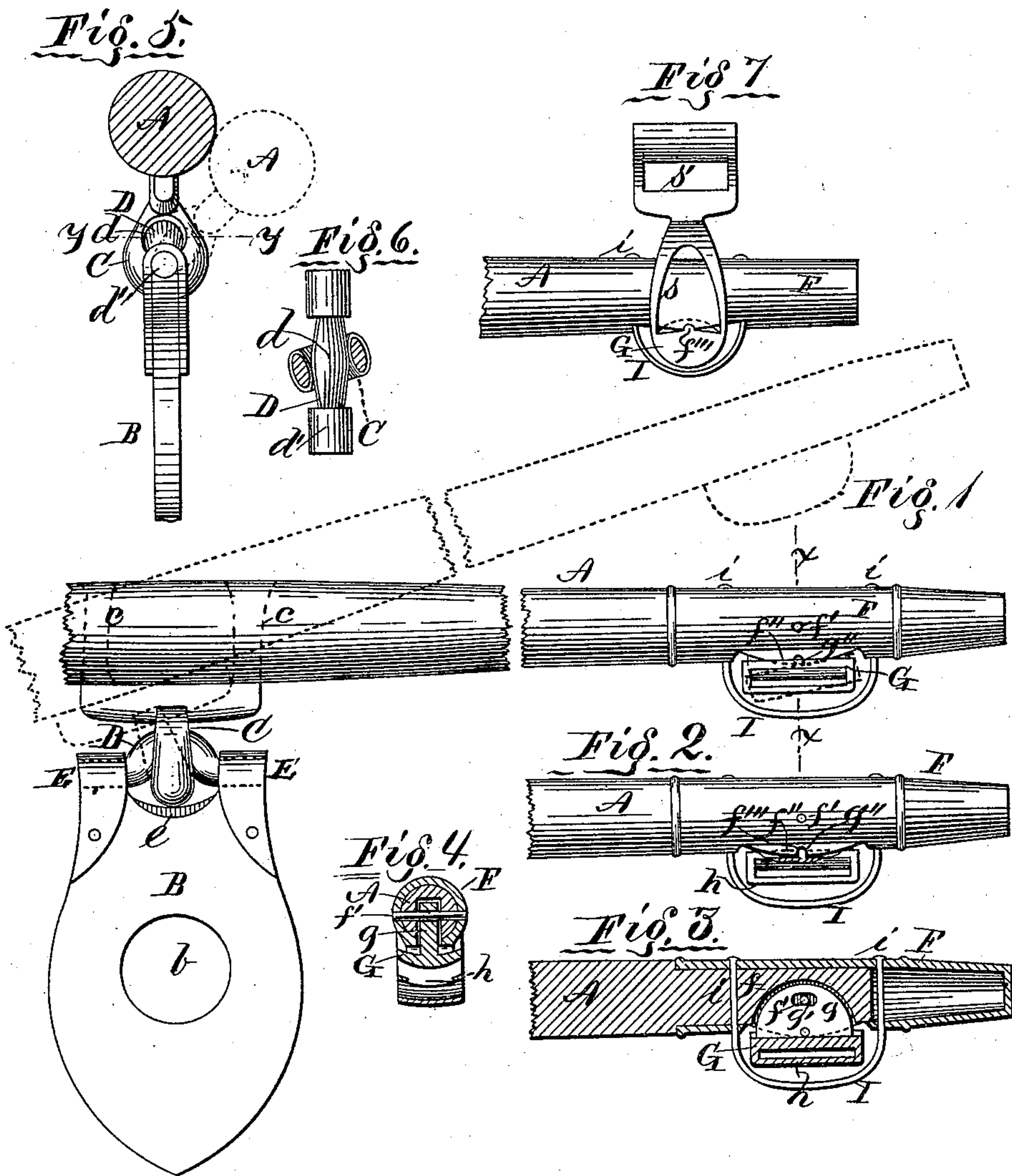


G. W. HURD.
NECK-YOKE.

No. 190,435.

Patented May 8, 1877.



Witnesses:
M. H. Barringer.
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Inventor:
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UNITED STATES PATENT OFFICE

GEORGE W. HURD, OF IONIA, ILLINOIS.

IMPROVEMENT IN NECK-YOKES.

Specification forming part of Letters Patent No. 190,435, dated May 8, 1877; application filed September 2, 1876.

To all whom it may concern:

Be it known that I, GEORGE WASHINGTON HURD, of Ionia, in the county of Warren and State of Illinois, have invented certain new and useful Improvements in Neck-Yokes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The nature of my invention relates to improvements in neck-yokes of that class used for supporting the ends of the tongues of carriages, wagons, &c.; and the invention consists, first, in improvements in the neck-yoke ring or plate for connecting with the tongue, adapting it, first, to admit of flexure in different planes, and, second, to relieve concussion or prevent rattling.

My invention further consists in an improved method of connecting the breast-straps to the ends of the neck-yokes through the instrumentality of plates pivoted or hinged upon the neck-yoke in such manner as to prevent all friction of the parts, and to operate through rolling contact between the plate and the neck-yoke, the adjacent parts of which are so constructed that the point of contact will be, in all their changes of position in use, always on the line of centers, and further adapt them to produce constant contact between the breast-strap and said plate, all as hereinafter fully described.

In the accompanying drawings, Figure 1 is a side elevation of a neck-yoke embodying my invention. Fig. 2 is a side elevation of one end of Fig. 1, partly broken away. Fig. 3 is a longitudinal vertical central sectional view of Fig. 2. Fig. 4 is a transverse sectional view in the line *xx* in Fig. 1. Fig. 5 is an elevation of Fig. 1, seen from the left-hand side. Fig. 6 is a sectional view in the line *yy* of Fig. 5. Fig. 7 is a modification.

Referring to the parts by letters, A represents one end of a neck-yoke. B is the neck-yoke ring. C is an eyebolt, secured to the central part of the neck-yoke A by means of stems *c*. D is an axial bolt, formed, as shown in the

drawings, with an enlarged central part, *d*, which operates in the eye C, and with ends *d'* journaled in the loops E, which are attached to the ring B. *e* is a piece of rubber seated in the ring B. The dotted lines in Fig. 1 illustrate the manner in which the neck-yoke may be flexed in a plane parallel with the ring B, and the dotted lines at Fig. 5 show how it may be flexed in planes transversely thereto, and at different angles, so as to adapt it to the movements required in relation to the tongue. The rubber *e*, binding against the eye C, will prevent all rattling and noise. F is an ordinary metallic socket on the end of the neck-yoke A, and is recessed at *f* to receive a tongue, *g*, of a plate, G, which is held therein by a pin, *f'*, which passes through the socket F and through a slot, *g'*, in the tongue *g*. The body part of the plate G rests upon a curved projecting surface, *f''*, of the socket F, and a transverse projecting rib, *g''*, rests in a small groove, *f'''*, in the apex of the curved surface *f''*. The front or rear side of the plate G is shown partly broken away at Fig. 2 to show the projection *f''* in rear thereof. The breast-strap passes over the plate G, and is held in place laterally thereon by the guards *h*. I is a shield for the plate G, its central part covering it, and its ends *i* passing through the socket F and end of the neck-yoke A.

It will be evident that as the plate G is oscillated on the points *g''* by the movements of the breast-strap or neck-yoke, as shown by dotted lines at Fig. 1, the adjacent surfaces of said plate G and projection *f''* will, in all their varied positions, be in rolling contact and on the line of centers, and at right angles to the plate G and with the direction of the breast-strap, thus reducing the friction to the minimum.

Fig. 7 shows a modification of my device, in which the plate G is carried around the end of the neck-yoke in the form of arms *s*, with a loop, *s'*, on their ends for receiving the breast-strap in the ordinary manner.

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

1. The neck-yoke ring or plate B, having loops E E and rubber pad *e*, in combination

with the axial bolt D, eyebolt *c*, and neck-yoke A, substantially as and for the purpose specified.

2. The plates G, pivoted at *f'''* on the curved projecting surfaces *f''* of the socket F, and combined with the neck-yoke A, substantially as described, and for the purpose specified.

3. The plates G, having slotted tongue *g*, combined with the pin *f'*, projections *f''*, bearings *g''*, and neck-yoke A, substantially as described, and for the purpose specified.

4. The plate G, having guards *h*, combined with the projecting parts *f''* of the socket F and neck-yoke A, substantially as described, and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GEORGE WASHINGTON HURD.

Witnesses:

THOMAS MCKEE,

W. B. RICHARDS.