

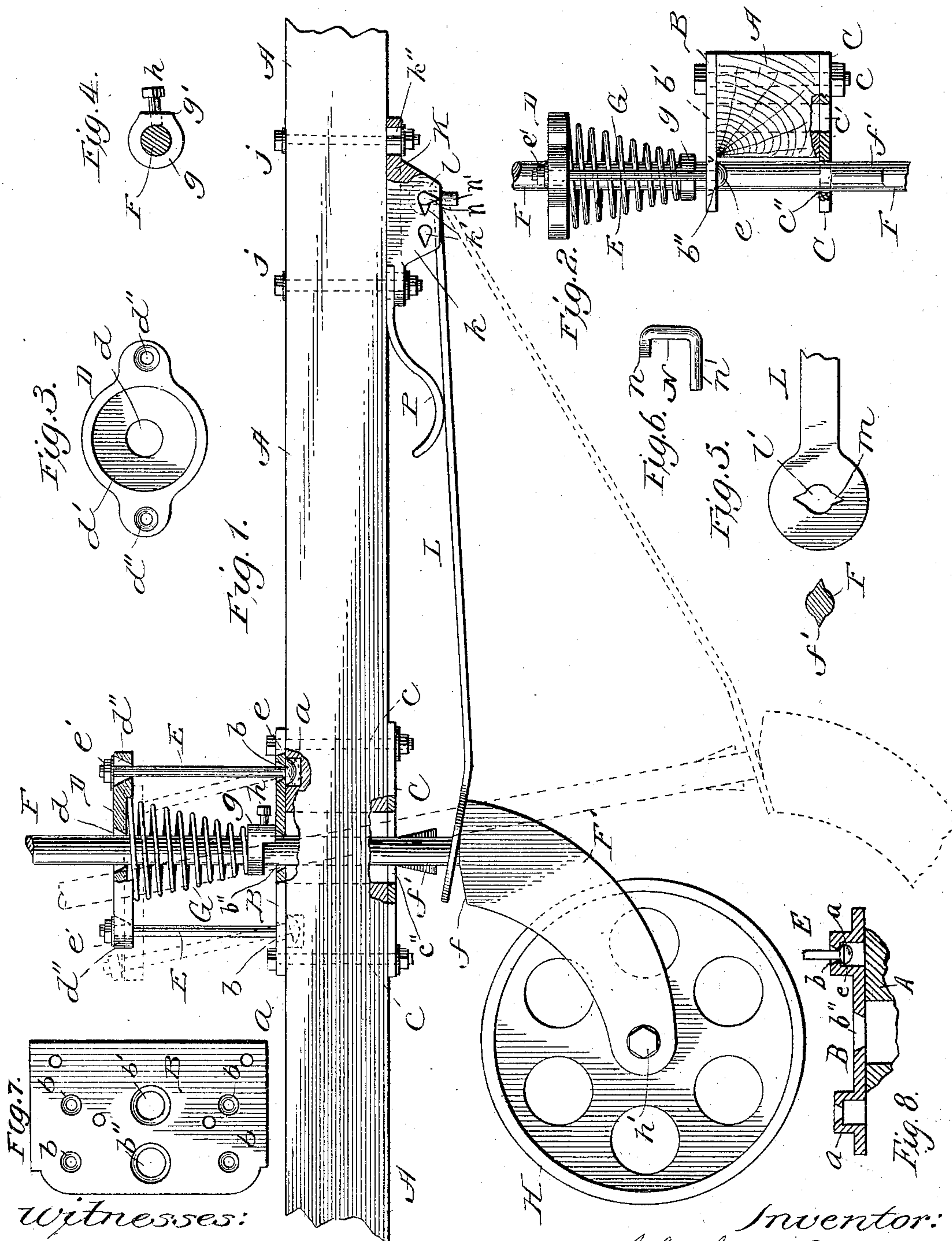
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Patented Oct. 17, 1899.

C. A. BAKER.
TONGUE SUPPORTING DEVICE.

(Application filed Feb. 1, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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TONGUE-SUPPORTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 634,974, dated October 17, 1899.

Application filed February 1, 1899. Serial No. 704,137. (No model.)

To all whom it may concern:

Be it known that I, CLARK A. BAKER, a citizen of the United States, residing at Webster's Crossing, in the county of Livingston and State of New York, have invented certain new and useful Improvements in Tongue-Supporting Devices; 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 tongue-supporting devices adapted for supporting the tongues of harvesters, grain-binders, &c.

The object of my invention is to provide devices having yielding and adjustable connections with the tongue and caster-wheel for supporting the tongue and preventing undue strain upon the necks of horses attached to the reaper or other machine.

Another object is to provide for overcoming the jolting and jerking motions of the tongue, due to the passage of the supporting-wheel over rocks and uneven places on the ground traversed by the machine.

These objects are principally accomplished by means of the yielding spring connection mounted in flexible bearings which are suitably connected with the shaft of the caster-wheel and the tongue of the machine.

I also provide certain details of construction and arrangement of parts by means of which improved results are secured, as will be hereinafter more fully pointed out by reference to the drawings.

The matter constituting my invention will be defined in the claims.

I will now describe the details of construction by reference to the accompanying drawings, in which—

Figure 1 represents an elevation of my supporting device and part of a tongue with parts in section. Fig. 2 represents a transverse section through the tongue, showing parts of my device in elevation. Fig. 3 represents a bottom plan view of a cap-plate. Fig. 4 represents a transverse section of the caster-shaft having a collar and set-screw applied thereto. Fig. 5 represents detail views of one end of the draft-rod and the shaft which passes through it. Fig. 6 represents a detached view of the locking-key for the draft-

rod. Fig. 7 is a top plan view of the top plate. Fig. 8 represents a longitudinal section of the top plate, showing the bosses and a portion of the tongue.

At a suitable part of the tongue A, preferably near the machine, are attached the supporting caster-wheel H and the yielding and flexible bearings therefor, which are as follows: I preferably provide a top plate B and bottom plate C with double holes for the passage of the shaft of the caster-wheel, so that said shaft may be passed either centrally through the tongue or laterally through the outer set of holes in the top and bottom plates. The plates B and C are secured to the tongue by the bolts *c c*, having suitable heads and nuts, in the usual manner. The top plate B is provided with the flaring openings *b b* or openings large enough to permit free movement of the stay-rods E, and just below said openings sockets *a a* are provided for receiving the heads *e* of the yielding stay-rods E. The sockets *a a* are preferably made in bosses of the iron plate B, which project from the top of plate B, as shown in Fig. 8. The top plate B is also provided with openings *b'* and *b''* for passage of the shaft. The bottom plate C is provided with the elongated openings *c' c''* also for the passage of the shaft. The cap-plate D is provided with a central flaring opening *d* and with the lateral flaring openings *d''*, the central opening being for the shaft and the lateral openings being for the stay-rods. The cap-plate D is also provided in its under side with a large circular recess *d'* to receive the large end of the conical spiral spring G. The stay-rods E E will be placed in position with their heads *e* in the sockets *a*. Then the plate B will be secured to the tongue by bolts *c*. The collar *g*, having a set-screw *h*, may then be secured to shaft F, the conical spiral spring G then placed in position with the larger end upward, and the cap D then be connected by means of nuts *e' e'* to the upper ends of the stay-rods E, which are passed through the flaring holes *d''*, as clearly shown in Fig. 1.

The collar *g* is made with a downwardly-extending boss *g'* on one side, and the screw-hole for the set-screw *h* is formed in this boss, so that the set-screw shall bear upon the shaft

F below the transverse center of the collar. I have found that by means of this construction the set-screw will cause the collar to bite at its inner opposite edges on the shaft, thereby holding it more rigidly in place and preventing slipping under the pressure and wear to which the parts are subjected.

By means of the flaring or enlarged openings in the plate B and cap-plate D the shaft F and the stay-rods E may have greater swing or flexibility, so that the caster-wheel H may better accommodate itself to uneven places in the road and to the requirements when the machine is mounted on trucks.

The shaft F is provided at its lower end with the usual fork F' for receiving the caster-wheel, and such wheel is mounted upon an axle-rod h' at the lower ends of the fork. The fork F' is provided with beveled shoulders f at its junction with the shaft F. The lower part of the shaft is provided with one or more lateral projections or lugs f', as shown in Figs. 1 and 5, for holding the draft-rod L in place on the shoulders f.

A short distance in front of the caster-wheel I secure to the tongue a casting K, composed of a bottom plate and two depending ears or side plates k. The bottom plate is provided at each end with an elongated slot k'' for the passage of the bolts j j, which clamp the casting to the tongue A. The side plates k are each provided with the elongated and pointed holes k' for the passage of the locking-key.

The draft-rod L is provided at one end with a loop or eye l, where it is attached to the casting K, and at the other end is provided with an enlarged head having a central opening l' for the shaft F. This opening is made with lateral notches m, extending transversely with respect to the rod L. It will be noted that the lateral lugs f' on shaft F are adapted to pass through the notches m and can then be turned one-quarter around, so as to project over the solid portion of the rod L and hold it in place.

The locking-key N is made with a transverse body portion having a turned-over V-shaped catch n at one end and an elongated handle n'. A flat curved spring P is secured to the tongue by one of the bolts j and bears at its outer end upon the draw-bar L for pressing it down against the shoulders f of the fork. The spring P, being secured at its inner end to the under side of the tongue, will bear strongly at its outer end upon the draft-rod L, thus assisting in supporting the tongue, since the outer end of the draft-rod bears upon the beveled shoulder f of the fork F'. The beveled shoulder f always forms a good bearing for the outer end of the draft-rod in the different positions and elevations of the caster-wheel, as clearly indicated in both the full and dotted lines in Fig. 1, and by means of them I do away with the usual washers. I regard these beveled shoulders as valuable features of my invention. The

V-shaped end of catch n of the key is inserted through the longitudinal pointed openings k' and through the eye l of the draft-rod and is then given a one-quarter turn, so that the handle n' and the catch end n shall both hang downward and be retained in place. This makes an effective and quickly-adjustable coupling device.

In carrying out my invention I also arrange the spiral spring G and the collar g with a set-screw below the tongue, the collar being adjustably secured to the shaft below the spring and serving as a bearing therefor. This arrangement is especially useful when the tongue is to be carried comparatively high above the caster-wheel, which is usually the case when the binder is mounted on trucks. This latter arrangement of parts is within the limits of my invention.

Instead of using a cap-plate D as the upper support for the spring G, I provide the stay-rods E at their upper ends with hooks, which are engaged with the upper end of the spiral spring. By thus engaging the spiral spring by means of the hooked upper ends of the stay-rods E, I obtain a yielding connection between the tongue and spring, which gives satisfactory results in practice.

It is to be noted that the casting K through the medium of its elongated slots k'' and the bolts j may be adjusted closer to or farther from the shaft F of the caster-wheel. By means of the two elongated slots k a longer or shorter draft-rod L may be used.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with the tongue, of a caster-wheel having a shaft, an adjustable collar on said shaft, a coiled or spiral spring bearing on said collar, and yielding stay-rods connecting the tongue with the top of the spring and forming a flexible connection for the purpose described.

2. The combination with the tongue, of a caster-wheel and shaft therefor, an annular adjustable collar on the shaft, a spiral spring and a yielding or flexibly-connected cap-plate for said spring to bear upon.

3. The combination with the tongue, of a caster-wheel having a shaft, a conical spiral spring, a cap-plate therefor, and stay-rods flexibly connecting said cap-plate with the tongue, substantially as described.

4. The combination with the tongue, of a caster-wheel, having a shaft, a top plate bolted to the tongue, a cap-plate above the same, and having a circular recess, a conical spiral spring bearing at its larger end in said recess, an adjustable collar on the shaft and stay-rods connecting said cap-plate with the tongue, substantially as described.

5. The tongue having a top plate provided with sockets, in combination with a cap-plate having a recess for the spring, stay-rods provided with heads arranged to move flexibly in said sockets and connecting at their upper ends with the cap-plate, a spiral spring be-

tween the tongue and cap-plate and the shaft connecting with a caster-wheel, substantially as described.

6. In combination with the tongue, caster-wheel shaft and connections therefor, of an adjustable casting having side plates provided each with an elongated transverse opening, a key as N, having a catch end *n*, and a handle *n'*, and the draft-rod engaged by said locking-key, and connecting with the shaft, substantially as described.

7. In a tongue-supporting device, the caster-wheel having a shaft, provided with a lateral lug above its shoulder, in combination with a draft-rod, having at one end an opening and a lateral notch *m*, and means for connecting the opposite end of said rod to the tongue, substantially as described.

8. The combination with the tongue and caster-wheel shaft, of the top and bottom plates B and C, having holes *b'*, and *c'*, for passage of said shaft centrally through the tongue, and the lateral holes *b''* and *c''*, for passage of said shaft at the side of the tongue, and suitable connections between the tongue and shaft for the purpose set forth.

9. The combination with the tongue and caster-wheel having a shaft, of a draft-rod connecting with the tongue and shaft, and a flat spring, P, connecting at one end with the tongue and bearing on said draft-rod and assisting in supporting the tongue, substantially as described.

10. The combination with the tongue of the

shaft F, having a fork, *F'*, provided at the top with a beveled shoulder *f*, and a draft-rod connecting with the tongue and bearing at its outer end on said beveled shoulder, substantially as described.

11. In combination with a shaft, arranged to slide in a bearing and a spring coiled around the same and having a suitable support at one end, the adjustable collar *g'*, having a downwardly-extending lug at one side and a set-screw passing through said lug and bearing on the shaft, whereby the collar may be forced to bite at its inner edge or edges on said shaft and prevent slipping, said collar serving as an adjustable support for said spring, substantially as described.

12. The combination with the tongue and caster-wheel, having a shaft, of an adjustable collar, having a downwardly-extending lug on one side, and a set-screw passing through said lug and bearing at its inner end on the shaft, so as to cause the collar at its interior edge or edges, to bite on the shaft, and prevent slipping, a coiled spring bearing at one end on said collar and a suitable support for the other end of said spring, substantially as described.

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

CLARK A. BAKER.

Witnesses:

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W. L. TUCKER.