(No Model.)

# W. H. HALL.

## TEDDER.

No. 352,973. Patented Nov. 23, 1886.

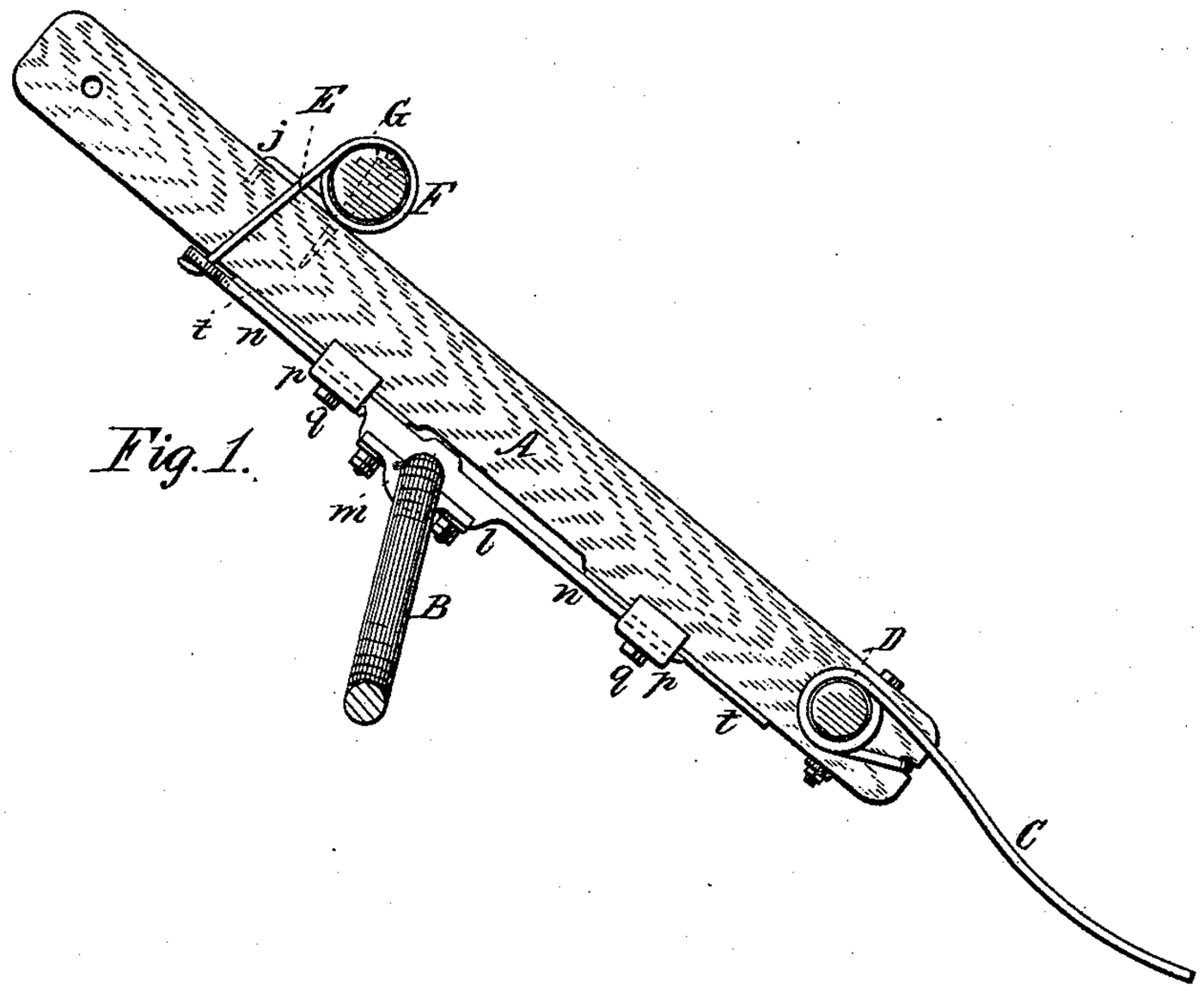



Fig. 1.

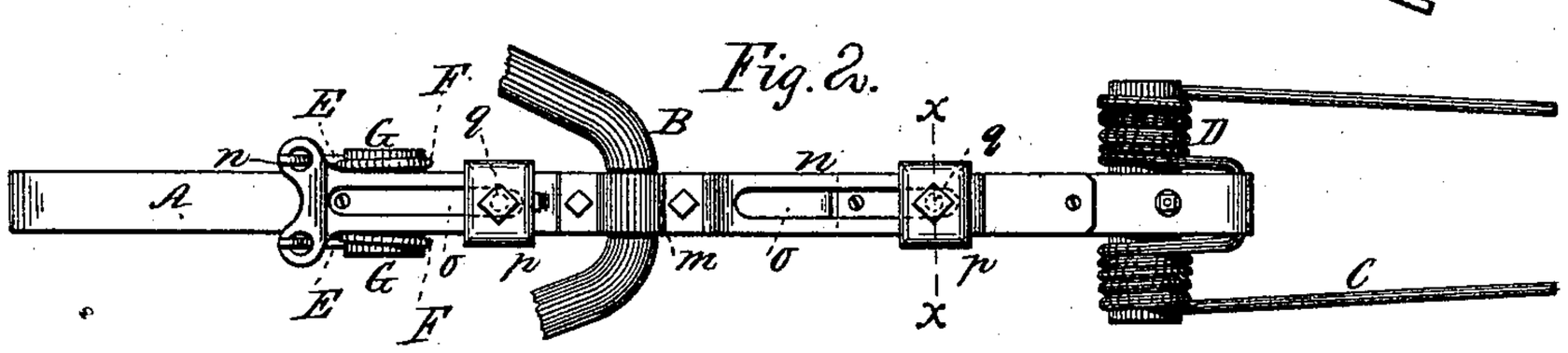



Fig. 2.

Fig. 3.

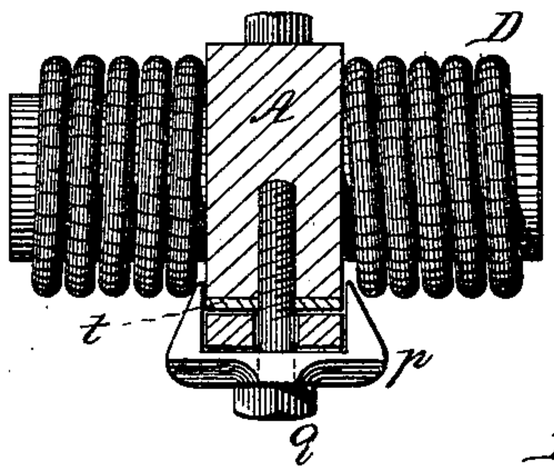



Fig. 4.

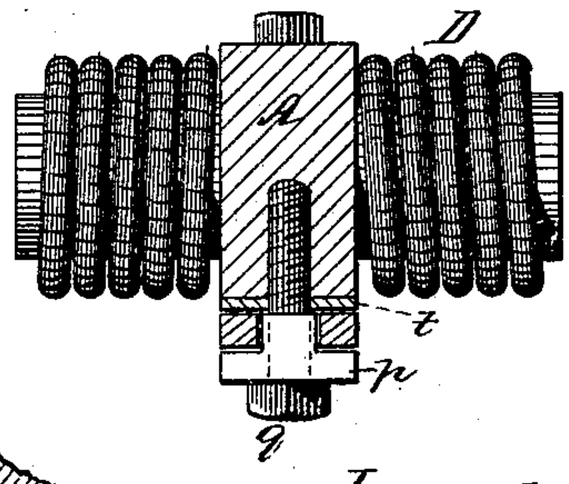
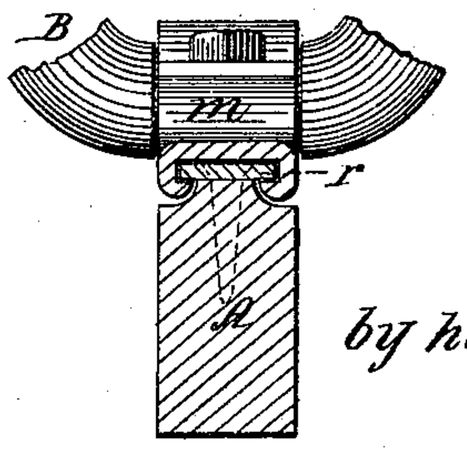



Fig. 5.

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# UNITED STATES PATENT OFFICE.

WILLIAM H. HALL, OF TIFFIN, OHIO.

## TEDDER.

SPECIFICATION forming part of Letters Patent No. 352,973, dated November 23, 1886.

Application filed January 5, 1886. Serial No. 187,660. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. HALL, of Tiffin, county of Seneca, and State of Ohio, have made a new and useful Improvement in Tedders, of which the following is a specification.

My invention relates especially to the mode of mounting the tedder-arm or fork-handle upon the crank which actuates it. Its object is to provide for an elastic longitudinal movement of this arm, whereby it may be relieved from the shock caused by the fork encountering an obstruction.

It consists, first, in a sliding box which allows the fork-arm to move lengthwise while guiding it, so as to prevent any deflection from the parallelism between it and the adjacent fork-arms, and preserving it throughout its movement in proper relation to the actuating-crank; second, in the modes of mounting this box on the fork-handle; third, in the means by which the longitudinal movement of the box is controlled, as more specifically hereinafter described.

Figure 1 is a side view of a tedder fork-arm having my improvement mounted thereon. Fig. 2 is a plan of the same as seen from beneath. Fig. 3 is a cross-section taken through the fork-arm at *x x*, Fig. 2. Fig. 4 is a cross-section taken at the same point, showing a modified form of the bracket or guide-plate in which the box slides. Fig. 5 is a cross-section taken through the box and fork-arm just above the crank-bearing, showing a modified construction of the sliding box and the mode of securing the same to the fork-arm.

A is the fork-arm, having any suitable fork, C, mounted thereon by means of coil-spring D, or in any other appropriate manner.

B represents a section of the actuating-crank, having its bearing in a box, of which *l* represents the pillow-block, and *m* the cap. This box has projections *n* extending longitudinally of the fork-arm and sliding in brackets or hangers *p p*, which brackets or hangers are firmly secured to the fork-arm by screws *q q*, or in any other suitable manner. The extensions *n* of the box are preferably slotted at *o*, the screws *q q* extending through the slot and affording a stop to the movement of the box in each direction, while serving at the same time, in connection with the brackets, as a guide, rigidly supporting the box against any lateral displacement or deflection from the proper line of its movement.

F represents a coiled spring mounted upon a plug, G, on the opposite side of the fork-arm from the sliding box, and having extended therefrom arms E E, which take into eyes at or near the end of the extension *n* of the sliding box, or are otherwise connected to said extension. These arms I prefer to form by simply extending the coil-spring, giving to them as well as to the coil sufficient elasticity to afford a substantial spring action. If the coil-spring were applied directly to the sliding box, so that the compression of the spring was required to be equal to the play of the box, it would necessitate an inconvenient extent of compression and expansion in such spring, and it would be difficult to provide at once the necessary rigidity and the desired extent of longitudinal movement. This difficulty I overcome by means of the arms E E applying their stress substantially transversely of the movement of the box, thereby causing a slight movement of the coil-spring to correspond to a much longer movement of the box.

*j* represents an extension of the wire forming the coil-spring along the surface of the fork-arm, into which it is projected at a point above that where it intersects the arms E E. Two or more of these wires may be thus extended. Their elasticity affords an additional element in the spring action. Instead of passing the ends of the arms E E through eyes on the extension *n*, they may be connected to such eyes by means of links or rings, or may be connected to the sliding box in any other manner that will admit of the necessary play. The spring may be applied at the opposite end of the box, or at any other convenient point; but wherever located it is desirable that its stress be applied toward preserving the normal relative position of the box and tedder-arm.

Other forms of spring may be applied to control the movement of the arms E E. I have shown and claimed in an application filed simultaneously herewith another construction, by which the advantage of the transverse arms is utilized, the right to which I reserve to be more specifically secured in said application.

*t t* represent metallic plates under the extensions of the sliding box, serving to prevent

wear of the wood. These plates may be dispensed with. Instead of forming the brackets *p p* with the side flanges, as shown in Fig. 3, they may be formed with a tongue projecting into the slot, as shown in Fig. 4; or the screw or bolt *q* may be made to perform the office of such tongue. These brackets or hangers may be otherwise modified, so long as they serve the purpose of guiding the box in its longitudinal movement and supporting it against displacement; or the box may be provided with lugs or loops taking round a plate, *r*, securely attached to the back of the fork-handle, as shown in Fig. 5.

The operation is as follows: Whenever the fork strikes an obstruction, the fork-arm, being forced upward, slides on the extensions of the box, which move freely in the brackets *p p*. These brackets, in connection with the extensions *n n*, serve to so guide the movement of the fork-arm that its proper relations to all other parts of the mechanism are preserved, the arms E E yielding elastically to the stress, and serving to force the fork-arm and box to their normal position as soon as the shock is passed.

I claim—

1. In combination with the fork-arm and actuating-crank of a tedder, a sliding box affording a bearing for the crank, having longitudinal extensions mounted and guided in brackets on said fork-arm, and spring-arms extended transversely of the movement of said box and affording elastic resistance to the same, for the purpose described.

2. The combination, with the actuating-crank of a tedder, of the sliding box having slotted extensions, brackets in which said extensions are supported and guided both above and below the crank-bearing, and a spring mounted on the fork-arm and affording elastic resistance to the longitudinal movement of the arm upon the box, for the purpose described.

3. In combination with the slotted extensions of the sliding box, the brackets embracing and guiding said extensions, for the purpose described.

4. In combination with the fork-arm of a tedder, a sliding box mounted thereon having bearing for the actuating-crank, a coiled spring mounted on said fork-arm, and arms extended from said coil-spring substantially transversely of said fork-arm, engaging with said sliding box and controlling the longitudinal movement thereof, for the purpose described.

5. In combination with the sliding box of a tedder fork-arm, a spring composed of a coil mounted upon a suitable plug, having extended therefrom in a direction substantially transverse to the movement of said sliding box one or more arms, which engage with said sliding box and control its longitudinal movement, for the purpose described.

6. In combination with the sliding box of a tedder fork-arm, a coiled spring mounted upon a plug upon the opposite side of said fork-arm, having extensions transversely of said fork-arm taking into said sliding box and controlling its longitudinal movement, for the purpose described.

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