

A. D. PLOWDEN.  
AUTOMATIC TAKE-UP.  
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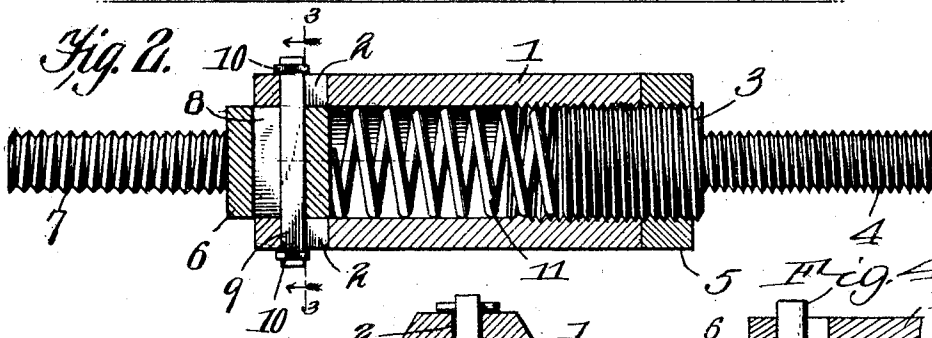
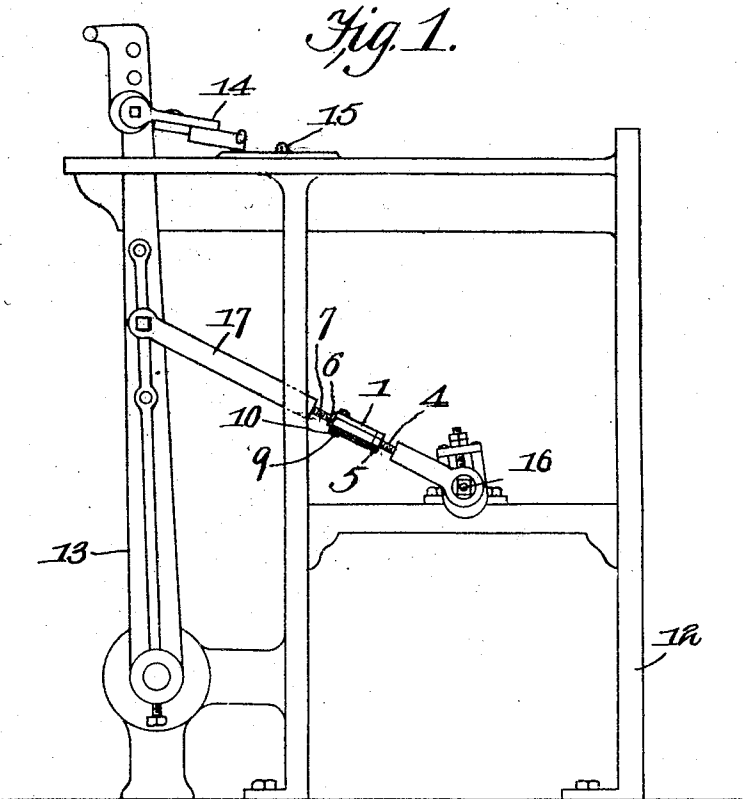


Fig. 3.

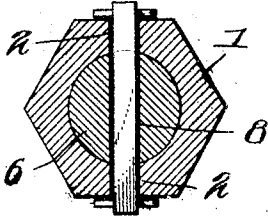
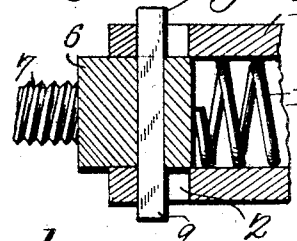


Fig. 4.



Witnesses  
*E. J. Stewart*  
*A. J. Shepard*

*Arthur D. Plowden,* Inventor.  
 by *Chas. H. Deo* Attorneys

# UNITED STATES PATENT OFFICE.

ARTHUR D. PLOWDEN, OF PRETORIA, GEORGIA.

## AUTOMATIC TAKE-UP.

SPECIFICATION forming part of Letters Patent No. 778,889, dated January 3, 1905.

Application filed March 23, 1904. Serial No. 199,642.

*To all whom it may concern:*

Be it known that I, ARTHUR D. PLOWDEN, a citizen of the United States, residing at Pretoria, in the county of Dougherty and State of Georgia, have invented a new and useful Automatic Take-Up, of which the following is a specification.

This invention relates to means for taking up shocks and jars in machinery, and is particularly designed for application to the saw-sharpening machine disclosed in the patent to Milo Covell, No. 523,883, issued July 31, 1894. In the Covell machine the feed-finger thereof contacts with a rigid stop, and the jar incident thereto places considerable strain and wear upon the machine. To overcome this objection, I propose to provide for automatically taking up the jars or shocks, and in carrying out this idea I prefer to locate the jar-take-up means in the connecting-rod which actuates the rocker-arm of the feed-finger.

Specifically, my invention is in the nature of a turnbuckle which is capable of yielding in an endwise direction to take up jars and shocks and at the same time is capable of the usual endwise adjustment without interfering with its yieldability.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of so much of the Covell machine as is necessary to understand the application of the present invention with the improved form of take-up means applied thereto. Fig. 2 is a detail longitudinal sectional view of the turnbuckle constituting the present take-up means. Fig. 3 is a cross-sectional view on the line 3-3 of Fig. 2. Fig. 4 is a detail sectional view taken through one end of the device to show a modification thereof.

Like characters of reference designate cor-

responding parts in each and every figure of the drawings.

I will first describe the make-up of the yieldable turnbuckle and afterward set forth its application to the Covell machine.

Referring at first to Figs. 2 and 3 of the drawings, it will be seen that the present turnbuckle comprises the open-ended tubular body 1, which is externally polygonal for convenience in applying a wrench thereto. One end portion of the tubular body is internally screw-threaded, while the remaining and larger portion is smooth. The smooth end of the body is pierced by two diametrically opposite openings in the form of slots 2.

Adjustable within the screw-threaded end of the body is a screw-threaded plug 3, from which a reduced screw-threaded shank or stem 4 projects outwardly through the adjacent open end of the body, with a lock-nut 5 fitted to the externally-projected portion of the plug 3, whereby the latter may be fixed at any adjustment within the body.

Working in an endwise direction within the slotted end of the body is an externally-smooth cylindrical head or plunger 6, which has a reduced outwardly-directed screw-threaded shank or stem 7. The slidable head or plunger is pierced by a diametric slot or opening 8, which is normally in alinement with the slots 2 of the body for the reception of a guide-pin 9, the opposite ends of which project externally of the body 1 and are pierced by suitable keys 10 to prevent endwise displacement of the pin without interfering with the slidable movement of the head or plunger 6.

Interposed between the stationary abutment afforded by the plug 3 and the slidable head or plunger 6 is a comparatively strong helical spring 11, which cushions the plunger and permits the same to yield inwardly. It will now be understood that the plug or abutment 3 is endwise adjustable for the purpose of adjusting the tension of the spring.

For an understanding of the application and operation of the present form of turnbuckle reference is had to Fig. 1 of the drawings, wherein the reference character 12 designates a part of the frame of the Covell machine, the rocker-arm being designated by the

reference character 13. Pivotaly connected to the upper end of the rocker-arm is the feed-finger 14, which is designed to contact with the fixed or rigid stop 15 upon the top of the frame of the machine. The rocker-arm 13 is actuated from the cam-shaft 16 through the medium of the connecting-rod 17, and the present form of take-up device is included in this connecting-rod in lieu of the ordinary turnbuckle as commonly employed in the Covel machine. From this description it is apparent that shocks or jars are caused every time the feed-finger 14 strikes the fixed or rigid stop 15, wherefore the wear and tear upon the machine is considerable. When the present device is included in the connecting-rod 17, as shown in Fig. 1 of the drawings, it is apparent that all endwise shocks or jars applied to the rod are automatically and effectually taken up by the spring 11 of the present take-up device and the machine will operate smoothly and uninterruptedly without any material jars or shocks whatsoever.

The Covel machine contemplates an adjustment of the stop 15 and employs an ordinary turnbuckle included in the connecting-rod to accommodate the latter to adjustment of the stop, wherefore it is necessary that the present take-up device in addition to its cushioning effect must also be adjustable for the purpose of increasing and diminishing the length of the connecting-rod in accordance with the adjustment of the stop 15. With this requirement in view the present take-up has been given the features of a turnbuckle in addition to its cushioning features by employing the intermediate body 1 and the opposite terminal screw-threaded shanks or stems 4 and 7, so that by turning the body the length of the connecting-rod may be varied in accordance with the adjustment of the stop 15.

Attention is called to the fact that by the application of the present invention all of the advantages of the original machine are preserved and in addition thereto a new advantage is brought about, in that a cushioning effect is obtained and all jars are effectually taken up, whereby a regular and uninterrupted operation of the machine is insured and wear and tear are effectually obviated. Moreover, no change whatsoever is required in the original Covel machine to permit of the application of the present device, and its presence in the machine materially prolongs the life thereof.

A slight modification has been shown in Fig. 4 of the drawings, wherein the guide-pin 9 is rigidly held by the plunger 6 instead of being loose in a slot, as in Fig. 2. When the pin 9 is rigid with the plunger 6, the keys 10 may be omitted, as they are not needed to prevent endwise displacement of the pin, wherefore it will be understood that the modified arrangement is somewhat simpler and

cheaper than that shown in Fig. 2, while at the same time it has all of the advantages possessed by the former structure.

While the old style of Covel machine has been shown in the drawings to illustrate the application of this invention, it will of course be understood that the present device is also applicable to the present style of Covel machine.

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

1. A turnbuckle comprising a body capable of rotation upon its axis; terminal couplings carried by the body and respectively adjustably fixed and slidable, one of the couplings being threaded for connection with another part, and a spring interposed between and bearing against the two couplings, said couplings being simultaneously rotatable with the body of the turnbuckle, and the adjustably-fixed coupling capable of an endwise-adjustable movement upon the body to vary the tension of the spring.

2. A turnbuckle comprising a body capable of rotation upon its axis and provided with a smooth terminal and a threaded terminal, a coupling having a threaded portion engaging and carried by the threaded terminal of the body, said coupling being rotatable with the body of the turnbuckle and capable of endwise adjustment upon its threaded connection therewith, a slidable coupling mounted upon the smooth end of the body and rotatable therewith, and a spring interposed between and bearing against the two couplings, one of the couplings having a threaded portion for connection with another part, the adjustable coupling operating to vary the tension of the spring.

3. A turnbuckle comprising a body capable of rotation upon its axis and provided with a smooth terminal and a threaded terminal, a coupling having a threaded portion engaging and carried by the threaded terminal of the body, said coupling being rotatable with the body of the turnbuckle and capable of endwise adjustment upon its threaded connection therewith, a slidable coupling mounted upon the smooth end of the body and rotatable therewith, a spring interposed between and bearing against the two couplings, one of the couplings having a threaded portion for connection with another part, the adjustable coupling operating to vary the tension of the spring, and a jam-nut to adjustably clamp the adjustable coupling upon the body.

4. A turnbuckle comprising a tubular open-ended body capable of rotation upon its axis and provided with an internally-threaded terminal and a smooth opposite terminal, a coupling having a threaded portion fitting the threaded portion of the body and normally fixed thereon but capable of endwise adjustment upon its threaded connection with the

body, a yieldable coupling slidable within the opposite smooth end of the body, and a spring housed within the body between the couplings and bearing in opposite directions against the latter to cushion the slidable coupling, one of the couplings having a threaded portion for engagement with another part, both of the couplings being simultaneously rotatable with the body, and the fixed coupling being adjustable to vary the tension of the spring.

5. A turnbuckle comprising a tubular open-ended body capable of rotation upon its axis and provided with an internal smooth terminal and an internally-threaded terminal, a coupling having a threaded plug portion fitting the threaded end of the body and projected externally thereof, a jam-nut fitting the externally-projected end of the plug portion and engaging the adjacent end of the body to adjustably interlock the coupling therewith and render the same rotatable with the body, a yieldable coupling having a plunger portion slidable within the opposite smooth terminal of the body and connected with the latter for simultaneous rotation therewith, one of the couplings having a threaded portion for connection with another part, and a spring within the body and between the couplings with its ends bearing in opposite directions against the

plunger and the plug respectively, the adjustable coupling operating to vary the tension of the spring. 30

6. A device of the character described comprising a tubular open-ended body capable of rotation upon its longitudinal axis, one end of the body being internally screw-threaded and the opposite end internally smooth, the latter end of the body having a longitudinal slot, a plunger working within the slotted end of the body and provided with an outwardly-directed stem, a guide-pin carried by the plunger and working in the slot of the body, a screw-threaded plug adjustable within the screw-threaded end of the body and provided with an outwardly-directed stem, one of the stems being screw-threaded, a clamp-nut carried by the plug to interlock the same with the body, and a spring housed within the body and bearing in opposite directions against the plug and the plunger to cushion the latter. 40 45 50

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

ARTHUR D. PLOWDEN.

Witnesses:

J. E. DEAN, Jr.,  
C. B. ELLIS.