

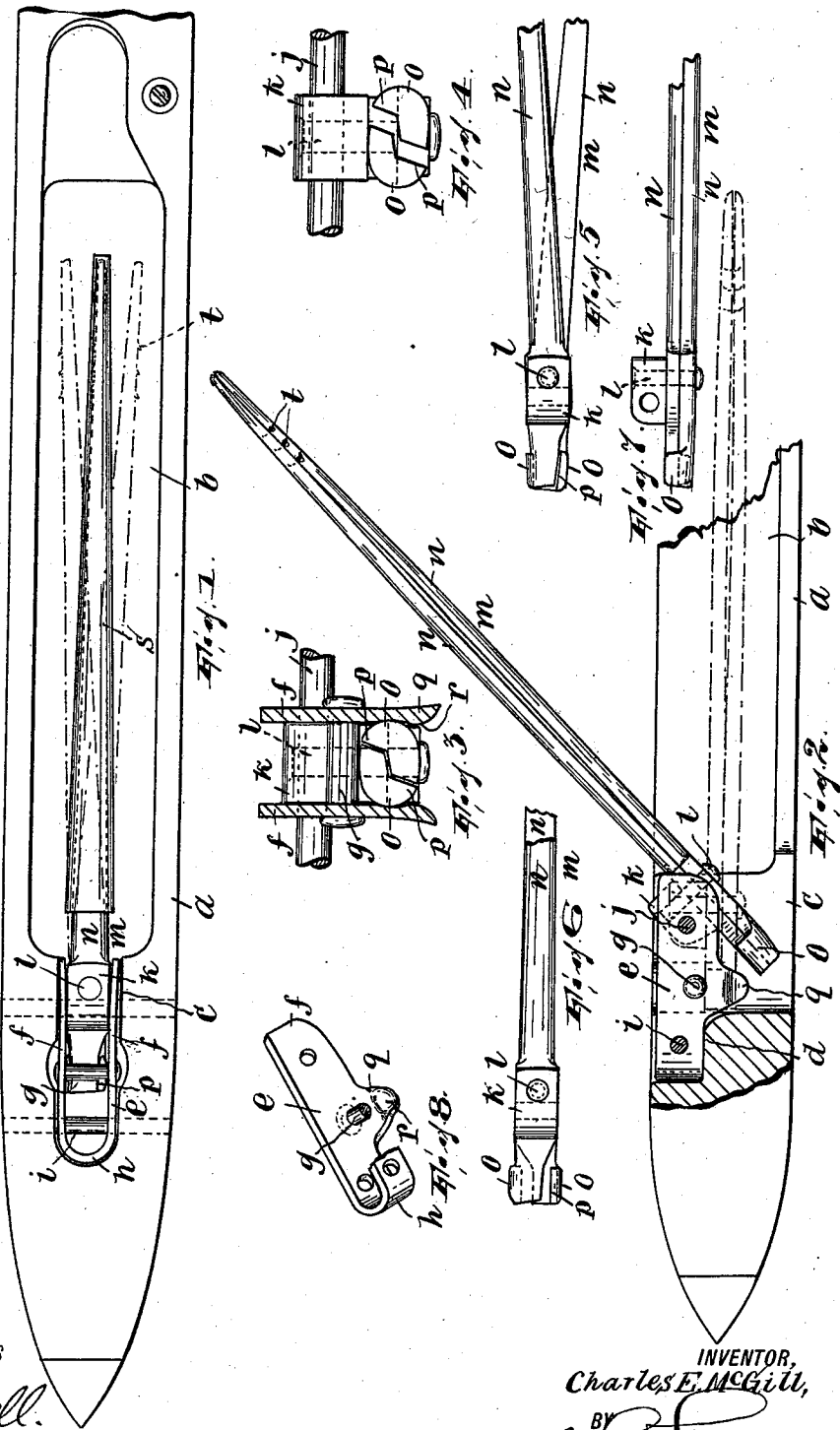
C. E. MCGILL.

SHUTTLE.

APPLICATION FILED FEB. 17, 1911.

1,014,661.

Patented Jan. 16, 1912.



WITNESSES

Wm. D. Zell.
Elio Kaufmann.

INVENTOR,

Charles E. McGill,

BY

John Steward.

ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES E. MCGILL, OF BINGHAMTON, NEW YORK, ASSIGNOR OF ONE-FOURTH TO CHARLES HUBER, ONE-FOURTH TO EDWARD HOWELL, AND ONE-FOURTH TO CHARLES F. RUOFF, ALL OF BINGHAMTON, NEW YORK.

SHUTTLE.

1,014,661.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed February 17, 1911. Serial No. 609,160.

To all whom it may concern:

Be it known that I, CHARLES E. MCGILL, a citizen of the United States, residing at Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Shuttles, of which the following is a specification.

This invention relates to shuttles and particularly to the means therein affording support for the cop, quill or other filling package, notably such filling packages, now commonly used, in which the windings are disposed upon a paper tube or core. In the use of weft or filling packages of this kind it is well known that means is desirable for preventing longitudinal displacement thereof on the spindle when the shuttle is in action.

To provide in a simple way, calculated not to increase materially the cost of manufacture and efficiently to effect intended purpose, for securing the filling package against such movement is one of the principal objects of this invention, the same being accomplished by forming the spindle in two members pivoted to move on a transverse and relatively vertical axis in the butt-portion of the spindle after the manner of a pair of scissors whose longer ends receive the package, one or both being caused to move on the pivot to grip the bore of the package when the spindle is depressed and release the package when the spindle is raised.

In the accompanying drawings, wherein the invention will be found fully illustrated, Figure 1 is a plan view of a shuttle constructed in accordance with the present invention, the spindle being elevated; Fig. 2 is a side view of what appears in Fig. 1, the shuttle being broken away and the spindle elevated; Fig. 3 is a transverse sectional view of the spindle mounting in a vertical plane just back of the spindle butt, the scale being larger and the spindle appearing in end elevation and as being depressed; Fig. 4 is a view showing the spindle in rear elevation and open; Figs. 5 and 6 are plan views of the spindle in the open and closed positions; Fig. 7 is a side view of the spindle; and, Fig. 8 a fragment of the spindle mounting.

a in said drawings designates the shuttle-body and *b* the shuttle cavity therein for the filling or weft package; communicating

with said cavity at one end thereof is the recess *c* formed with a seat *d*.

The spindle mounting shown in Figs. 1, 2, 3 and 7 consists of a plate *e* of a stiff metal (preferably spring steel) rebent upon itself, the two sides or cheeks *f* of which are held together by a rivet *g*; said mounting fits in the cavity *c*, its sides or cheeks lying flat against the sides of said cavity and the bend-portion *h* of the same resting upon the seat *d*. The mounting *e* is retained in the cavity by two pins *i j* which are passed through holes in the walls of the shuttle-body and the mounting. On the pin *j* is fulcrumed a block *k* which is penetrated vertically by a riveted pin *l* projecting downwardly from the block. On the downwardly projecting end of this pin is arranged the spindle *m*. The spindle is divided longitudinally from end to end thereof and in a horizontal plane to form two substantially similar and corresponding members *n n*, each member being pivotally movable on the pin *l*. The pin *l* being in the butt-portion of the spindle and somewhat removed from the free end of the butt, the parts *n n* have a scissors-like relation to each other. At the rear or butt end of each of the parts *n n* there is formed a lateral projection *o* appearing rounded in end elevation (Figs. 3 and 4) and merging into a stop *p*, the stop *p* for the upper part *n* projecting downwardly and that for the lower part *n* projecting upwardly. In the open position of the parts of the spindle, the stop *p* of each part *n* engages the side of the other part *n* and limits the opening movement. The mounting *e* has two downwardly projecting ears or lugs *q*, each of which has a rounded hump *r* on the inner face thereof. The two humps *r* are opposed to each other and occupy such a position that when the spindle is depressed and the projections *o o* of the parts *n n* of the spindle wipe over said humps, the latter crowd together the ends of the parts *n n* forming the butt of the spindle and consequently cause their free or longer portions to assume the open position (Fig. 5). On raising the spindle to the position shown in Fig. 2, the compressing action of the humps *r r* ceases, allowing the spindle to collapse, as shown in Fig. 6. A further function of the cam-projections afforded by the humps

r r is to retain the spindle depressed when the shuttle is in action; this they accomplish in such a way as positively to prevent the accidental rising of the spindle at this time.

5 s designates the paper tube or other core on which the windings of the filling or weft package are disposed. When the spindle is elevated and therefore collapsed, the tube may readily be slipped on or off the spindle; 10 when the spindle is depressed, the consequent movement of the parts n n to the open position causes them to grip the bore of the tube s to hold the same thereon. If desired, spurs t may be formed on the sides of the 15 parts n n to engage the bore of the tube s and further assure its being held against movement longitudinally of the spindle when the shuttle is in action.

One of the salient features of my invention 20 is the fact that the expansion and collapse of the spindle affect the same clear to the free end thereon, being therefore distinguished from expanding spindles heretofore proposed, wherein the expansion has 25 emanated from the butt of the spindle. Thus, while the filling or weft package may readily be removed when the spindle is elevated and collapsed without the straining of the filling or the overlapping of its con- 30 volutions which are likely otherwise to happen in the handling incidental to applying the package on the spindle, when the spindle is depressed it grips and holds the package absolutely rigidly, regardless, moreover, of 35 the diameter of the bore of the tube forming the core of the package.

I do not wish to be limited to the precise construction herein shown and described what I claim being:

40 1. In a shuttle, the combination of a supporting means, a spindle movable up and down therein and divided longitudinally to form two members, one of said members being pivoted to move on a transverse and 45 relatively vertical axis in the butt-portion of the spindle, and means for effecting movement of said member upon movement of the spindle, substantially as described.

50 2. In a shuttle, the combination of a supporting means, a spindle movable up and

down therein and divided longitudinally to form two members, each pivoted to move on a transverse and relatively vertical axis in the butt-portion of the spindle, and means for effecting movement of said members in 55 opposite directions upon movement of the spindle, substantially as described.

3. In a shuttle, the combination of a supporting means, a spindle movable up and 60 down therein and divided longitudinally to form two members, one of said members being pivoted to move on a transverse and relatively vertical axis in the butt-portion of the spindle, and means for holding the spindle depressed including a cam-projection 65 extending into the path of movement of said pivoted member in the up and down movement of the spindle, substantially as described.

4. In a shuttle, the combination of a supporting means, a spindle movable up and 70 down therein and divided longitudinally to form two members, each pivoted to move on a transverse and relatively vertical axis in the butt-portion of the spindle, and means 75 for holding the spindle depressed including substantially opposed cam-projections respectively extending into the paths of movement of said members in the up and down 80 movement of the spindle, substantially as described.

5. In combination, with a shuttle, a U-shaped mounting arranged therein with its side members projecting horizontally from the part of the mounting which joins 85 them and having an inward cam-projection depending from one of said side members and a spindle pivotally movable between said side members on an axis connecting the 90 latter, said cam-projection extending into the path of pivotal movement of the spindle and having wiping engagement therewith in the movement of the spindle, substantially as described.

In testimony whereof I affix my signature 95 in presence of two witnesses.

CHARLES E. MCGILL.

Witnesses:

MAURICE E. PAGE,
EMMA C. PAGE.