Feb. 2, 1932. B. CARTER 1,843,752

CARRIER OR SPINDLE FOR BRAIDING MACHINES AND THE LIKE

Filed July 8, 1931

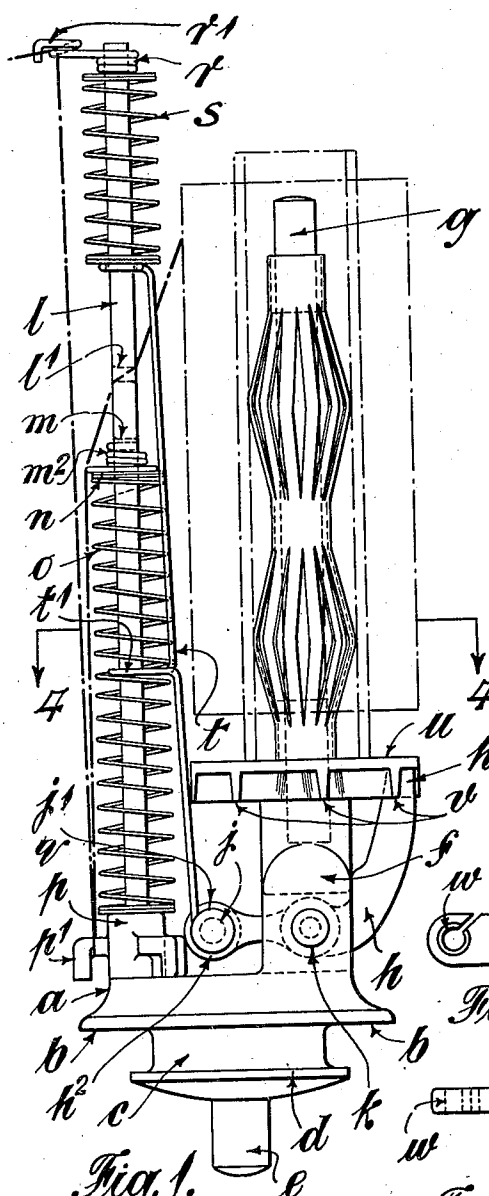


Fig. 1.

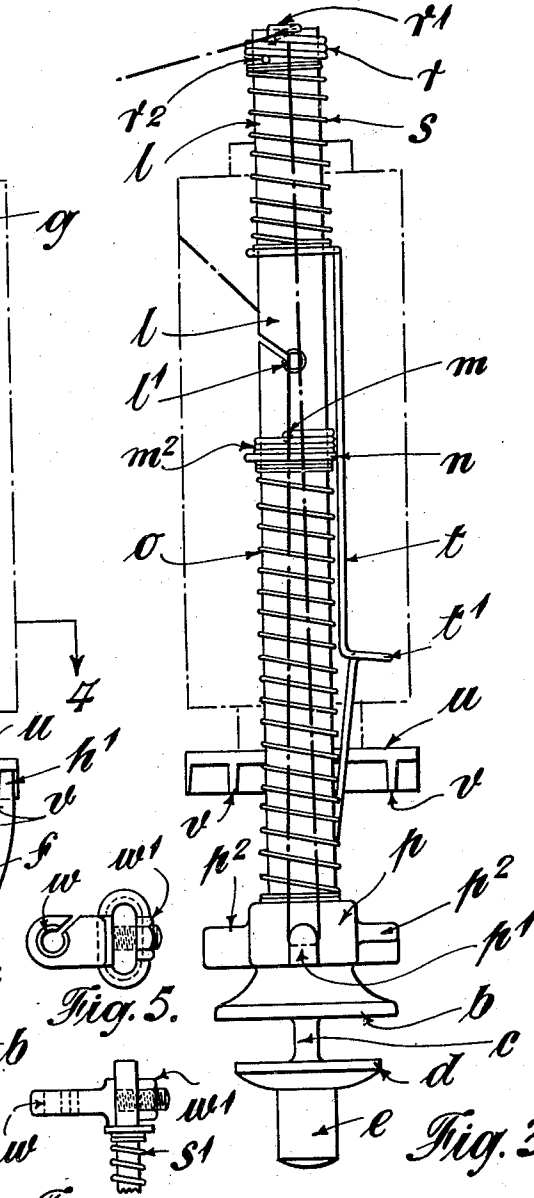


Fig. 3.

Fig. 6.

Fig. 5.

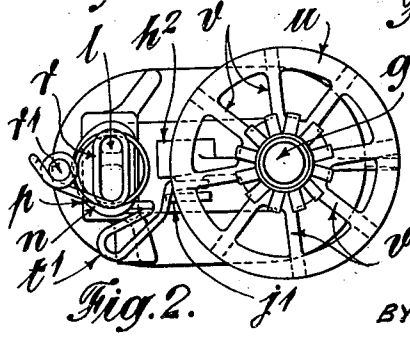


Fig. 2.

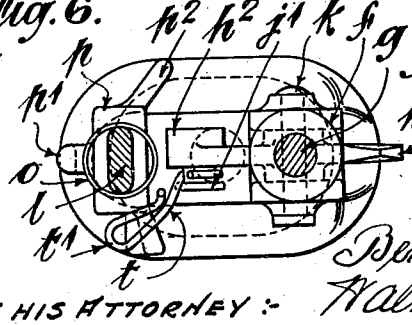


Fig. 4.

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UNITED STATES PATENT OFFICE

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CARRIER OR SPINDLE FOR BRAIDING MACHINES AND THE LIKE

Application filed July 8, 1931, Serial No. 549,405, and in Great Britain July 17, 1930.

This invention relates to carriers or spindles for braiding machines, and the like, such as plaiting machines.

The object of the invention is an improved constructional form of carrier or spindle suitable for work at higher speeds than has hitherto been possible.

The invention is illustrated in the accompanying drawings in which:—

Fig. 1 is a side elevation of one form of carrier made in accordance with the invention.

Fig. 2 is a plan of Fig. 1.

Fig. 3 is a rear elevation of Fig. 1.

Fig. 4 is a sectional plan on line 4—4 Fig. 1.

Figs. 5 and 6 are detail views of a modified construction of eyelet for the upper end of the back and other parts.

As illustrated, the base *a* of the carrier is a casting, the lower part of which is formed with an oval sliding surface *b*, a depending guide web *c*, a retaining flange *d* and a driving peg *e*. At the leading end of the base is an upstanding column *f* in the top of which is fixed an upright steel rod *g* forming the spindle for the bobbin holder. In the base of the column *f* is a through slot in which is pivotally mounted a curved catch lever *h*, the catch end h^1 of which stands in front of and slightly above the top of the column *f*. The rear end of the catch lever is formed with a counter-balance weight h^2, one side of which is shaped to form a projecting stud *j* with a relatively large flat head j^1. The pivot for the catch lever is a hardened steel pin *k*.

Behind the catch lever, and secured therein at the time of casting the base, is a flat steel back *l*, the edges or narrower sides of which are rounded. In the steel back and at a point upwards from its base about two-thirds of its length is a split eyelet l^1, cut into the back for quick yarn threading, the cut or split of the eyelet being inclined downwardly towards the hole, the edges of which are bevelled. Below the eyelet is a hole *m* which receives the end of a spring wire collar m^2 wound to fit closely on the back and providing a quickly fitted stop. On the back and below such stop are arranged in order a stop plate or collar *n* of D shape, a light wire coil spring *o*, round or flat to conform with the shape of the back *l*, and a sliding weight *p*, the latter having the usual hook p^1, for the yarn *q*, and wings p^2.

At the upper end of the back *l* is a pig-tail eyelet *r*, made entirely of wire, the eyelet end r^1 projecting behind the back, the other part of the wire being wound to fit closely to the back *l* with the extreme end r^2 bent inwardly to fit into a hole in the back and thereby be positioned. On the back *l* is a light coil spring *s*, round, oval or rectangular as in the case of the yarn tensioning spring *o*, and forming a return spring for the catch *h* through a catch wire *t*, which lies alongside the back, the upper end being bent to fit slidably on the back and to engage the lower end of the light spring *s* and the other end being hooked round the stud *j* of the catch counter-weight. Intermediate of its length the wire *t* is doubled on itself to form a laterally projecting loop t^1 adapted to be engaged by one of the wings p^2 of the tensioning weight h^2. Oval springs, such as s^1 shown in Figs. 5 and 6, may be used instead of round springs.

The bobbin holder itself is formed with a long spindle constructed in known manner to hold the bobbin and is cast with a light circular base *u* having downwardly projecting webs *v* to be engaged by the catch h^1, the hub of the base normally bearing on the top of the column *f* already described.

The wire pig-tail eyelet at the top of the back may be replaced by a steel eyelet *w* threaded and screwed into the top of the steel rectangular back and locked in position by a nut w^1 (see Figs. 5 and 6).

The operation of the carrier as one of a known type and its movements in the braiding machine will be well known and the manner in which the tensioning weight *p* is in continuous movement up and down the back *l* to maintain a constant tension on the yarn *q*, one of its wings p^2 engaging the loop t^1 of the catch wire *t* frequently, to release the bobbin as more yarn is required and always again releasing the catch *h* so that the bobbin is held and so that the required tension may be maintained. The improved carrier has the advantage that the

lighter weight *p* imposes a less strain on the yarn and yet the required tension may be maintained, and more uniformly than hitherto, owing to the quick response of the light tensioning spring *o*. Similarly, the provision of the return spring *s* for the catch lever *h* gives a more sensitive and quicker acting mechanism.

The steel back *l*, as compared with the known cast back, is a great improvement as it is less fragile and by casting it in with the base part the advantage of the rigidity of the oval section back is retained without the disadvantage which would result from the larger diameter of rod that would be required if round and having the same lateral rigidity, and also the cost of fixing the parts together is very small as well as ensuring absolute rigidity. Further, there are few parts to work loose which is the main difficulty with these carriers. The general construction and arrangement of the parts is of importance in so far as security with ease and simplicity of their attachment or replacement is obtained, but the invention is not limited to the particular details of the example above described as will be apparent from the description itself.

What I claim is:—

1. A bobbin carrier for braiding machines and the like having a vertical guide, a thread eyelet in the guide opposite the bobbin, a catch release member slidably mounted at its upper end on the guide above the said thread eyelet, and a thread tension weight slidably mounted on the guide and adapted to engage the said catch release member, characterized by a stop on the guide below the said thread eyelet, a spring on the guide between the said stop and the thread tension weight, and a projection on the catch release member intermediate of its length, to be engaged by the said weight, as set forth.

2. A carrier for braiding machines and the like having a vertical guide, a thread eyelet in the guide opposite the bobbin, a catch release member slidably mounted at its upper end on the guide above the said thread eyelet, and a thread tension weight slidably mounted on the guide and adapted to engage the said catch release member, characterized by a stop on the guide below the said thread eyelet, a spring on the guide between the said stop and the thread tension weight, a projection on the catch release member intermediate of its length to be engaged by the said weight, a further stop at the upper end of the guide, and a further spring on the guide between said further stop and the upper end of the catch release member, as set forth.

3. A carrier according to claim 2, further characterized in that the said further stop at the upper end of the guide also constitutes a thread eyelet, as set forth.

4. A carrier according to claim 2, characterized in that the said further stop at the upper end of the guide is made of wire coiled to fit closely on the guide and having one end turned in to engage a hole in the guide, and the other end projecting and twisted to form a "pig-tail" thread eyelet, as set forth.

5. A carrier according to claim 1, characterized in that the stop below the thread eyelet consists of a coiled wire closely fitting the guide and having its upper end turned in to engage a hole in the guide, together with a loose washer on the guide between the said stop and the end of the spring, as set forth.

In testimony whereof I have signed my name to this specification.

BEN CARTER.