D. O. PEASE.

TWISTER HEAD FOR SPINNING MACHINES.

APPLICATION FILED OCT. 26, 1909.

983.641. Patented Feb. 7, 1911.

Fig. 2

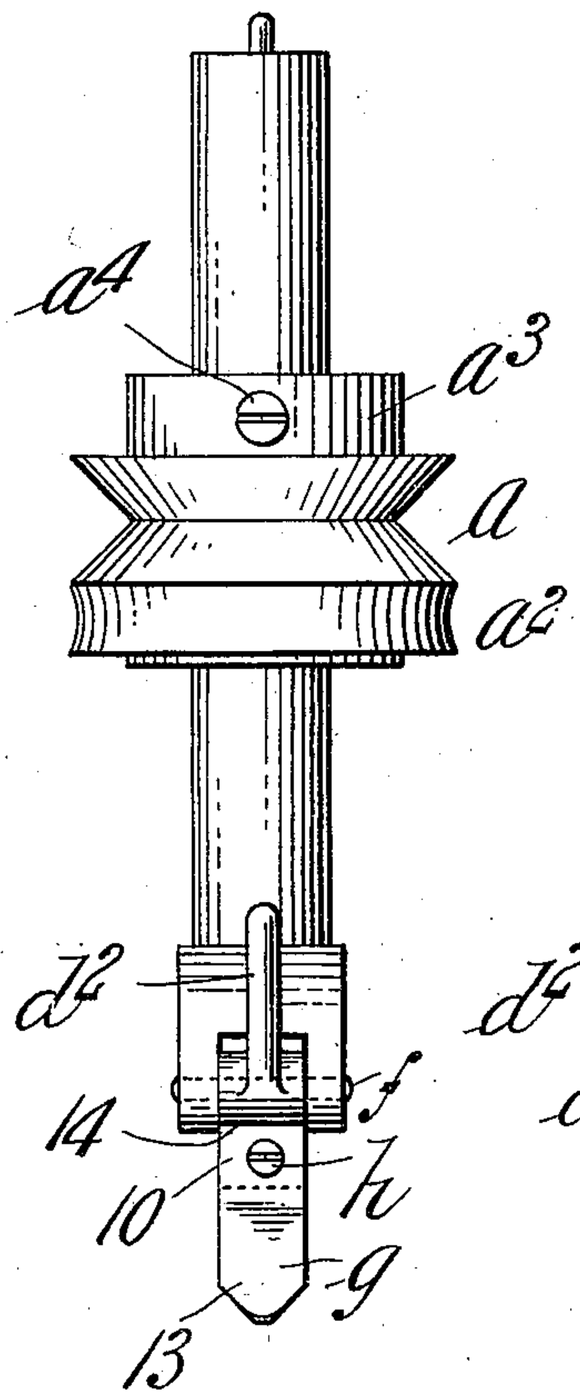


Fig. 1.

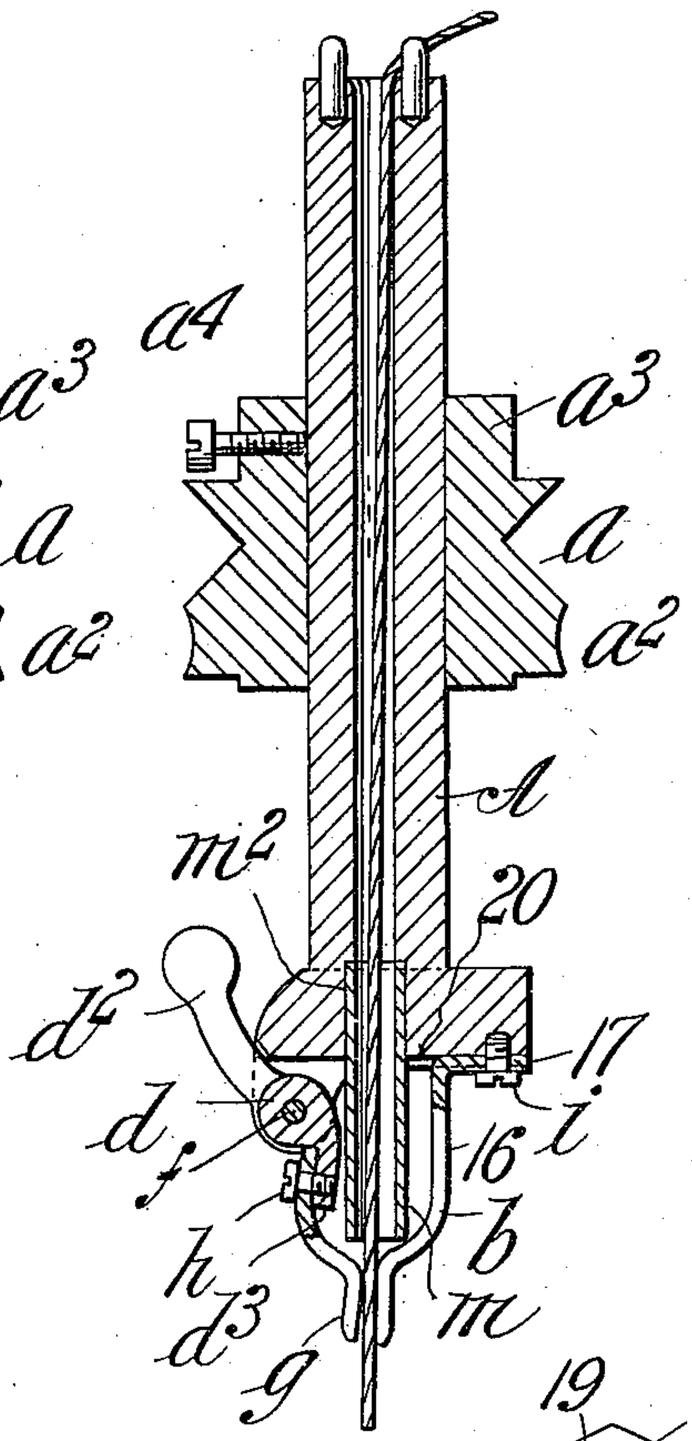


Fig. 3.

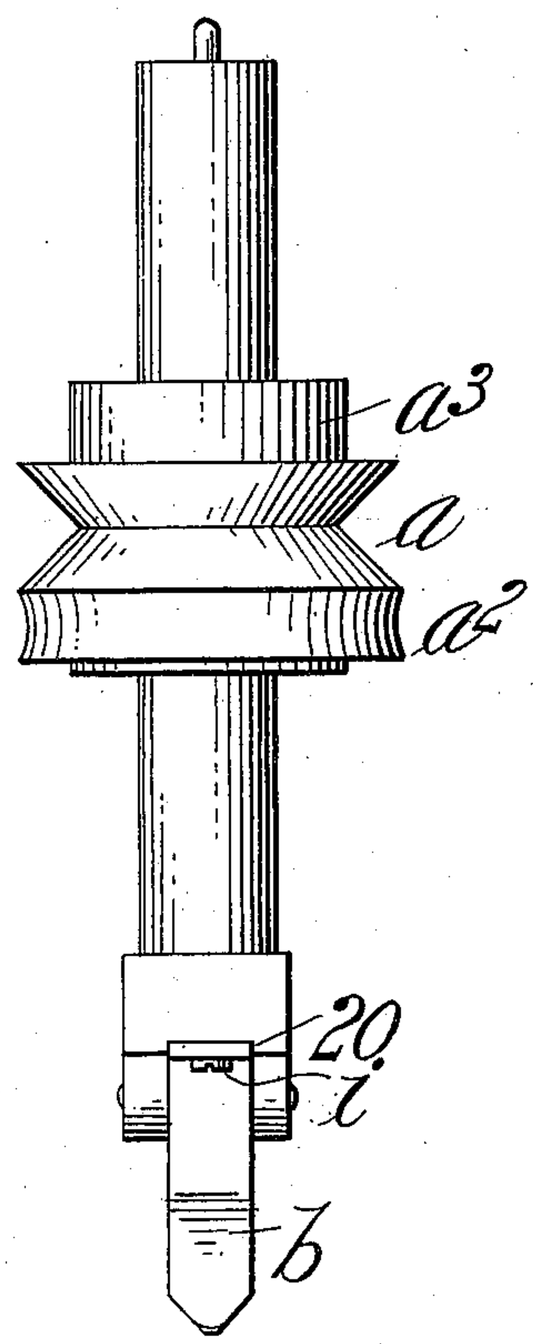
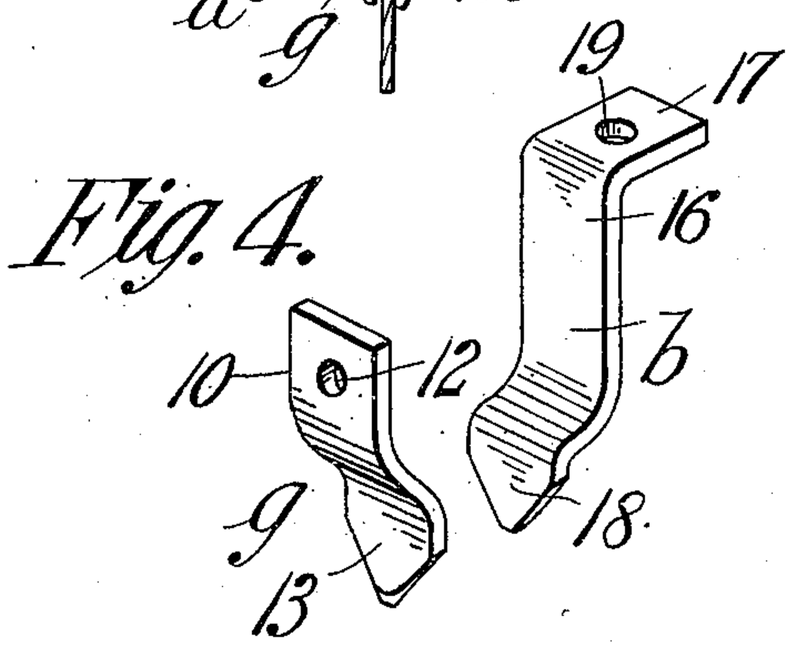


Fig. 4.



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TWISTER-HEAD FOR SPINNING-MACHINES.

983,641. Specification of Letters Patent. Patented Feb. 7, 1911.

Application filed October 26, 1909. Serial No. 524,696.

To all whom it may concern:

Be it known that I, DURELL O. PEASE, a citizen of the United States of America, and resident of Hampden, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Twister-Heads for Spinning-Machines, of which the following is a full, clear, and exact description.

This invention relates to improvements in a twister head for a spinning machine, of a kind which comprises a revolubly tubular body having a fixed longitudinally extending yarn gripping jaw thereon and a second jaw which is pivoted on the body, the lower end of which swings opposite and against the side of the fixed jaw and which pivot jaw has a weighting extension above and outwardly beyond the pivot so that accordingly as the twister head is rotated with greater or less speed the movable jaw will, by reason of centrifugal action of the weighting extension, bear with proportionate pressure against the fixed jaw or against the yarn passing downwardly between the jaws to the drawing rolls. In this description of twister head the jaws after a comparatively short time of use become worn at the portions having bearing on the yarn, so that they have comparatively deep grooves in their adjacent faces, rendering them unfit for further efficient action; and the object of this invention is to provide the jaw constituting portions of the twister head as members separable, the one from the body proper and the other separable from the pivoted lever which is provided with the weight extension whereby when the jaws become worn, instead of making it necessary to discard the entire head, it is only necessary to detach, by the removal of the fastening screws therefor, the separately made jaw members and replace them by new ones, a further object accomplished under the exercise of this invention being the assurance that the jaws detachably connected on the twister head are with certainty always exactly in their proper positions and relations, and that the pressure bearing of the one jaw on the other will be the same, with as great certainty as regards replaced or substituted jaws as with those initially provided.

Another object is to provide in a whirl with which the twister head is equipped such a construction as to enable an operative to grasp it so as to stop its rotation at a time when desired to piece together a broken yarn or roving.

Other objects of the invention are to very materially simplify and cheapen the construction of the twister head; and the invention consists in the combination and arrangement of parts in the twister head and the particular construction of certain of the parts all substantially as hereinafter described in conjunction with the accompanying drawings and set forth in the claims.

In the drawings:—Figure 1 is a central vertical section through the twister head. Figs. 2 and 3 are elevations of the same as taken at the opposite sides thereof and at right angles to Fig. 1. Fig. 4 is a perspective view of the separable jaws of the device.

Similar characters of reference indicate corresponding parts in all of the views.

The twister head which is used in duplicated series in this machine above and in close relation to the drawing roll comprises a tubular cylindrical body A having a sheave or whirl *a* thereon and a narrow yarn gripping jaw *b* longitudinally extending at the lower portion of the body at one side of its axis.

d represents a lever-like member supported on the pivot *f* at the side of the body opposite the jaw *b*, the same being constructed with an upwardly and outwardly projecting arm or extension d^2 which by the weight thereof in and under centrifugal action imparts pressure inwardly to the jaw *g* which is carried by the lever-like member *d*.

The jaw constituting members *b* and *g* as indicated in the drawings, is constructed of thin flat metal struck up to their proper forms, that is to say, the jaw *g* is made with a substantially rectangular parallel sided shank portion 10 with the screw hole 12, while between such shank portion and its yarn bearing portion 13 it is bent on an ogee curve; and the shank portion in contact facewise against the substantially rectangular lug member d^3 or short arm of the lever member *d* below the pivot is firmly held in place by the screw *h*; and any rocking movement of the jaw member *g* on the lever member *d* which carries it is prevented by the abutment of the straight upper edge 14 of the member *g* against the shoulder constituted by the enlarged or hub like portion of the carrying member or lever *d* through which the pivot *f* is passed.

The jaw member *b* comprises a straight downwardly extending portion 16, a securing member 17 which is angular to the portion 16, while between the portion 16 and the bearing member 18 the thin metallic part has substantially the form of an ogee curve.

The securing member 17 has a screw hole 19 therein, and the body or head proper has in its lower end and at one side of the central longitudinal passage therethrough a planed way or shallow channel 20 in which the shank or securing member, the opposite edges of which are parallel, is partially sunk so that the jaw member *b* positively fastened by the screw *i* has a very stable engagement at the lower end of the head and is always held truly in opposition to the swinging jaw *g*.

As above stated, the jaw members *g* and *b* may be most rapidly, accurately and cheaply produced by punching and stamping operations; and whenever one or both of the jaws become so worn as to impair its operative efficiency for spinning, it is only necessary to detach the jaw or jaws by the removal of the fastening screws and replace them by unworn ones.

It is to be especially appreciated that the jaw members of the form shown when initially positioned on, engaged with, and detachably secured to, the parts by which they are supported, as above described, and new, jaw members when they are latterly substituted, always have their true and proper coöperative relations for the highest efficiency of the spinning operation,—the bringing of the parts to such relations being determinative and easily accomplished by the structural character of the interengaging parts.

By making the jaw members *b* and *g* of thin flat metal accurately and cheaply by punching and stamping operations as above mentioned, these members are susceptible of being case hardened so that they will have a uniformity of hardness, and consequently will uniformly wear; and all the jaw members *b*, and all the jaw members *g* will be respectively of identical bulk and weight to secure invariability of their actions, which are of a quite delicate nature, on the rovings.

The twister head has its whirl *a* constructed with a portion a^2 to one side of its groove in which the driving band runs, the same being not only of a substantial height, or dimension in the line of its axis, but diametrically greater than the grooved or band-gripped portion of the whirl, whereby such portion a^2 may be readily grasped by the hand in such manner that by the exercise of comparatively slight gripping force the twister head is, as by a braking action, slowed down and then entirely restrained from rotation.

At times, as well known in spinning, the rovings or yarn become broken, requiring to be "pieced" on,—the rotary movement of the twister head being momentarily stopped.

By reason of the provision of a portion a^2 the periphery of which is preferably slightly concave, as shown, a person may acquire a good grasp on the whirl for stopping the rotation of the twister head (the driving band then slipping on the whirl) without any liability of having the band coming in contact with the fingers, or causing, by the hooks by which the ends of the driving bands are spliced, any injury to the fingers.

In Fig. 1 the whirl is represented as separately made from the cylindrical body of the head and provided with a hole axially therethrough to fit the body; and the whirl is provided above its groove portion with a hub a^3 through which the screw a^4 is passed so as to have engagement by its inner end with the body and thereby adjustably as well as detachably confine the whirl on the twister head body.

In the operation of the twister head, probably the most frequent cause of breakage of the yarn, requiring stoppage of the head and piecing on, is occasioned by the yarn merging at the lower end of the passage through the head failing to pass, in every case, properly between the gripping portions of the jaws; and to insure that the yarn will be guided exactly to and between the centralized bearing portion of the jaws, the tubular body of the twister head is provided with a downward tubular extension *m*, the passage through which is continuous with the passage through the twister head proper, and which tubular extension projects between the shanks of the jaws and has its end above, but in very close proximity to, the bearing portions of said jaws which are in a plane coincident with the axis of the head by being inwardly offset from the shanks between which the projecting part *m* is located.

I claim:—

1. In a twister head for spinning machines, a tubular rotative body having, at the lower end thereof, a horizontal channel, a jaw member struck up from sheet metal comprising a perforated horizontal securing portion, of the same width as, and engaged in said channel, and a downwardly extending portion having an inwardly offset bearing part, a screw confining the horizontal portion of the jaw member to the body, and a pivotally mounted jaw struck up from sheet metal, located opposite, movable toward and yieldable relatively to the fixed jaw.

2. In a twister head for spinning machines, a tubular rotative body having at the lower end thereof a downwardly extending fixed jaw struck up from sheet metal and a lever like member pivoted at the lower portion of the head and provided with an upwardly extending weighting extension and

with a downwardly extending portion, and a jaw struck up from sheet metal, and separately made from, and detachably connected with, the said downwardly extending portion of said lever like member and arranged opposite to and for coaction with said fixed jaw.

3. In a twister head for spinning machines, a tubular rotative body having at the lower end thereof a downwardly extending fixed jaw struck up from sheet metal and a lever-like member pivoted at the lower portion of the head at its side opposite the fixed jaw and provided with an upwardly extending weighing extension and with a downwardly extending lug like portion, and a jaw member struck up from sheet metal having a shank portion engaged on and screw connected to said lug like portion and having a bearing member in an inwardly offset relation to the shank member and joined to the latter by a bent intermediate portion of said thin flat metal.

4. In a twister head for spinning machines, a tubular rotative body having at the lower end thereof a downwardly extending jaw struck up from sheet metal and detachably connected with the head proper, and a lever-like member pivoted at the lower portion of the head provided with an upwardly extending weighting extension and with a downwardly extending portion, and also having adjacent its pivot a straight faced shoulder, and a jaw, struck up from sheet metal, having a squared upper end and detachably connected with the said downwardly extending portion of said lever like member with its squared upper end against said shoulder and arranged opposite to, and for coaction with, the bearing portion of said fixed jaw.

Signed by me at Springfield, Mass., in presence of two subscribing witnesses.

DURELL O. PEASE.

Witnesses:
WM. S. BELLOWS,
G. R. DRISCOLL.