

(No Model.)

O. L. HUMPHREY.

STOP MOTION SPOON FOR MACHINES FOR PREPARING SLIVERS.

No. 566,983.

Patented Sept. 1, 1896.

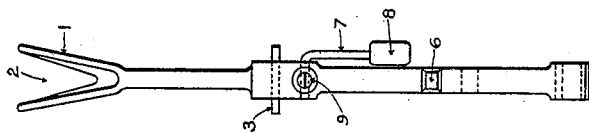


FIG. 2.

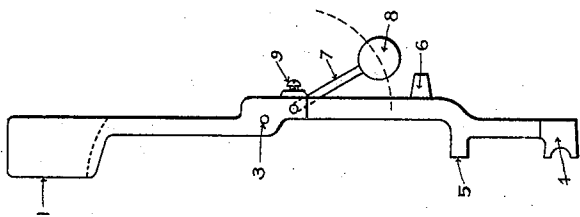


FIG. 1.

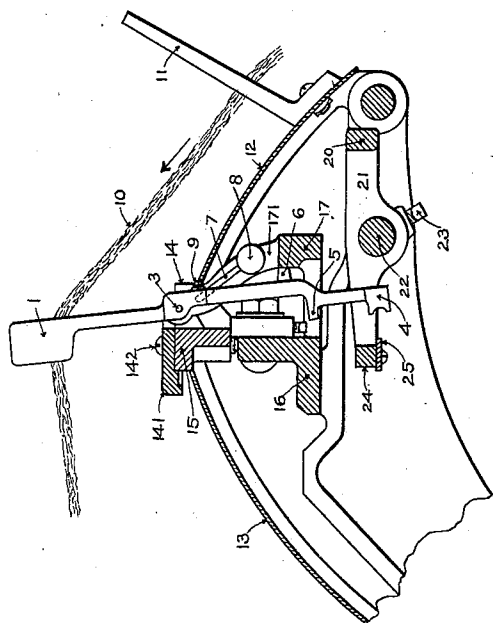


FIG. 3.

WITNESSES.

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OTIS LUMAN HUMPHREY, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO THE
LOWELL MACHINE SHOP, OF SAME PLACE.

STOP-MOTION SPOON FOR MACHINES FOR PREPARING SLIVERS.

SPECIFICATION forming part of Letters Patent No. 566,983, dated September 1, 1896.

Application filed November 5, 1895. Serial No. 568,002. (No model.)

To all whom it may concern:

Be it known that I, OTIS LUMAN HUMPHREY, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Stop-Motion Spoons for Machines for Preparing Slivers, of which the following is a specification, reference being had therein to the accompanying drawings.

Generally speaking, the invention consists in a stop-motion spoon having an adjustable overweighting device, which latter may be manipulated to vary its effect, as desired, in order thus to adapt the spoon for use in connection with slivers of various weights and sizes.

The invention will be described first with reference to the accompanying drawings, after which the distinguishing characteristics thereof will be particularly pointed out, and distinctly defined in the claims at the close of this specification.

Figure 1 of the drawings shows in side elevation a stop-motion spoon having my invention applied thereto. Fig. 2 is a view thereof in elevation looking from the right-hand side in Fig. 1. Fig. 3 is a sectional view showing certain portions of a machine for preparing slivers and also showing in proper position a stop-motion spoon having my invention applied thereto.

1 is the upper end or head of a stop-motion spoon. 2 is the sliver-passage that is provided in the said upper end or head and through which is led the sliver indicated at 10, the said passage being V-shaped and open at the top, as shown. The guide 11 for the sliver directs the latter on its way to the spoon, the said guide being mounted upon the cover or shield 12.

3 is a pin which is secured in a hole that is made transversely through the spoon, the ends of the said pin projecting on opposite sides of the spoon to constitute trunnions or journals for the latter. The said trunnions or journals rest upon bearing-pieces 14, which extend from a stand 15, that is applied to the machine-framing, and the said trunnions or journals are held in place on said bearing-

pieces by a cap 141, which is secured in position by screws 142.

4 is a laterally-projecting piece or portion at the lower end of the spoon, the same co-acting with the striker, which latter is described hereinafter.

5 is a projection on the lower part of the spoon, the same being intended to contact with the surface of the cross-rail 16, applied to the framing of the machine, in order thereby to arrest the reverse movement of the spoon, which is permitted in case of breakage of the sliver or whenever the friction of the sliver against the sides of the sliver-passage 2 is insufficient to hold the upper end or head of the spoon drawn forward. The weight of the spoon is so distributed with reference to the journals or trunnions thereof that the spoon, when not prevented from so doing, gravitates into an erect or vertical position, with the stop projection 5 resting against the rail 16. The friction of the sliver as it travels through the sliver-passage 2 draws the spoon into the inclined position which is shown in Fig. 3. I make the spoon quite light, so as to render the same fit for use in connection with slivers of small weight and size, and in order to enable the same to be balanced to the required degree of approximation for coöperation with such slivers as well as to enable it conveniently to be over-balanced to the extent which is necessary to fit it for use in connection with larger slivers of various weights and sizes, I provide as follows:

7 is an arm which is connected pivotally to the body of the spoon. The said arm is provided at its free extremity with a weight 8. I have shown the inner extremity of the said arm bent or cranked at right angles and fitted to a hole that is made transversely through the body of the spoon. This mode of effecting the connection of the arm with the spoon enables the arm and weight to be adjusted in an arc, as indicated by the dotted line in Fig. 1, so as to carry the weight toward and from the body of the spoon. The screw 9, which is fitted to a threaded hole in the body of the spoon and bears by its inner end upon the cranked portion of the arm, serves con-

veniently to secure the arm and weight in the desired position of angular adjustment after having been swung to locate the weight at the desired distance laterally from the pivotal point of the spoon. As will be obvious, the resistance which the spoon will present against being drawn forward by the friction of the sliver will be increased as the weight is swung away from the body of the spoon, and vice versa. Normally, during the passage of a sliver of full predetermined size and weight, the friction thereof in the V-shaped passage of the spoon will swing the latter into the position in which it is shown in Fig. 3, namely, inclined forwardly in the direction of the passage of the sliver, and with the stop 6 near its lower end pressed against the cross-bar 17. The latter is supported in convenient manner on the framing. Should the sliver decrease in size and weight, the overbalancing-weight 8 will operate to swing the spoon into an upright or erect position.

It will be observed in the drawings that the head of the spoon, it containing the sliver-passage 2, is very nearly over the journals of the spoon. This enables the spoon conveniently to be placed approximately at right angles to the line of draft of the sliver, which renders the spoon more readily responsive to the changes in the sliver; also, that the weight 8, when swung down at the side of the body of the spoon, is approximately beneath the journals of the latter, where it has the minimum effect, while, when said weight is swung rearwardly away from the said body, it acts with increased effect in proportion as the arm approaches a position at right angles to the body of the spoon. Not only is the weight capable of being swung rearwardly so as to act in opposition to the friction of the advancing sliver upon the spoon, but said weight is capable of being swung forwardly, so as to act with the friction of the advancing sliver upon the spoon as far as may be requisite to secure the desired balance and poise of the spoon. The great capacity of the weight for adjustment, and the fact that the arm carrying the same may be swung substantially into a position in a horizontal line through the pivotal point of the spoon, enables me to secure the maximum of counterbalancing effect with the minimum of weight. The less the weight upon the pivots or journals of the stop-motion spoon the greater is the delicacy of the action of the latter.

The devices which coact with the spoon, constructed and equipped as has been described, may be of any suitable and convenient character and arrangement. I have shown a vibrating striker consisting of side bars 20 and 24, arms 21, carrying the said side bars, and a rock-shaft 22, on which the said arms are fixed, as by a clamping-screw

23. The side bar 24 has applied thereto a plate 25, which, when the spoon is permitted to gravitate into its erect position, as by breakage of the sliver or diminished bulk thereof, engages with either the upper or lower side of projection 4 on the spoon, the particular side being determined by the direction in which the plate 25 happens to be moving at the instant when the projection comes within its range. As will be understood, the arrest of the movement of the striker, occasioned by the engagement of plate 25 with the projection 4 of the spoon, will be followed by the stoppage of the machine, this latter result being secured in well-known manner not needing to be explained.

I claim as my invention—

1. A pivotally-mounted stop-motion spoon, having a passage-way for a sliver, an arm pivoted thereto carrying a weight and adapted to hang with the weight approximately beneath the pivotal point of the spoon and also to be swung to locate the weight at the desired distance laterally from the pivotal point of the spoon, and means to fix the arm in the desired position of angular adjustment whereby to vary as required the resistance offered by the spoon to being moved by the friction of the sliver, substantially as described.

2. A pivotally-mounted stop-motion spoon, having a passage-way for a sliver, an arm pivoted to the body of the spoon and carrying a weight, said arm being adapted to hang with the weight approximately beneath the pivotal point of the spoon and also to be swung to locate the weight at the desired distance laterally from the pivotal point of the spoon, and a screw engaging said pivot to fix the arm in the desired position of angular adjustment, to vary as required the resistance offered by the spoon to being moved by the friction of the sliver, substantially as described.

3. A pivotally-mounted stop-motion spoon supported normally in an approximately erect position having in its upper end a passage-way for a sliver, an arm pivoted to the body of the spoon and carrying a weight, said arm being adapted to hang with the weight approximately beneath the pivotal point of the spoon and also to be swung to locate the weight at the desired distance laterally from the pivotal point of the spoon, and a screw engaging said pivot to fix the arm in the desired position of angular adjustment, to vary as required the resistance offered by the spoon to being moved by the friction of the sliver, substantially as described.

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

OTIS LUMAN HUMPHREY.

Witnesses:

SAML. G. STEPHENS,
MARY CAVERLY.