This invention relates to a stop motion for a twister of that type wherein a pivotally mounted holder is supported by the running yarn and is provided with a tongue which, when the yarn fails, is permitted to feed in between the rolls and thus stop the rotation of the top roll. A device of this type is usually pivoted on the journal of the top roll and in addition has a sliding motion on the journal to permit the tongue to position itself properly in the bite of the rolls. Since the journal of the top roll is rotating continuously, a considerable amount of wear takes place between the journal and the stop motion device, not infrequently resulting in cutting the journal deeply as well as disturbing the proper working position of the device itself.

The object of the present invention is to provide a stop motion device of this type which shall have its own independent pivotal support so that there is practically no wear because there is practically no movement of the stop motion device on its pivot except when the yarn fails.

The object of the invention is further to provide a device of this type in which the tongue shall have a loose or limited pivotal connection with the holder arm or support so that when the yarn fails and the stop motion device swings downwardly, the tongue will readily adjust itself to the bite of the rolls and be fed in surely and accurately between the rolls to stop the rotation of the top roll.

The object of the invention is further to provide a device of this type which may be readily attached to existing twisters without any substantial alteration of the twister frame.

These and other objects and features of the invention will appear more fully from the accompanying description and drawings and will be particularly pointed out in the claim.

The drawings illustrate a simple and preferred form of the invention, together with so much of an ordinary type of twister frame as is necessary to a disclosure of the invention.

In the drawings:
Fig. 1 is a view in vertical cross section through a portion of the twister frame taken adjacent one of the supports for one of the top rolls and showing the stop motion device with the yarn in running position.

Fig. 2 is a view similar to Fig. 1 showing the device in the position it assumes when the yarn fails.

Fig. 3 is a view in front elevation of the upper portion of the construction shown in Fig. 1.

Fig. 4 is a top plan view of a portion of the device shown in the previous figures.

Fig. 5 is a detail in cross section taken transversely of Fig. 3 showing the connection between the tongue and holder arm when the device is in the position assumed with the yarn running.

Fig. 6 is a view similar to Fig. 5 with the device in the position assumed on failure of the yarn.

In the twister frame illustrated, a series of supports 1 extending upwardly from the frame 2 present bearings in which is jour-}

nalled the positively driven bottom roll 3. In these supports is mounted in the usual way bars 4 from which project the supporting brackets 5. These supporting brackets are provided with vertically slotted bearings 6 in which are mounted the journals 7 of the top rolls 8, thus permitting the top rolls to rest upon and be driven by the bottom roll and to be lifted out of contact with the bot-}

tom roll. The yarn 9 feeds down around the top roll in between the top and bottom rolls around back of the bottom roll and thence down through the usual guide eye 10 supported from the finger board 11 projecting at the front of the frame 2.

A preferred form of stop motion device is provided for each top roll or run of yarn. A bracket 12 is secured by means of a bolt or set screw 13 to the front face of one of the top roll supports 5. This bracket has jour-}

nalled in its top portion a stud 14 extending parallel with the roll axes. A holder arm in the form of a generally L-shaped metal plate having the forwardly projecting portion 15 and the base portion 16 extending parallel with the roll axes is secured to this stud 14. A guide arm 17 preferably formed of wire and having at its free end a pigtail or guide eye 18 is secured to the base 16 of the holder arm. This is conveniently done by bending over and about the end of the guide arm 17 a portion 19 of the base and riveting this portion to the main portion of the base 16, as
shown at 20 and then clamping the parts together with a prick punch, as indicated at 21. A tongue 22, formed of flat sheet metal and curved as indicated, is secured to the holder and projects downwardly therefrom opposite the bite in the rolls. This tongue is so secured to the holder arm as to have a limited swinging movement thereon toward and from the pivotal axis of the holder arm.

This is conveniently done by curving the upper end 23 of the tongue 22 to fit the rounded edge formed by bending the portion 19 of the holder arm down upon the base 16 and by providing the rivet 20 with a head 24 spaced a short distance from the back of the base 16 of the holder arm and by providing the tongue 20 with an aperture loosely fitting the rivet between the head 24 and the base 16.

The parts are shown in running position in Fig. 1 and it will be seen that the guide arm 17 is supported by the running yarn 9 to hold the stop motion device elevated with the free end of the tongue 22 forward of, but substantially opposite, the bite of the top and bottom rolls. If now the yarn 9 fails, and by this term is also included the occurrence of undue slackness, the guide arm 17, no longer held by the yarn, and the entire device swing downwardly about the pivotal axis 14. The tongue automatically adjusts itself, because of the lost motion or limited swinging movement permitted between its upper end and the holder arm, to enter the bite of the rolls and is fed in between the rolls and thus lifts the top roll and stops its rotation.

It will be seen that all that it is necessary to do to attach the device to an existing twister is to tap or bore a hole for the set screw or bolt 13 and fasten the device in position on the bracket 5.

There is substantially no wear because, under normal conditions, there is practically no movement of the pivotal stud 14 in its bearing.

There is thus presented a very simple and efficient stop motion device which may be readily attached to existing twisters and which neither injures or wears the twister mechanism nor is subject to wear itself.

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

In a stop motion for a twister, a flat sheet metal holder arm bent upon itself, a guide arm inserted and clamped between the portions of the holder arm, a rivet clamping portions of the holder arm together and having a head spaced from the holder arm, and a sheet metal tongue curved at its end to fit the bent portion of the holder arm and having an aperture loosely fitting the rivet between the rivet head and the holder arm.

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

ALONZO E. RHOADES.