May 15, 1951 W. J. SCOTT 2,553,335

STOP MOTION

Filed June 24, 1946

Fig. 1.

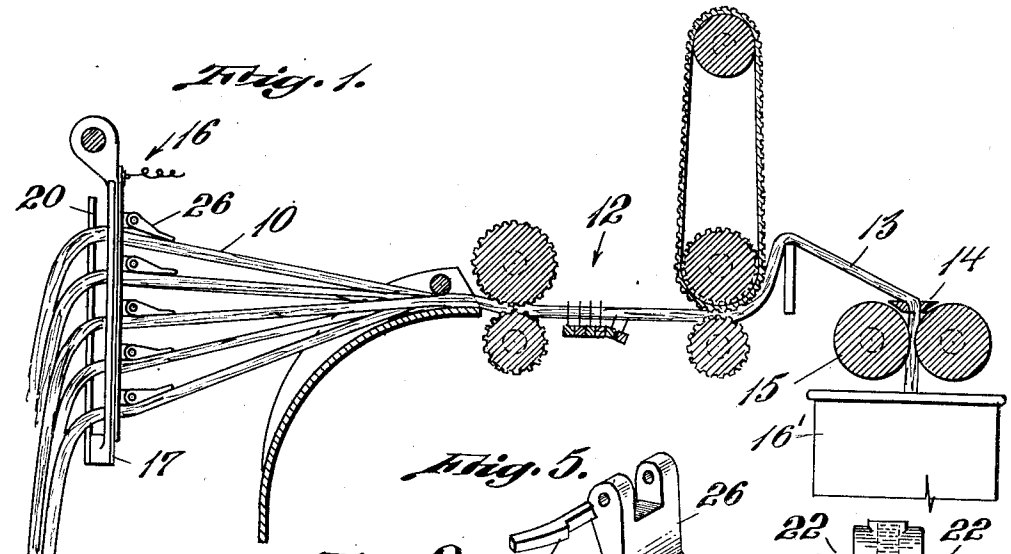


Fig. 5.

Fig. 2.

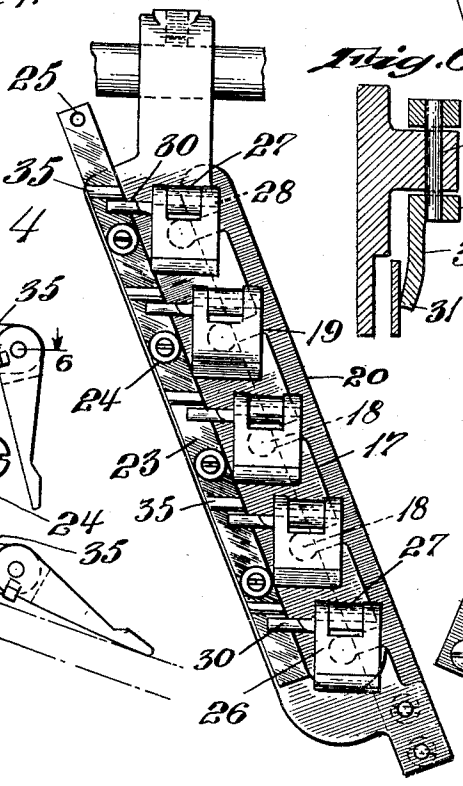


Fig. 6.

Fig. 4

Fig. 3.

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STOP MOTION

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2 Claims. (Cl. 19—165)

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This invention relates to a drawing frame and is an improvement upon the stop motion shown in my prior Patent No. 1,848,667 dated March 8, 1932.

In the above mentioned patent, the feeler member swings by gravity through an arc so that when its free edge arrives at a point most distant from the pivot the contact is made to cause a stop motion to operate. A partial effect of the mass of the member is all that there is to force contact to cause the actuation of the stop motion. Dust and lint may collect on one of the contacts and interfere with its operation and so far as the movement of the parts into contact is concerned, there is nothing to wipe the contacts clear.

One of the objects of this invention is to provide a more positive electrical connection for actuation of the stop motion.

Another object of this invention is to provide a wiping ocntact with a relationship so that one part slides along another through an extent sufficient to keep a surface clear of lint or dust.

Another object of the invention is to provide a shield which will effiectively prevent collection of dust on the fixed contact which is provided.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Fig. 1 is a diagrammatic elevation illustrating a drawing frame equipped with my improved stop motion;

Fig. 2 is an elevation of the stop motion shown in Fig. 1;

Fig. 3 is an elevation looking at the back of the stop motion as shown in Fig. 1;

Fig. 4 is an elevation on a larger scale of a fragmental portion of the stop motion mechanism shown in Fig. 1;

Fig. 5 is a perspective view of the feeler member of the stop motion;

Fig. 6 is a section on line 6—6 of Fig. 4.

In proceeding with this invention, I have mounted an arm on the feeler member at a location close to the pivot. The arm is off the center of the pivot so as to be given some arcuate motion and the end of the arm is so bent that an increase of the arcuate motion is provided. This swinging motion is utilized for providing a wiping contact of this arm along a contact bar for closing the circuit to operate the stop motion of the drawing frame in accordance with the disclosure in the above-mentioned Patent No. 1,848,667.

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With reference more specifically to the drawings, there are a plurality of slivers which are drawn from a supply can 11 and which pass through the gill mechanism designated generally 12 and are delivered as at 13 to a trumpet or condenser 14 and then fed by rolls 15 into a receiving can 16'. The stop motion which I provide is of electrical character and is designated generally 16 as shown in Fig. 1 and is mounted between the supply can 11 and the gill box.

This stop motion consists of a bar 17 which is provided with a plurality of openings 18 through which each of the slivers is guided. The sliver may enter this opening through a slot 19 at the edge of the bar and is prevented from escape from the opening 18 by means of the rod 20 spaced from the edge of the bar 17 and extending along the several openings in the bar. At the upper end of the bar an eye 21 is cast for the reception of the supporting rod 22. A contact or bus bar 23 is mounted in insulating relation to the bar 17 by means of fiber spacing washers 24 (see Fig. 4) located at spaced points along the bar. Some electrical wire may be connected to the upper end of this bus bar as at 25.

Feeler members 26 are pivoted on eyes 27 by means of pins 28 which eyes are located above and in a position so that the feeler members will swing downwardly across the openings 18 but these feeler members 26 are held in elevated position as shown in Fig. 1 by the slivers 10 in their passage through the openings and to the gill box. An arm 30 extends laterally from each of the feeler members 26 and is generally of angular shape as shown in Fig. 5. The end 31 of this arm is bent so as to increase the diameter of the arcuate path of the arm as it moves over the bus bar 23. Thus, should a sliver 10 fail or become so slack as to allow the feeler arm to descend into the position shown in Fig. 4, this arm 30 will wipe across the bus bar 23 and establish an electrical connection from the metal frame work upon which the feeler member is mounted to the insulated bus bar whereupon the machine will be stopped through mechanism which is well known.

In order to shield from dirt the contact surface of the bus bar against which each of the arms engages, a lip, shelf or shield 35 of generally L-shaped construction is positioned over each of the contact surfaces and above a location at which the arm will move so that lint or foreign matter will be prevented from collecting on this stationary surface which is engaged for electrical contact or circuit.

I claim:

1. In a stop motion device for a drawing frame comprising a body portion having an opening through which the sliver passes, a fixed contact carried by said body portion, a feeler member for resting on the sliver, a pivot for said member so arranged that the member will move downwardly upon slackening of the tension of said sliver, and an arm carried by said member at a location between the pivot axis and the center of gravity of said member an extending generally parallel to said pivot and movable in an arc of a radius slightly greater than the shortest distance between the axis of the pivot and the contacting side of said contact but less than the radius of the arc through which the sliver engaging portion of said feeler member travels whereby to have sweeping engagement with said contact.

2. In a drawing frame as set forth in claim 1 wherein a shield extends over the said contact to protect the same from gathering dust.

WALTER J. SCOTT.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
555,692	Geb	Mar. 3, 1896
767,965	Scott	Aug. 16, 1904
1,778,097	Wachsman	Oct. 14, 1930
1,848,667	Scott	Mar. 8, 1932