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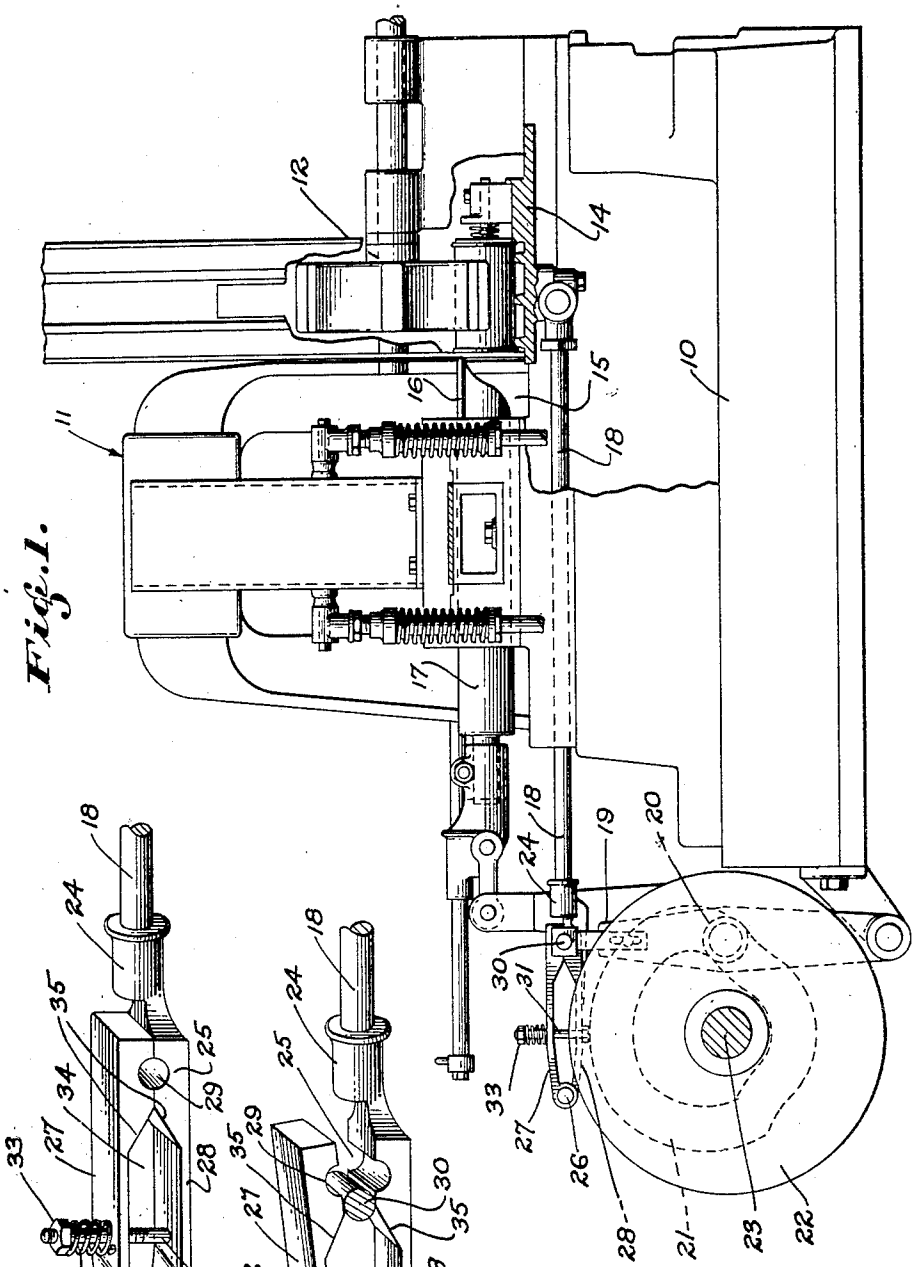


Fig. 1.

Fig. 2.

Fig. 3.

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This invention relates to connecting devices for transmitting a drive to can feeding mechanisms of can filling machines such as disclosed in my copending application entitled "Can filling machine", filed January 10, 1927, S. N. 160,075.

In the application referred to I have disclosed a can filling machine wherein a can is delivered to a filling station by a reciprocable can carriage operated by a box cam. At the filling station the can receives a charge of fish and the carriage is operated to remove the can from the filling station and discharge it from the machine. The cam which operates the carriage is driven in timed relation with other operations such as delivering the fish to a compression chamber, compressing the fish and transferring the fish from the compression chamber to the can. It sometimes occurs that a can is improperly delivered to the carriage or the can jams before it reaches the filling station. When the carriage is positively operated such an occurrence results in injury to the machine and usually places it out of commission until suitable repairs can be made.

It is the principal object of the present invention to provide a connecting device for connecting a can carriage or similar mechanism to its operating medium, which connecting device is normally capable of transmitting a drive to the carriage but will automatically become ineffective when the resistance of the carriage to be driven is abnormal and automatically regains its effectiveness when the resistance of the carriage to operation returns to normal.

In carrying out this object into practice I provide a connecting device for connecting the reciprocable carriage to the oscillating cam arm, which connecting device is capable of transmitting the oscillation of the cam arm to the carriage when the resistance offered by the carriage is normal. This device comprises a bearing formed in two yieldably connected halves which engage the pin of the cam arm but are capable of permitting the pin to disengage therefrom when the resistance offered by the carriage to operation is abnormal.

One form which the invention may assume is exemplified in the following description and illustrated by way of example in the accompanying drawings, in which:

Fig. 1 is a fragmentary view in side elevation of a can filling machine showing my invention applied thereto.

Figs. 2 and 3 are perspective views of the connecting member between the can carriage and its cam showing the connecting member in opened and closed position.

Referring more particularly to the accompanying drawings, 10 indicates the frame of a can filling machine. The operation of this can filling machine and its construction will not be described as it may be readily obtained from the prior application herein mentioned.

It will suffice to state that this machine comprises a can feeding mechanism 12 adapted to intermittently feed cans to a reciprocable can carriage 14 guided for reciprocating movement on the frame of the machine. This can carriage on its inner stroke is adapted to deliver a can to a filling station indicated by the numeral 15 where the can is arranged over a guide 16 in alignment with a compression chamber. A plunger 17 passes through this compression chamber and delivers a charge of fish to the can, whereafter the can carriage is operated to withdraw the can and permit it to be ejected from the machine.

The can carriage 14 of course operates in synchronism with the can feed mechanism 12 and the plunger 17. For this reason the can carriage 14 is connected by a connecting rod 18 to the upper end of a cam arm 19 which is pivotally connected at its lower end to the frame 10. Intermediate its ends the cam arm 19 is fitted with a cam roller 20 operating in the groove 21 of a box cam 22, which is suitably secured on a continuously operating shaft 23.

It is with the connection between the cam arm 19 and the connecting rod 18 that this application is particularly concerned. This connection is shown most clearly in Figs. 2 and 3 and comprises a bearing 25 having a boss 24 at one end which is threadedly or otherwise connected with the connecting rod 18.

The bearing 25 is formed in two parts hinged together as at 26. The two parts of the bearing are indicated by the numerals 27 and 28. The latter is the one which carries the boss 24 which is connected to the connecting rod 18. The other half 27 of the bearing is capable of movement relative to the half 28 so that the two parts may be spread apart when desired.

At the ends of the halves 27 and 28 adjacent the boss 24 they are formed with a transverse bore 29 to receive a pin 30 carried by the upper end of the cam arm 19. It will be noticed that one half of the bore is in each part of the bearing. The two parts 27 and 28 of the bearing are yieldably held together so as to normally retain the cam arm pin 30 within the bore 29 so that oscillation of the cam arm will be translated into reciprocation of the connecting rod 18.

To yieldably hold the two parts of the bearing structure together I provide a stud 31 which extends through both parts 27 and 28 at right angles to the bore 29. A compression spring 32 is interposed between a nut 33 at one end of the stud and the adjacent part 27 of the bearing. At the other end of the stud it is formed with a head so that the spring 32 will normally yieldably retain the two parts together.

Intermediate their ends the two parts 27 and 28 of the bearing are recessed as indicated by the numeral 34. This recess extends from the hinged end of the bearing to a point closely adjacent the bore 29. At this end of the recess cam surfaces 35 are formed which taper inwardly from opposite sides of the recess.

It is intended that when the can carriage 14 meets with an obstruction or offers more than normal resistance to operation during its travel that the force exerted on the pin 30 cause the latter to spread the two parts 27 and 28 of the bearing apart and pass into the recess 34, so that the cam arm 19 may oscillate without reciprocating the connecting rod 18. It is seen that on its outward stroke the pin 30 will spread the halves 27 and 28 apart and pass into the recess 34. On its return stroke the pin 30 will engage the cam surfaces 35 and again spread the bearing parts apart and return into the bore 29. Should the obstruction be removed during one complete cycle of the cam arm, the can carriage will commence operating automatically, but it will not operate until the obstruction has been removed, because the pin 30 will continue to move freely in the bearing structure until the obstruction has been removed.

While I have shown this bearing structure for use in connection with a can filling machine, I realize that it has a multitude of different uses in connection with other types of machines and may be used without departing from the invention to transmit a drive from one member to another.

While I have shown the preferred form of my invention, it is to be understood that various changes may be made in its construction by those skilled in the art without departing from the spirit of the invention as defined in the appended claim.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

A device of the character described comprising a bearing formed of a pair of halves hinged together at one end, a transverse bore formed through the halves at the other end thereof, and a recess formed between the halves intermediate the bore and the hinged end, means yieldably holding said halves together whereby a pin journalled in said bore will normally remain journalled therein but may reciprocate between the bore and said recess under abnormal conditions.

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