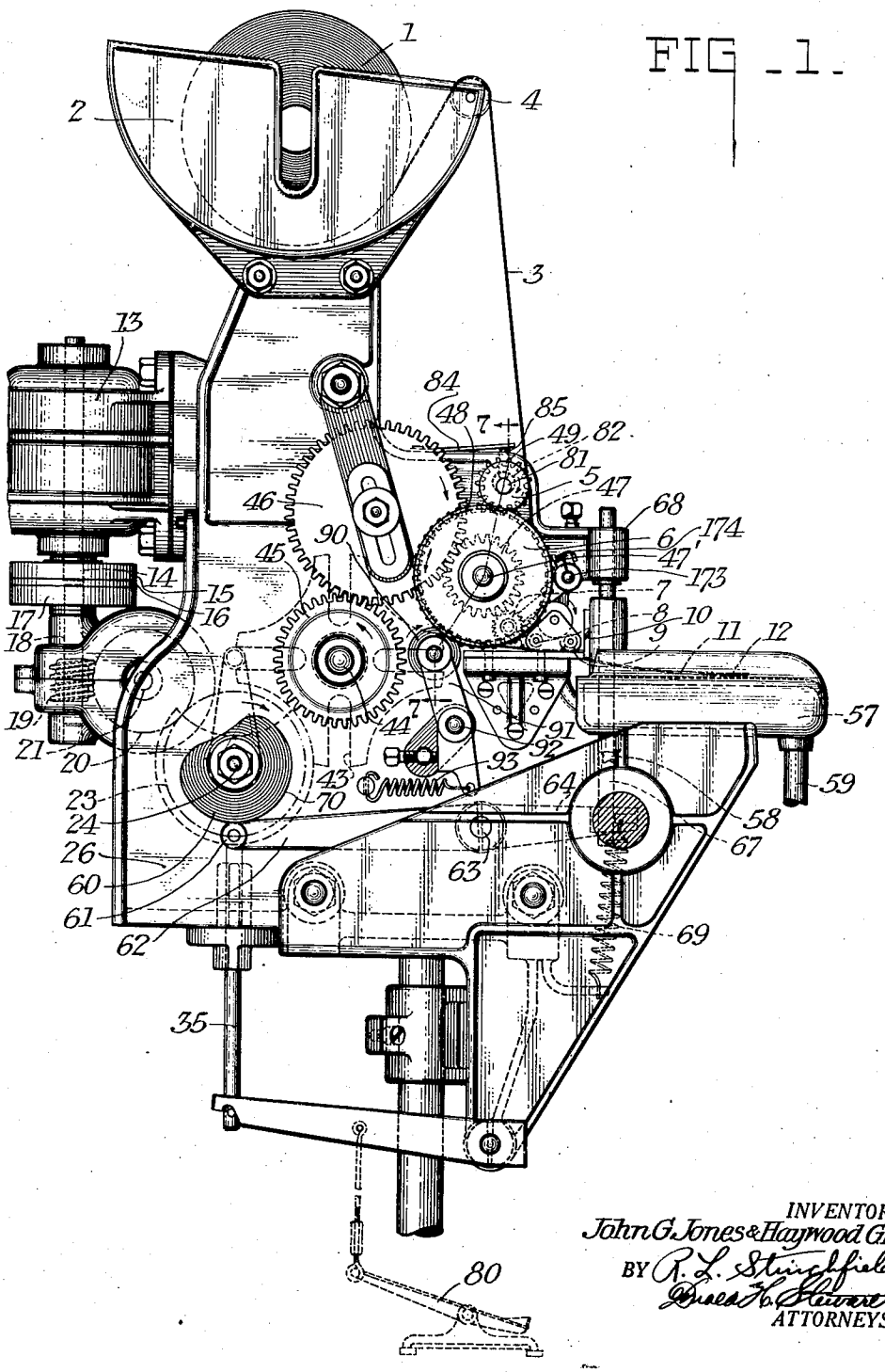
Jan. 7, 1930. J. G. JONES ET AL 1,742,814

PHOTOGRAPHIC FILM CARTRIDGE PASTER SUPPLYING MACHINE

Filed May 19, 1923 3 Sheets-Sheet 1

FIG. 1.



INVENTORS,
John G. Jones & Haywood G. Dewey,
BY R. L. Stringfield
Bruce H. Stevens
ATTORNEYS.

Jan. 7, 1930. J. G. JONES ET AL 1,742,814

PHOTOGRAPHIC FILM CARTRIDGE PASTER SUPPLYING MACHINE

Filed May 19, 1923 3 Sheets-Sheet 2

FIG. 2.

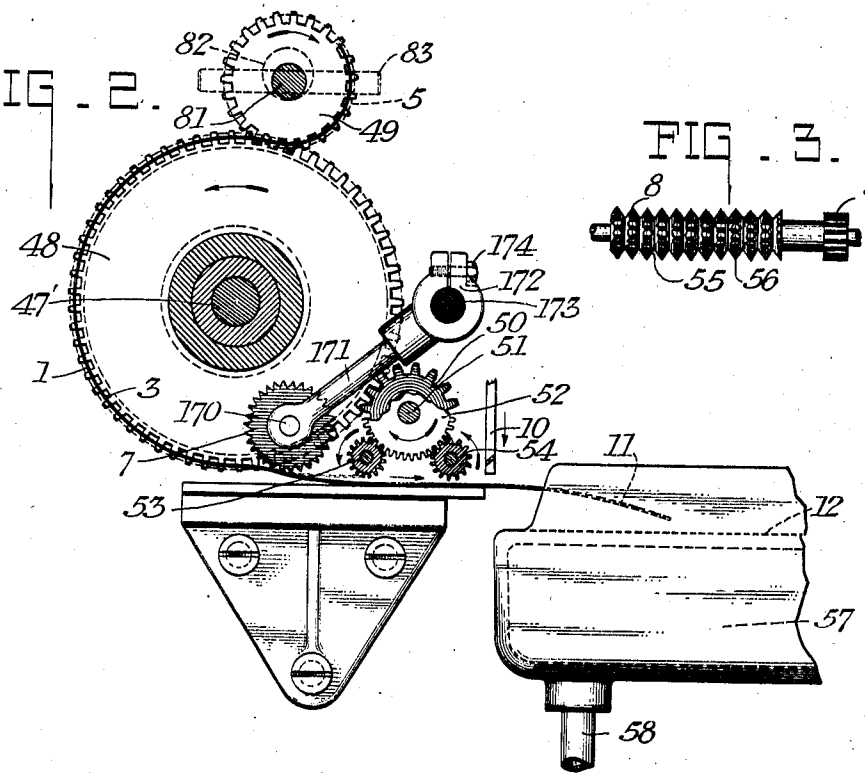
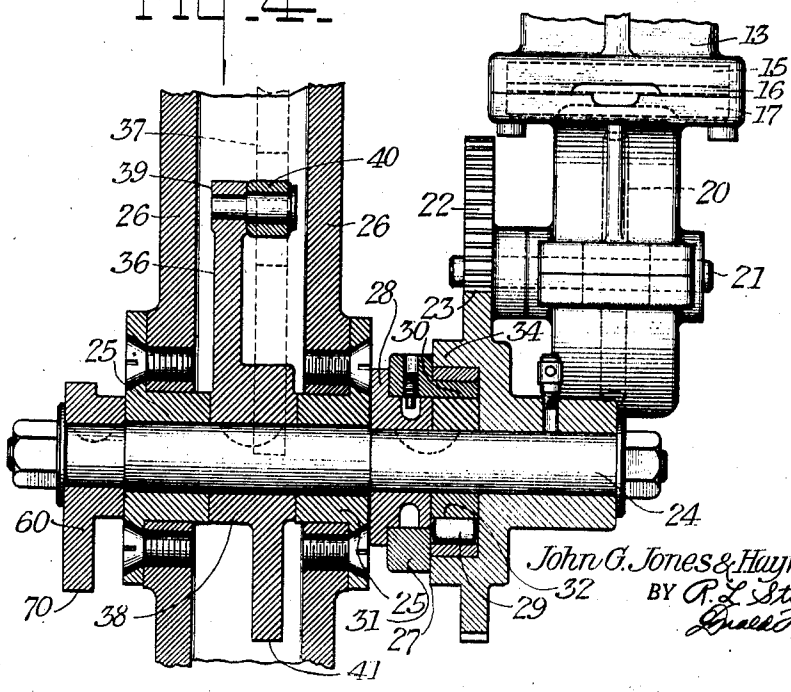


FIG. 3.

FIG. 4.



INVENTORS,
John G. Jones & Haywood G. Dewey,
BY R. L. Stringfield
Duell & Hume
ATTORNEYS.

Jan. 7, 1930. J. G. JONES ET AL 1,742,814

PHOTOGRAPHIC FILM CARTRIDGE PASTER SUPPLYING MACHINE

Filed May 19, 1923 3 Sheets-Sheet 3

FIG. 5.

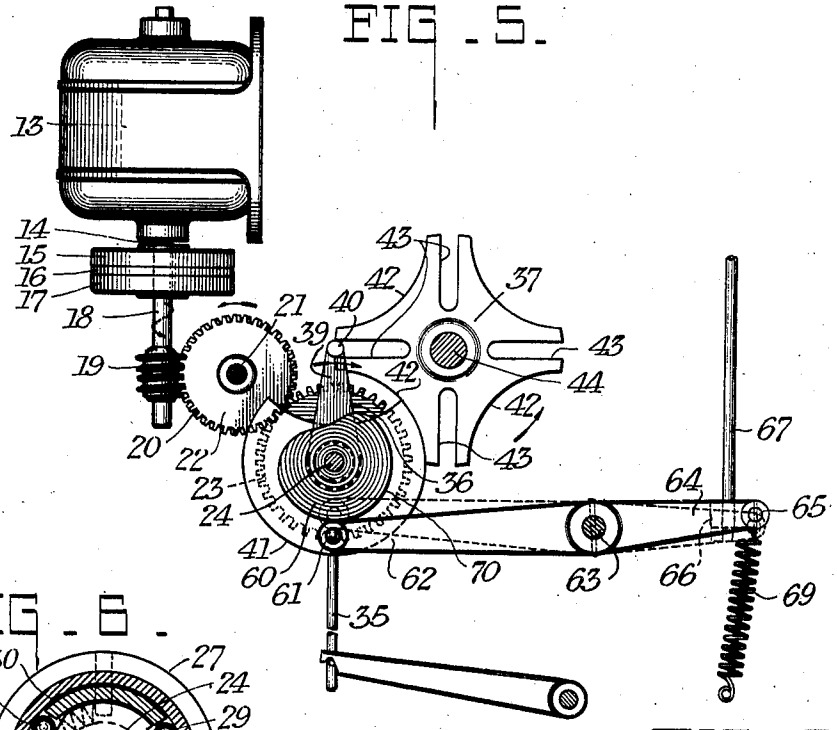


FIG. 6.

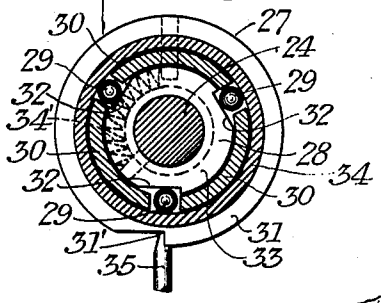


FIG. 9.

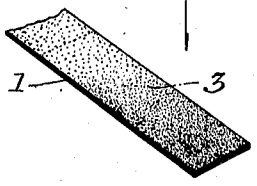


FIG. 7.

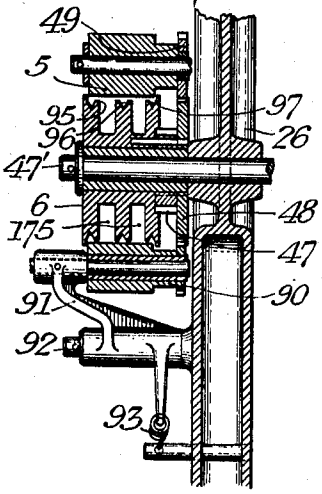
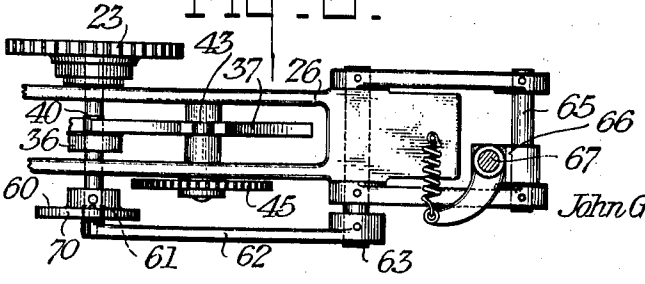


FIG. 8.



INVENTORS,
John G. Jones & Haywood G. Dewey,
BY R. L. Stinchfield
Beals & Seward.
ATTORNEYS.

Patented Jan. 7, 1930 1,742,814

UNITED STATES PATENT OFFICE

JOHN G. JONES AND HAYWOOD G. DEWEY, OF ROCHESTER, NEW YORK, ASSIGNORS TO EASTMAN KODAK COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK

PHOTOGRAPHIC-FILM-CARTRIDGE PASTER-SUPPLYING MACHINE

Application filed May 19, 1923. Serial No. 640,261.

This invention relates to machines for automatically furnishing a paster at the necessary time intervals and conditioning it for use in assembling photographic film cartridges. It has for its object to provide such a machine in which lengths of proper size are intermittently unrolled, cut off and laid upon a hot plate, from which they may be removed manually or mechanically for use in assembling the complete photographic film cartridge. Other objects will appear from the following specification, the novel features being pointed out at the end thereof in the claims.

In the drawings, wherein like reference characters denote like parts throughout:

Fig. 1 is a side elevation of a machine constructed in accordance with and illustrating one form of our invention;

Fig. 2 is an enlarged detail, partly in section, of a portion of the machine;

Fig. 3 is a detail front elevation of a roller;

Fig. 4 is an enlarged section through the main driving shaft;

Fig. 5 is a side elevation of the driving mechanism removed from the housing;

Fig. 6 is a section through an overrunning clutch used in the machine;

Fig. 7 is a section on line 7—7 of Fig. 1, parts being omitted for clearness;

Fig. 8 is a plan view of parts of the machine; and

Fig. 9 is a fragmentary view of a part of the paster band.

This machine delivers a paster, such as may be used for fastening the film to the backing paper in a film cartridge, in condition for use at the proper time.

A roll of adhesive coated tape 1 is carried at the supply station in the holder 2. In this instance the adhesive is of the type frequently used on surgeon's plaster, which becomes tacky or sticky when heated. As shown in Fig. 9 the tape 1 is coated on one side 3 with this material.

The course of the tape is as follows: Passing over guide roller 4, the tape passes about the adjustable roller 5, measuring drum 6 from which it is stripped (when necessary) by wheel 7, under rollers 8 and 9 which guide it to the knife 10 by which a length 11 is severed so as to fall upon the hot plate 12, where it will be conditioned for use by the heat. This plate forms a dispensing table from which the paster is taken by hand or machine for assembling the photographic film cartridge.

Power is derived from motor 13 which rotates shaft 14 and the flexible drive member 15. The leather washer 16 lies between 15 and another member 17 to which shaft 18 is keyed. This connection may be of any desired type which will permit a limited amount of play or movement between the parts thus permitting certain movement or play between shafts 14 and 18. Shaft 18 drives worm 19, gear 20, shaft 21, and gear 22 which meshes with gear 23 mounted to revolve freely upon the main drive shaft 24. Shaft 24 is supported in bearings 25 attached to the casting or main frame 26.

An overruning clutch 27 lies between gear 23 and member 28 keyed to the shaft, this clutch being here shown as of the roller type (Figs. 4 and 6). The rollers 29 are spaced by ring 30 so that the flange 31 controls the position of the rollers relative to the inclined seats 32 of member 33 which is keyed to shaft 24. Spring 34′ normally holds the rollers in position to bind between flange 34 and member 33 so that the gear 23, of which flange 34 is a part, will drive the shaft. But when ring 30 is stopped, as by pin 35 contacting with notch 31′ in ring 31, the rollers are moved against the action of spring 34′ to an inoperative position in which the gear 23 turns idly upon shaft 24. Pin 35 therefore, controls the rotation of this shaft.

The paster advancing mechanism is operated periodically from shaft 24 through the Geneva mechanism 36, 37. Member 36 consists of a hub 38 affixed to shaft 24 from which hub an arm 39 carrying roller 40 extends radially, there being a flange 41 adapted to contact with a side 42 of the Geneva gear 37. Roller 40 successively engages slots 43 to intermittently drive shaft 44 upon which gear 45 is affixed. From gear 45 power is transmitted to drum 6 through gears 46 and 47, the latter driving shaft 47′, to which the drum is

keyed. As best shown in Fig. 2, shaft 47' also carries a gear 48 which drives gear 49 for moving roller 5, and gear 50 which moves shaft 51, gear 52 and pinions 53 and 54; the former actuating roller 8 and the latter roller 9.

Measuring drum 6 may conveniently be made of a series of spaced notched disks 95, 96 and 97 (Fig. 7) so as to present a roughened surface to the tacky side 3 of the paster to prevent sticking. Rollers 8 and 9, as shown in Fig. 3, may conveniently be made of a standard gear bar notched as at 55 with a V-shaped tool, thus making a series of small contacting points 56. At one end a gear 53 or 54 may conveniently be formed by cutting away the metal bar to each side of the portion desired for a gear. This structure makes a rough surfaced roller to which the adhesive side of the paster will not stick.

The paster, or adhesive tape, is periodically advanced a predetermined distance by the above mentioned mechanism and the sticky or tacky side 3 is never in contact with a flat surface against which it may stick. In the present instance the length 11 cut off by knife 10 falls upon the hot plate 12 which is heated by steam entering the hollow chamber 57 being admitted through pipe 58 and having an exit through pipe 59. This type of plate is used for supplying pasters to the semi-automatic film spooling machine such as is shown in pending application of John G. Jones, Patent No. 1,560,167 for semi-automatic film spooling lathe, November 3, 1925, wherein pasters 177, 178, 179 and 181 are used in the film assembling. Of these, 177 and 181 are of the tacky, when heated, type and are supplied to the operator by a machine of the type described in this application from a hot plate 11. The machine for supplying the other two water adhesive pasters is described in our Patent No. 1,609,824, photographic film cartridge sealing machine, December 7, 1926, John G. Jones and Haywood G. Dewey.

In order to cut the paster lengths 11, and to cause knife 10 to function at proper intervals, the following mechanism is used: Shaft 24 carries a cam 60 keyed on the shaft. This cam is contacted by a roller 61 affixed to one end 62 of a lever pivoted at 63 to the frame and having the other end 64 pivoted at 65 to a link 66 to which rod 67 is fastened. Rod 67 moves vertically in bearing 68 causing knife 10 to function at each revolution of cam 60. A spring 69 holds roller 61 against the cam. As will appear from Fig. 5, the concentric portion 70 of the cam holds rod 67 (and with it knife 10) stationary in a raised position while the paster-feeding mechanism functions.

It is, of course, possible to trip the clutch causing the machine to function through link 35 manually or by foot powder with a suitable treadle, shown in broken lines at 80, but we prefer to connect this rod to parts of the semi-automatic spooling lathe or to parts of the automatic spooling lathe included in other applications above mentioned.

In order to facilitate threading the paster strip 1 through the machine, roller 5, and with it gear 49 are mounted upon shaft 81 which is eccentrically carried in an enlarged bearing 82, and which is equipped with a handle 83. By turning the handle 83 the gear teeth of 49 leave the teeth of gear 48 and roller 5 is spaced from measuring drum 6 sufficiently to pass the paster strip 1 in edgewise between these parts. A spring 84 pressing on pin 95 tends to retain shaft 81 in its operative position.

The strip is then looped about measuring drum 6, and roller 90; carried by lever 91 pivoted at 92 to the frame and normally held by spring 93 in position to press roller 90 toward the measuring drum; is pulled from measuring drum 6 so the paster strip may be entered edgewise between these parts. Then by setting the machine in motion rollers 8 and 9 will move the tape through its proper course to knife 10.

Wheel 7 is preferably made with a notched or otherwise pointed periphery so that it may press against the tacky side of the paster and not present a surface to which the adhesive will stick. As best shown in Fig. 2, this wheel is carried upon a shaft 170 carried by arm 171 which is equipped with an adjustment collar 172 which surrounds shaft 173 affixed to the main frame. By adjusting screw 174 the wheel can be moved to or from shaft 47' about which the measuring drum 6 rotates. This wheel is mounted between a pair of the wheel-like members of which the drum is made (Fig. 7) in a space 175.

It is obvious that numerous embodiments of our invention are possible and we contemplate as included therein all such modifications and equivalents as fall within the terms of the appended claims.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a machine for use in assembling film cartridges, a supply mechanism adapted to contain a roll of paster material, a dispensing mechanism, and means for moving the paster material from one mechanism to another including a constantly rotated source of power, an overrunning clutch associated therewith, a trip for said clutch permitting a part of the mechanism to move through a cycle of movement, connections between the paster moving means and the source of power including a Geneva movement adapted to function once for each cycle of movement and a knife adapted to be operated once each time the mechanism operating through the Geneva movement is at rest, whereby a length of

paster material may be automatically delivered at the dispensing mechanism.

2. In a machine for use in assembling film cartridges, a supply mechanism adapted to contain a roll of paster material, a dispensing mechanism, and means for moving the paster material from the supply to the dispensing mechanism including a constantly moving power driven member, a second power driven member connected to the first member through an overrunning clutch, a roller carried by the second member adapted to drive a Geneva gear, a plurality of rotary members connected to the Geneva gear to intermittently advance the paster band, a knife connected to one of said power driven members adapted to sever a section of the paster material while the material is at rest between the intermittent movements, and a clutch control member by which the movement of the second power driven element may be controlled.

Signed at Rochester, New York, this 14th day of May, 1923.

JOHN G. JONES.
HAYWOOD G. DEWEY.