No. 849,076. PATENTED APR. 2, 1907.

F. J. MATHEIN.

SPOOL FOR PHOTOGRAPHIC FILM CARTRIDGES.

APPLICATION FILED SEPT. 1, 1906.

Fig. 1.

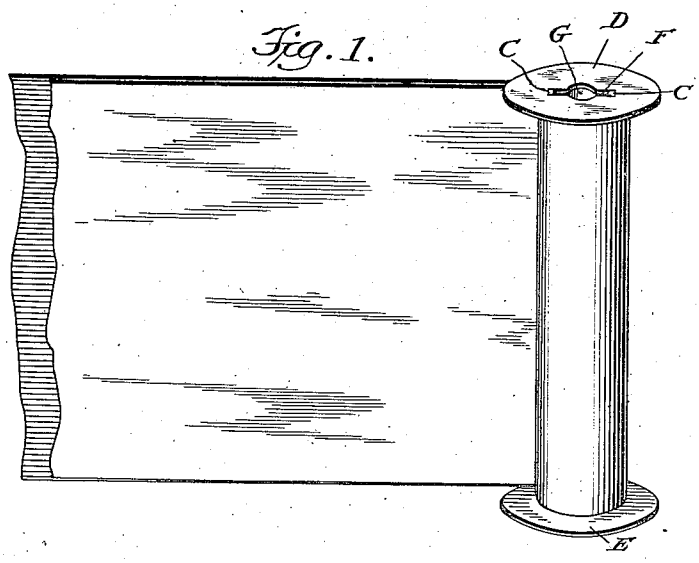


Fig. 2.

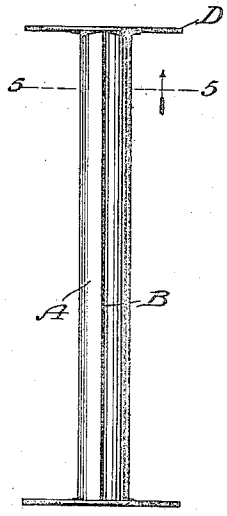


Fig. 3.

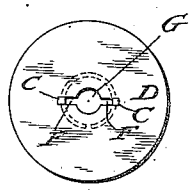


Fig. 4.

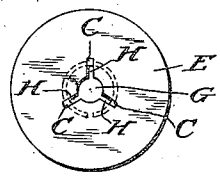


Fig. 5.

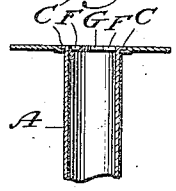
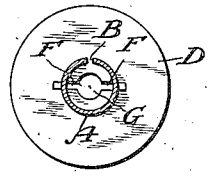


Fig. 6.



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UNITED STATES PATENT OFFICE.

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SPOOL FOR PHOTOGRAPHIC-FILM CARTRIDGES.

No. 849,076. Specification of Letters Patent. Patented April 2, 1907.

Application filed September 1, 1906. Serial No. 333,019.

To all whom it may concern:

Be it known that I, FRANK JOSEF MATHEIN, a citizen of the United States, and a resident in the city and county of New Haven, State of Connecticut, have invented certain new and useful Improvements in Spools for Photographic-Film Cartridges, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 illustrates an elevation of the invention, the film and protecting opaque material being in place upon the spool. Fig. 2 illustrates an elevation of the invention, the film and opaque material being removed. Fig. 3 illustrates a plan view of one of the flanges of the spool. Fig. 4 illustrates a plan view of the other flange of the spool. Fig. 5 illustrates a longitudinal sectional view taken through the metallic spool center and through the medial line of the flange illustrated in Fig. 3. Fig. 6 illustrates an endwise sectional view of the invention, the spool center having been cross-cut and presented toward the observer and showing the form of flange illustrated in Fig. 3.

Cartridge-spools as heretofore made have usually had wood centers. These are objectional for a number of reasons well known to the manufacturers thereof as well as users, which need not be detailed here, but will be referred to in the recitation of advantages realized through this invention found near the end of this specification.

Referring to the drawings, A represents the spool center. It is made of a flat piece of suitable sheet metal rolled or folded into substantially tubular form, leaving, however, a narrow slit B between the adjacent edges, through which the end of the usual strip of opaque material of the cartridge may be passed, which will be retained or stored within the hollow interior of the center piece. The ends of the strip are provided with projecting parts C for a purpose to be described.

D is one of the heads or flanges of the spool, and E is the other flange. The flange D has a slot F cut through it, the central part of which is enlarged to make a circular opening G to receive the spindle of the winding-key, which is used in some cameras and roll-holders. The flange E (seen in Fig. 4) has a three-part slot H cut through it and the circular opening G the same as before and for the same purpose.

In assembling the parts the projections C from the ends of the spool-center A are entered within the slots F and H, respectively, close to their outer ends, and are then bent over outwardly and by suitable mechanical means are crimped down hard upon the surface of the flanges at the ends of the slots, partly compressing the metal, if desired, thus measurably reducing its thickness and securely fastening all the parts together. Of course the number and location of the projections on the ends of the spool center piece will conform to the construction of the slot in the flanges with which they are to engage.

Among the advantages secured by the invention are these:

The structure as a whole is uninfluenced by atmospheric conditions. Consequently there is never any difficulty in inserting and removing the winding device.

The two central holes in the flanges are always in alinement with each other, there being no wood present to warp and twist.

The slots in the flange with which the winding-key engages are always in registration with the devices on the winding-key which fit into them, and they are always open full size, because being cut in metal nothing can distort or close them up, as is frequently the case when metallic flanges are forced on the ends of wooden spool centers, which latter are necessarily small and much cut away in making the recesses for the winding device.

The flanges, owing to their rigid metallic connection with the spool center, permanently retain their rectangular position relative to it.

The slot in the hollow spool center through which the end of the opaque material of the cartridge passes for reception and storage within the hollow interior is always parallel to the axis of the spool center, and the edges of the slot are sufficiently separated to permit of the ready insertion of the end of the opaque material.

The spool is adapted to use with any of the forms of cameras and roll-holders now made, since one of its heads or flanges has a straight slot adapted to use with the straight-bar winding device on the winding-key. The other flange has the three openings adapted

to receive the three pins used on some winding-keys, and both flanges have the central opening G, together with the hollow spool center, thus providing for the passage through the spool of a spindle, if that be present as part of the winding apparatus.

It will be seen by those who are familiar with this art that the essentials of the invention may be employed in a variety of forms. That shown by me is one embodiment only. I therefore do not limit myself to the details specifically illustrated and described, except as the scope of the claims requires.

I claim—

1. A spool for film-cartridges embodying two sheet-metal flanges and a hollow sheet-metal center piece to which both of the flanges are attached, one of the flanges having a centrally-located opening for the reception of the winding device of the winding-key.

2. A spool for film-cartridges embodying two metallic flanges and a hollow sheet-metal center piece provided with longitudinally-extending parts which interlock with and attach it to both of the flanges, one of the flanges having a centrally-located opening for the reception of the winding device of the winding-key, the adjoining edges of the center piece being separated to produce a longitudinally-extending slit, which connects its outside with its hollow inside through which slit the end of the opaque material of the cartridge may be passed and stored within the hollow interior.

3. A spool for film-cartridges embodying two metallic flanges each having openings in their centers adapted to receive the bearings for the support and rotation of the spool, a hollow sheet-metal center piece provided with longitudinally-projecting parts which engage in the openings in the flanges and attach both of them to it, the adjoining edges of the center piece being separated to produce a longitudinally-extending slit through which the end of the opaque material of the cartridge may be passed and stored within the hollow interior.

4. A spool for film-cartridges embodying two sheet-metal flanges each provided with centrally-located and radially-extending openings, a hollow metallic center piece provided with longitudinally-extending parts which engage in the extremes of the radially-extending openings in the flanges leaving their central parts open for the reception of the bearings and winding device for the spool, the hollow center piece having a longitudinally-extending slit through which the end of the opaque material of the cartridge may be passed and received within its hollow interior.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK JOSEF MATHEIN.

Witnesses:

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R. W. SMITH.