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353,962

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Complete Accepted: Aug. 6, 1931.

COMPLETE SPECIFICATION.

Improvements in or relating to Feeding Apparatus for Kinematograph Film.

We, TECHNICAL MOTION PICTURE CORPORATION, a corporation of Maine, United States of America, of 110, Brookline Avenue, Boston, Massachusetts, United States of America, assignees of JOHN FREDERICK KIENNINGER, a citizen of the United States of America, of 110, Brookline Avenue, Boston, Massachusetts, aforesaid, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

In the art of cinematography it is frequently desirable to feed a film continuously through a treating apparatus. For example, in printing a blank film by imbibition from a dye-soaked matrix film it is necessary to hold the films in intimate contact for several minutes to permit the blank film to imbibe the dye from the matrix. Prior to this invention the best way of obtaining this result in a continuous machine has involved a long approximately straight film path as disclosed in the patent to Comstock, 307,659, May, 14, 1928. However, this arrangement requires either a long machine or a slow rate of film travel. The principal object of the present invention, therefore, is to obtain a feeding arrangement which has the advantages of the aforesaid type of machine and at the same time reduce the length of the machine and/or increase the rate of film travel so that more film may be processed in a given length of time.

As in the aforesaid patent, the present invention preferably utilizes an endless belt for conducting the film along a predetermined path and, especially, for imbibition uses, the belt is preferably provided with registering pins for interengagement with the sprocket holes of the film. The belt travels in a plurality of loops and at least one wheel is provided in each end of each loop for supporting and guiding the belt. The axes of certain of the wheels are inclined transversely so that each wheel at one end is longitudinally aligned with the periphery of a wheel at the other end of the loops. Thus

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the stretches of belt and film bridging aligned peripheries at opposite ends of the loops, while they may be twisted through an angle less than ninety degrees due to the aforesaid inclination of one or more of the wheels, are not subjected to unequal tension transversely of the belt and films.

For the purpose of illustrating the genus of the invention, a typical embodiment is shown in the accompanying drawings in which:

Fig. 1 is a diagrammatic plan view;

Fig. 2 is a diagrammatic side elevation; and

Fig. 3 is an end elevation of the two inclined wheels.

The particular embodiment of the invention chosen for the purpose of illustration comprises two wheels P and P¹ arranged in axial alignment at one end of the loops and two wheels I and I¹ oppositely inclined at the other end of the loops with the two wheels I and I¹ offset with respect to each other longitudinally of the loops. The upper side of wheel I¹ is in tangential alignment with the upper side of wheel P, the lower side of wheel P is in tangential alignment with the lower side of wheel I, the upper side of wheel I is in tangential alignment with the upper side of wheel P¹ and the lower side of wheel P¹ is in tangential alignment with the lower side of wheel I¹. Thus the endless belt B or the film F or M feeds continuously around the wheels, the direction of movement of the four stretches of belt being indicated by arrows, the arrows associated with the upper stretches being solid and the arrows associated with the lower stretches being broken. As will be evident from Fig. 1 the stretches of belt extending from wheel I¹ to the opposite ends of the loops clear the wheel I with a wide margin of spacing due to the opposite inclination of the two wheels I and I¹. In using this apparatus for imbibition purposes, matrix and blank films may be fed onto the belt as indicated at M and F and, after having traversed the major portion of both loops, may be guided to take-up reels MR and

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- FR. Inasmuch as all of the details of construction of apparatus of this character are disclosed in the aforesaid patent further description is unnecessary for a full understanding of the present invention. 5
- It will, of course, be understood that many modifications may be made within the scope of the appended claims. For example instead of having only two loops any desired number may be employed as for example by duplicating the wheels P and I and increasing the size and inclination of the wheel, I¹. 10
- Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is:— 15
1. Cinematographic apparatus of the type in which film is fed along a series of loops over opposed sets of film wheels in which the peripheries of the wheels of one set tangentially align with the peripheries of the wheels of another set 20
- characterized in that the wheels in each set are parallel and that the wheels of one set are inclined to the planes of those of the other set at such an angle that the periphery of each inclined wheel is in tangential alignment with two wheels of the other set, and that additional wheel means are so inclined that opposite peripheral points thereof are in tangential alignment with the outermost wheels of the first set. 30
2. Cinematographic apparatus according to Claim 1 further characterized in that the wheels of one set are coaxial. 35
3. Cinematographic apparatus according to either of the preceding claims characterized by an endless belt which may be fed continuously along said loops substantially without unequal tension transversely of the belt. 40
- Dated the 9th day of May, 1930.
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 London & Lancashire House,
 5, Chancery Lane, London, W.C.2,
 Chartered Patent Agents. 45

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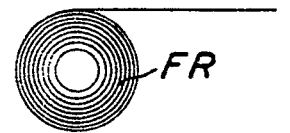
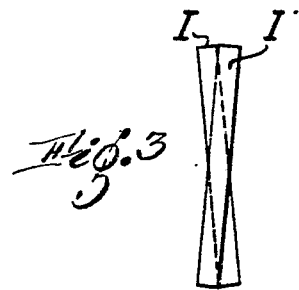
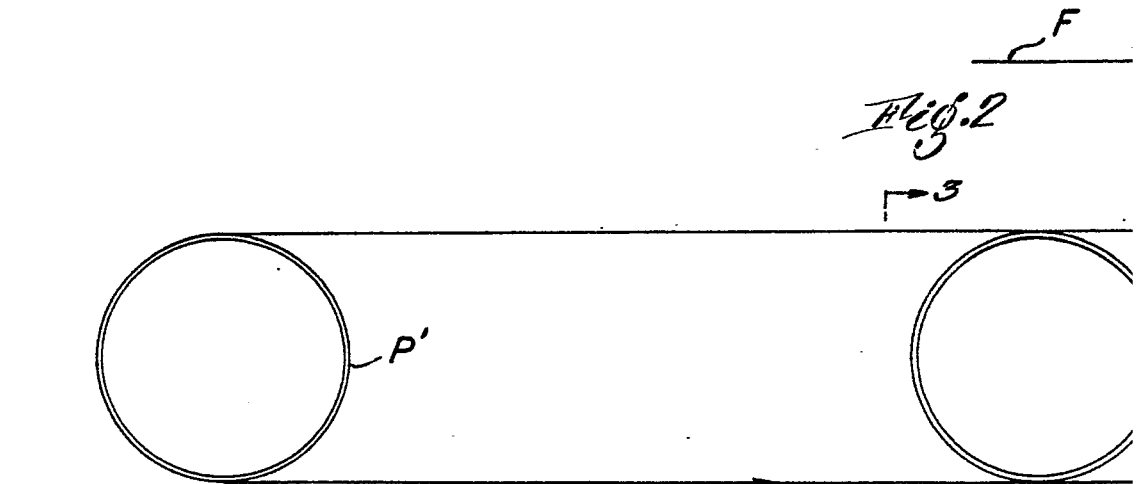
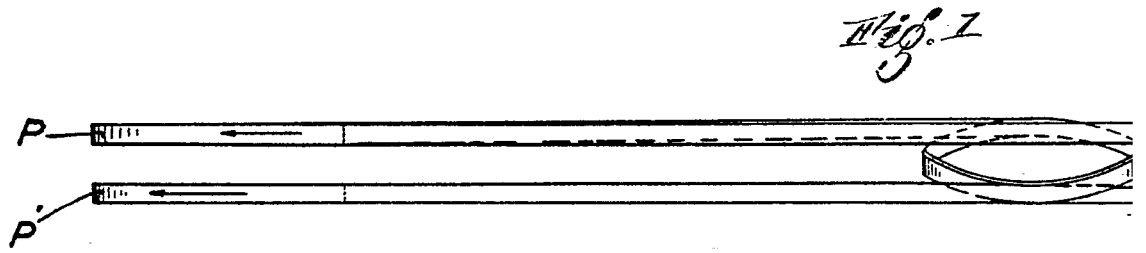


Fig. 1

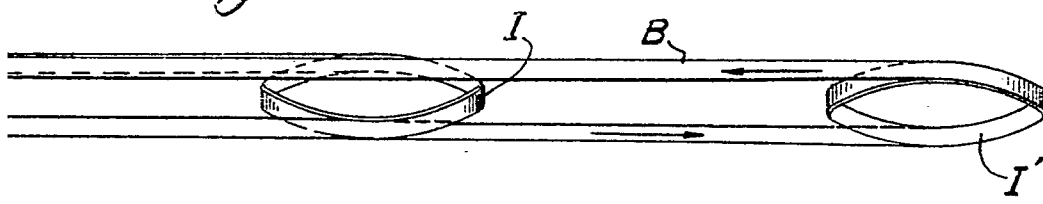
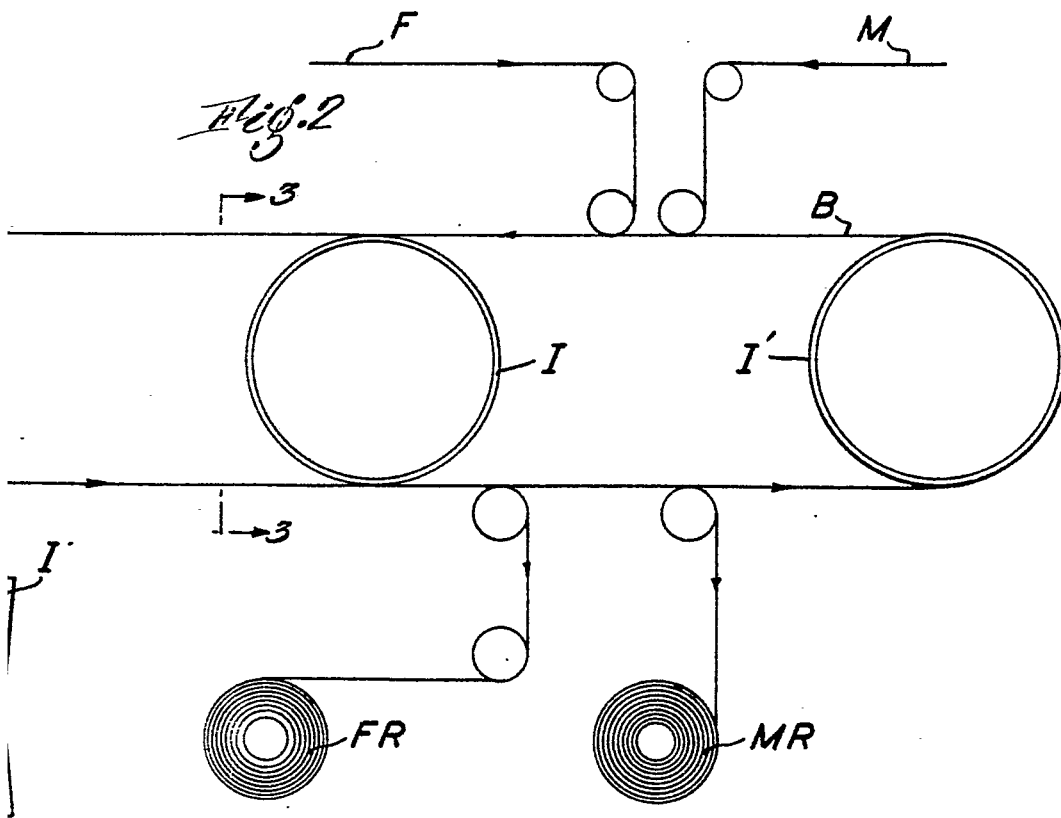
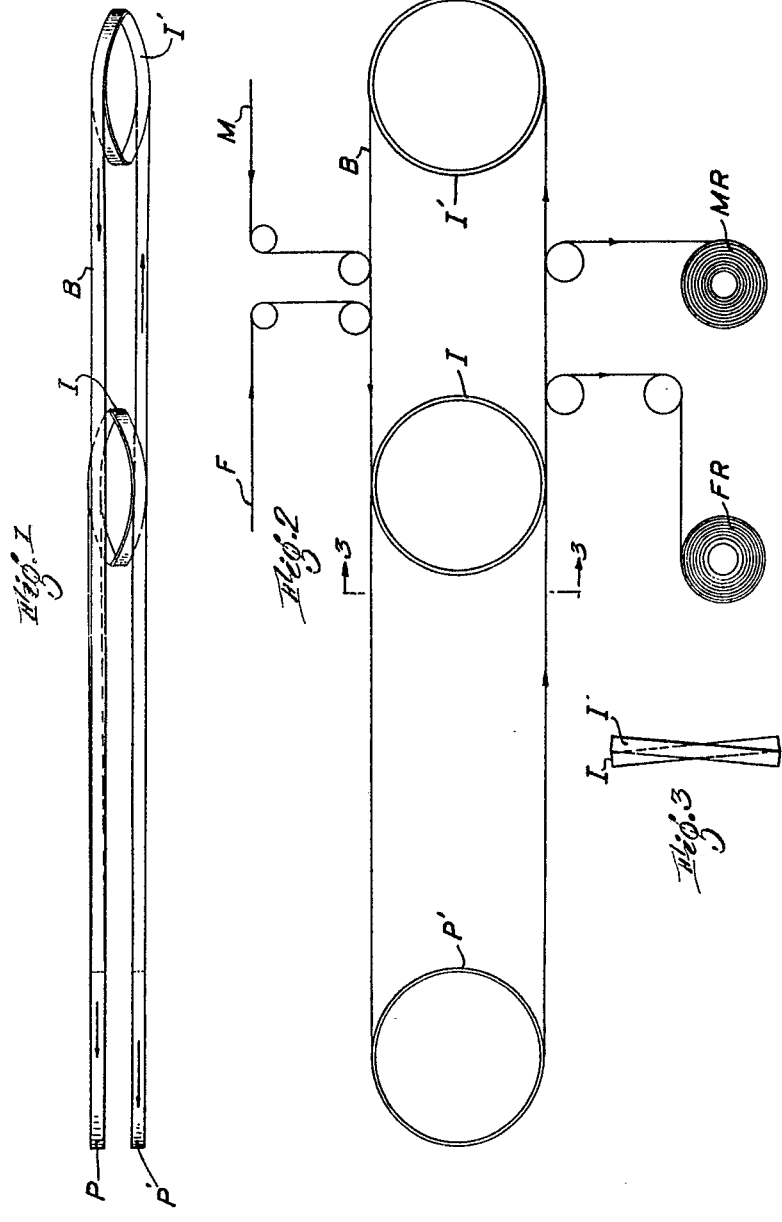


Fig. 2





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