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MECHANISM FOR DRIVING A PART AT VARIABLE SPEED.

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1,046,504.

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Fig. 1.

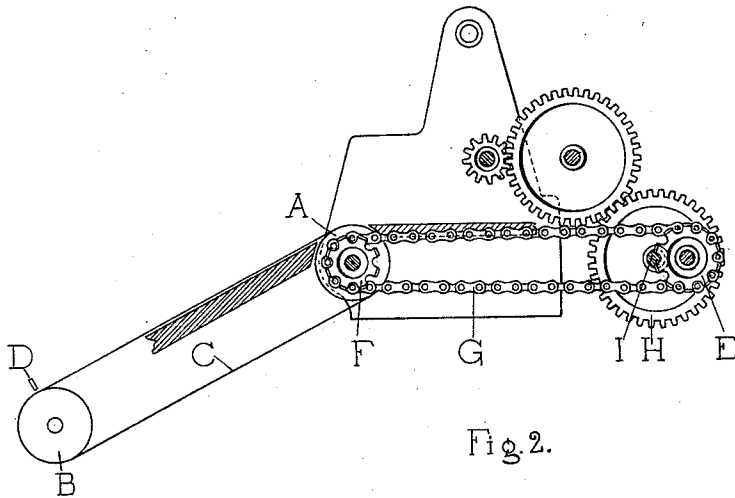
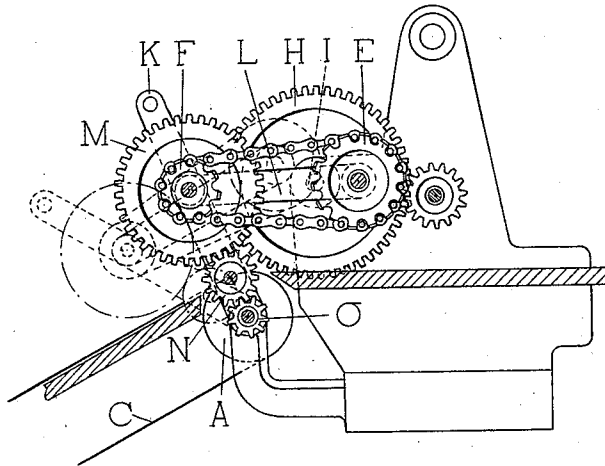


Fig. 2.



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UNITED STATES PATENT OFFICE.

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MECHANISM FOR DRIVING A PART AT VARIABLE SPEED.

1,046,504.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORG SPIESS, a citizen of the Empire of Germany, and a resident of Leipzig-Anger-Crottendorf, Germany, have invented certain new and useful Improvements in Mechanism for Driving a Part at Variable Speed, of which the following is a specification.

This invention has reference to improvements in mechanism for driving a part at a variable speed whereby during each revolution of a certain shaft a uniformly retarded motion of said part is effected until it comes to a standstill for a moment and then acquires a uniformly accelerated motion. This mechanism is particularly adapted for a novel driving device for delivery apparatus in sheet feeders.

The sheets which are singly carried forward by the feed mechanism are guided on a transport or delivery apparatus for the purpose of being further worked up. The rapid forward movement of the sheets by the delivery apparatus causes said sheets to abut with great speed against the stop which is located at the end of same. The sheets thus will stow or creep upon the stop.

In order to avoid the described deficiencies, the delivery apparatus receives a retarded motion. This is accomplished according to the present invention by driving the delivery apparatus by means of a chain operated device whose driving sprocket wheel is eccentrically mounted on the driving wheel so that its pitch circle passes approximately through the center of the shaft of said driving wheel.

The invention is illustrated in the accompanying drawing in which:

Figure 1 represents diagrammatically an arrangement of a driving device embodying in desirable form the present improvements, and Fig. 2 shows a modified form of same.

The delivery apparatus consists of the driving rolls A, B which are adapted to receive a transporting apron C. The single sheets conducted onto said apron shall finally rest against the stop D. For driving the rolls A, a chain operated device is provided consisting of the sprocket wheels E, F and the sprocket chain G. The driving sprocket wheel E is eccentrically mounted upon the driving tooth wheel H or upon an arm secured to the shaft I of said tooth wheel H. In accordance with the present invention the sprocket wheel E is eccen-

trically attached to the driving wheel H so that its pitch circle goes approximately through the axis of the shaft I of said driving wheel. By virtue of this arrangement I attain that with each revolution of the shaft I the chain operated mechanism imparts to the delivery apparatus first, a uniformly retarded motion until it comes to a standstill for a moment and then it imparts a uniformly accelerated motion. This retardation and acceleration in the movement of the delivery apparatus is effected by the eccentrically mounted sprocket wheel E. The sheet conducted onto and over the driving roll A and the apron C is accordingly transported with gradually retarded speed toward the stop D and reaches the latter at the time when the apron is practically at rest for a moment. In this way the desired exact location of each single transported sheet is assured.

A modified form of device represented in Fig. 2 shows the driven sprocket wheel F secured to a movable lever K and both sprocket wheels are connected by means of an arm L movably connected thereto. By means of this arrangement the sprocket chain G may remain uniformly tensioned during the entire eccentric rotary motion of the sprocket wheel E as may be seen from its position shown in dotted lines in Fig. 2. The rotary motion of the chain operated mechanism in this modified form is transmitted from the shaft of the sprocket wheel F to the rolls of the apron by means of the tooth wheels M, N and O.

I claim as my invention:

1. Mechanism for driving intermittingly a part at variable speed, comprising a shaft with a driving wheel, two sprocket wheels, and a chain for connecting said sprockets, one sprocket wheel being eccentrically mounted on said driving wheel so that its pitch circle passes approximately through the axis of the shaft of the same whereby during each revolution a uniformly retarded and accelerated motion is imparted to the sprocket chain and thus to the second sprocket and the mechanism operated thereby.

2. Mechanism for driving intermittingly a part at variable speed, comprising a shaft with a driving wheel, two sprocket wheels, and a chain connecting the said sprockets, one sprocket being eccentrically attached to said driving wheel so that its pitch circle

passes approximately through the axis of the shaft of the same whereby during each revolution a uniformly retarded and accelerated motion is imparted to the sprocket chain and thus to the second sprocket and the mechanism operated thereby leaving the latter practically at rest for a moment during each cycle of operations.

3. In driving mechanism for driving in-
10 termittingly a part at variable speed, a shaft with a driving wheel, a sprocket wheel eccentrically attached to said driving wheel so that its pitch circle passes approximately through the axis of the shaft of the same,

a second sprocket wheel, and a sprocket 15 chain connecting both so that upon each revolution of the driving wheel a uniformly retarded and accelerated motion is imparted to the sprocket chain and thus to the second sprocket and the mechanism operated 20 thereby leaving the latter at rest for a moment during each cycle of operations.

Signed at Leipzig, Germany, this 5th day of December 1910.

GEORG SPIESS.

Witnesses:

RUDOLPH FRICKE,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."