A. K. TERNSTEDT.

AUTOMATIC SLACK TAKE-UP FOR CHAINS.

APPLICATION FILED JAN. 25, 1913.

1,208,234. Patented Dec. 12, 1916.

Fig. 1.

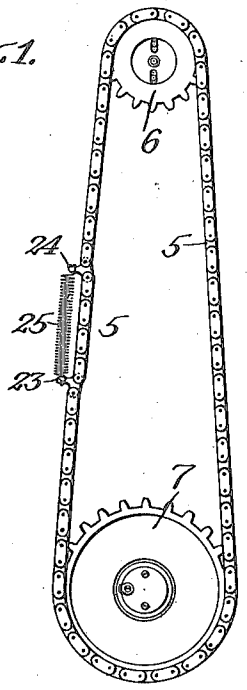


Fig. 2.

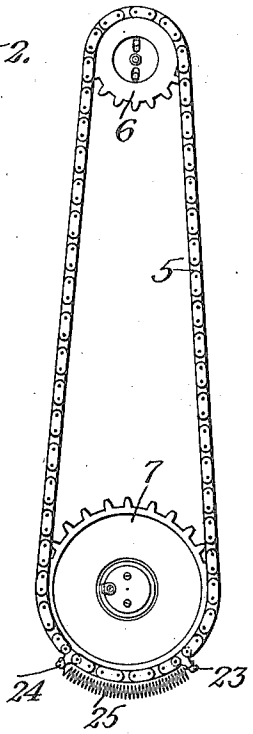
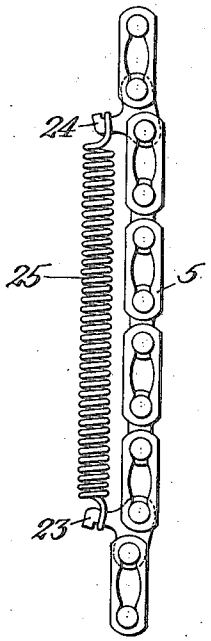


Fig. 3.



WITNESSES.

F. B. Townsend.

K. M. McMahon.

INVENTOR

Alvar K. Ternstedt.

BY

Townsend & Decker

ATTORNEYS

UNITED STATES PATENT OFFICE.

ALVAR K. TERNSTEDT, OF NEW YORK, N. Y., ASSIGNOR TO PERFECT WINDOW REGULATOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF MAINE.

AUTOMATIC SLACK TAKE-UP FOR CHAINS.

1,208,234. Specification of Letters Patent. Patented Dec. 12, 1916.

Original application filed December 19, 1911, Serial No. 666,759. Divided and this application filed January 25, 1913. Serial No. 744,116.

To all whom it may concern:

Be it known that I, ALVAR K. TERNSTEDT, a subject of the King of Sweden, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Automatic Slack Take-Ups for Chains, of which the following is a specification.

My present invention relates to means for taking up slack in driving chains and has for its object to provide simple and effective means for automatically taking up the slack and stretch in sprocket chains.

The particular merit attached to the invention is that it at all times keeps the chain taut without the necessity of changing the position of the sprockets over which it passes or providing other means for manually taking up the slack which exists or may develop under usage. It also permits the chain to stretch without subjecting it to extra tension. By thus providing means for automatically keeping the chain taut at all times any rattle of the chain against the sides of a casing in which it may be located is avoided.

The invention is particularly useful when employed with the chain drives usually used in mechanism for raising and lowering windows but it will be understood that the invention is of general application and not limited to use with window operating apparatus or apparatus of any particular type. Its usefulness and efficiency is particularly noticeable when employed with the chain drives of window raising and lowering mechanism and particularly when used in moving vehicles as the driving mechanism is mounted in a small thin space in which, if the chain is the least particle loose, the chain will strike against the side of the casing and make the use of such mechanism annoying, if not prohibitive, in moving vehicles such as automobiles, boats, &c.

By utilizing this invention the slack in the chain is at all times automatically taken up as the chain stretches and at the same time the slack take-up device in no way interferes with the efficient driving of the chain or with its smoothness in passing over any of the sprockets it may be compelled to pass over.

To these ends the invention consists in the improved automatic take-up for driving chains hereinafter more particularly described and then specified in the claims.

In the accompanying drawings, Figure 1 illustrates a side elevation of a chain drive having my invention applied thereto. Fig. 2 is a similar view showing the chain in a different position with relation to the sprockets. Fig. 3 is an enlarged view of that portion of the chain to which the invention is applied.

The uses to which the invention may be put being universal it is deemed necessary to illustrate it merely as applied to an ordinary sprocket chain passing over driving and driven sprocket wheels, the chain being used in any connection and for any of the uses to which they are or might be applied.

5 indicates a driving chain of any suitable construction and preferably consisting of a plurality of links pivoted together and so formed as to be engaged by and pass over the teeth of the sprocket wheels 6 and 7. Either one of the sprockets may be the driving sprocket; in the drawings the sprocket 6 imparts the power to the chain, and power may be applied thereto in any manner.

Two of the chain links or the connectors for the links located at any desired distance apart are provided with hooks or fingers 23 and 24. A helical tension spring 25 is secured at each end to the hooks 23 and 24, so that any slack which might exist in the chain is taken up by the spring drawing the links together, the links between the hooks or fingers 23 and 24 merely buckling slightly and the chain is thereby always maintained in a uniform taut condition.

It will be obvious, as illustrated in Fig. 2, that the spring take-up in no manner interferes with the operation of the chain in passing over the teeth of either sprocket.

It will be understood that various modifications in the manner of applying and carrying out the invention may be resorted to without departing from the spirit thereof as expressed in the appended claims.

This application is a division of my prior application for window operating device filed Dec. 19, 1911, Serial No. 666,759.

What I claim as my invention is:

1. A driving chain comprising links pivotally secured to each other, hooks secured to two of said links and a spring connecting

said hooks for taking up the slack in said chain.

2. A driving chain comprising links pivotally secured together, hooks projecting from two of said links remote from each other and a tension spring having its ends connected to said hooks to automatically take up the slack in said chain.

3. A driving chain comprising links through which the teeth of the sprockets pass, supplemental links or connectors pivotally secured to the links, hooks projecting from two of said connectors and a tension spring having its ends secured to said hooks as and for the purpose described.

4. A sprocket driving chain comprising links pivotally connected together, hooks laterally projecting from said chain remote from each other and off-set from the link pivots and a spring connected to the ends of said hooks whereby the links between the hooks are maintained in a taut condition.

Signed at New York in the county of New York and State of New York this 24th day of January, A. D. 1913.

ALVAR K. TERNSTEDT.

Witnesses:
F. B. TOWNSEND,
K. M. MCMAHON.