A. W. STRAUSE.

COPY HOLDER.

APPLICATION FILED MAY 2, 1914.

1,170,941. Patented Feb. 8, 1916.

Fig. 1.

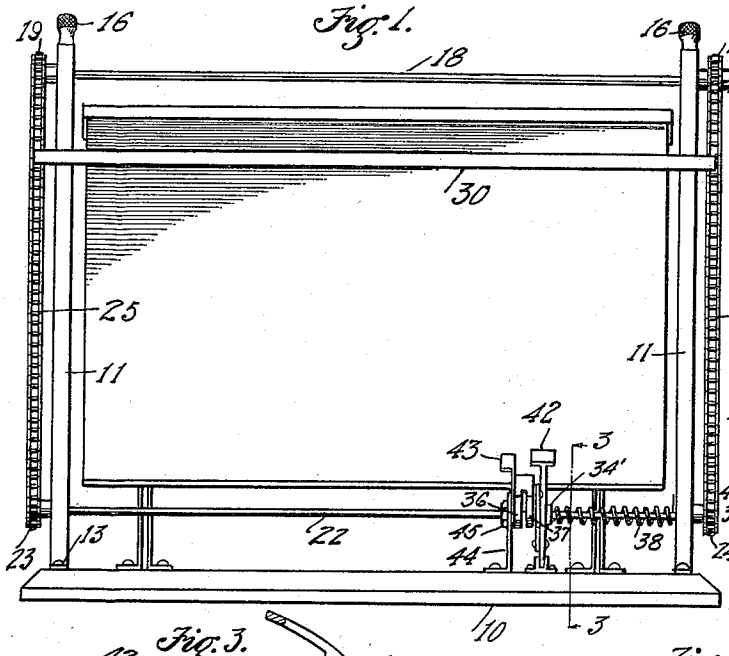


Fig. 2.

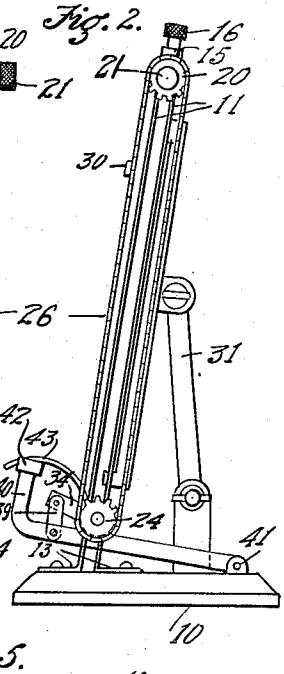


Fig. 3.

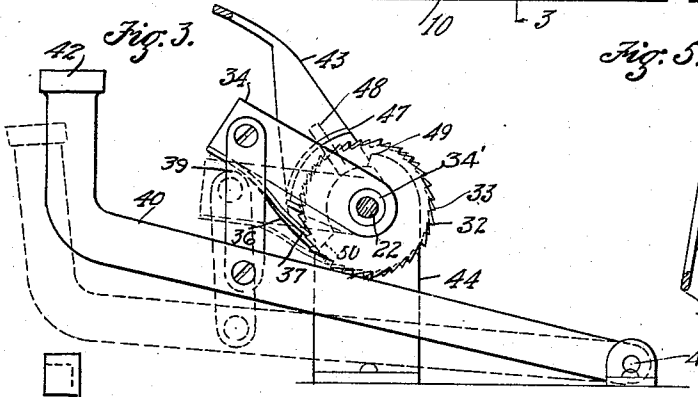


Fig. 5.

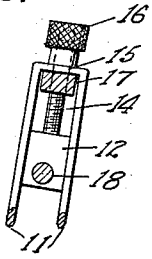


Fig. 4.

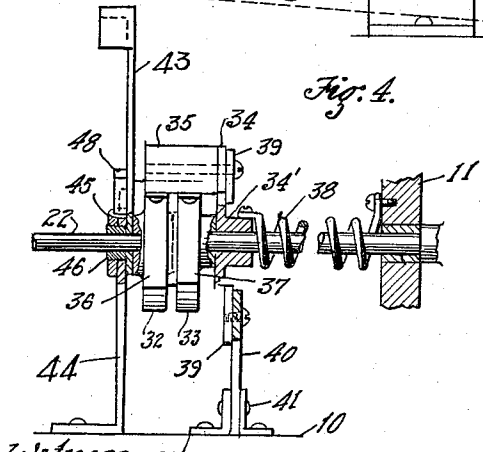


Fig. 6.

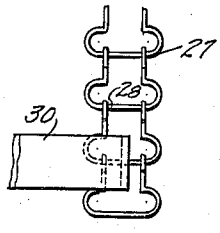
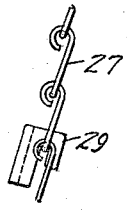


Fig. 7.



Witnesses:
James M. Atkeir
Marie Battey

Inventor:
Aaron W. Strause
By Harad Strause
Attys.

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

AARON W. STRAUSE, OF BERKELEY, CALIFORNIA.

COPY-HOLDER.

1,170,941. Specification of Letters Patent. Patented Feb. 8, 1916.

Original application filed February 24, 1913, Serial No. 750,180. Divided and this application filed May 2, 1914. Serial No. 835,869.

To all whom it may concern:

Be it known that I, AARON W. STRAUSE, a citizen of the United States, residing at Berkeley, in the county of Sonoma, State of California, have invented new and useful Improvements in Copy-Holders, of which the following is a specification.

This invention relates to a copy holder, and particularly pertains to a line spacing mechanism therefor, such as set forth in my copending application, Serial Number 750,180, filed February 24, 1913, and of which this application is a division.

It is the object of this invention to provide a line spacing mechanism for copy holders having a transverse bar indicating the lines of the copy, which is so constructed that the bar can be advanced intermittently at adjusted lengths of travel, and which will be automatically disengaged from its conveying mechanism on reaching the bottom of a page, and which may be readily reattached to the conveying mechanism at the top of the page to obviate reversing the conveying mechanism.

A further object is to provide a simple and effective means for advancing the bar step by step adapted to be operated by the depression of a key.

A further object is to provide a simple means for adjusting the length of the step movement of the reading bar so as to adapt it to various spaced lines and which adjustment can be quickly effected.

The invention primarily resides in a pair of endless chains, a reading bar detachably supported at its ends on said chains for rotating such chains simultaneously in a step by step movement to advance the reading bar intermittently from the top of a page of copy to the bottom thereof, means for adjusting the length of the step movements of the chains, and means for automatically disconnecting the bar from the chains when it reaches the bottom of the page.

The invention is illustrated in the accompanying drawing, in which:

Figure 1 is a front elevation of the holder and line spacing mechanism. Fig. 2 is an end elevation of same. Fig. 3 is an enlarged detail section on the line 3—3 of Fig. 1 as seen in the direction indicated by the arrows, illustrating the chain actuating mechanism, and showing the adjustment whereby the length of each impulse of the chain is regulated. Fig. 4 is a detail in front elevation of the chain actuating mechanism, with parts broken away. Fig. 5 is an enlarged detail of the chain tension adjusting device. Fig. 6 is an enlarged detail of the chain, showing the manner of attaching the reading bar thereto. Fig. 7 is a side elevation of same.

More specifically, 10 indicates the base of the device on which a pair of spaced inclined frames 11 are mounted. Each of the frames 11 is formed of parallel strips of strap metal connected together at the top and spaced apart to form a guide-way for a sliding block 12; the lower ends of the metal straps being bent outwardly to form feet 13 which are rigidly secured to the base 10. The block 12 has a threaded stem 14 which passes upward through the connecting portion 15 of the frame and is adapted to receive a knurled cap nut 16, which is adapted to be screwed on the stem 14 to bear against the upper face of the frame connecting portion 15; a nut 17 being screwed on the stem 14 to engage the underside of the frame connecting portion 15 to secure the block 12 against movement.

The blocks 12 form bearings for a horizontally extending shaft 18 which extends between the frames 11 and is fitted with sprocket wheels 19 and 20 at its outer ends adjacent the bearing blocks 12; a knurled head 21 being formed on one end of the shaft 18 by which it may be rotated if desired. Supported in suitable bearings adjacent the lower ends of the frames 11 is a second drive shaft 22 extending parallel with the shaft 18 and having sprocket wheels 23 and 24 on its outer ends. A chain 25 passes around and connects the sprocket wheels 19 and 23 and a corresponding chain 26 passes around and connects the sprocket wheels 20 and 24, which chains are formed with links 27 having horizontally extending bars 28, as particularly shown in Figs. 6 and 7, which bars 28 are adapted to receive hooks 29 formed on the ends of a reading bar 30; the bar 30 being thus connected at its ends to the chains 25 and 26 and removably supported thereon. The hooks 29 extend rearwardly from the upper edge of the reading bar 30 and open downwardly so as to rest by gravity in engagement with the lateral bars 28 formed on the links 27. The tension of the chains 25 and 26 is regulated

by adjusting the blocks 12 by means of the nuts 16 and 17.

Means are provided on the shaft 22 whereby the latter will be rotated intermittently to advance the chains 25 and 26 and the bar 30 carried thereon in step by step fashion so as to move the bar 30 over a page of copy held rearwardly thereof by means of an adjustable copy holder 31 forming the subject matter of the before-mentioned copending application. This means includes a pair of ratchet wheels 32 and 33 placed adjacent one another and keyed to the shaft 22 with their teeth in staggered relation, as shown in Fig. 3. Loosely mounted on the shaft 22 adjacent the ratchet wheel 33 is an arm 34 having a laterally extending block 35 adjacent its outer end, to the underside of which block is secured a pair of spring pawls 36 and 37 normally engaging the teeth of the ratchet wheels 32 and 33 respectively. The arm 34 is formed with a hub 34′ to which is secured one end of a coiled spring 38 wound on the shaft 22 secured at its outer end to the frame 11 and which spring normally operates to maintain the arm 34 in its uppermost position. Connecting with the arm 34 is a link 39 the lower end of which is pivotally connected to an arm 40 extending beneath the shaft 22 and pivoted at 41 to the base 10, the outer end of the arm 40 being bent upwardly and terminating in a button 42 at the depression of which button the arms 40 and 34 can be rocked downwardly to advance the ratchet wheels 32 and 33 by reason of their engagement with the pawls 36 and 37.

Means are provided for adjusting the length of movement of the ratchet wheels and consequently the length of each step movement of the chains 25 and 26 and the reading bar 30 on a depression of the arm 40. This means consists of an arm 43 pivoted on the shaft 22 and frictionally engaged with a standard 44 adjacent the ratchet wheel 32 by means of a nut 45 screwed on a hub 46 on the arm 43, which nut serves to clamp the arm 43 against the standard 44 and means on the arm whereby the engagement of the spring pawls 36 and 37 with the ratchet wheels 32 and 33 may be prevented at any desired point and the point of engagement with the ratchet wheels 32 and 33 controlled. The spring-controlling means is constructed as follows:—Extending from one side of the arm 43 is a shield plate 47 which extends over the ratchet wheels 32 and 33 with its lower edge positioned to engage the spring pawls 36 and 37 to lift the latter out of engagement with the ratchet wheels 32 and 33 according to the position of the arm 43; the position of the arm 43 being varied according to the point at which it is desired to throw the pawls 36 and 37 out of engagement with the ratchet wheels. The shield 47 operates to cover a portion of the teeth of the ratchet wheels 32 and 33 in such manner that when the pawls 36 and 37 are retracted by the upward movement of the arm 34 they will ride on to the lower edge of the shield 47 and thus be prevented from engaging the ratchet teeth at any desired point and their point of engagement with the ratchet wheels varied so as to limit the extent of rotation of the ratchet wheels on the depression of the lever 40.

Projecting from the arm 43 on the side opposite the shield 47 is a lug 48, which travels in a channel formed on the standard 44 and is adapted to engage shoulders 49 and 50 at the ends of the channels whereby the range of movement of the arm 43 is limited.

In the operation of the invention, the copy is placed in the holder 31 and the bar 30 is disposed in its uppermost position on the chains 25 and 26 with the hooks 29 in engagement with the bar 28; the bar 30 being arranged with its upper edge in alinement with the line to be read on the copy. The detachable connection between the hooks and the chains 25 and 26 permit the bar 30 being accurately adjusted to the desired line without operating the bar conveying mechanism. When it is desired to shift the bar to the next succeeding line the arm 40 is rocked downwardly by depressing the button 42 thereby causing the arm 34 to rock and move the pawls 36 and 37 into engagement with the ratchet wheels 32 and 33, thereby advancing the latter a partial revolution as indicated in dotted lines in Fig. 3. The movement of the ratchet wheels 32 and 33 is transmitted to the shaft 22 and the chains 25 and 26, which will travel synchronously and advance the bar 30 according to the length of movement of the ratchet wheels 32 and 33 which movement is varied according to the position of the arm 43.

The arm 43 extends upwardly in the path of travel of the bar 30 in such manner that when the latter reaches its lowermost position it is engaged by the arm 43 and held stationary thereby, so that the chains 25 and 26 in advancing farther will cause the hooks 29 to be disengaged from the bars 48 thus automatically disconnecting the bar from the chain, whereupon it can be readily lifted to its upper position and reëngaged with the chain without the necessity of altering the spacer to move the chains backward. Furthermore, the bar is thus removed out of the way so as to facilitate the changing of the page.

When it is desired to reverse the movement of the bar without disconnecting it from the chains the arm 43 is swung downwardly sufficiently forward to cause the shield 47 to move the pawls 36 and 37 out

of engagement with the ratchet wheels 32 and 33, whereupon the shaft 18 may be rotated in either direction by means of the knurled head 21 thereon to dispose the reading bar 30 in any desired position. The arm 43 will then be adjusted to such a point as to permit the pawls to engage the ratchet wheels.

By employing a double set of ratchet wheels and pawls with the teeth staggered in relation to each other, a close adjustment of the length of movement of the ratchet wheels and connected wheels is rendered possible.

What I claim is:

1. A line indicating device, for copyholders, comprising a pair of spaced sprocket chains, a reading bar detachably mounted thereon, means for advancing the sprocket chains in a step by step movement, and means for disengaging the bar from the chains as the bar is moved to its lowermost position.

2. In a line indicating device for copy holders, the combination of a shaft, a pair of sprocket wheels on said shaft, chains on said sprocket wheels having links formed with transverse bars, a reading bar, hooks on the ends of said reading bar engaging the transverse bars on the chain links, means for intermittently rotating the shaft to advance the chains and the bar thereon in step by step fashion, and means for disengaging the bar from the chains as the bar is moved to its lowermost position.

3. A line-indicating device for copy holders comprising, a pair of spaced sprocket chains, a reading bar detachably mounted thereon, means for advancing the sprocket chains in a step-by-step movement, and an arm extending in the path of travel of the bar to engage the bar to automatically disengage it from the chains.

In witness that I claim the foregoing I have hereunto subscribed my name this 21st day of April, 1914.

AARON W. STRAUSE.

Witnesses:
E. M. PRICE,
R. C. MOODEY.

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