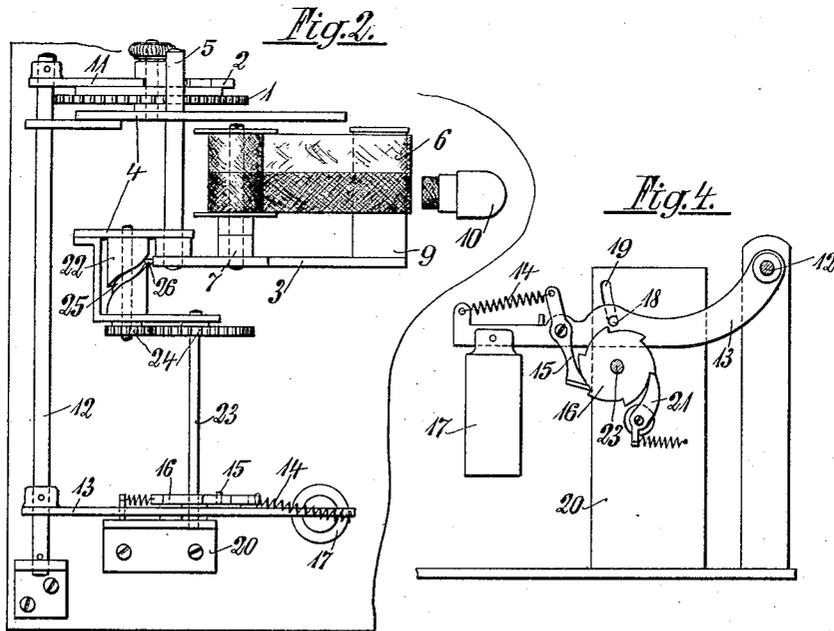
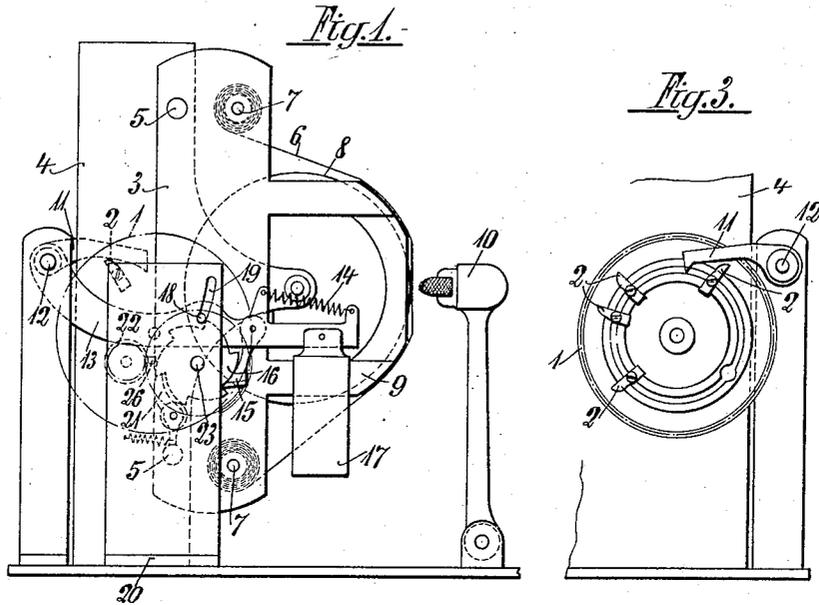


R. BÜRK.
 WORKMAN'S TIME RECORDER WITH PRINTING MECHANISM AND DISPLACEABLE INKING RIBBON.
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WITNESSES
Frank H. Logan
Cornelius Hopfing.

INVENTOR
 RICHARD BÜRK
 BY *Frank Deere*
 ATTORNEY

UNITED STATES PATENT OFFICE.

RICHARD BÜRK, OF SCHWENNINGEN, GERMANY.

WORKMAN'S TIME-RECORDER WITH PRINTING MECHANISM AND DISPLACEABLE INKING-RIBBON.

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To all whom it may concern:

Be it known that I, RICHARD BÜRK, a citizen of the German Empire, residing at Schweningen, in the Kingdom of Württemberg, Germany, have invented certain new and useful Improvements in Workmen's Time-Recorders with Printing Mechanism and Displaceable Inking-Ribbons; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In the workmen's time recording apparatus hitherto known, a separate operating mechanism is always necessary for the transverse displacement of the inking ribbon.

Now this invention has for its object to effect the automatic transverse displacement of the inking ribbon without a separate operating mechanism, and this is attained by the clockwork being employed both for operating the time sheet or disk and also for transversely displacing the inking ribbon. For this object the ordinary catches or cams on the time disk, which is operated in the ordinary way, act on a device such as a ratchet and pawl which effects the transverse displacement of the inking ribbon. This ratchet mechanism is also connected by means of a suitable gearing or transfer mechanism with a cam-grooved drum, while a pin of the inking ribbon carrier, which pin may if desired have a slide roller, engages in the groove, so that on the rotation of the time disk driven by the clockwork the ratchet mechanism rotates the grooved drum and this then by means of the groove and pin effects the transverse displacement of the inking ribbon carrier, and therefore of the inking ribbon. The cam groove may be of any suitable form, so that for example at each half revolution there is a single transverse displacement of the inking ribbon to one side or the other, or so that a repeated lateral reciprocation of the inking ribbon takes place at only one revolution of the grooved drum. With this invention the inking ribbon automatically presents to the printing wheels different colored portions of a two-colored ribbon, so that different colors may be printed at different times of the day. For instance, one color may be used during the regular hours of labor while another

color may be used out of the hours of labor. Other changes of color might be found useful, and it is to be noted that the times for changing the color may be adjusted when desired.

One form of construction of the invention is illustrated as an example in the accompanying drawings, in which:—

Figure 1 is a partial end view of a workmen's time recorder provided with the improvement; Fig. 2 is a plan view; Fig. 3 is a rear view of the time disk for operating the ratchet mechanism; and Fig. 4, a rear view of the ratchet mechanism.

The time recording apparatus is provided in known manner with a time disk 1 driven by clockwork, which disk has a number of adjustable catches or cams 2. Further an inking ribbon carrier 3 is displaceably mounted in a frame 4 and for this object the carrier 3 is provided with guide bars 5. The inking ribbon 6 is wound on drums which rotate on spindles 7 and a guide 9 is provided for securely guiding the inking ribbon 6 around the type wheel 8. Finally, the ordinary striking hammer 10 is arranged in front of the type wheel 8 (Figs. 1 and 2). Now according to the present invention a separate operating mechanism is not necessary for the transverse displacement of the inking ribbon 6, but this transverse displacement is effected by means of the clockwork, which also moves forward the type wheels; this is effected by means of the well known time disk 1. On the rotation of the time disk 1, one of the catches or cams 2 encounters a lever 11 and lifts it, whereby a shaft 12 rocks and thus lifts a shifting lever 13 (Figs. 3 and 4). The latter has a pawl 15 which is acted on by a spring 14 and turns a ratchet wheel 16 when the lever 13 drops *i. e.* moves downward. The downward movement of the lever 13 is effected by the further rotation of the time disk 1, the cam 2 then releasing the lever 11 which, together with the lever 13, can then drop. To enable the ratchet wheel 16 to be rapidly moved farther forward, the lever 13 is weighted at its end, for instance by means of a weight 17, or a spring or the like, but the lever 13 may also be constructed in such manner that it drops by its own weight without being specially weighted. The lever 13 is provided with a pin 18 for limiting its movement, which pin moves in a slot 19

of the upright 20. A pawl 21 is also provided for braking the ratchet wheel 16.

The shifting mechanism is connected with a cam-grooved drum 22 by means of a shaft 23 and gear wheels 24. A pin 26 of the inking ribbon carrier 3, which pin may if desired be provided with a slide roller, engages in the groove 25 of the drum 22, so that on the rotation of the ratchet wheel 16, the drum 22 rotates and thereby causes a transverse displacement of the inking ribbon carrier 3 and the inking ribbon 6 by means of the groove 25 and the pin 26. By a suitable arrangement of the ratchet and pawl mechanism and a suitable number of teeth on the ratchet wheel 16, the latter may also be directly mounted on the shaft of the drum 22.

The working of the improved apparatus is briefly as follows:—The time disk 1 operated by the clockwork rotates, whereupon the nearest cam or tooth 2 lifts the lever 11 which shortly afterward again descends. The lever 13 follows the rising and falling of the lever 11 and the pawl 15 on this lever 13 turns the ratchet wheel 16, whereby the grooved drum 22 is also turned and thus the inking ribbon 6 is transversely displaced.

I declare that what I claim is:—

1. In a workman's time recording apparatus, the combination of a displaceable ribbon carrier; a time disk; a plurality of cams adjustably secured thereon; a contact lever adapted to be contacted and moved by said cams; and an operative connection from the contact lever for moving the carrier.

2. In a workman's time recording apparatus, the combination of a displaceable inking ribbon carrier; a time disk; a plurality of cams adjustably secured thereto; a ratchet wheel; means operated by the cams for moving the ratchet wheel; and an operative connection between the ratchet wheel and the carrier for shifting the carrier when the ratchet wheel is turned.

3. In a workman's time recording apparatus, the combination of a displaceable inking-ribbon carrier; a time disk provided with cams; a ratchet wheel; means operated by the cams for moving the ratchet wheel; a grooved drum rotated by said ratchet wheel; and a projection connected to the carrier and engaging in the groove.

4. In a workman's time recording apparatus, the combination of a displaceable inking ribbon carrier; a time disk provided with cams; a rock shaft; a contact lever mounted on the shaft and adapted to be contacted and moved by the cams; a weighted lifting lever carried by the rock shaft; a ratchet wheel; a pawl carried by the lifting lever and engaging the ratchet wheel; and an operative connection between the ratchet wheel and the carrier for shifting the carrier when the ratchet wheel is turned.

5. In a workman's time recording apparatus, the combination of a displaceable inking-ribbon carrier; a time disk provided with cams; a rock shaft; a contact lever mounted on the shaft and adapted to be contacted and moved by said cams; a weighted lifting lever carried by the rock shaft; a ratchet wheel; a pawl carried on the lifting lever and engaging the ratchet wheel; a drum rotated by said ratchet wheel and provided with a cam groove; and a pin carried by the carrier and engaging in the groove.

6. In a workman's time printing and recording apparatus, the combination of a displaceable inking-ribbon carrier and an automatic carrier displacing mechanism driven and controlled by the same means that rotates the printing wheels.

In testimony whereof I affix my signature, in presence of two witnesses.

RICHARD BÜRK.

Witnesses:

ADOLF NUSS,

GARRY HANSELMANN.