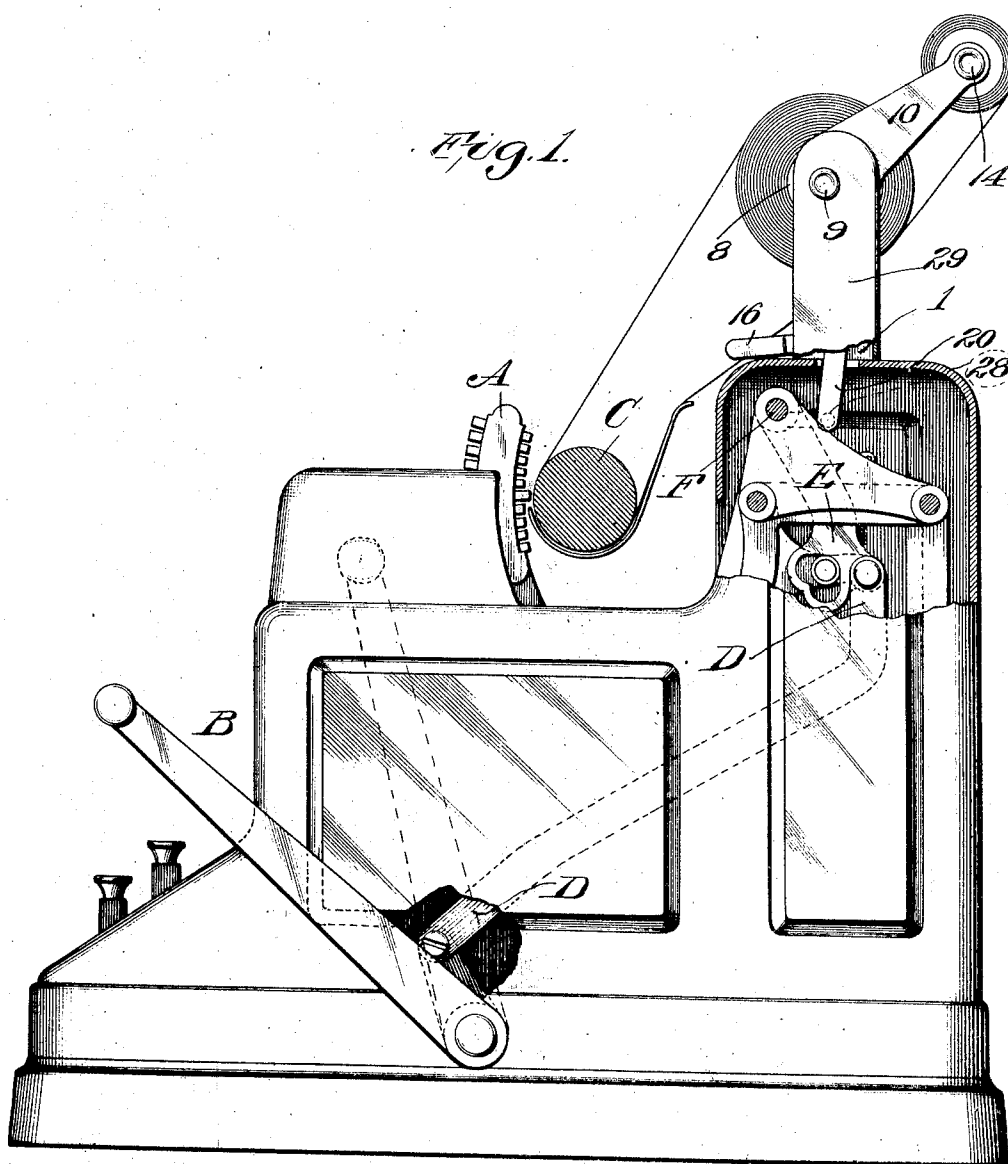


J. MAGNUS.
 ADDING AND RECORDING MACHINE.
 APPLICATION FILED FEB. 1, 1912.

1,131,849.

Patented Mar. 16, 1915.
 3 SHEETS-SHEET 1.



Attest:
Wm. H. Frost
Fred Schaefer

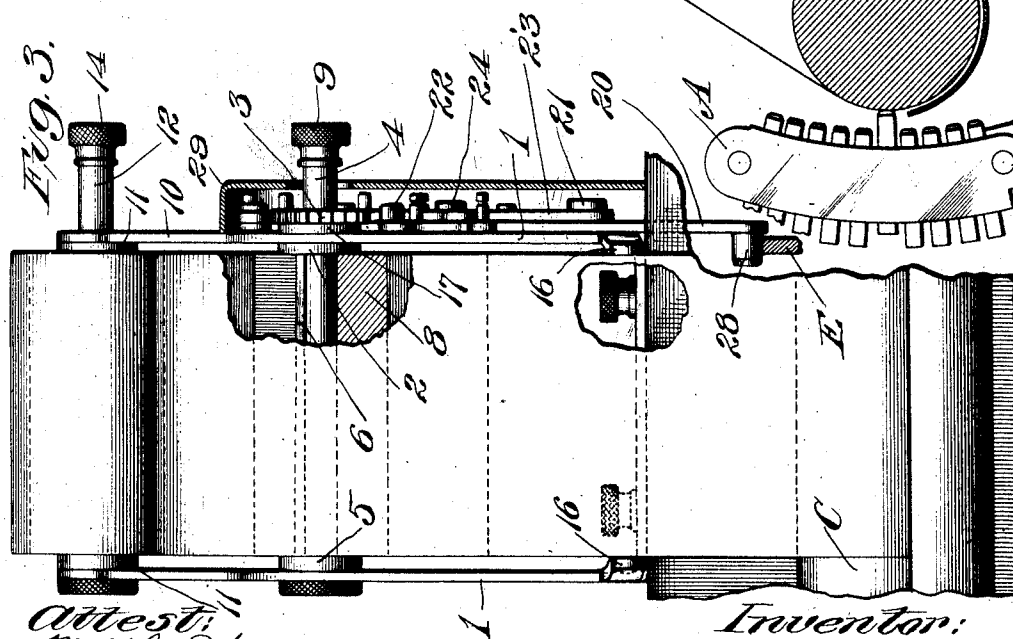
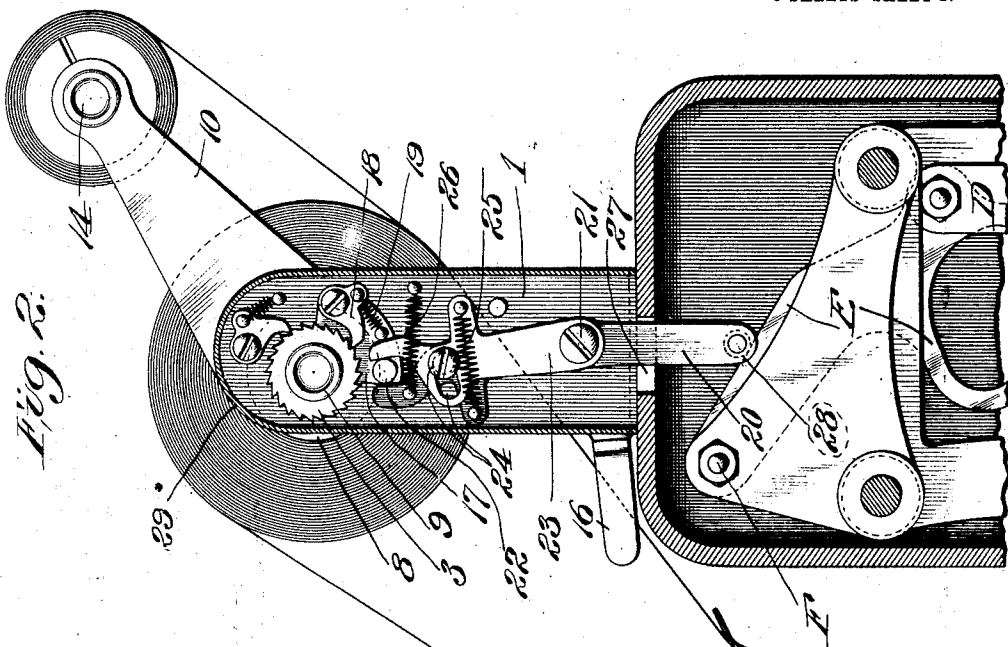
Inventor:
John Magnus,
 by *J. D. Rippey*
att'y.

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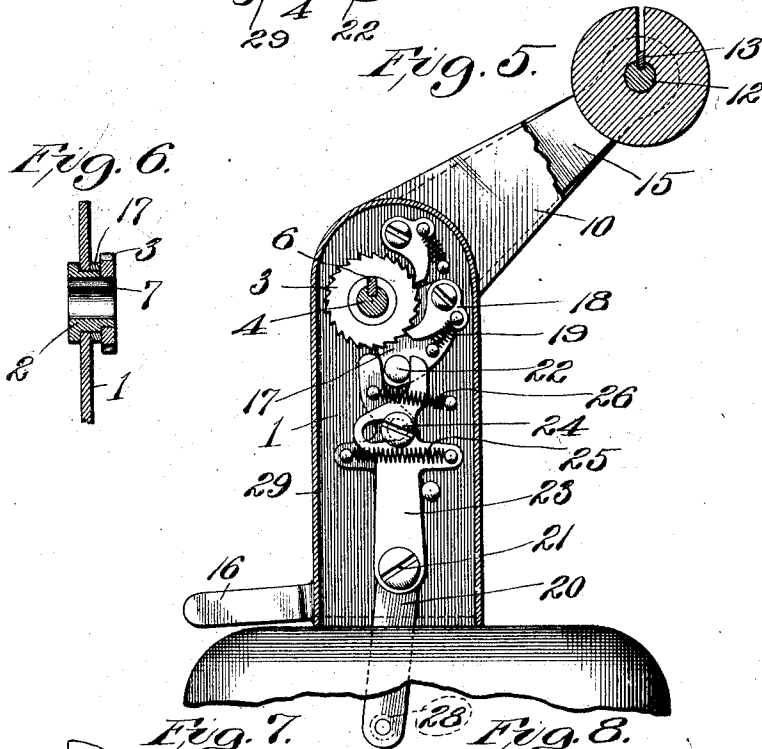
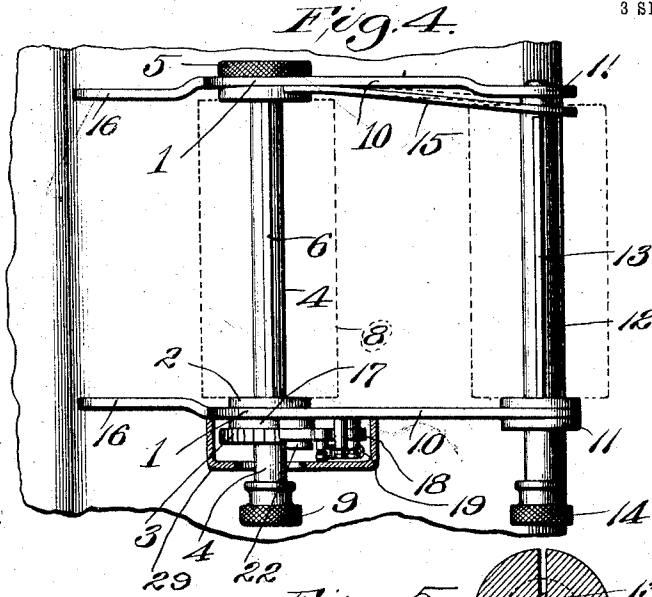


Fig. 7.

1	2	3	4
3	0	5	4
6	7		
8	9		
5	0	6	
3	2	4	
4	4	9	6
6	6		0

Fig. 8.

0	1	2	3
9	6	4	4
4	4	4	4
4	2	5	
9	0	5	
6	8		
7	9		
4	5	0	8
4	8	2	1
4	8	2	1

Attest:
Wm. Scott.
Fred Schaefer.

Inventor:
John Magnus,
 by *J. D. Rippey*
 atty.

UNITED STATES PATENT OFFICE.

JOHN MAGNUS, OF POPLAR BLUFF, MISSOURI, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO THE DALTON ADDING MACHINE COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

ADDING AND RECORDING MACHINE.

1,131,849.

Specification of Letters Patent.

Patented Mar. 16, 1915.

Application filed February 1, 1912. Serial No. 674,754.

To all whom it may concern:

Be it known that I, JOHN MAGNUS, a citizen of the United States, residing at Poplar Bluff, county of Butler, and State of Missouri, have invented a new and useful Adding and Recording Machine, of which the following is a specification.

This invention relates to recording machines, and more particularly to the paper feeding mechanism and, while particularly adapted to adding and recording machines, its capabilities are not at all restricted and it may be combined and used on other types of recording machines.

15. An object of the invention is to provide, in combination with the platen, a paper roll arranged to supply paper to the platen, and another roll to take up the paper passing from the platen, with provisions for effecting rotation of the last-named roll.

20. In the drawings in which I have illustrated my invention applied and adapted to a well known adding machine Figure 1 is an elevation with the operating mechanism of the adding machine shown in course of operation. Fig. 2 is an enlarged sectional view showing the devices for operating the roll for taking up the paper passing from the platen. Fig. 3 is a front elevation, the inclosure for the operating mechanism being in section. Fig. 4 is a top or plan view of the roll supports and operating appliances. Fig. 5 is a view illustrating the operating devices ready for movement to rotate the paper roll. Fig. 6 is a sectional view of the ratchet wheel which controls the roll for taking up the paper. Figs. 7 and 8 show columns or lists of items or numbers printed on paper fed from my paper feeding mechanism.

25. The machine on which I have illustrated my invention is an embodiment of the adding and listing machine forming part of the subject matter of Hopkins Patent No. 1,039,130, dated September 24, 1912, the application for which was filed January 24, 1903. This machine includes the type-carriers A having series of type thereon, and a handle B, which is operable to cause the type-carriers to swing back and forth close to the platen C. The handle reciprocates a link D whose rear end is connected to a plate E which is pivoted on a shaft F. In idle position the plate E is elevated, as shown

in Fig. 2, but when the handle B is drawn forwardly the plate E is swung downwardly and forwardly, as shown in Fig. 1. This operation of the handle B also causes the type-carriers to move and produce the necessary records on paper passing around the platen.

The support for the paper roll comprises two substantially vertical arms 1 removably mounted upon the case of the machine. Bearings are formed near the upper extremities of the vertical portions of the arms 1 and in one of said bearings a hub 2 (Fig. 6) is mounted and on its outer portion supports a ratchet wheel 3. An axial rod or shaft 4 is arranged to pass through the hub 2 and wheel 3 to secure threaded engagement with a bearing 5 in the other vertical arm 1. The rod 4 supports a blade or spline 6 which passes into and through a groove 7 in the hub 2 thereby locking said hub and the ratchet wheel 3 upon the said shaft. The paper spool 8 is mounted upon the rod or shaft 4 between the vertical arms by being locked upon the shaft by the blade or spline 6, which passes through a slot or groove in the spool. The outer end of the rod or shaft 4 is provided with a knob 9, whereby said shaft may be manually engaged for adjustment or release.

The upper portions of the arms 1 extend obliquely upwardly and rearwardly, said oblique portions being indicated by 10. The rear extremities of the oblique portions 10 are provided with bearings 11 arranged to raise and support a rod or shaft 12 which is a duplicate of the rod or shaft 4 previously described, being provided with a blade or spline 13 corresponding to the blade or spline 6 and with knob 14, similar to and for the same purpose as the knob 9. A spring 15 is arranged to press against one end of the spool mounted on the rod or shaft 12 so as to act as a brake therefor and prevent excess movement of the paper passing from the rear spool to the platen passing under and in front of the platen and upwardly to the spool 8 mounted on the rod or shaft 4. Arms 6 extending forwardly from the arms 1 form a space in which the paper passes and constitutes guides for the paper passing to the platen. Rotation of the platen will draw the paper from the supply spool, but it may be necessary to rotate

th spool 8 by special mechanism, one form of which I will now describe.

A plate 17 swings from the hub 2, between the ratchet wheel 3 and the supporting arm 1. A pawl 18 is pivoted to the outer surface of the plate 17 and is actuated into engagement with the ratchet wheel 3 by a spring 19. A lever 20 is supported on a pivot 21 and extends in front of a projection 22 on the plate 17. An arm 23 is also supported on the pivot 21 and extends behind the projection 22 and has pin-in-slot connection 24 with the lever 20 and is connected to said lever 20 by a spring 25 which is effective to hold the said arm and lever yielding in position shown in Figs. 2 and 5. A spring 26 connects the upper end of the lever 20 with the arm 1 actuating said lever rearwardly. The lower end of the lever 20 extends through a slot 27 in the case of the machine and carries a roller 28 which, in idle position, is in contact with the upper edge of the plate E, as illustrated in Fig. 2. When the handle B is operated forwardly, as shown in Fig. 1, the plate E is moved downwardly and forwardly away from the roller 28 permitting the spring 26 to retract and causing the lever 20 to raise the plate 17 and the pawl 18 to engage said pawl at another point on the ratchet wheel 3. After the handle B reaches the end of its forward movement and is released, and after the recording type on the type-carriers A have printed upon the paper passing in front of the platen C, the said type-carriers and handle and also plate E return to their idle or rest positions, the plate E again engaging the roller 28 and moving the lower end of the lever 20 rearwardly and the upper end of said lever forwardly in opposition to the tension of the spring 26. The spring 25 constitutes a yielding connection between the lever 20 and the arm 23 to move the plate 17 and the pawl 18 forwardly thereby rotating the rod or shaft 4 and the spool 8 mounted thereon effectively to take up the paper passing across the face of the platen. The movement of the parts effecting rotation of the spool 8 is timed so that the spool will be rotated the proper distance after each movement of the paper, so as to wind on said spool and hold under tension the paper leaving the platen. The fork or bifurcation formed by the lever 20 and the arm 23 yields to the tension of the paper when the spool 8 becomes filled so that the paper will not be torn thereby nor drawn too rapidly across the platen.

The operating devices for the spool 8 are inclosed within a case 29 attached to the arm 1 supporting said devices, thereby shielding and protecting them from accidental injury or displacement or from gathering accumulations of dust, etc.

After the front spool 8 becomes filled it

may be removed and placed upon the rear rod or shaft 12 and an empty spool placed upon the rod or shaft 4. The paper can then be fed across the platen again so as to receive a second column of items, as shown in Fig. 8, and wound on to the newly located empty spool. The second column will be a suitable distance from the first column and inverted with respect to the first column, or may be printed on the opposite side of the paper.

Mechanism of this character is found useful upon adding and listing machines when it is desired to preserve the paper containing the lists, and also when it is desired to list more than one column upon the paper. The actuation of the roll taking up the paper is effected by appliances controlled directly by the operating mechanism, and is not dependent upon the pressure or tension of the paper passing to the platen.

I do not restrict myself to specific features, but what I claim and desire to secure by Letters-Patent is:

1. In a device of the character described, the combination of a roll, a ratchet wheel for rotating said roll, a pawl for rotating said ratchet wheel, a lever for moving said pawl in one direction, a spring actuating said lever, a lever for moving the pawl in the opposite direction, a spring for actuating said second-named lever, and means for causing said spring and said second-named lever to actuate said pawl, substantially as described.

2. In a device of the character described, the combination of a roll, a ratchet wheel for rotating said roll, a pawl for rotating said ratchet wheel, a lever for moving said pawl in one direction, means for actuating said lever to move said pawl, means for moving said lever in the opposite direction, a second lever for actuating said pawl to rotate said ratchet wheel, a device holding said second lever in proper position with respect to said first lever, and means for operating said second lever to actuate said pawl to rotate said ratchet wheel.

3. In a device of the character described, the combination of a roll, a ratchet wheel for rotating said roll, a pawl for rotating said ratchet wheel, two levers for moving said pawl in opposite directions, and springs for actuating said levers to move said pawl, substantially as described.

4. In a device of the character described, the combination of a roll, a ratchet wheel for rotating said roll, a pawl for rotating said ratchet wheel, a lever for moving said pawl in one direction, another lever for moving said pawl in the opposite direction, springs for actuating said levers, and means for placing said springs under tension so that they will actuate said levers.

5. In a device of the character described,

the combination of a revoluble roll, a ratchet wheel for rotating said roll, a pivoted support adjacent to said ratchet wheel, a pawl on said support, a lever for moving said support in one direction, a spring for actuating said lever to move said support as aforesaid, means for actuating said lever in the opposite direction away from said support, a second lever for moving said support and said pawl in a direction opposite from that in which they are moved by said first-named lever, and a device holding said two levers in proper relative position.

6. In a device of the character described, the combination of a revoluble rod, a ratchet wheel for rotating said rod, a pawl for rotating said ratchet wheel, a lever operable to move said pawl in one direction, another lever operable to move said pawl in the opposite direction effectively to rotate said ratchet wheel, independent springs for actuating said levers as aforesaid, and means independent of said levers for rotating said rod.

7. In a device of the character described, the combination with a rod, a spool, and means for locking said spool on said rod, of a ratchet wheel attached to said rod, a pawl engaging said ratchet wheel, a lever for actuating said pawl in one direction, a spring for actuating said pawl, a lever for actuating said pawl in the opposite direction effectively to rotate said ratchet wheel and said rod and thereby said spool, and a spring for actuating said second-named lever, substantially as described.

8. In a device of the character described, the combination of a rod, a ratchet wheel mounted on said rod, a pawl for rotating said ratchet wheel, a lever for moving said pawl in one direction, a separate device for moving said pawl in the opposite direction to rotate said wheel, a spring for actuating said device, and means for operating said lever to cause said spring to actuate said device and thereby said pawl.

9. In a device of the character described, the combination of a revoluble support, a pawl operable to rotate said support, a lever for actuating said pawl effectively to rotate said support, a spring for actuating said lever and another lever operable to tension said spring and cause said spring to actuate said first-named lever.

10. In a device of the character described, the combination of a stationary support, a ratchet wheel revolubly supported by said support, a pawl for actuating said ratchet wheel, a lever for moving said pawl in one direction, a separately movable device for moving said pawl in the opposite direction

effectively to rotate said ratchet wheel, and a rod releasably locked in engagement with said ratchet wheel, substantially as described.

11. In a device of the character described, the combination with a roll, of a pawl for rotating said roll, a lever for moving said pawl in one direction, a spring for actuating said lever, a second lever for moving said pawl in the opposite direction, means for moving said first-named lever to its starting point after having moved said pawl as aforesaid, a spring connecting said two levers and tensioned by the last-named movement of said first-named lever effectively to cause said second lever to actuate said pawl, and means holding said levers in proper relative adjustment.

12. In a device of the character described, the combination with a stationary support, and a ratchet wheel revolubly supported by said support, of a pawl for rotating said ratchet wheel, a lever for moving said pawl in one direction, a separate lever for moving said pawl in a direction to actuate said ratchet wheel, a spring for operating said second-named lever, and means for holding said pawl in engagement with said ratchet wheel, substantially as described.

13. In a device of the character described, the combination of a ratchet wheel, a movable support, a pawl carried by said support in engagement with said ratchet wheel, a pivot, a lever mounted on said pivot, a spring for actuating said lever to move said support and said pawl in one direction, a second lever mounted on said pivot for moving said support and said pawl in the opposite direction effectively to rotate said ratchet wheel, a spring connecting said two levers, and means for holding said two levers in proper relative adjustment.

14. In a device of the character described, the combination of a ratchet wheel, a pawl engaging said ratchet wheel, a pivot, a lever mounted on said pivot, a spring for actuating said lever to move said pawl in one direction, a second lever mounted on said pivot for moving said pawl in the opposite direction to rotate said ratchet wheel, a spring for actuating said second-named lever, and means for limiting the movement of said levers with respect to each other.

In witness whereof, I have signed this specification in the presence of two subscribing witnesses.

JOHN MAGNUS.

Witnesses:

I. W. CAHILL,
B. C. HARRISON.