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E. F. LITTLEFIELD & H. A. DRINKWATER.

REWINDER FOR PERFORATING MACHINES.

APPLICATION FILED MAY 2, 1907.

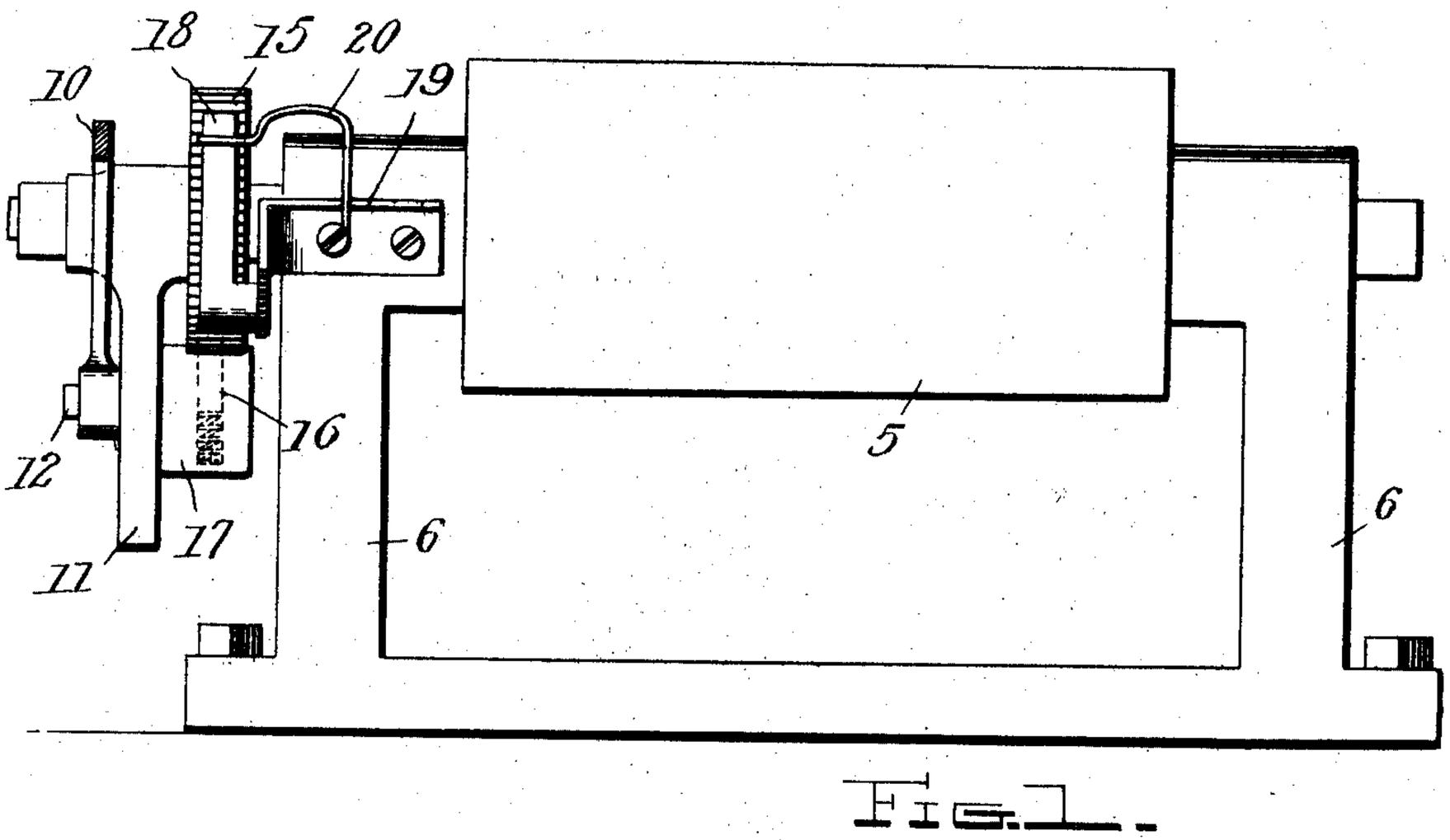

FIG. 1.

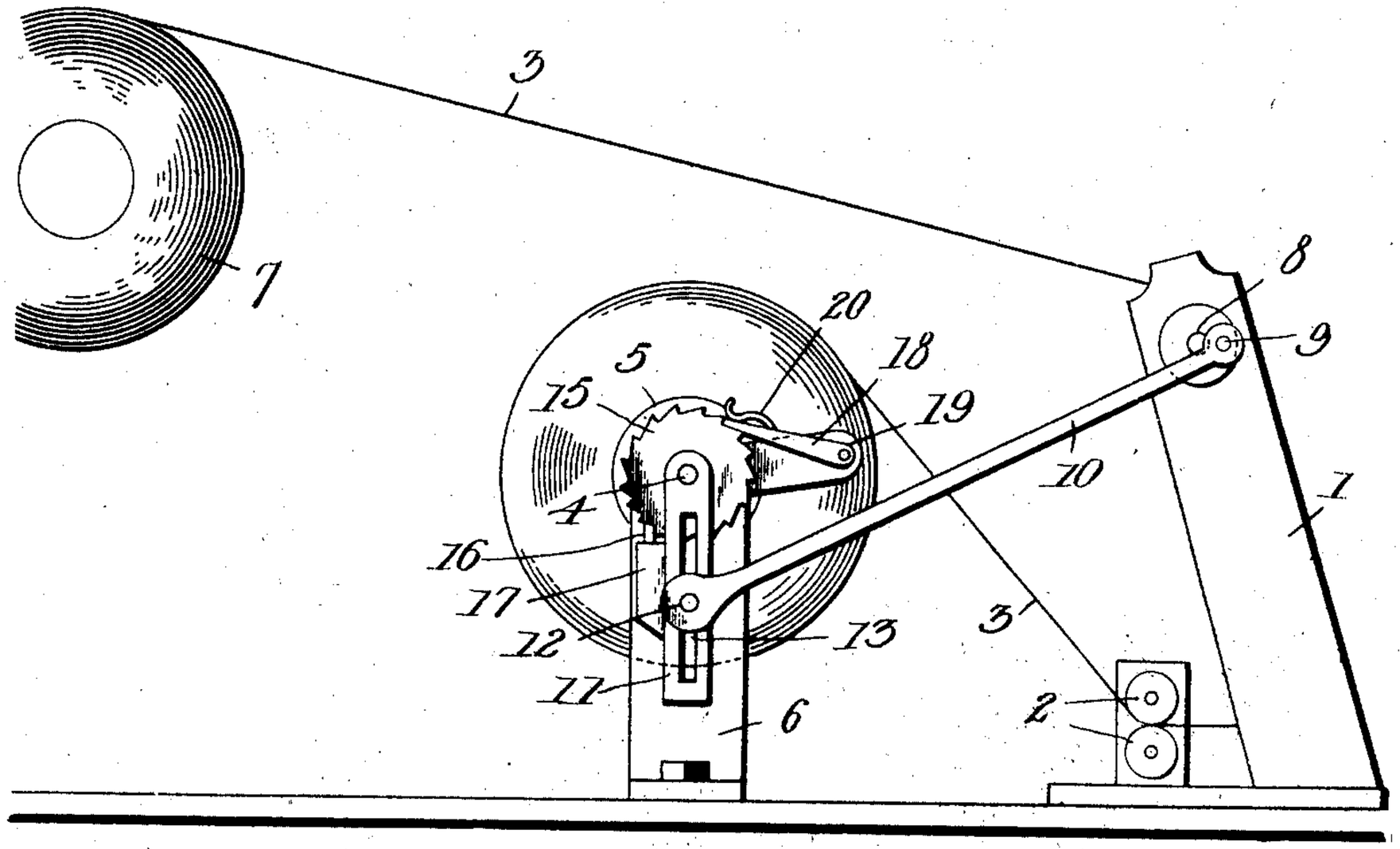

FIG. 2.

Witnesses

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REWINDER FOR PERFORATING-MACHINES.

No. 883,213. Specification of Letters Patent. Patented March 31, 1908.

Application filed May 2, 1907. Serial No. 371,524.

To all whom it may concern:

Be it known that we, EDWARD F. LITTLEFIELD and HERBERT A. DRINKWATER, citizens of the United States, residing at Belfast, in the county of Waldo and State of Maine, have invented certain new and useful Improvements in Rewinders for Perforating-Machines; and we do 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.

This invention relates to attachments for perforating machines, and more particularly to a device for rewinding the paper or other material that is used as a backing which is semi-perforated when the original material is perforated, whereby said semi-perforated material can be reversed and thereby used twice. It will also place the paper in such condition that it can be conveniently handled and effectually disposed of, thereby avoiding the scattering of the material over the shop, and also affording a means of revenue.

The mechanism is simple and efficient and can be readily applied to any perforator or to any other form of machinery which is adapted to use a web of paper as from a roll, and is provided with a reciprocatory member.

In the accompanying drawings, which illustrate the invention, Figure 1 is a front elevation of a machine embodying the invention; and Fig. 2 is a side elevation of the same, connected with a perforator.

Referring more particularly to the drawings, 1 indicates a perforator, which may be of any suitable form and construction and is provided with suitable feeding rollers, 2, which are adapted to engage with and feed a strip of paper 3 through the perforator.

As ordinarily constructed after the paper has been once passed through the perforator, and has been acted upon or semi-perforated by the perforators upon one side and drawn through the feed rollers, 2, it has been treated as waste paper and no provision has been made for keeping it off the floor where it becomes a nuisance. In large factories, as for instance, shoe factories, in which a great deal of perforating must be done for the tips of the shoes and other parts, the cost and care of the backing paper becomes quite an item. To avoid these objections and to put the paper in condition whereby it may be used again, as by reversing it and passing it through the perforator and also to place the material in convenient condition for handling and for sale after it has thus been acted upon the second time, we have constructed a rewinding roll, 5, which is adapted to be mounted upon a rotary shaft 4 and locate the same in any convenient position to be actuated by the perforator and to receive the paper directly from the feed rollers. To accomplish this purpose we have journaled the shaft of the roller, 5, in suitable standards, 6, adjacent to the feed rollers 2, and preferably between the perforator and the original roll 7, and low enough to permit of the web of paper 3 passing from the roll 7 to the upper portion of the perforator without the roll 5 engaging therewith.

As the paper or other material used for the purpose of a backing must remain stationary while the perforating is being done, it is necessary that the roll 5 be fed forward intermittently and during the reciprocations of the perforator. One form for accomplishing this movement is by providing one of the shafts 8 of the perforator with a crank or wrist pin 9 to which the end of a reciprocatory bar or rod 10 is connected. The free end of the rod or bar 10 is pivotally connected with an arm 11, as by means of a bolt or pin 12, which is adapted to be adjustably secured thereto as by means of a slot 13 arranged longitudinally of the arm 11. The arm 11 is pivotally secured to one end of the shaft 4 of the roller 5 adjacent to a ratchet wheel 15. A pawl 16 is secured to the arm 11 in position for engaging with the ratchet wheel and thereby moving said wheel and the roller forward intermittently as the rod 10 is reciprocated. The pawl 16 is preferably spring-pressed, whereby it will be held in yielding engagement with the teeth of the ratchet wheel even though it be seated in a recess in a projection 17 upon one side of the arm. The ratchet wheel 15 is held against return movement by means of a pawl or detent 18, which is preferably connected with a latch piece or projection, 19, extending outwardly from one of the standards 6. A spring 20 is preferably provided for engaging with the free end of the pawl 18 and thereby holding it yieldingly in engagement with the ratchet wheel 15 at all times.

In using a machine or attachment as above described, the end of the strip of paper 3 after it has been drawn through the perfo-

rator by means of the feeding rollers 2 is connected with the roller 5 and the pawls arranged to engage with the ratchet 15 when the rod 10 is reciprocated by the shaft 8 of the perforator. As the roll is of comparatively small diameter, weighing about 15 pounds with the machine we have been using, the adjustment of the rod 10 upon the slotted arm 11, when necessary to keep the peripheral speed of the increasing roll substantially even with the delivering of the paper from the rollers 2, is done in any suitable manner, as manually by the attendant, which we have found very satisfactory. In this manner the paper or other material will be tightly wound upon the roller 5 as it passes from the perforator, and after all of the strip of paper has thus been run through the perforator once, the roll 5 and its surrounding material is removed from the standards 6 and placed in the supports for the original roll 7 with the material so arranged that when it again passes through the perforator the uncut side of the strip of paper will be placed next to the cutting edges of the perforator and will thereby present a smooth or unbroken surface to the edges of the perforator and cause said edges to perforate the material they are acting upon as perfectly and satisfactorily as though the paper were being used for the first time. After the paper has thus been run through the perforator the second time, and is tightly wound upon the roll, it is in convenient position for handling and can be readily sold to manufacturers or dealers in material for making paper. By using the paper the second time, the cost of the backing material is reduced one-half, and by rewinding it upon the extra rollers it is prevented from getting into the way of the operators and can be readily sold.

The attachment is very simple and can be readily connected with or attached to any ordinary perforator and by locating it between the perforator and the original roll of paper, it virtually takes up no floor space whatever.

Having described our invention, we claim:

1. In an apparatus of the type described, a perforator, a distributing roll sustained adjacent thereto, a receiving roll operatively supported near the perforator, said rolls being interchangeable for permitting reversal of a backing strip which is adapted to be led from the distributing roll through the perforator to the receiving roll to bring either of its faces into position for receiving the impress of the perforator, and means operable from the latter for imparting a step-by-step rotation to the receiving roll.

2. In an apparatus of the type described, a perforator, a distributing and a receiving roll sustained for rotation adjacent thereto, an arm fixed on the shaft of the latter, a pitman engaged with said arm, a toothed ratchet fixed upon said shaft, a spring-pressed pawl carried by the arm for engagement with the ratchet to impart a step-by-step rotation to the roll, and means for preventing retrograde movement of the latter, said rolls being interchangeable to permit of the reversal of a backing strip which is adapted to be led from the distributing rolls through the perforator to the receiving roll, for bringing either of its faces into position for receiving the impress of the perforator.

In testimony whereof we have hereunto set our hand in presence of two subscribing witnesses.

EDWARD F. LITTLEFIELD.
HERBERT A. DRINKWATER.

Witnesses:
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ALVAH C. TISDALE