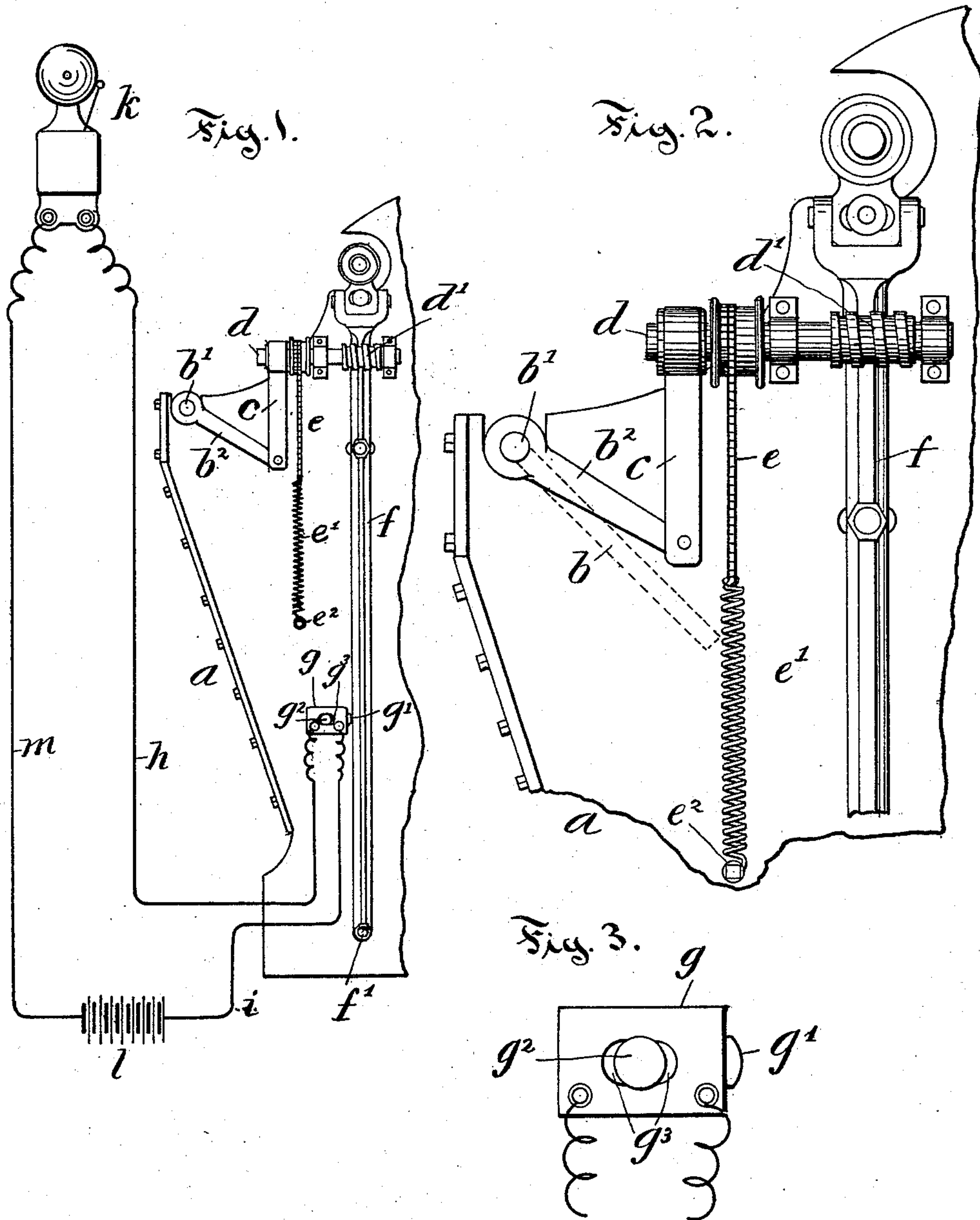


(No Model.)

W. W. GORDON & T. F. PYE.  
FEED ALARM FOR CARDING MACHINES.

No. 525,013.

Patented Aug. 28, 1894.



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# UNITED STATES PATENT OFFICE.

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## FEED-ALARM FOR CARDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 525,013, dated August 28, 1894.

Application filed August 26, 1893. Serial No. 484,141. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM W. GORDON, of Hazardville, and THOMAS F. PYE, of Hartford, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Feed-Alarms for Carding-Machines, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of our invention is to provide a device for use in connection with carding or like machines in which an alarm shall be sounded when the hopper or like part is relieved of its contents, and to this end our invention consists in the combination of the several parts making up the device as a whole as more particularly hereinafter described and pointed out in the claims.

Referring to the drawings: Figure 1 is a view in end elevation of a portion of a card breaker showing the alarm and mechanism for operating it. Fig. 2 is a like view on enlarged scale showing the alarm operating mechanism. Fig. 3 is a detail view showing the adjustable support for the push button.

Our invention is shown and described herein as applied to the first breaker of a carding machine, although it is obvious that the device may be attached to any part of the machine in which there may be constructed a moving part within the path of which a push button may be placed in such position as to be operated by said moving part at any pre-determined time.

In the accompanying drawings the letter *a* denotes a portion of the frame of the machine within which is located a hopper or receiver for containing a mass of wool or like fiber to be operated upon by the machine. In the form of receiver herein shown there is located a pivoted feed board *b* (see Fig. 2 of the drawings), this feed board being secured to a shaft *b'* running lengthwise of the machine and supported in suitable bearings at each end thereof. To one end of this shaft *b'* is secured a lever *b<sup>2</sup>* and to the end of this lever is secured a flexible connection *c* that is wound about a shaft *d*. This shaft *d* is suitably journaled in bearings secured to the frame and supports a worm *d'*. There is also wound about this shaft *d* a chain or like flexi-

ble connection *e*, this chain being wound around the shaft in an opposite direction to that at which the connection *c* is wound thereon. To the lower end of this chain *e* is attached the spring *e'* secured at its lower end as at *e<sup>2</sup>* to the frame of the machine. A lever *f* is pivoted on the frame of the machine preferably at its lower end as at *f'*, the lever passing upward adjacent to the worm *b'* and having a lug projecting into the groove in the worm, the upper end of the lever bearing operating parts of the card.

To the frame of the machine or other support as may be desired is adjustably secured the support *g* for a push button *g'*, a bolt *g<sup>2</sup>* passing through a slot *g<sup>3</sup>* located in this support for the push button and serving as a means of adjustably securing the former in a position adjacent to the swinging lever *f*. This support *g* is provided with suitable binding posts to which are attached the wires *h*, *i*, the wire *h* extending to an alarm *k* of any ordinary and usual construction, adapted to be rung by the action of a current of electricity. The other wire *i* extends to one pole of the battery *l* and a wire *m* extends from the opposite pole of the battery to the alarm.

The means for closing and opening the electric circuit by the operation of the push button may be that employed in any of the well known devices of this class, and it is not deemed necessary to a correct understanding of the operation of the device to burden the specification with a detailed description thereof, the essential feature of this part of the invention being the adjustability of the support to or from the lever which may be accomplished as by means of a slot in the support with a bolt projecting into the slot as shown in Fig. 3 of the drawings.

The operation of the device is as follows: Wool or like fiber being placed in the receiver upon the pivoted feed board *b* the feed board is forced downward by the weight of the material, this downward pressure of the pivoted feed board *b* causing the flexible connection *c* to be unwound from the shaft *d* this causing the chain *e* to be wound thereon under tension of the spring *e'*. As the material is gradually fed from the receiver through the card the weight being relieved the feed



board *b* is gradually lifted through the medium of the arm *b*<sup>2</sup>, connection *c*, shaft *d*, and chain *e* under the impulse of the spring *e*'. This rotation of the shaft *d* and consequently  
 5 the worm located thereon causes the lever having the lug in engagement with the groove in the worm to be thrown to the left in such manner as to engage the push button *g*' which engagement causes the alarm to be rung.  
 10 The adjustment of the support on the push button with regard to the lever allows the latter to come in engagement with the push button at any predetermined time, it being preferred, of course, to have such engage-  
 15 ment take place just prior to the time when the receiver is relieved of its contents or immediately upon such relief.

It is preferred that the adjustment of the push button with regard to the lever shall be  
 20 such that the alarm will be caused to be rung just prior to the emptying of the hopper as if the hopper is allowed to become empty and immediately refilled an uneven roping is caused and this results in an uneven thread  
 25 at the finish which is a result especially to be avoided.

We claim as our invention—

1. In combination in a carding or like machine, an electric alarm, a push button for  
 30 controlling the electric current, a swinging lever adapted to operate the button, a receiver having a pivoted feed board, and a connecting mechanism between the lever and

feed board whereby the former is caused to engage the button and sound the alarm, all 35 substantially as described.

2. In combination in a carding or like machine, an electric alarm, a push button adapted to control the electric current, a  
 40 swinging lever adapted to operate the push button, a spring controlled worm adapted to engage the lever, a pivoted feed board borne in the receiver, and connecting mechanism between the feed and the spring retained worm  
 45 whereby the latter is rotated, all substantially as described.

3. In combination in a carding or like machine, a receiver, a pivoted feed board borne in the receiver, an arm projecting from the feed  
 50 board, a flexible connection between the lever and a worm shaft operating to turn the latter in one direction, a flexible connection attached to the worm shaft and to a spring  
 55 and adapted to turn the shaft in an opposite direction, the spring, the worm in engagement with a lug on a swinging lever, the swinging lever, a push button adjustably borne in operative relation to the lever, and  
 60 an alarm adapted to be sounded by the movement of the push button, all substantially as described.

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