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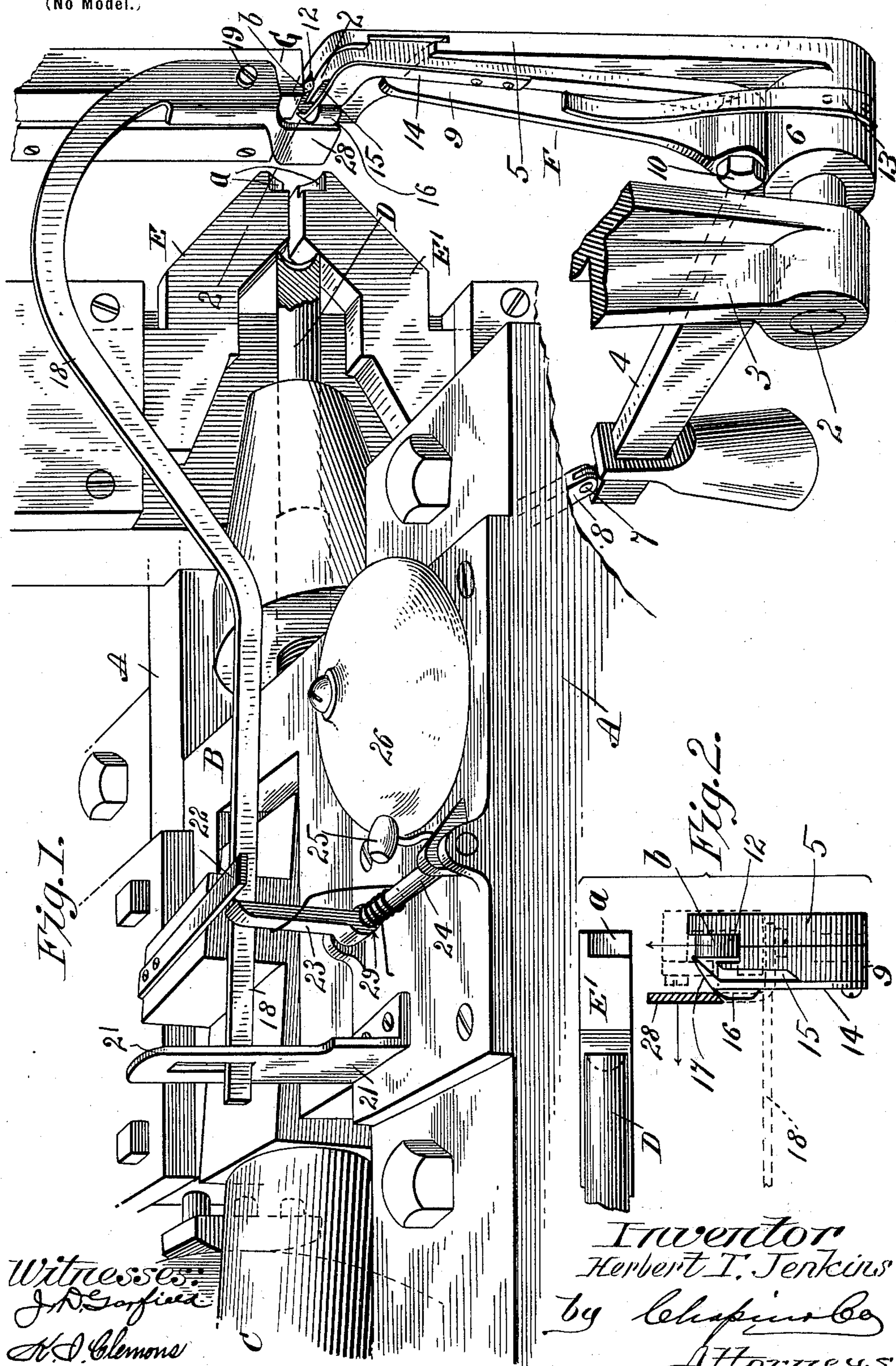
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H. T. JENKINS.

ALARM DEVICE FOR BUTTON MACHINES.

(Application filed Dec. 30, 1897.)

(No Model.)



Witnesses:
J. D. Garfield
H. D. Clemons

Inventor
Herbert I. Jenkins
by Chapman & Co
Attorneys.

UNITED STATES PATENT OFFICE.

HERBERT T. JENKINS, OF PORTSMOUTH, NEW HAMPSHIRE, ASSIGNOR TO
THE MORLEY BUTTON MANUFACTURING COMPANY, OF SAME PLACE.

ALARM DEVICE FOR BUTTON-MACHINES.

SPECIFICATION forming part of Letters Patent No. 610,876, dated September 13, 1898.

Application filed December 30, 1897. Serial No. 664,637. (No model.)

To all whom it may concern:

Be it known that I, HERBERT T. JENKINS, a citizen of the United States of America, residing at Portsmouth, in the county of Rockingham and State of New Hampshire, have invented new and useful Improvements in Alarm Devices for Button-Machines, of which the following is a specification.

This invention relates to the manufacture of buttons or similar articles having a uniform shape; and the object of the invention is the construction of an alarm device to be applied to button-forming machines or machines for making analogous articles whereby if a button or other similar blank is not delivered from the end of a feed-tube to a position in which it can be grasped by the proper devices and carried to the forming mechanism the attention of the operative in charge will be called to the fact by the operation of said alarm; and the invention consists in the construction as hereinafter fully described, and pointed out in the claims.

In the drawings forming part of this specification this invention is shown applied to a button-machine patented by Fred H. Hardman on May 3, 1892, No. 474,320, and the particular devices for receiving and conveying the button from the delivery end of the hopper-tube to the button-forming devices were also patented to said Hardman on June 14, 1892, No. 477,116, to both of which Letters Patent reference may be had for a more detailed description of their construction than is herein given, as only the parts relating particularly to the operation of the bell-alarm devices will be herein described, and to that end—

Figure 1 of the drawings shows in perspective a portion of the above-mentioned Hardman machine, comprising the devices for forming the button and the devices for conveying a button-blank to said button-forming devices. Fig. 2 is a horizontal sectional view taken on a plane lying just under the end of the blank-conveying tube and indicated by the line 2 2 applied to Fig. 1 and shows a top plan view of the button-conveying arm and one of the jaws which receives a button therefrom and the button-forming punch.

Referring to the drawings, A A represent two parallel portions of the frame of a button-machine, between which the cross-head B slides reciprocatingly, actuated by a connecting-rod C, extending between said cross-head and a suitable eccentric (not shown) on the driving-shaft of the machine. Said cross-head carries the button-forming punch D. Supported in proper relation to said punch are suitable jaws E E', which receive a button-blank in the semi-annular recesses a, which blank is carried to said jaws E E' and placed in the said recesses by the button-conveyer F, which is provided with suitable devices for receiving and conveying a button-blank from the tube G of a hopper (not shown) containing said blanks, the said button-conveyer F having a vibratory movement between the end of said tube G and the said jaws E E'. A suitable die against which said blanks are pressed and suitable devices for forming the loop-shaped wire shanks are also embodied in this machine, but not shown in connection with the subject-matter of this application, which has relation only to the said button-conveyer F, the tube G, and the movements of the cross-head B. The said button-conveyer F is supported on the stud 2 in an arm 3, secured to the frame of the machine, and said conveyer consists of the two arms 4 and 5, united to a common hub 6, through which the stud 2 passes and on which stud said conveyer swings freely. Said arm 4 is pivotally connected at 7 to the end of a lever 8, leading to a suitable cam, (not shown,) whereby reciprocatory movements are imparted to the arm 5 of said conveyer to a degree sufficient to move the operative end thereof from a position under the tube G from which it receives a button-blank to a proper position in proximity to said jaws E E', into the recesses of which said conveyer delivers said blank.

An arm 9 is pivoted at 10 to the side of the arm 5 of the conveyer, and the upper extremities of said parts 5 and 9 lie in close proximity to the delivery end of the tube G, and said arms vibrate together between said tube and the jaws E E', as stated, and in the ends of said arms is formed, partly in one and partly in the other, a suitable recess 12

for the reception of a blank. (Indicated by *b* in Fig. 2.) Said arm 9 is held in proper position relative to the arm 5 for the reception of said blank by a spring 13, to the end that
 5 when said arms 5 and 9 arrive at the point of their movement close to the jaws *E E'* the movement of said arm 9 is arrested, and the arm 5, continuing its movement, pushes said blank into the recess *a* in said jaws *E E'*.
 10 Upon the return movement of said arm 5 to the point at which said arm 9 was arrested said arms move together in their backward movement until they again reach a position under the tube *G*, which permits another
 15 button-blank to be deposited in said recess 12. On the side of said arm 9 is the L-shaped spring 14, whose short arm extends along the side of the upper end of said arm 9, the long end of said spring being riveted or otherwise
 20 secured to said arm, as shown, to the end that the upper end of said spring may be spring-held against the side of said arm 9. The side of said arm contiguous to the upper end of said spring is cut away, as shown at 15, where-
 25 by the spring will have a bearing against the side of said arm 9 only at or near the angular bend therein. Said L-shaped spring 14 is provided with a cam projection 16 on the free end thereof, and its said free end is inturned,
 30 as at 17, toward the side of the arm 5, as clearly shown in Fig. 2, the purpose of said turned-in end being to engage the edge of the blank *b* when the latter is in said recess 12 in the end of said arms 5 and 9 and whereby
 35 said inturned end will be rigidly supported by said blank.

A long lever 18 is pivotally supported by one end at 19 on the tube *G*, near the lower end thereof, through which lever the sound-
 40 ing of the alarm-bell is controlled. The opposite end of said lever extends over to a point near the cross-head *B*, its end projecting through a slotted guide-plate 21 on the frame of the machine. Supported on said
 45 cross-head in any suitable manner is a spring-finger 22, adapted, normally, to engage with an arm 23 on a rock-shaft 24, on which is a striker 25 for operating against a bell 26. Said rock-shaft has a coiled spring 29 applied
 50 thereto, whereby said striker is thrown against said bell when the cross-head *B*, moving between the said parallel portions *A A* of the frame of the machine, causes the spring-finger 22 to engage the arm 23 and rock said
 55 shaft 24. As above stated, the function of said lever 18 is to control the operation of said bell-ringing devices, and to that end the extremity 28 of said lever below its point of support 19 is so formed as to lie in the path
 60 of movement of the cam projection 16 on the spring 14, and as the arm 5 of the button-conveyer moves toward said jaws *E E'* to place a blank therein the said cam projec-
 65 tion 16 will come in contact with the edge of said extremity 28 of said lever 18.

If a blank has been duly fed into the recess 12 in the ends of the arms 5 and 9, then the

inturned end of said spring 14 will be rigidly supported thereby, and as said levers move forward to place said blank between the jaws
 70 *E E'* said cam projection 16 will force its way under the said end 28 of said lever 18, and the end thereof lying in the guide-plate 21 will be raised, and thereby raise the end of the spring-finger 22 on the cross-head *B*,
 75 whereby it will slide on the said lever 18 over the top of the arm 23 instead of engaging the end thereof and ringing the bell.

The operation of the lever 18 is so timed that it will be actuated at the right time to
 80 raise said spring-finger 22 and hold it above the end of the arm 23 as said finger passes said arm, carried by the cross-head *B*, in its movements. Should a blank *b* fail to be fed into said recess 12 at the proper time, then
 85 when the arm 5 is moved toward the jaws *E E'* the inturned free end 17 of the spring 14 would be unsupported, and as the side of the arm 9 under it is cut away said point of the spring, being of insufficient strength to op-
 90 erate said lever if unsupported by a blank, will be forced in against the side of the lever 9 at the cut-away part 15 thereof, and the long lever 18 will therefore not be operated by the cam projection 16 on the L-shaped
 95 spring 14, and hence the cross-head *B* will at its next movement cause said spring-finger 22 to engage the arm 23 and ring the bell and call the attention of the operative to the machine. The extremity 28 of the said lever 18
 100 is made of such width that the duration of the engagement of the cam projection 16 with said extremity 28 may be sufficiently long to hold the long end of said lever in an elevated position during a portion of the movement of
 105 the cross-head *B* both forward and back.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for forming buttons from
 110 blanks, an alarm-bell, a striker for said bell, means connected with said striker for engagement with a moving part of said machine, combined with button-receiving jaws, a blank-conveyer carrying blanks to said
 115 jaws, and means interposed between said conveyer and said striker-engaging part of the machine, whereby said striker is rendered operative and an alarm is sounded when no button-blank is present in said conveyer, com-
 120 bined and operating substantially as set forth.

2. In a machine for forming buttons from blanks, jaws for receiving said blanks one by one, and a punch attached to a reciprocally-
 125 moving part of the machine acting against said blanks whereby the latter are formed, a vibratory blank-conveyer receiving blanks one by one from a suitable feeding-tube, and carrying the same to said jaws, combined
 130 with an alarm-bell located on the machine, a striker hung to swing near said bell having a hammer-actuating arm 23, on the support thereof, extending near the said punch-mov-

ing part, a flexible arm 22, fixed on said last-named part for engagement with said arm 23, and a lever pivoted on a fixed part of the machine having one end engaging with said
5 blank-conveyer when containing a blank, and the opposite end engaging said flexible arm 22, whereby the latter is held out of engagement with said arm 23, and the ringing of

said bell is prevented while said conveyer contains a button-blank, substantially as set forth.

HERBERT T. JENKINS.

Witnesses:

WALTER E. BENNETT,
JOHN H. BARTLETT.