G. ZINT.

BELL RINGING MACHINE.

APPLICATION FILED JULY 18, 1910.

**1,013,262.**

Patented Jan. 2, 1912.

5 SHEETS—SHEET 1.

FIG. 1

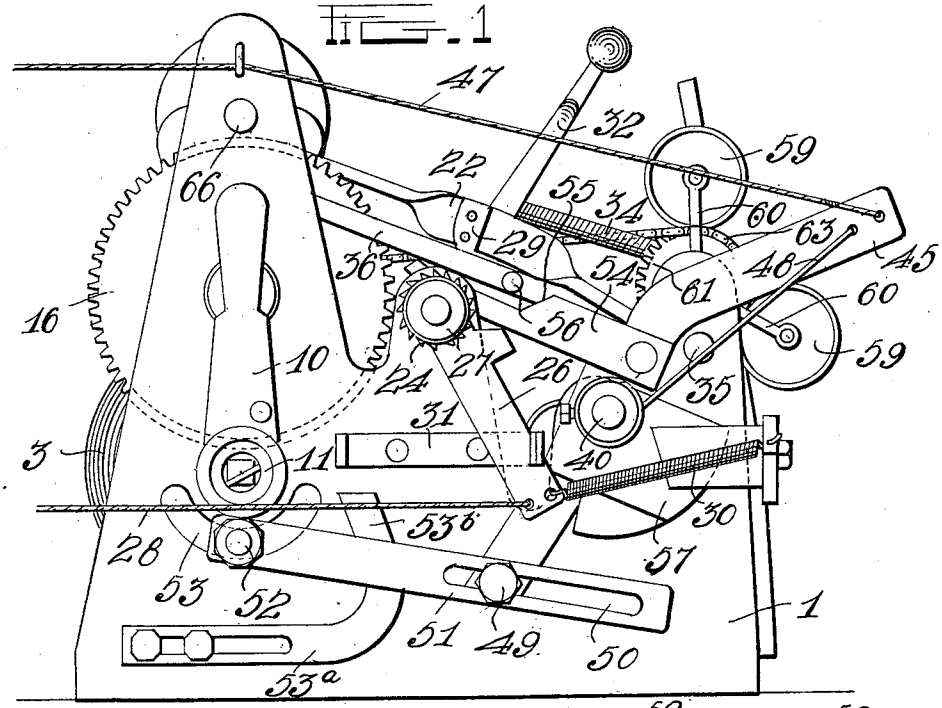
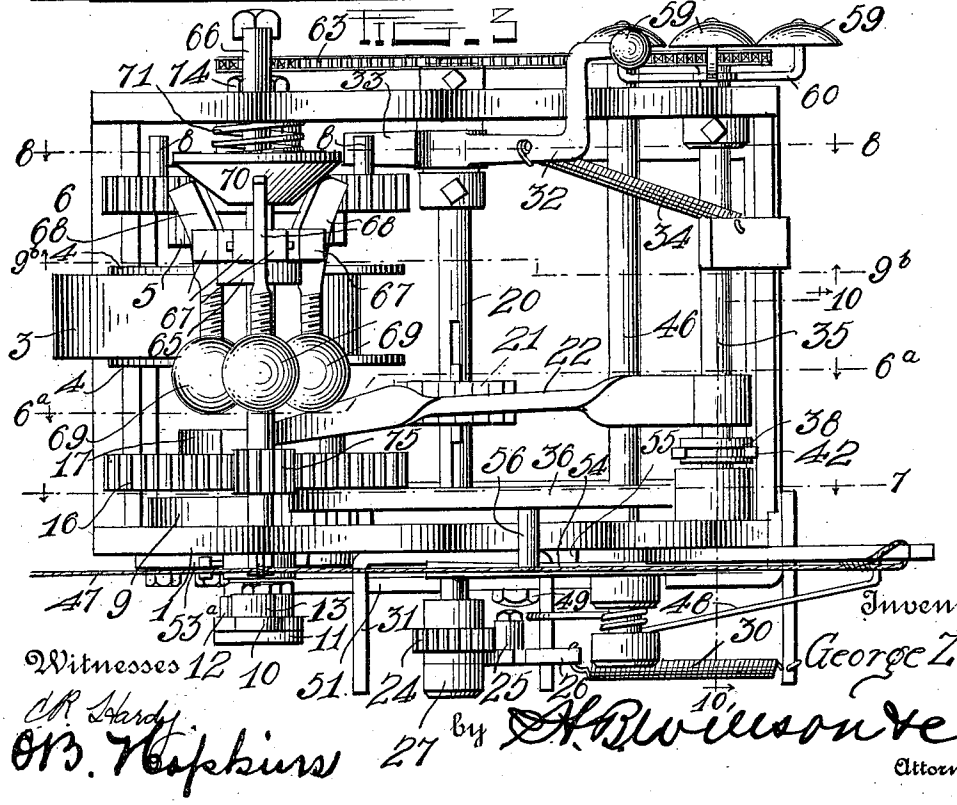



FIG. 2




Witnesses

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5 SHEETS—SHEET 2.

FIG. 2

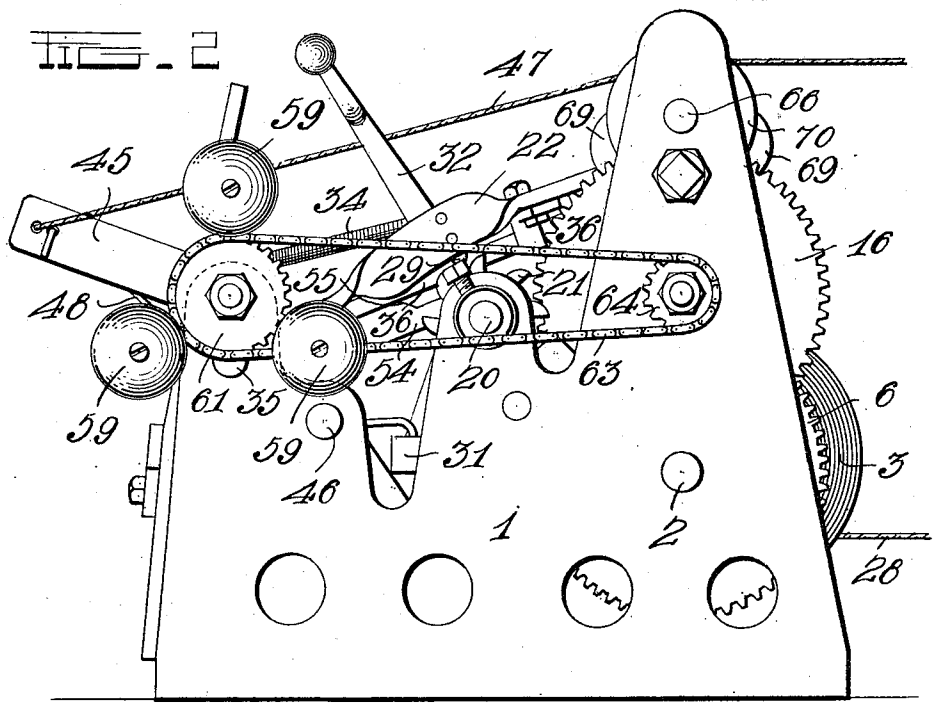
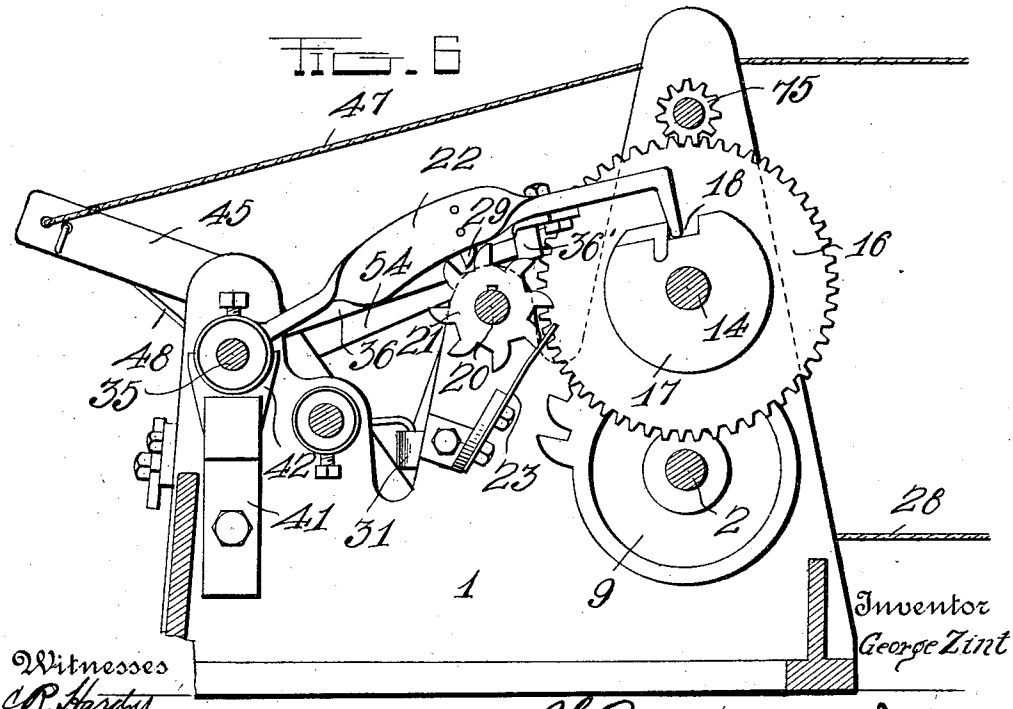



FIG. 6

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5 SHEETS—SHEET 3.

Fig. 4

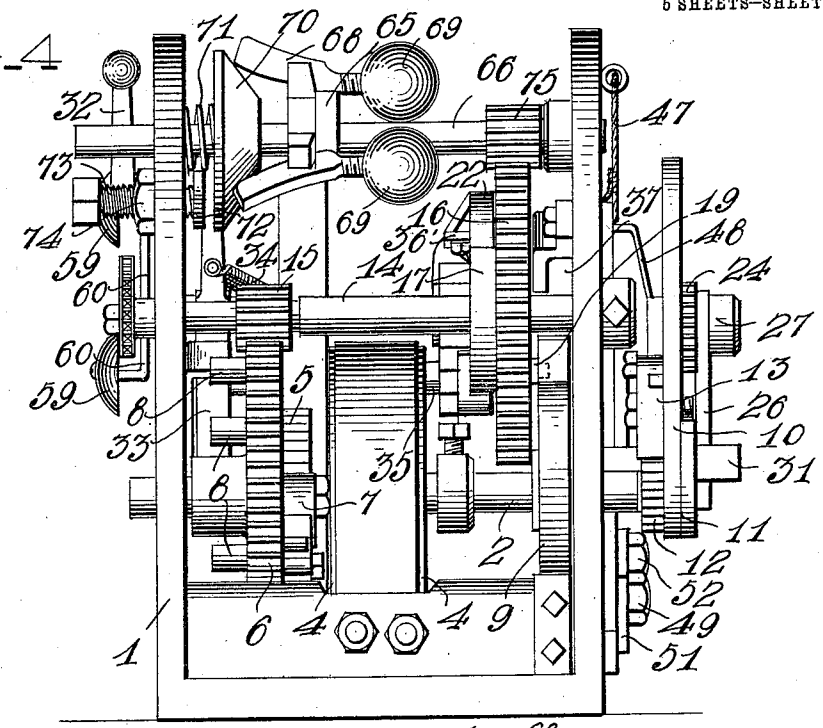
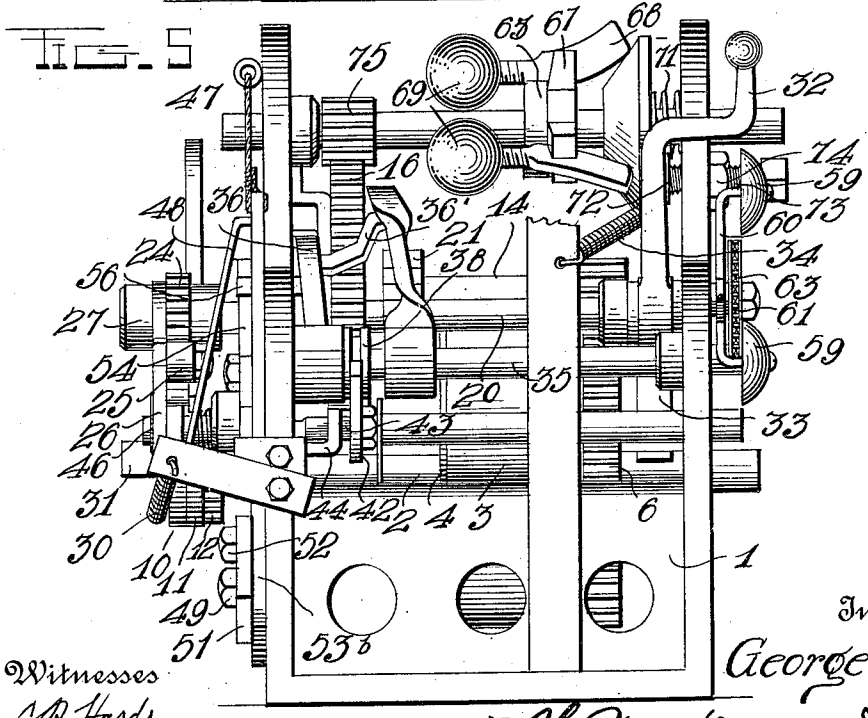



Fig. 5

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5 SHEETS—SHEET 4.

FIG. 7

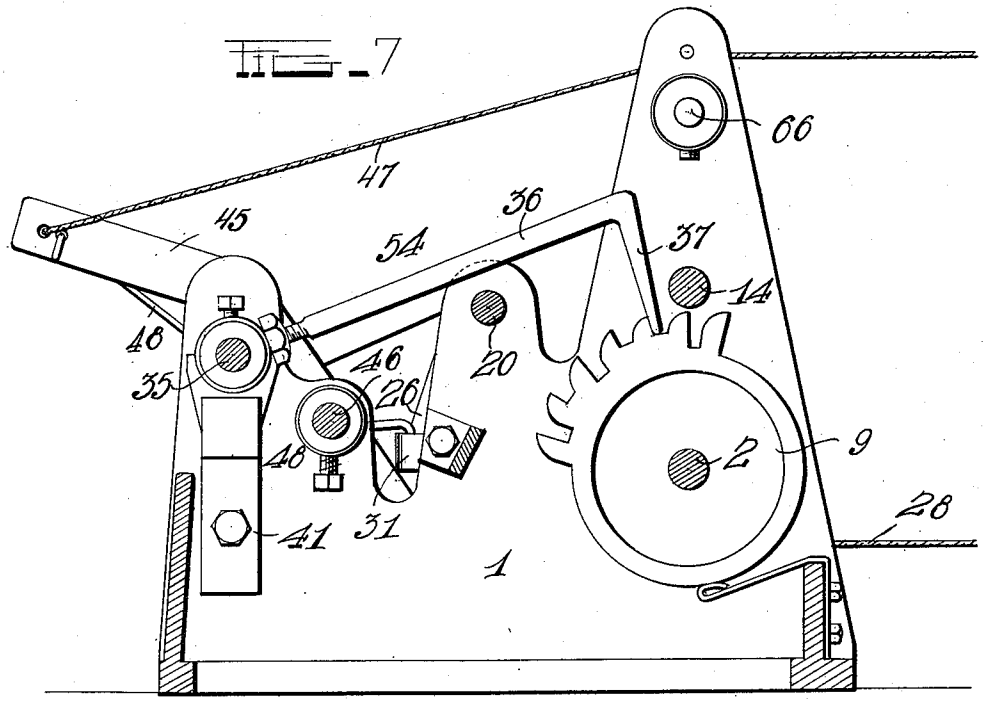
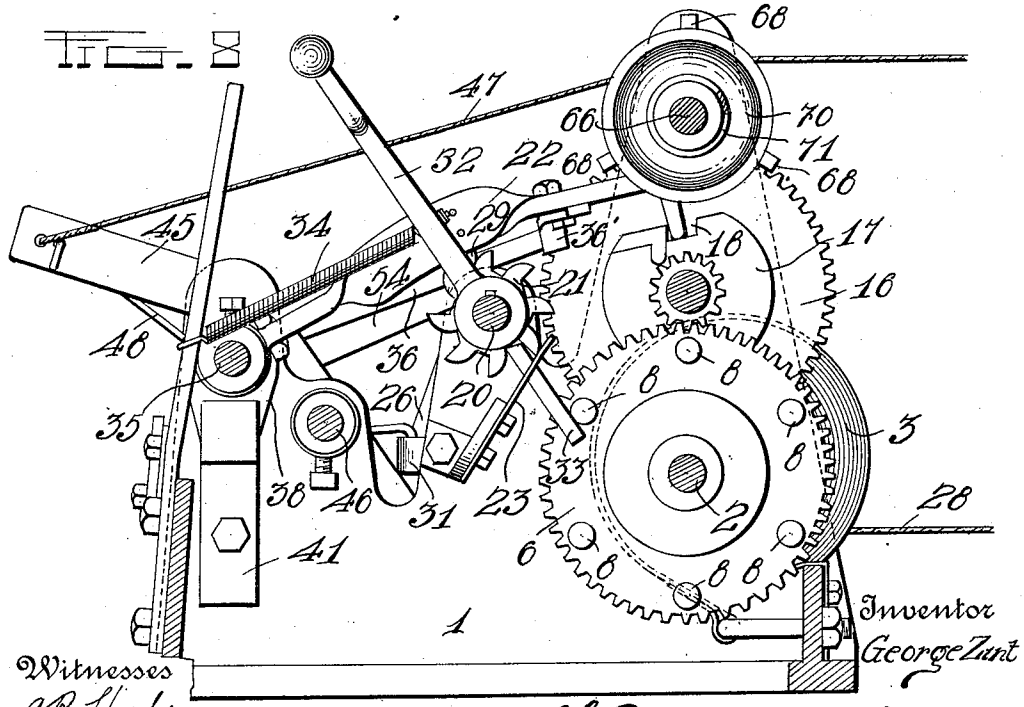



FIG. 8

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5 SHEETS—SHEET 5.

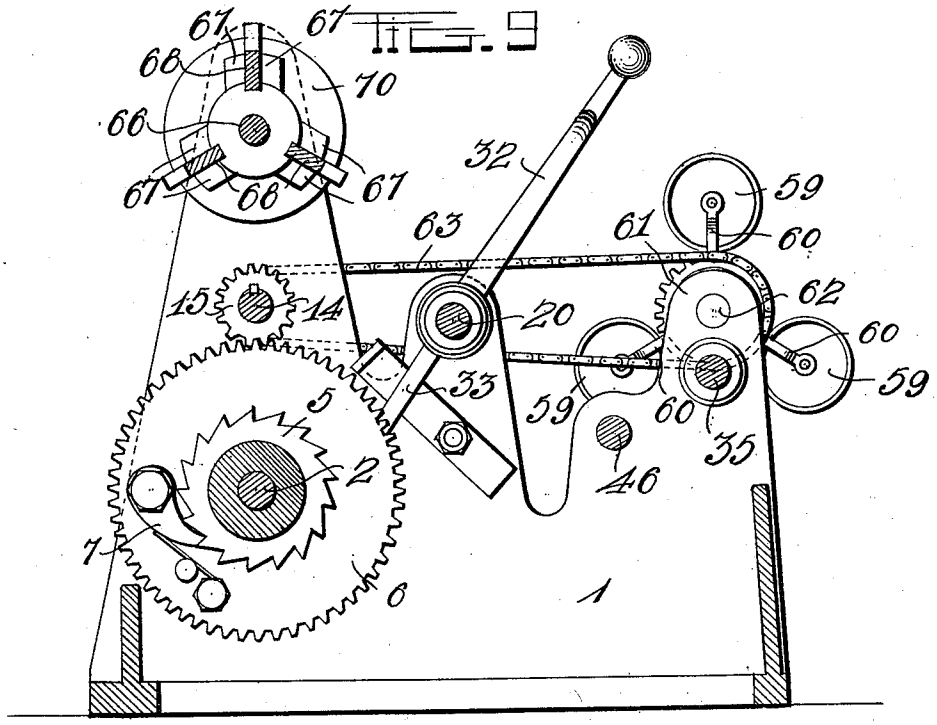
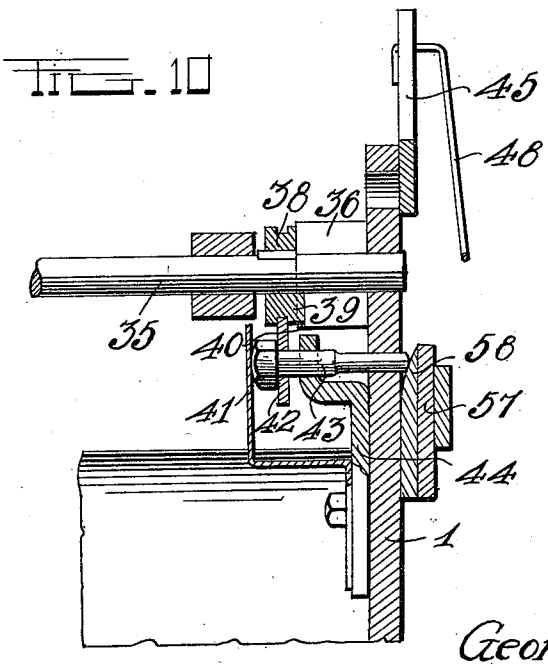



FIG. 10

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# UNITED STATES PATENT OFFICE.

GEORGE ZINT, OF WAPAKONETA, OHIO.

## BELL-RINGING MACHINE.

1,013,262. Specification of Letters Patent. Patented Jan. 2, 1912.

Application filed July 18, 1910. Serial No. 572,573.

*To all whom it may concern:*

Be it known that I, GEORGE ZINT, a citizen of the United States, residing at Wapakoneta, in the county of Auglaize and State of Ohio, have invented certain new and useful Improvements in Bell-Ringing Machines; and I 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 improvements in bell ringing machines.

One object of the invention is to provide a machine of this character by means of which bells may be consecutively rung, each time a different number of strokes.

Another object is to provide a bell ringing machine of this character having bells of different tones and provided with means whereby the speed of the bell striking lever may be controlled.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims:

In the accompanying drawings: Figure 1 is a side view of one side of the machine; Fig. 2 is a similar view of the opposite side; Fig. 3 is a top plan view; Fig. 4 is a front end view; Fig. 5 is a rear end view; Fig. 6 is a vertical longitudinal section on the line 6—6 of Fig. 3 looking in the direction of the arrow *a;* Fig. 7 is a similar view on the line 7—7 of Fig. 3 looking in the same direction; Fig. 8 is a similar view on the line 8—8 of Fig. 3 looking in the same direction; Fig. 9 is a similar view on the line 9—9 of Fig. 3; looking in the direction of the arrow *b;* Fig. 10 is a detail longitudinal section through the clutch mechanism of the stop levers on the line 10—10 of Fig. 3.

In the embodiment of the invention I provide a supporting frame 1 in the opposite sides of which adjacent to one end thereof is revolubly mounted a power shaft 2 on which is arranged a coiled power spring 3, said spring having its inner end fixedly connected to the shaft 2 and its outer end connected in any suitable manner to the frame 1. The spring 3 is preferably confined between a pair of guard plates 4 arranged on the shaft 2 as shown. Fixedly mounted on the power shaft 2 adjacent to one side of the spring 3 is a ratchet gear 5. Loosely mounted on the power shaft 2 between the ratchet gear 5 and the adjacent side of the frame is a combined driving and clapper tripping gear 6, said gear being preferably provided with seventy-two gear teeth.

Pivotally connected to one side of the gear 6 is a spring projected pawl 7, said pawl being adapted to engage the teeth of the ratchet gear 5 whereby when the shaft 2 and the gear 5 are turned by the spring 3, the driving gear 6 will be operated and whereby when the shaft is turned in the opposite direction for winding up the spring, said pawl will play loosely over the teeth of the ratchet gear 5 and will not turn the gear 6. On the opposite side of the gear 6 from the pawl 7 is located a series of clapper tripping studs 8 of which there may be any desired number, said studs being arranged at equi-distant points around the gear or opposite every twelfth tooth of the same.

Loosely mounted on the shaft 2 adjacent to the opposite side of the frame from the gear 6 is a strike controlling gear 9 on which is arranged a series of ratchet teeth, the spaces between which are formed at different depths for a purpose hereinafter described. One end of the shaft 2 projects beyond the adjacent side of the frame and is squared to receive a spring winding lever 10 which is adapted to be detachably engaged therewith and which comprises a head 11 having formed therein a squared socket to receive the square end of the shaft and having formed thereon a ratchet gear 12 with which is adapted to be engaged a spring projected pawl 13 carried by the lever 10 which is pivotally mounted on the head. By thus forming the winding lever the latter, when turned in one direction will cause the head 11 to turn the shaft 2, thereby winding the spring and when said lever is swung around in the opposite direction the pawl will play loosely over the ratchet gear 6 thus permitting the lever to be swung around for a new grip as will be readily understood.

Revolubly mounted in the opposite sides of the frame 1 above the shaft 2 is a power transmitting shaft 14 on which, adjacent to one end is keyed a spur gear pinion 15 which is preferably provided with twelve teeth having the same pitch as the teeth of the driving gear 6 with which said pinion is engaged. By providing the pinion 15

with twelve teeth it will be readily seen that said pinion and the shaft 14 will make a complete revolution each time the driving gear 6 moves to the distance of twelve teeth or to the distance between two of the clapper tripping studs arranged on said gear. Also fixedly mounted on the power transmitting shaft 14 is a stop gear 16 having on one side an integral annular stop plate 17 in the periphery of which is formed a stop notch 18 the purpose of which will be hereinafter described. On the hub of the opposite side of the gear 16 from the stop plate 17 is arranged a laterally projecting trip stud 19 which is adapted to engage the teeth of the strike controlling gear 9 on the shaft 2 thereby moving said strike controlling gear to the distance of one tooth at each complete revolution of the stop gear.

Revolubly mounted in the frame in rear of and substantially in line with the shaft 14 is a rock shaft 20 on which is mounted the starting mechanism of the machine. The starting mechanism comprises a lever lifting gear 21 which is keyed to the shaft 20 and is adapted to lift the stop lever 22 out of engagement with the stop notch 18 in the stop plate 17 of the gear 16 as will be hereinafter more fully described. The lever lifting gear 21 has engaged therewith a spring pawl 23 whereby said gear and the shaft 20 is held against retrograde movement.

One end of the rock shaft 20 projects beyond one side of the machine and has fixedly mounted thereon a ratchet gear 24 with which is adapted to be engaged the pawl 25 of a ratchet starting lever 26. The lever 26 is loosely mounted on the end of the shaft 20 and is held in position to engage the pawl 25 with the gear 24 by a collar 27. To the outer end of the lever 26 is connected a starting cable 28 which may extend to any desired point for operating the machine. When the cable 28 is pulled in the proper direction for engaging the pawl 25 with the ratchet gear 24 the shaft 20 will be rocked thereby turning the lever lifting gear 21 in the proper direction for engaging a trip lug 29 on the stop lever 22 thereby lifting said lever out of engagement with the stop notch 18 in the stop plate 17 which will permit the machine to start under the action of the power spring 3. After the starting lever has been thus turned to the position for starting the machine, the starting cable is released and said lever will then be swung back to its normal position by a coiled spring 30 which is connected thereby and to the frame of the machine as shown. When the lever is thus swung back by the spring 30 the pawl 25 will play loosely over the teeth of the ratchet gear 24 so that the rock shaft 20 will not be affected by the return movement of the starting lever. The movement of the starting lever is preferably limited by a stop bracket 31 the ends of which project laterally from the adjacent side of the frame 1 as shown.

Loosely mounted on the end of the rock shaft 20 is a bell clapper 32 on the hub or inner end of which is formed a longitudinal inwardly projecting trip arm 33. The trip arm 33 projects into the path of movement of the trip studs 8 on the driving gear 6 and is adapted to be consecutively engaged by said studs whereby said clapper is tripped each time one of the studs engages and passes the trip arm 33. The outer end of the clapper 32 is bent or formed at a right angle and projects beyond the adjacent side of the frame of the machine and is adapted to be engaged with a bell or series of bells arranged on the side of the machine as will be hereinafter described. The clapper when tripped by the studs 8 is forcibly brought back into engagement with the bells by a coiled spring 34 which is connected thereto and to the frame of the machine in any suitable manner.

The stop lever 22 is fixedly mounted on a clutch supporting shaft 35 journaled in the rear portion of the frame and on said shaft is loosely mounted a strike controlling lever 36 having on its free end the right angularly projecting fixed pawl or dog 37 which is adapted to engage the spaces between the teeth of the strike controlling gear 9. The strike controlling lever 36 is adapted to be raised and lowered by the stop lever 22 by means of an arm 36′ which is secured to the stop lever 22 and projects laterally therefrom and engages the under side of the strike controlling lever 36 as shown. By means of this connection between said levers, the strike controlling lever is lifted with the stop lever and may also be independently lifted for a purpose hereinafter described. As the spaces between the teeth of said gear 9 are of different depths the lever 36 will be allowed to drop to a greater or less extent when the pawl on the end thereof engages the different spaces between said teeth, or in other words said strike controlling lever 36 will be held up at different elevations according to the depth of the space between the teeth 9 with which the pawl 37 is engaged. As hereinbefore stated the lever 36 is loosely mounted on the shaft 35 and is adapted to be locked to said shaft by a clutch 38 which is keyed to slide on the shaft 35 and is provided with a clutch tooth 39 adapted to be brought into engagement with a notch 40 in the adjacent side of the hub of the lever 36 thus locking said lever to the shaft. The clutch 38 is engaged with and normally held in position to lock the lever 36 to the shaft 35 by a spring 41 secured to the adjacent portion of the frame of the machine and which engages a bifur-

cated clutch shifting lever 42 the ends of which are engaged with an annular groove formed in the clutch as shown. The clutch shifting lever 42 is connected to a clutch releasing bar 43 slidably mounted in the adjacent side of the frame 1 and in a supporting bracket 44 arranged thereon. The free end of the releasing bar 43 works through and is normally projected a slight distance beyond the outer side of the frame and is adapted to be engaged by a clutch releasing mechanism hereafter described.

By locking the strike controlling lever 36 to the shaft 35 in the manner described it will be seen that the strike controlling lever 36 and the stop lever 22 will be caused to move together or in unison, so that when the stop lever 22 is lifted by the lever lifting gear 21 said strike controlling lever 36 will also be raised. When the levers 22 and 36 are thus raised they will be held up to inoperative positions by the engagement of the right angularly bent outer end of the stop lever 22 with the periphery of the stop plate 17 on the gear 16 until said gear and plate have made one complete revolution and the stop notch 18 in said plate has again been brought around in position to receive the end of the lever 22 whereupon said lever and the strike controlling lever 36 will drop. While the stop gear 16 and plate 17 have thus made one revolution the trip stud 19 on the hub of the gear 16 will have moved the strike controlling gear 9 to the distance of one tooth so that the space between said tooth and the next tooth of said gear will be immediately below or in position to receive the pawl 37 on the end of the lever 36. If the space between the teeth of the gear 9 which has thus been brought below the pawl 37 of the lever 36 is of sufficient depth to permit the lever 36 and the stop lever 22 to drop far enough to engage the right angular end of said lever 22 with the stop notch 18 in the plate 19, the machine will be stopped at the completion of a revolution of the stop gear and plate. If, however, the space between the teeth of the gear 9 which has been brought below the pawl 37 of the strike controlling lever 36 is not of sufficient depth to permit the levers 36 and 22 to drop far enough to engage the angular end of the stop lever 22 with the stop notch 18, the gear 16 will be permitted to make a second or third or any number of revolutions until a space of sufficient depth between the teeth of said strike controlling gear has been brought to a position beneath the pawl 37 of the strike controlling lever 36 to permit said lever and the stop lever 22 to drop far enough to engage the end of said lever 22 with the stop notch 18 in the stop plate 17 of the gear 16 whereupon further movement of the machine will be stopped. By thus controlling the movement of the machine it will be readily understood that one or more of the trip studs 8 on the driving gear 6 will be brought into operative engagement with the clapper for tripping the same one or any number of times corresponding to the revolutions of the stop gear 16.

It will be understood that the teeth on the strike controlling gear 9 may be arranged in any manner to produce any consecutive number of strikes for the clapper and in the present instance the teeth of said gear are arranged so that the operating mechanism will cause the clapper to first strike one bell and at the next movement of the starting lever to strike two bells and at the third movement of the starting lever to strike three bells, this controlling of the operating mechanism being effected by the difference in the depth of the consecutive spaces between the teeth of the gear 9 as hereinbefore described. After the strike controlling gear 9 has been moved in the manner described, to bring its entire series of teeth past the pawl 37 of the strike controlling lever, during which movement all of the series of strokes have been struck, the strike controlling gear 9 is adapted to be turned back on the shaft 2 to a position wherein the series of operations just described will be repeated by a suitable retracting mechanism now to be described.

The retracting mechanism comprises a retracting lever 45 which is pivotally mounted on the projecting end of a shaft 46 journaled in the frame 1. To the lever 45 is connected a retracting cord or cable 47 which may extend to any distant point from the machine. The lever 45 is also provided with a spring 48 whereby the same is restored to its normal position after being operated to retract the strike operating mechanism. The lower end of the lever 45 is provided with a headed stud 49 which is engaged with a longitudinal slot 50 formed in a gear retracting bar 51, the opposite end of which is pivotally connected to a stud 52 connected with the strike controlling gear 9 and projecting therefrom through a segmental slot 53 formed in the adjacent side of the machine as shown. By thus connecting the lower end of the retracting lever 45 with the slotted end of the retracting bar 51 said bar will be actuated when the lever is pulled upwardly to retract or turn the strike controlling gear back to its original or starting position. After the lever has thus been operated to turn the gear 9 back to its original position, said retracting lever will be restored to its normal position by the spring 48 which action is permitted by the slotted connection between the retracting bar and the lower end of the lever. This slotted connection between the retracting bar and lower end of the lever will also permit the

strike controlling gear to be intermittently operated in the manner described for controlling mechanism.

In order to permit the striking mechanism to start at any point on the strike controlling gear, I provide means to limit the retracting movement of the strike controlling gear whereby the same may be stopped to bring any of the desired spaces therein into position to receive the pawl of the strike controlling lever, said means comprising a slotted stop bar $53^a$ which is adjustably secured to the side of the frame by set screws or similar fastening devices and is provided on its inner end with an upwardly projecting finger $53^b$ adapted to be brought across the slot 53 at any desired point thereby shortening said slot and thus limiting the movement of the stud 52 which connects the retracting bar 51 with the strike controlling gear thereby limiting the movement of the latter.

In order to permit the strike controlling gear to be retracted it is first necessary to disengage the pawl 37 of the strike controlling lever from the teeth of said gear. This disengagement of the pawl 37 from the strike controlling gear is accomplished by the lever lifting arm 54 which is pivotally connected at one end to the retracting lever 45 and has a loose sliding engagement at its opposite end with the projecting end of the rock shaft 20 whereby said end of the arm is operatively supported. On the arm 54 is formed a cam shoulder 55 which, when the retracting lever is swung forwardly is adapted to engage a stud 56 which projects laterally from the adjacent side of the strike controlling lever 36 thereby lifting said lever independently of the stop lever 22 and disengaging the pawl 37 from the teeth of the strike controlling gear 9 until the latter has been retracted or turned back by the retracting bar 51 as hereinbefore described. After the gear has thus been turned back and the retracting lever restored to its normal position the strike controlling lever 36 will again drop by gravity into position to engage the teeth of the strike controlling gear. In order to thus lift the strike controlling lever 36 independently of the stop lever it is necessary to disengage the clutch 38 from the inner end of the stop lever whereby the latter may turn loosely on the clutch shaft 35. The disengagement of the clutch from the strike controlling lever must occur simultaneously with the movement of the retracting lever and before the cam shoulder 55 of the lever lifting arm 54 comes into engagement with the stud 56 on the strike controlling lever. This shifting of the clutch is accomplished by means of a segmental retracting plate 57 which is bolted or otherwise secured to the retracting lever 45 and is provided on its inner side with a cam projection 58. As soon as the retracting lever is moved in a forward direction, the cam projection 58 will be brought into engagement with the projecting end of the clutch releasing bar 43 hereinbefore described, thereby forcing said bar inwardly against the tension of the clutch spring 41, thereby causing the clutch shifting lever 52 to shift the clutch back out of engagement with the hub of the strike controlling lever thus permitting the latter to turn loosely on the clutch shaft when raised by the arm 54 as hereinbefore described.

As hereinbefore stated the machine may be provided with a single bell adapted to be struck by the right angularly projecting outer end of the clapper 32 or as shown in the drawings, I may provide a series of bells 59 each of which has preferably a different tone. The bells 59 are connected to the outer end of radially projecting supporting arms 60 the inner ends of which are secured to the hub of a sprocket gear 61 which is revolubly mounted on the projecting end of a stud shaft 62 which is screwed in the side of the machine frame adjacent to the end of the clutch shaft 35 as shown. The sprocket gear 61 is connected by a sprocket chain 63 with a sprocket pinion 64 which is fixedly mounted on the outer end of the power transmitting shaft 14 whereby said gear 61 and the bells operated thereby are revolved. The gears 61 and 64 are provided with the proper relative number of teeth for turning the bells to the proper distance to consecutively bring the same into position to be engaged with the clapper. In the present instance wherein three bells are shown the gear 61 is provided with thirty teeth while the pinion 64 is provided with ten teeth so that for each complete revolution of the pinion the sprocket gear will be moved one-third of a revolution thus bringing the bells around in position to be consecutively struck by the clapper, which is operated at the proper time by the studs 8 on the clapper tripping gear 6 as hereinbefore described.

In order to control the speed of the machine I provide a suitable governor which is here shown in the form of a centrifugal governor and comprises a collar 65 which is fixedly mounted on a governor shaft 66 which is revolubly mounted in the frame of the machine above the power transmitting shaft 14 and stop gear 16. The governor 65 is provided with pairs of radially projecting bearing lugs 67 between each pair of which is pivotally mounted a weight supporting arm 68 having on one end a weight 69. The opposite end of the arms 68 project beyond the opposite side of the collar from the weights 69 and have rounded inner corners which are adapted to be engaged with the conical or tapered inner face of the

brake disk 70 which is slidably and loosely mounted on the shaft 66. The disk 70 is normally held in yielding engagement with the ends of the arm 68 by a coiled spring 71 arranged on the shaft 66 between said disk and the adjacent side of the machine.

The disk 70 is adapted to be forced laterally by the engaging ends of the arms 68 and into engagement with a brake shoe 72 which is secured to the inner end of an adjusting screw 73 arranged in the adjacent side of the frame and secured to hold the shoe 72 in its adjusted position by means of a jam nut 74.

The movement of the machine is imparted to the governor shaft through a spur gear pinion 75 which is keyed to or otherwise secured to the governor shaft 66 and is in operative engagement with the stop gear 16 on the power transmitting shaft 14. By thus connecting the governor shaft with the machine, said shaft will, when revolved by the stop gear 16 impart a centrifugal action to the weighted arms 68 thus causing the inner ends of the same to move the brake disk 70 into more or less forcible engagement with the brake shoe thereby retarding the movement of the governor shaft and consequently of the power transmitting shaft geared thereto, so that by regulating the position of the brake shoe the speed of the machine may be controlled.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

Having thus described my invention, what I claim is:

1. In a bell ringing machine, a supporting frame, a power shaft mounted therein, a clapper adapted to be actuated by said power shaft, bells adapted to be sounded by said clapper, a stop mechanism adapted to control the movement of said power shaft, means to control said stop mechanism whereby the clapper is caused to strike the bells a different number of times at each successive operation of the clapper and means to retract said strike controlling mechanism.

2. In a bell ringing machine, a supporting frame, a spring operated power shaft arranged in said frame, a trip gear operatively mounted on said shaft, a series of trip studs arranged on said gear, a bell clapper adapted to be engaged and tripped by said studs, a power transmitting shaft geared to said power shaft, a stop gear fixedly mounted on said power transmitting shaft, a stop plate arranged on said stop gear, said plate having formed therein a stop notch, a stop lever adapted to be operatively engaged with said stop notch whereby the movement of said shafts is controlled, a strike controlling mechanism operated by said stop gear, means to start said power shaft, and means to retract said strike controlling mechanism whereby the striking operation may be repeated.

3. In a bell ringing machine, a supporting frame, a spring actuated shaft arranged therein, a clapper tripping mechanism operated by said power shaft, a clapper adapted to be operated by said tripping mechanism, a bell adapted to be struck by said clapper, a power transmitting shaft geared to said power shaft, a stop gear mounted on said power transmitting shaft, a stop plate arranged on said stop gear, said plate having a stop notch, a stop lever adapted to be engaged with said notch whereby said power shaft is stopped, a rock shaft mounted in said frame, a lever lifting gear mounted on said shaft and adapted to be engaged with said stop lever whereby the latter is lifted to disengage the same from the stop notch in said stop plate whereby the machine is permitted to start, a ratchet starting lever arranged on said rock shaft whereby said lever lifting gear is operated, a strike controlling mechanism actuated by said stop gear whereby the movement of said stopping lever is controlled to permit said stop gear to make one or more revolutions thereby causing said clapper tripping mechanism to trip the clapper a different number of times at each successive operation of said mechanism and means to retract said strike controlling mechanism whereby the operation of the machine may be repeated.

4. In a bell ringing machine, a supporting frame, a bell clapper operatively mounted in said frame, a bell adapted to be struck by said clapper, a suitably operated tripping mechanism adapted to successively trip said clapper, a stop mechanism geared to said tripping mechanism, said stop mechanism comprising a stop lever, a starting mechanism adapted to disengage said stop lever from said stop mechanism, whereby the tripping mechanism is started, a strike controlling gear operated by said stop mechanism, said gear having teeth between which are formed spaces of different depth, a strike controlling lever adapted to be engaged with the spaces between said teeth, said lever being operatively connected with said stop lever whereby the latter is held out of engagement with said stop mechanism for periods of different length thereby causing said tripping mechanism to trip said bell clapper a different number of times at each successive operation, a clutch adapted to operatively connect and disconnect said strike control-

ling lever with said stop lever, a retracting mechanism adapted to return said strike controlling gear to its normal position whereby the striking operation may be lifted, a clutch shifting mechanism operated by said retracting mechanism whereby said clutch is shifted to disconnect said strike controlling lever from said stop lever when said strike controlling gear is retracted.

5. In a bell ringing machine, a supporting frame, a bell clapper operatively mounted in said frame, a bell adapted to be struck by said clapper, a suitably operated tripping mechanism adapted to successively trip said clapper, a stop mechanism geared to said tripping mechanism, said stop mechanism comprising a stop lever, a starting mechanism adapted to disengage said stop lever from said stop mechanism whereby the tripping mechanism is started, a strike controlling gear operated by said stop mechanism, a strike controlling lever adapted to be engaged with said gear, a clutch adapted to operatively connect and disconnect said strike controlling lever with said stop lever, a gear retracting bar pivotally connected with said strike controlling gear, a retracting lever having a pin and slot connection with said retracting bar whereby the latter is actuated to retract or turn said strike controlling gear back to its normal position, a clutch shifting cam carried by said retracting lever and adapted to operate said clutch whereby said strike controlling lever is disengaged from said stop lever, and means operated by said retracting lever to lift said strike controlling lever out of engagement with said strike controlling gear whereby the latter may be retracted.

6. In a bell ringing machine, a supporting frame, a spring operated power shaft, a trip gear operatively mounted on said shaft, a series of trip studs arranged on said gear, a bell clapper adapted to be engaged and tripped by said studs, a series of bells revolubly mounted on said frame, said bells each having a different tone, means to operatively connect said bells with said power shaft whereby the bells will be revolved at the proper time and to the proper distance to successively bring the same into position to be struck by said clapper, a stop mechanism adapted to control the movement of said power shaft, a strike controlling mechanism adapted to operate said stop mechanism whereby said clapper is caused to strike said bells a different number of times at each successive operation and means whereby said strike controlling mechanism is retracted to permit the striking operation to be repeated.

7. In a bell ringing machine, a supporting frame, a spring operated power shaft, a trip gear operatively mounted on said shaft, a series of trip studs arranged on said gear, a bell clapper adapted to be engaged and tripped by said studs, a series of bells revolubly mounted on said frame, said bells each having a different tone, means to operatively connect said bells with said power shaft whereby the bells will be revolved at the proper time and to the proper distance to successively bring the same into position to be struck by the clapper, a stop mechanism adapted to control the movement of said power shaft, a strike controlling mechanism adapted to operate said stop mechanism whereby said clapper is caused to strike said bells a different number of times at each successive operation, means whereby said strike controlling mechanism is retracted to permit the striking operation to be repeated, and a governor geared to said tripping mechanism whereby the speed of the machine is automatically controlled.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE ZINT.

Witnesses:
ROY E. LAYTON,
ELSIE C. ORPHAL.