









# UNITED STATES PATENT OFFICE.

ALLAN EDWARD LARD, OF ST. JOSEPH, MISSOURI

## SINGLE-TRIGGER FIREARM.

SPECIFICATION forming part of Letters Patent No. 668,526, dated February 19, 1901.

Application filed June 21, 1899. Serial No. 721,282. (No model.)

*To all whom it may concern:*

Be it known that I, ALLAN EDWARD LARD, of St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Firearms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to firing mechanisms for firearms of that class in which a single trigger is employed for firing two or more barrels—such, for instance, as is shown in my prior application for a patent, Serial No. 676,091, filed April 1, 1898.

The invention consists in the matters hereinafter described, and pointed out in the appended claims.

The invention is herein shown in connection with a shotgun provided with two shot-barrels and locks or firing mechanisms embracing two hammers, together with means for actuating the same by successive pulls on the trigger. The invention, however, may be applied to firearms of other kinds and to those having more than two barrels.

In the accompanying drawings, illustrating my invention, Figure 1 is a view in side elevation of the breech mechanism of a double-barreled shotgun made in accordance with my invention. Fig. 2 is a cross-sectional view taken on line 2 2 of Fig. 1. Figs. 3 and 4 are views showing the main parts of the firing mechanism, illustrating different positions of said parts during the operation thereof. Fig. 5 is a detail plan section of the main parts shown in Fig. 1 on line 5 5 of Fig. 1. Fig. 6 is a detail section taken on line 6 6 of Fig. 5, showing in end view the device illustrated in Figs. 1, 2, and 5 for changing the order in which the barrels are fired. Fig. 7 is a bottom plan view of the shifting-lugs shown in Fig. 6 removed from the other parts of the device.

As shown in the said drawings, A indicates the body or wooden portion of the gun-stock, B the frame, and C the barrels, which are pivoted to the forward extension B of the frame.

E indicates the snap-lever by which the locking-detent for holding the barrels in firing position is actuated. The locks are shown

as each consisting of the usual hammer or tumbler F, mainspring F', sear F<sup>2</sup>, and sear-spring F<sup>3</sup>. The frame is provided in its forward extension with two cocking-levers F<sup>4</sup>, which extend into a recess d in the extension D and which are actuated in the depression of the forward end of the barrels at the time of loading, so as to cock or throw back the hammers in the usual manner.

G indicates the trigger-plate, to which the trigger is pivoted and upon which, in the particular instance illustrated, the main parts of the firing mechanism are mounted.

Now, referring to the firing mechanism by which the sears F<sup>2</sup> are actuated for releasing the hammers, the same is, in the particular embodiment of my invention herein shown, constructed as follows:

J indicates the trigger, which is mounted on a pivot j, secured in an upwardly-projecting plate G' upon the trigger-plate. Said trigger is provided with a rearwardly-extending trigger-blade J', which projects rearwardly over the trigger-plate and is rigidly attached to and movable with the trigger. Said trigger and trigger-blade have movable connection with the pivot j by means of a slot j', formed in the forward part of the trigger-blade and through which said pivot j passes. Said slot permits a bodily backward-and-forward movement of the trigger-blade and trigger. The trigger-blade is provided at its rear portion with two laterally-projecting firing-lugs K K', which firing-lugs extend beneath and act upon the rear ends of the sears, the parts being so arranged that when the trigger is pulled backwardly the rear end of the trigger-blade rises and the firing-lugs act upon the sears. A suitably-applied spring, herein shown as having the form of a contractible coiled spring J<sup>2</sup>, acts upon the trigger-blade and trigger in such manner that it tends to draw or move the same forward or in a direction to bring the rear end of the slot j' against the pivot j. A holding-tooth g on the trigger-plate is adapted for contact with a forwardly-facing shoulder j<sup>3</sup> on the lower margin of the trigger-blade when the said blade and the trigger are retracted or drawn back in such manner as to hold the said blade in its retracted position against the action of the spring J<sup>2</sup>. In Fig. 1 the trigger-blade and



trigger are shown as at the rearward limit of their movement, with the holding-tooth *g* engaged with the shoulder *j*<sup>2</sup> and the forward end of the slot *j*<sup>1</sup> in contact with the pivot *j*.

5 *L* is a detent-arm rigidly attached to the trigger-blade and, as herein shown, having the form of an integral rearwardly-projecting prong or spur on the rear edge of said blade. Said detent-arm is adapted for engagement

10 with a holding or locking tooth *m* on a swinging detent-post or detent *M*, which is pivoted at its lower end by a pivot-pin *m*<sup>1</sup> to the trigger-plate and is adapted to swing backwardly and forwardly in a vertical plane. The pivot

15 *m*<sup>1</sup> is shown as secured in an upright standard *G*<sup>3</sup> on the trigger-plate *G*. Said detent *M* is provided with a shoulder *m*<sup>2</sup>, adapted for contact with the trigger-plate in such manner as to limit the rearward or backward movement

20 of the upper end of said detent. A suitably-applied spring is arranged in position to move or throw backwardly and thereby hold at the rearward limit of its movement, said detent *M*, said spring, as herein shown, having

25 the form of a coiled spring *M*<sup>1</sup>, which is held in compression between a lug on the detent and an opposing surface of the trigger-plate.

Mounted on the forward end of the trigger-blade by means of a pivot-pin *n* is a detent *N*, which projects rearwardly from said

30 pivot-pin in such position that its rear end is adapted for engagement with the pivot *j*. Said detent is provided with a depending arm *N*<sup>2</sup>, through which the said detent is actuated.

35 When the trigger-blade is at the rearward limit of its movement, the rear end of the said detent is held in an elevated position and above the slot *j*<sup>1</sup> by means of the pivot *j*. A stop-pin *n*<sup>1</sup> is arranged on the trigger-blade

40 in position for contact with the depending arm *N*<sup>2</sup> of said detent *N* when the rear end of the latter is in its elevated position. A spring *N*<sup>1</sup> tends to throw forward the depending arm of the detent *N*, so as to depress the rear end

45 of the said detent into position in front of the pivot *j* when the trigger-blade and trigger are at the forward limit of their movement. When the trigger-blade is at the rearward limit of its movement, the pivot-pin stands

50 beneath the detent and in position to prevent the descent thereof under the action of the spring *N*<sup>1</sup>. Provision is made for throwing the detent *N* upwardly or out of its engagement with the pivot *j* by means of actuating

55 connections operated by a part which is moved in the act of loading the arm. As shown in the present instance, such actuating device for the detent is operated from the snap-lever *E* through the medium of the rod *E*<sup>1</sup>, which

60 is attached to and moves with the snap-lever, said rod having connection at its lower end with a sliding bar *H*, which sliding bar rests and slides upon the trigger-plate and is adapted for contact at its rear end with the depending arm *N*<sup>2</sup> of the detent. These parts are so

65 arranged that when the trigger-blade is at the forward limit of its movement (at which

time the detent *N* will be in position to engage the pivot *j*) the backward movement of the rod *H* (occurring when the snap-lever is 70 moved to unlock the barrels) will result in the depending arm of the detent *N* being thrust rearwardly and the horizontal arm thereof elevated to free it from the pivot, thereby causing rearward movement of the 75 trigger-blade and trigger against the action of the spring *J*<sup>2</sup>.

Mounted on the standard *G*<sup>1</sup> forward of the pivot *j* is a lever *I*, having on its upper end a weight or leaden ball *I*<sup>1</sup> and adapted for 80 contact at its lower end with the forward edge of the trigger-blade when the weight is thrown or moved forward. The upper or weighted end of the lever *I* is held at the rearward limit of its movement by a suitably-applied 85 spring, herein shown as consisting of the same spring, *J*<sup>2</sup>, which also acts to throw or draw forward the trigger and trigger-blade. The rearward movement of said weighted lever is, however, limited by a stop-pin *i*<sup>1</sup>, secured in 90 the standard *G*<sup>1</sup> below the level of the pivot *j* in position for contact with the lower end of said lever *I* when its upper end is at the rearward limit of its movement. *O* indicates a sliding weight located at the rear of the 95 detent *M* and which is herein shown as mounted to slide in the recess *O*<sup>1</sup> in the stock *A*. Said sliding weight is held normally at some distance rearwardly from the detent *M* by means of a coiled spring *O*<sup>2</sup>, but is adapted 100 by the yielding of said spring to be thrown forward against said detent.

Figs. 1, 3, and 4 illustrate the operation of the parts described in firing the arm, and the action thereof will be understood from the fol- 105 lowing: Fig. 4 illustrates the position of the parts when the gun is ready to be "broken," one barrel having been fired. When the snap-lever *E* is pushed to one side to break the gun, as said lever moves it causes the 110 slide-bar *H* to travel toward the butt-end of the gun. The rear end of said slide-bar comes in contact with the depending arm of the detent *N* on the trigger-blade, so that when the snap-lever is thrown over said bar will push 115 the said depending arm of the detent rearwardly, thereby lifting the detent free from engagement with the pivot *j*. As soon as the detent has been released from the pivot the depending arm of the detent will be 120 brought into contact with the stud *n*<sup>1</sup> on the forward end of the trigger-blade, and further rearward movement of the slide-bar will carry said trigger-blade, with the trigger, rearwardly until the pivot *j* reaches the front 125 end of the slot *j*<sup>1</sup> and the shoulder *j*<sup>2</sup> is brought into position for engagement with and is engaged by the holding-tooth *g* on the trigger-plate. At the same time that the trigger-blade is thus thrust rearwardly by the action 130 of the slide-bar the hammers will be thrown backwardly by the action of the cocking-levers and the forward ends of the sears will be lifted by the sear-springs, while the rear



ends of said sears will be depressed and brought into position for the action thereon of the firing-lugs. One of the sears, or that belonging to the lock mechanism which is first to be fired, will come into actual contact with its corresponding firing-lug and by pressing downwardly thereon will depress the rear end of the trigger-blade, thereby insuring the proper engagement of the shoulder  $j^2$  with the holding-tooth  $g$ . After the barrels have been closed the parts will then be in position shown in Fig. 1 and in readiness for the firing of the first barrel, it being of course understood that when the gun is closed the slide-bar  $H$  will be retracted or thrown forward, thus leaving the trigger and trigger-blade free for subsequent forward movement. The parts being in the position shown in Fig. 1 and the trigger being pulled, the rear end of the trigger-blade moves upwardly and the first barrel is fired. The detent-arm  $L$  is so arranged with respect to the holding-tooth  $m$  of the detent  $M$  that when the trigger and trigger-blade are at the rearward limit of their movement, as shown in Fig. 1, the end of said detent-arm will stand beneath the tooth  $m$  and at such a distance from the same as to permit upward movement of the trigger-blade to accomplish the firing of the first barrel before the said arm  $L$  strikes said tooth. It follows that the upward movement of the trigger-blade and firing-lugs in the firing of the first barrel is arrested by contact of the said detent-arm  $L$  with the tooth  $m$  before the second lug on the trigger-blade comes into contact with the second sear. Such contact of the detent-arm with the said tooth will prevent further movement of the trigger-blade after the first barrel has been so fired. The recoil of the arm in the firing of the first barrel will have the effect of jarring or throwing the gun rearwardly and the trigger-finger away from the trigger, and such recoil throws forward the detent  $M$ , thereby carrying the tooth  $m$  over the detent-arm  $L$ , so as to bring the parts into the position shown in Fig. 3. The recoil also has the effect of throwing forwardly the weight  $I'$  on the lever  $I$ , so that the lower end of said lever will be thrown rearwardly into contact with the front edge of the trigger-blade, and thereby prevent said trigger-blade from being thrown or jarred forward, thereby maintaining the detent-arm  $L$  beneath or in position for engagement with said tooth  $m$ . An involuntary pull invariably follows the first pull on the trigger, probably by reason of the rebound of the gun from the shoulder and the action of the muscles under the recoil. Under such involuntary pull when the parts are in the position resulting from the recoil and as illustrated in Fig. 3 any upward movement of the firing-plate beyond the point required for firing the first barrel will be prevented by the engagement of the detent-arm  $L$  with the detent-tooth  $m$ , and the movement of the trigger will therefore be blocked before

any upward pressure upon the second sear can take place. The above will be better understood from consideration of the fact that the primary action of the recoil will be to throw the gun rearwardly, and this will tend to throw the detent  $M$  and weight  $I'$  forward, thereby maintaining the detent-arm  $L$  and the detent  $M$  in interlocked relation. The secondary action of the recoil will be a rebound or forward movement of the gun, accentuated by the reaction of the muscles, which are held tense to withstand the blow of the recoil, and this will produce a pull on the trigger, which, however, will have no result, because the said detent-arm  $L$  and tooth  $m$  will still be in interlocked relation. The trigger being now released to a sufficient extent, the detent  $M$  will be thrown rearwardly to its normal position by the action of the spring  $M'$  and the weight  $I'$  will be drawn backward, while at the same time the trigger-blade will be drawn forward by the action of the spring  $J^2$ , thereby carrying the detent-arm  $L$  out from beneath the tooth  $m$  and bringing the parts to the positions shown in Fig. 4. The second barrel may now be fired by again pulling the trigger, as the rear end of the trigger-blade, with the firing-lug, is free to be moved upward by a rearward pull upon the trigger. As the trigger-blade and trigger are drawn forward to release the detent-arm  $L$  from the tooth  $m$ , as soon as the pivot  $j$  reaches the rear end of the slot  $j'$  the spring-actuated detent  $N$  will descend in front of the pivot, thereby confining said pivot on the rear end of said slot and holding the trigger-blade from backward movement during the pull on the trigger by which the second barrel is fired.

The sliding weight  $O$ , before described, operates to make the action of the detent  $M$  in blocking the involuntary pull more positive and certain, it being obvious that said weight will be jarred or thrown forward in the recoil of the gun, so as to strike the upper end of the detent  $M$  and aid in holding the same in engagement with the detent-arm  $L$  until after the involuntary pull.

A device to enable the shooter to fire either barrel first is illustrated in the several figures of the drawings and shown more clearly in Figs. 2, 5, 6, and 7. In the construction shown the firing-lugs  $K$   $K'$  on the trigger-blade are arranged with their upper surfaces at the same elevation, and in connection with said lugs is provided a sliding bar  $P$ , which is movable endwise in a suitable guideway in the trigger-blade and is provided with lateral projections or wings  $P'$   $P^2$ , arranged out of line with each other and so disposed that when one of said wings is over one of the firing-lugs the other wing will be free from the other firing-lug. In the particular construction illustrated the sliding bar  $P$  fits within a horizontally-arranged slot in the trigger-blade, and said bar is provided in its under surface with a rib  $p$ , which engages a guide-groove  $j^3$ , formed in the lower wall of said



slot, and receives said rib  $p$ , as clearly seen in Fig. 6. An operating device is provided by which said bar, with its wings, can be actuated or slid endwise in the trigger-blade by means operated from the outer surface of the breech-frame. The actuating device illustrated is located on the side of the frame and consists of a slide  $Q$ , similar to the ordinary safety-slide and having an inwardly-extending forked projection  $q$ , which engages an arm  $p'$  on the wing  $P^2$  of the slide-bar. The fork  $q$  of the slide is extended vertically or made of considerable depth, as seen in Fig. 6, so that it will retain its engagement with the arm  $p'$  in the vertical movement of the trigger-blade. Assuming the laterally-projecting parts or wings on the slide-bar to be one-sixteenth of an inch thick, when the slide  $Q$  is pushed forward and the gun is in readiness for firing the sear of the right-hand barrel will be one-sixteenth of an inch above the right firing-lug, while the left-hand sear will be in contact with the left-hand wing  $P'$ , which is over the left-hand stationary lug. This is the position of the parts shown in the drawings. Now if the trigger be operated first the left and then the right hand barrel will be fired. If, however, the slide  $Q$  be pushed rearward, the wing  $P^2$  will be carried over the stationary lug  $K'$ , and a space of one-sixteenth of an inch will then exist between the left-hand stationary lug and the left-hand sear, while the right-hand sliding wing  $P^2$  will be in contact with the right-hand sear. If the trigger now be pulled, the right-hand barrel will be first fired, its sear being lifted by the action of the movable wing, which rests over the right-hand firing-lug. When the trigger is again pulled, the left-hand barrel will be fired, its sear being lifted by contact therewith of the left-hand firing-lug.

In Fig. 1 of the drawings I have shown a safety catch or detent adapted to engage the trigger-blade when it is desired to lock the same from movement to prevent the gun from being fired. Said safety-catch is constructed as follows:  $R$  indicates a slide or thumb piece mounted on the top of the tang and provided with a stem  $r$ , which passes through a longitudinal slot in said tang and is provided with a cross-pin  $r'$  to hold it from rising out of said slot.  $S$  indicates a sliding bar, which rests in contact with and slides upon the under surface of the tang and is provided with a depending projection  $s$ , adapted for contact with the top surface of the trigger-blade when the slide  $S$  is thrust forward, but which is free from said blade when the slide is retracted. Said slide is herein shown as being held in contact with the top of the tang by a headed screw  $s'$ , which passes through a longitudinal slot in the said slide. The rear end or portion  $S'$  of the slide  $S$  is made relatively thin and of resilient metal, so that it constitutes a spring. The rear extremity of the said spring-arm  $S'$  is connected with the lower end of the

lever  $S^2$ , which lever is pivoted between its ends by a pivot-pin  $s^2$  in the slot of the tang, so as to swing in a vertical plane. The upper end of said lever is connected, by means of a link  $R'$ , with the stem  $r$  of the slide  $R$ . These parts are so arranged that as the lever  $S^2$  is moved or swung on its pivot by the movement of the slide  $R$  the rear end of the spring-arm  $S'$  will be depressed when the slide is at the central part of its movement, such depression being permitted by the resiliency of the spring-arm  $S'$ . The upward pressure of said spring-arm, however, tends to hold the lever  $S^2$  and the slide  $r$  at the forward or backward limit of movement of said parts. It follows from this construction that the safety-slide is adapted to automatically lock itself in its forward or rearwardmost position, while at the same time the slide can be easily moved or shifted. When the safety-slide  $R$  is pushed forward, the trigger is free. When pushed back, the trigger is blocked.

So far as the operation of the devices for changing the order of firing the barrels is concerned the operation of said devices will be the same whether the part herein called the "trigger-blade" be rigidly attached to the trigger or whether it have a limited movement with respect to the trigger, as is the case with the firing-plate shown in said prior application hereinbefore referred to.

I claim as my invention—

1. The combination with a plurality of locks and their sears, of a trigger having a rigidly-attached, rearwardly-extending trigger-blade provided with a detent-arm, said trigger and its blade being pivoted to the frame and being longitudinally movable thereon, a tooth on the frame adapted for engagement with said detent-arm, a spring acting on the trigger and its blade in a direction to throw the same forward, means engaging the trigger-blade when the same is in its rearward and lowermost position to restrain it from forward movement under the action of said spring, holding means acting on the trigger-blade to hold it in its forward position after the discharge of the first barrel, and means actuated by the movement of the parts in loading the arm, acting to release the last-mentioned holding means and to throw rearwardly to their initial position the trigger and trigger-blade.

2. The combination with a plurality of locks and the sears thereof, of a single trigger having a rearwardly-extending, rigidly-attached trigger-blade provided with a detent-arm, said trigger and blade being pivoted to the frame and being movable longitudinally thereon, a tooth on the frame adapted for engagement with said detent-arm, a spring applied to the trigger-blade to throw the same forward, a holding-tooth adapted to hold the trigger and trigger-blade at the rearward limit of their movement against the action of said spring, a detent adapted to restrain the trigger and trigger-blade from rearward movement un-



der the pressure on the trigger at the time of firing the second barrel and a rod which is moved in the act of loading the arm, and which acts on said detent to release the trigger-blade and also on the blade, to move the same and the trigger rearwardly to their initial position.

3. The combination with a plurality of locks and the sears thereof, of a single trigger having a rearwardly-extending rigidly-attached trigger-blade, provided with a detent-arm, said trigger and trigger-blade being pivoted to the frame and being movable longitudinally thereon, a tooth on the frame adapted to engage said detent-arm, a spring applied to throw forward the trigger and trigger-blade, a holding-tooth in the frame adapted to engage the trigger-blade when in its lowermost position and hold the same and the trigger from forward movement under the action of said spring, a movable detent adapted to hold the trigger and trigger-blade at the forward limit of their movement in firing the second barrel, a rod which is moved in the act of loading the arm and which acts on said movable detent and also on the trigger and trigger-blade to thrust the latter rearwardly to their initial position, and a lever provided with a weight and acting on the trigger-blade to hold the same from forward movement at the time of the involuntary pull.

4. The combination with a plurality of locks and the sears thereof, of a single trigger having a rearwardly-extending, rigidly-attached trigger-blade, provided with a detent-arm, said trigger and its blade being pivoted to the frame and being also movable longitudinally thereon, a pivoted, spring-actuated detent-post on the frame, a spring applied to throw forward the trigger and its blade, a holding-tooth adapted to engage the trigger-blade when the latter is in its rearmost and lowermost position, a detent adapted to retain the trigger and its blade at the forward limit of its movement under the pull on the trigger and a rod which is moved in the act of loading the arm and which acts on said detent and also on the trigger-blade to throw the latter and the trigger rearwardly.

5. The combination with a plurality of locks and the sears thereof, of a single trigger having a rearwardly-extending, rigidly-attached trigger-blade provided with a detent-arm, said trigger and its blade being pivoted to the frame and being also movable longitudinally thereon, a pivoted, spring-actuated detent-post on the frame, a movable weight adapted for contact with said detent-post, a retracting-spring for said weight, a spring applied to throw forward the trigger and its blade, a holding-tooth adapted to engage the trigger-blade when the latter is in its rearmost and lowermost position, a detent adapted to retain the trigger and its blade at the forward limit of their movement under the pull on the trigger, and a rod which is moved in the act of loading the arm and which acts on said detent

and also on the trigger-blade to throw the latter and the trigger rearwardly.

6. The combination with a plurality of locks and the sears thereof, of a single trigger having a rearwardly-extending, rigidly-attached trigger-blade provided with a detent-arm, said trigger-blade being provided with a horizontal slot through which passes a pivot connecting the same with the frame, a detent pivoted on the trigger-blade in position to engage the said pivot when the blade and trigger are at the forward limit of their movement, a tooth on the frame, adapted for engagement with said detent-arm, a spring applied to throw forward the trigger and blade, a holding-tooth adapted to engage the blade when the latter is in its rearmost and lowermost position, and a rod which is moved in the act of loading the arm and which acts on the pivoted detent to release the same from the pivot and which also acts on the trigger-blade to throw the latter and the trigger rearwardly.

7. The combination with a plurality of locks and the sears thereof, of a single trigger having a rearwardly-extending rigidly-attached trigger-blade provided with a detent-arm and with a horizontal slot through which passes a pivot connecting said blade with the frame, a spring-actuated detent pivoted to the trigger-blade in position to engage the pivot when the trigger-blade is at the forward limit of its movement, said detent being provided with a depending arm, a tooth on the frame adapted to engage said detent-arm, a spring applied to throw forward the trigger-blade and trigger a holding-tooth adapted to engage the trigger-blade when the latter is in its rearmost and lowermost position, and a rod which is moved in the act of loading and which acts on said arm of the detent to release the latter from the pivot and which also acts on the trigger-blade to throw the latter and the trigger rearwardly.

8. The combination with a plurality of locks and the sears thereof, of a single trigger having a rearwardly-extending rigidly-attached trigger-blade provided with a detent-arm, with a horizontal slot in its forward part through which passes a pivot by which the trigger-blade is connected with the frame, said trigger-blade also having at its lower margin near its rear end a forwardly-facing shoulder, a holding-tooth on the frame adapted for engagement with said shoulder on the trigger-blade, a spring-actuated detent mounted on the trigger-blade in position to engage the said pivot when the trigger-blade is at the forward limit of its movement, a spring applied to throw the trigger-blade forwardly, and a rod which is moved in the act of loading the arm and which acts on said detent and also on the trigger-blade to throw the latter and the trigger rearwardly.

9. The combination with a plurality of locks and the sears thereof, of a single trigger, a rearwardly-extending trigger-blade which is lifted when the trigger is pulled, said trigger-blade being provided with laterally-extending



rigidly-attached firing-lugs, a slide-bar which slides in a groove disposed longitudinally of the trigger-blade, and provided with lateral firing-wings, arranged one in advance of the other, and means for actuating said sliding bar from the exterior of the frame.

10. The combination with a trigger and a trigger-blade, which is lifted when the trigger is pulled, of a safety locking device comprising a slide-bar provided with a spring-arm, a slide on the frame and a lever pivoted to the

frame and connected at its lower end with said spring-arm of the slide-bar and at its upper end with the said slide.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 17th day of June, A. D. 1899.

ALLAN EDWARD LARD.

Witnesses:

J. L. WOODSON,  
J. W. PETERSON