Sheet 1. 2 Sheets.

M. Pidault & G. Elieze dit Lagieze.

Breech-loading Fire-arm.

No. 68,786. Patented Sept. 10, 1867.

Fig. 1.

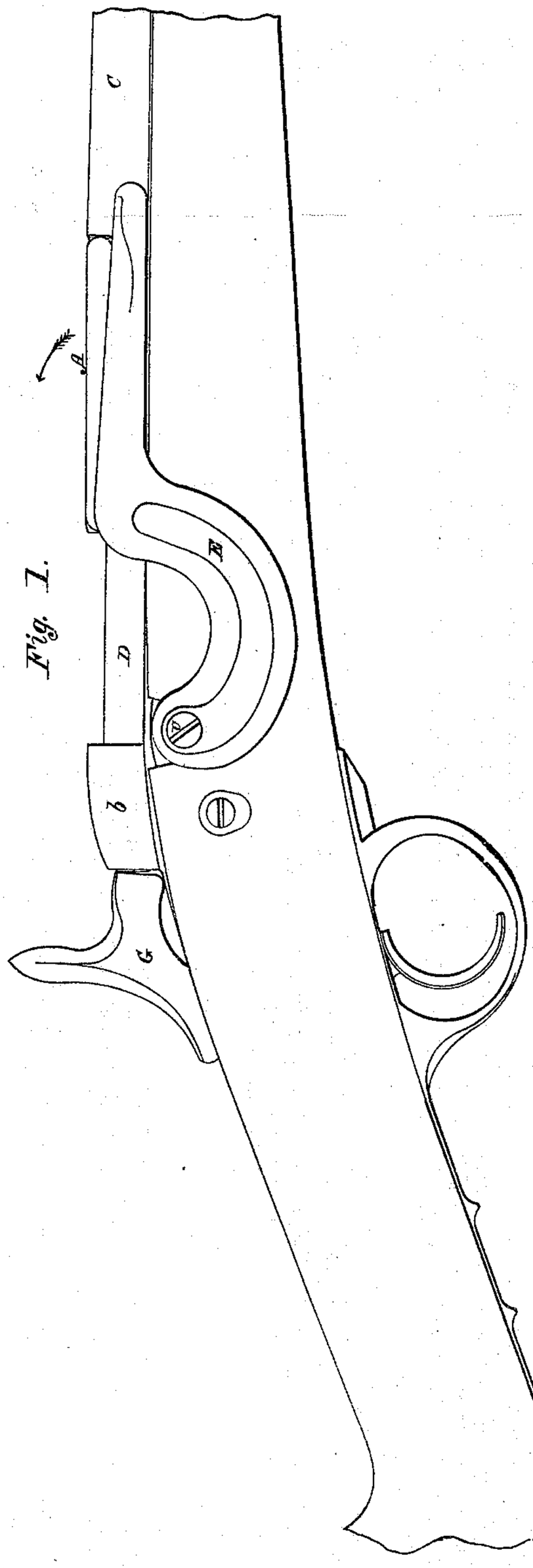
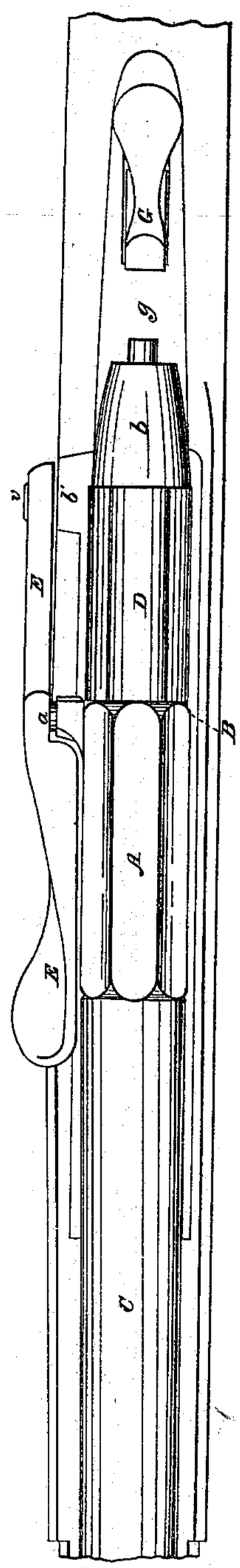


Fig. 2.



Witnesses,

Inventors,

Pidault
G. Elieze
dit Lagrieze

2 Sheets—Sheet 2.

M. PIDAULT & G. ELIEZE DIT LAGIEZE.

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Fig. 3.

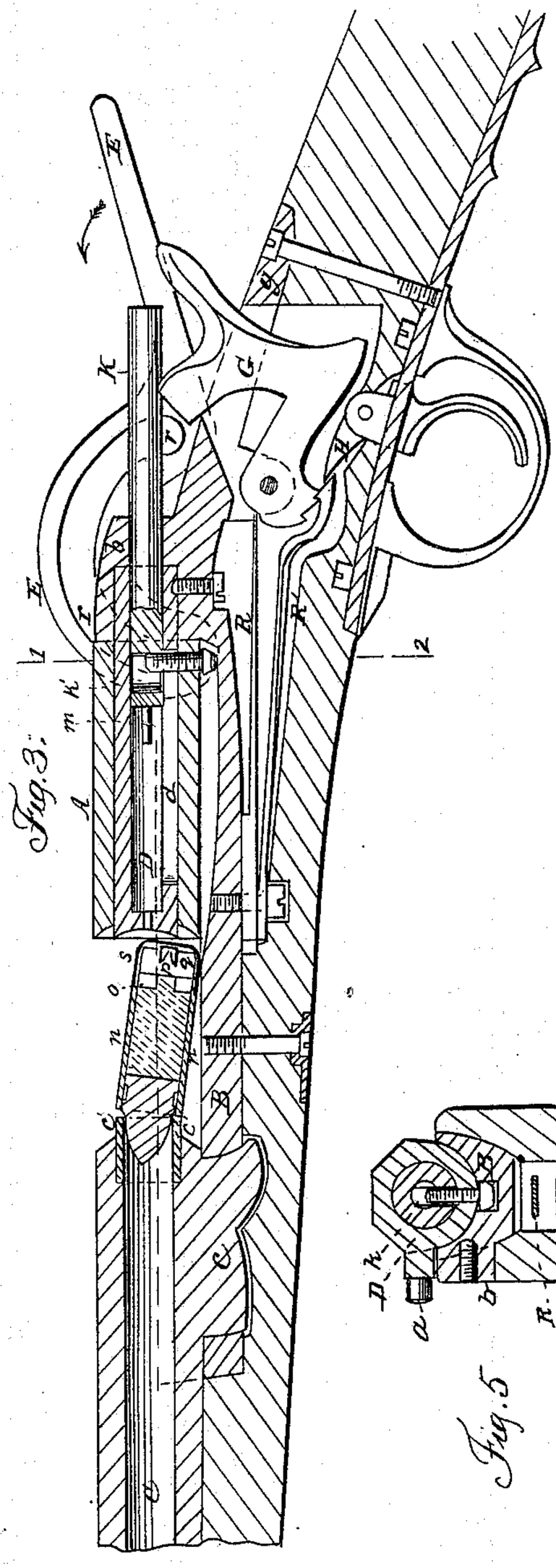

Fig 4

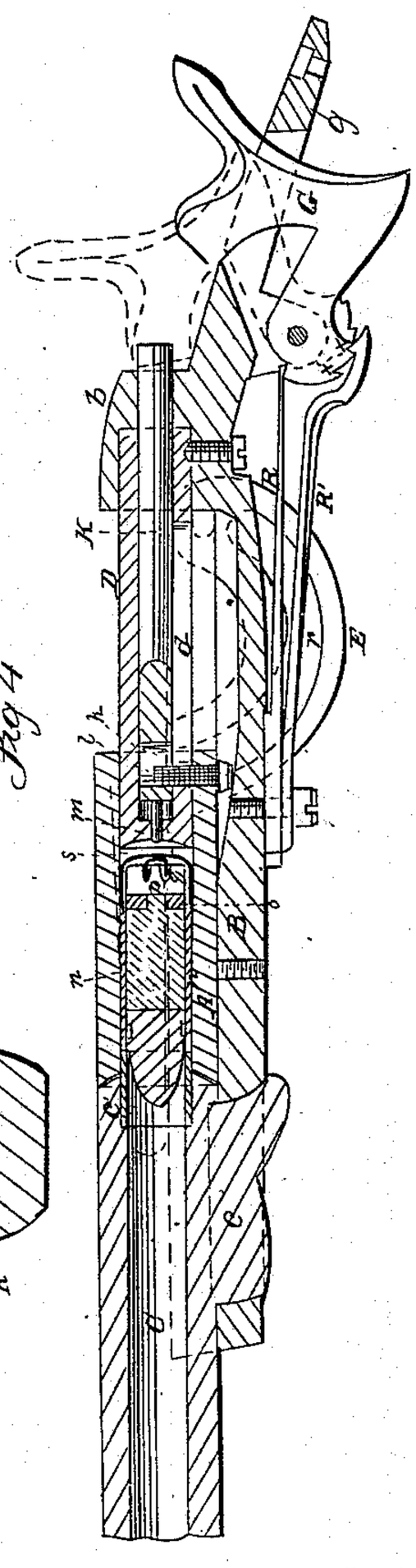

Fig. 5

Witnesses,

Inventors,

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

United States Patent Office.

MARTIAL PIDAULT AND GUILLAUME ELIEZE *dit* LAGIEZE, OF PARIS, FRANCE, ASSIGNORS TO THEMSELVES AND J. F. GEVELOT, OF SAME PLACE.

Letters Patent No. 68,786, *dated September* 10, 1867; *patented in France, September* 26, 1866.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we MARTIAL PIDAULT and GUILLAUME ELIEZE *dit* LAGIEZE, of Paris, France, manufacturers, have invented "Improvements in Breech-Loading Fire-Arms;" and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed sheets of drawing, making a part of the same.

Our improvements in breech-loading fire-arms will sum up all the advantages resulting from the use of such arms; that is to say, ready, easy, manual exercise; regular, precise shooting; no trouble for even those who are little skilled in the carrying of arms.

Contrary to what was done heretofore, the breech, or rather the chumber, is made to slide back, longitudinally, along the barrel, so as to leave between an open space for the cartridge being laid in. At the same time the drawback of said chamber cocks up the arm, the cock being retained in this position without its stroke down being accidentally possible so long as the arm is not ready to be used, or so long as the cartridge is not laid and perfectly fitted in the chamber. The rectilinear mobilizing of the chamber is obtained by a manner of key or handle fitted in the side of the stock. Inside the chamber is a socket forming the abutment breech, which socket being stationary serves the purpose of a cartridge-drawer after the firing has taken place. The socket has a bore in it to admit a rod, made itself mobilizable, together with the chamber or external shell, and terminating at one end in a point, filling the office of hammer, to strike through the centre of the cartridge, whilst the other end raises the cock and holds it up.

The combinations of the various parts of our improved arm is such as to allow a complete transforming of the actual muzzle-loading fire-arms into breech-loading ones, which is effected by merely cutting off the back part of the barrel and substituting the movable chamber therefor.

The central firing cartridge is so composed as to prevent all escape or leakage of the gas. The prime or cap in the centre of a compressed pasteboard block is covered over by a metallic shell which protects the whole.

Figure 1 of the annexed drawings represents a partial outside longitudinal view of a war fire-arm provided with our improvements.

Figure 2 shows a partial plan or under side view of the same arm turned in the opposite direction.

Figure 3 shows a partial longitudinal section of the arm, the chamber being drawn back, the cock raised and held in this position by the central rod.

Figure 4 shows a similar section, the chamber being closed; and

Figure 5 shows a transverse section through the line 1–2, fig. 3.

In all these figures the same letters of reference stand for the like parts where they recur.

The barrel C of the gun, as represented, is held fixed to the stock by the usual rings, and its back end is provided with a projection, *c*, entering the metal shell B, to which the whole mechanism is secured. This arrangement permits a ready taking to pieces of the gun, either for washing or wiping it after a certain number of firings. The tube or obturator C′ is so fitted as to be easily removed and replaced in case of injury or wear.

The shell B is hollowed out cylindrical, as shown in fig. 5, for the purpose of receiving a movable or mobilizable chamber A, made to slide on an inside socket, D, secured in the shell-plate *b*. The shell B is formed with a projection, *b′*, out of which is formed the screw V, on which works the key or handle E on the stock side, as shown. A groove, *r*, in the inside face of the key, admits the projecting pin *a* or portion of the movable chamber. The groove *r* is cut out of the form of an arc of circle, so that by moving the key in the direction of the arrow up to the position represented in fig. 3, it will pivot round the screw or centre *v*, and carry along with it the chamber A, which is perfectly guided in its rectilinear progress by the stationary socket D. The shell B has at its back part a flanch or groove, *g*, within which is set the cock G, the lower part of which, or the nut, is formed with two notches, *x x′*, the hind notch and the fore notch of the tumbler.

The cock is crested, or provided with a crest, which permits its being raised or cocked, without it being necessary to move the chamber A.

The main-spring R determines the fall of the cock, and the spring R′, placed beneath, serves to retain the same at half cock. The end of this latter spring is formed with a little incline, on which leans the end of the trigger H, the catch of which is set within the trigger-guard as usual.

Inside the socket D is placed the rod K, which is to move together with the chamber A. To this end the socket D is grooved longitudinally at *d*, so as to give passage to the screw *l*, formed in the chamber A, and having the same course as this. The head of the screw acts as guide in sliding in and along a longitudinal groove formed in the lower part of the shell B.

The screw passes through a longitudinal slot *k'*, the object of which will be explained hereafter. The fore part of the rod K is formed with a point or needle, M, which strikes the cartridge and effects the firing of the gun.

When the socket D is in the position represented in fig. 3, the rod K, carried back by the movable breech or chamber A, has not only raised the cock G, but still holds it securely in this position, when the point or needle M is withdrawn to the bottom of the socket.

After placing the cartridge as shown in fig. 3, the key E is moved in the direction of the arrow, so as to be covered exactly by the mobilizable chamber A, as shown in section, fig. 4. The concave end of the socket D, and the likewise concave edge of the chamber are intended to constantly bring the cartridge back to the centre, whatever may be the position it occupies at first when laid therein. The rod *k* is then brought back in such a manner that the hammer M be flush with the edge of the central socket D, its opposite end being somewhat beyond the plate *b*, the screw *l* then reaches the beginning of the slot *k'*.

On the catch being acted upon, the trigger H depresses the spring R', and the cock is then beaten down by the main-spring R. It strikes on the end of the rod K, which is caused to move forward a certain distance and consequently the hammer or point M is made to strike the cap in the cartridge, whereby the powder is ignited.

The whole pressure exerted during the igniting of the powder is undergone by the stationary socket D, and also by the plate *b*, which fills the office of breech, whilst the external mobilizable chamber A only undergoes the lateral pressure exerted at the periphery of the cartridge.

The cartridge, whose peculiar arrangement we claim, consists of a pasteboard socket, *n*, admitting at its end a block of the same substance strongly compressed at *o*, into which is embodied a manner of bridge, on the central part of which rests the cap or prime *q*. A metallic shell covers the whole over, thus preventing all leakage or escape of gas, the percussion being effected at the centre of the cartridge.

The cylindrical portion of the ball or projectile being of somewhat larger diameter, say the sixtieth of an inch, than that of the socket C', produces on its passage through the latter an expansion, whereby is insured the complete obturation between C' and A.

We will observe that although our improvements have been represented as applicable to a single-barrelled musket or war gun, they may likewise be adapted to double-barrelled shooting and other guns, whatever may be their size and dimensions.

Claims.

1. The combination and arrangement of the stationary socket D, sliding chamber A, with pin *a*, and the hinged lever E, substantially as described for the purpose specified.

2. The stationary tube or socket D arranged within the sliding chamber A, to serve as a breech-piece, substantially as herein shown and described.

3. The combination of the hammer G with the catch H on the trigger, and with the springs R and R', all made and operating substantially as herein shown and described.

4. The combination and arrangement of the slotted sliding rod K, pin *l*, socket D, and sliding chamber A, substantially as described for the purpose specified.

PIDAULT,
ELIEZE *dit* LAGIEZE.

Witnesses:
DEMOS,
A. GUION.