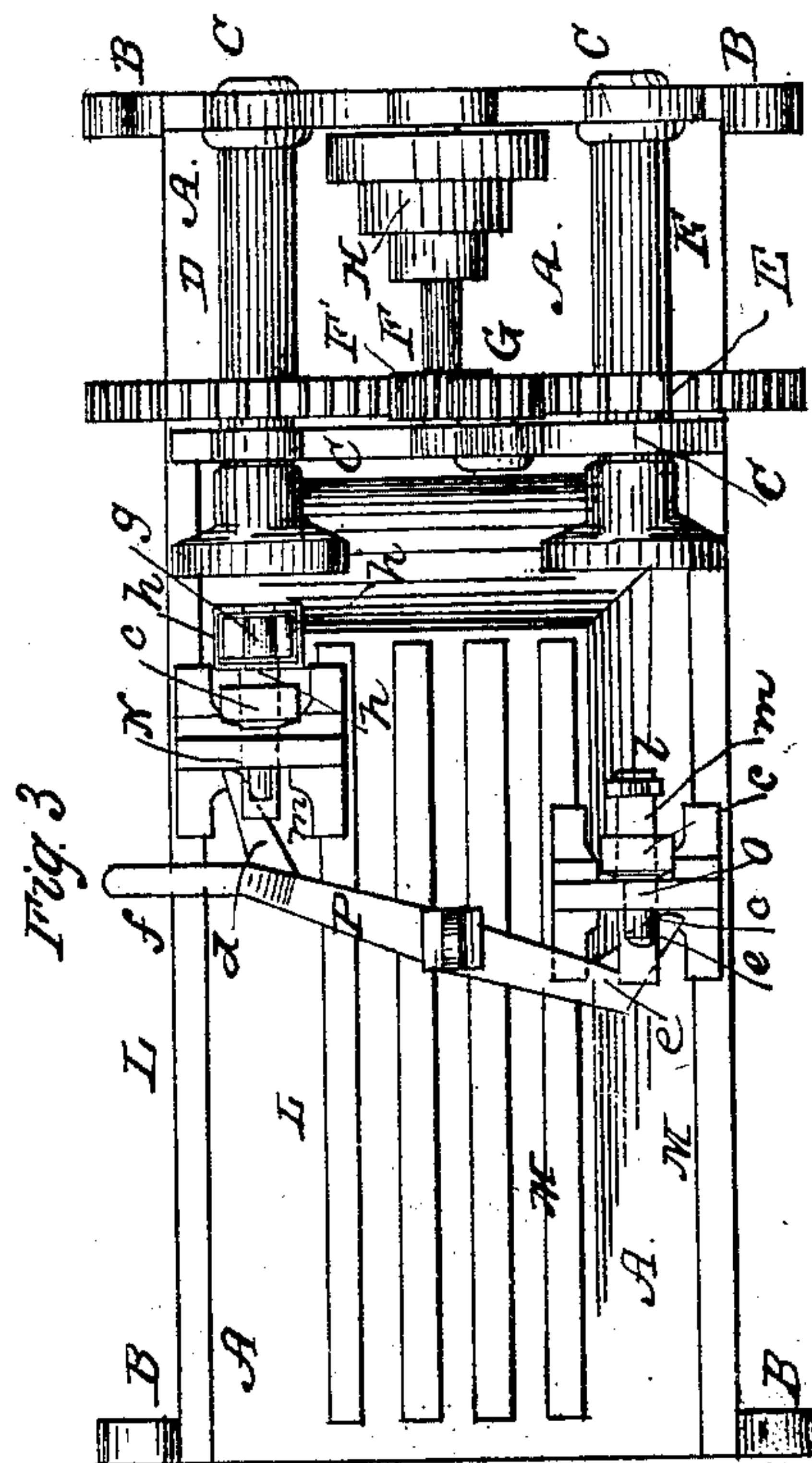
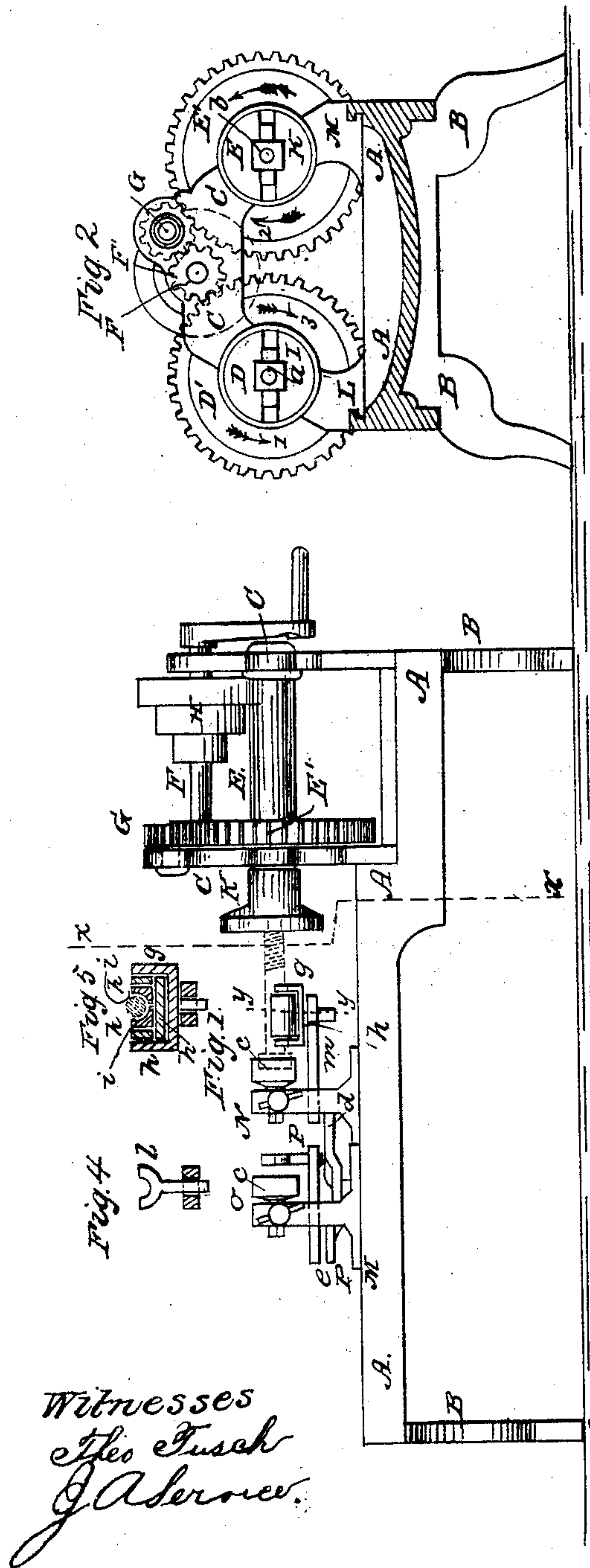


F. SCHWEIZER.  
Cutting Screws.

No. 62,693.

Patented March 5, 1867.



Inventor  
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# United States Patent Office

FRANZIS SCHWEIZER, OF NEW YORK, N. Y.

Letters Patent No. 62,693, dated March 5, 1867.

## IMPROVED MACHINE FOR CUTTING THREADS ON BOLTS.

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

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, FRANZIS SCHWEIZER, of the city, county, and State of New York, have invented a new and improved Machine for Cutting Threads on Bolts, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new machine, whereby screw-threads can be cut on two bolts, at the same time, without using more power than would be requisite to cut a thread on one bolt. The machine may be so constructed that two or more bars can be transformed into screws at the same time. The invention consists in doubling the apparatus generally used for the purpose of cutting a thread on one bolt; that is to say, I provide two dies and die stocks, which are secured to two horizontal shafts. The latter are connected by gearing in such a manner that they revolve in an opposite direction. The bolts or bars are held in two vises, and are fed to the dies as the dies are revolving in an opposite direction; a thread will be cut on one bolt while the other bolt is being released from its die, and *vice versa*. Thus I cut in this machine threads on two or more bolts, without using more power than is necessary to cut one bolt. In the accompanying drawings my invention is illustrated—

Figure 1 being a side elevation of my improved machine, partly in section.

Figure 2 is a vertical cross-section of the same, taken on the line *x x*, fig. 1.

Figure 3 is a plan or top view of the same.

Figures 4 and 5 are detail sectional views, to be hereinafter referred to.

Similar letters of reference indicate like parts.

The table A, which is made of wood or any other suitable material, is supported by four or more legs, B. On this table are arranged two upright frames C C, which are provided with suitable boxes for the support of the horizontal shafts D, E, and F. On each of the shafts D and E is mounted a gear-wheel, D' E'. These mesh respectively into the pinions F' and G. The pinion F' is mounted on the driving-shaft F, to which motion is imparted by the pulleys H. The pinion G is driven by the pinion F', and meshes into the gear-wheel E', as seen in fig. 2. By this gearing arrangement the shafts D and E are revolved in opposite directions; that is to say, when the shaft D moves in the direction of the arrow 1, the shaft E moves in the direction of the arrow 2, and, *vice versa*, when D moves with arrow 3, then E moves with arrow 4, (see fig. 2.) To the end of each shaft, D E, is arranged a die stock, I K, each of them holding a die or cutter, *a b*. These dies will revolve in the same directions as the shaft to which they are secured. Two sets of tracks, L M, are arranged on the table A, on which the stocks N and O slide respectively. Each of these stocks is provided with a vise, in which the head of the bolt which is to be operated upon is held. Or if these bolts are provided with square heads, a corresponding holder, *c*, is secured in each sliding stock. The bolt is secured in the vise or holder *c* and fed to the revolving cutter by a lever, P, which is pivoted to the table A, between the stocks N and O. The lever is provided with two arms, *d* and *e*, and by moving a handle, *f*, on the lever, either forwards or backwards, either the arm *d* or *e* is pressed against the corresponding sliding stock, and feeds the bolt which is held in the same to the revolving cutter. The lever P can be longitudinally adjusted on the table A, so as to feed longer or shorter bolts to the cutters. An elastic rest, *g*, is arranged on each stock for the purpose of supporting the central portion of the bolt. It is made elastic by means of rubber or other suitable springs, *h*, which support two concave metal plates, *i*, the latter forming a semicircular concave rest, as shown more particularly in fig. 5, which is a vertical cross-section through the rest *g*, the plane on section being indicated by the line *y y*, fig. 1. The elastic rest is preferable, as it will adapt itself to inequalities in the bolts. If these bolts should, however, be very accurately made, a rest, *l*, which is represented in figs. 3 and 4, will be sufficient. The rest *g* (or *l*) is attached to a bar, *m*, which slides loosely in the stock N or O, to which it may be secured.

The operation of the machine is as follows: A bolt is secured on the sliding stock N, and the machine is put in motion, so that the cutter *a* revolves in the direction of the arrow 3. The extremity of the bolt is brought in contact with the cutter by pressing the arm *d* on the lever P, against the stock N. The cutter, after it has begun to cut the thread on the bolt, will pull the bolt forward, without any more action on the lever P being required. As soon as the thread is cut completely on this bolt, another bolt is placed into the stock O and fed

by the arm *c* on the lever *P* to the cutter *b*. The motion of the machine is now reversed so that the cutter *b* turns in the direction of the arrow 2, and the cutter *a* turns in the direction with arrow 1. A thread will then be cut on the second bolt while the first bolt will be turned out of the cutter *a*; and then another bolt is placed into the stock *N*, the machine reversed again, and so forth. Thus the machine is always operating on and finishing two bolts while it actually only cuts a thread on one bolt at a time. The number of the sliding stocks and cutters may be doubled, trebled, or multiplied in such a manner that a pair of bolts is always operated upon in the manner herein described.

What I claim as new, and desire to secure by Letters Patent, is—

1. The sliding stocks *N* and *O*, in combination with the lever *P*, arranged relatively with the cutters *a* and *b*, operating as described for the purpose specified.
2. I claim the adjustable lever *P*, which is provided with arms *d* and *e*, substantially as and for the purpose herein shown and described.
3. I claim the elastic sliding rest *g*, made and operating substantially as and for the purpose herein shown and described.

FRANZIS SCHWEIZER.

Witnesses:

WM. F. McNAMARA,  
ALEX. F. ROBERTS.