

(No Model.)

J. A. BRICKER.
WATCHMAKER'S TOOL.

No. 512,942.

Patented Jan. 16, 1894.

Fig. 1.

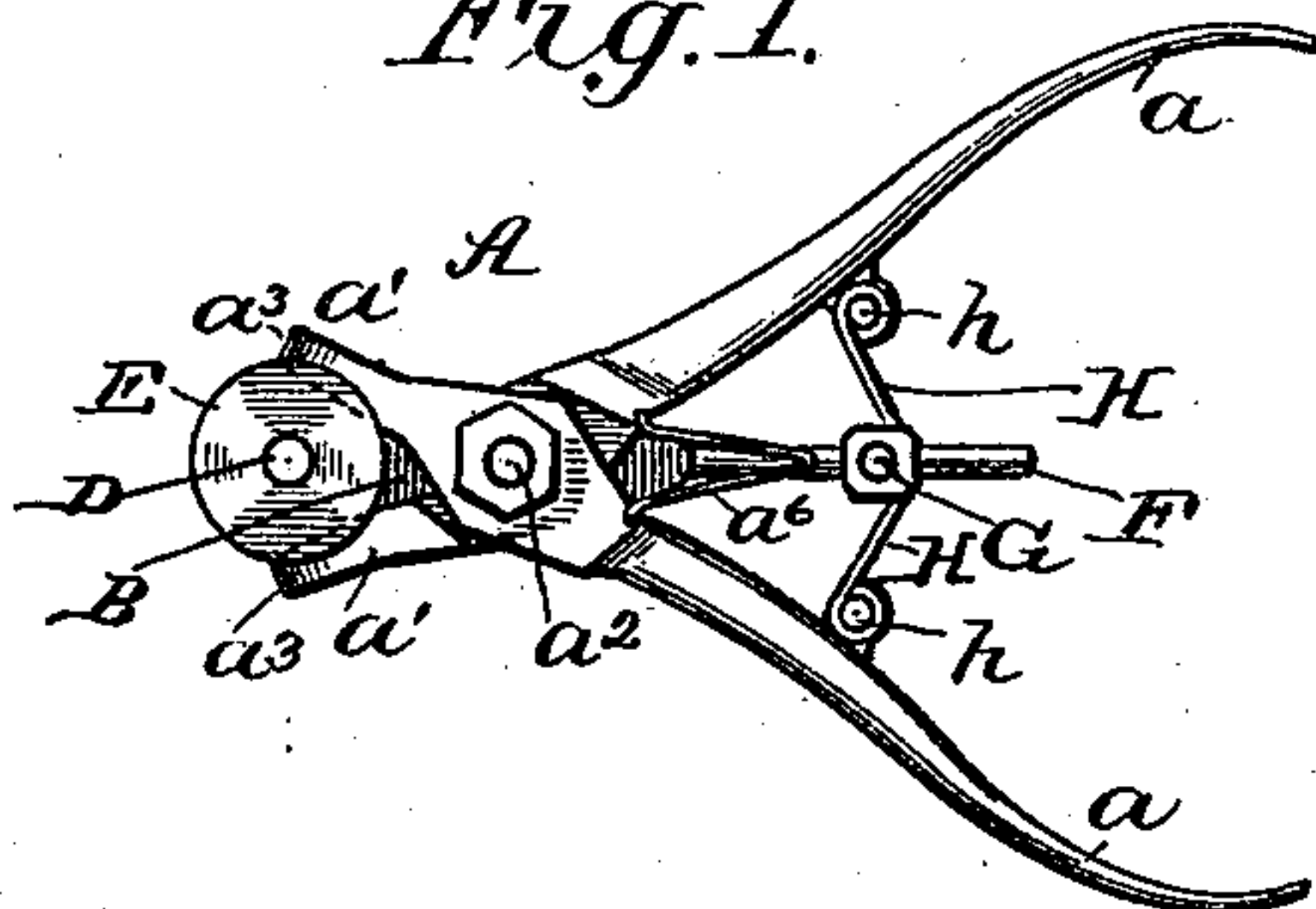


Fig. 2.

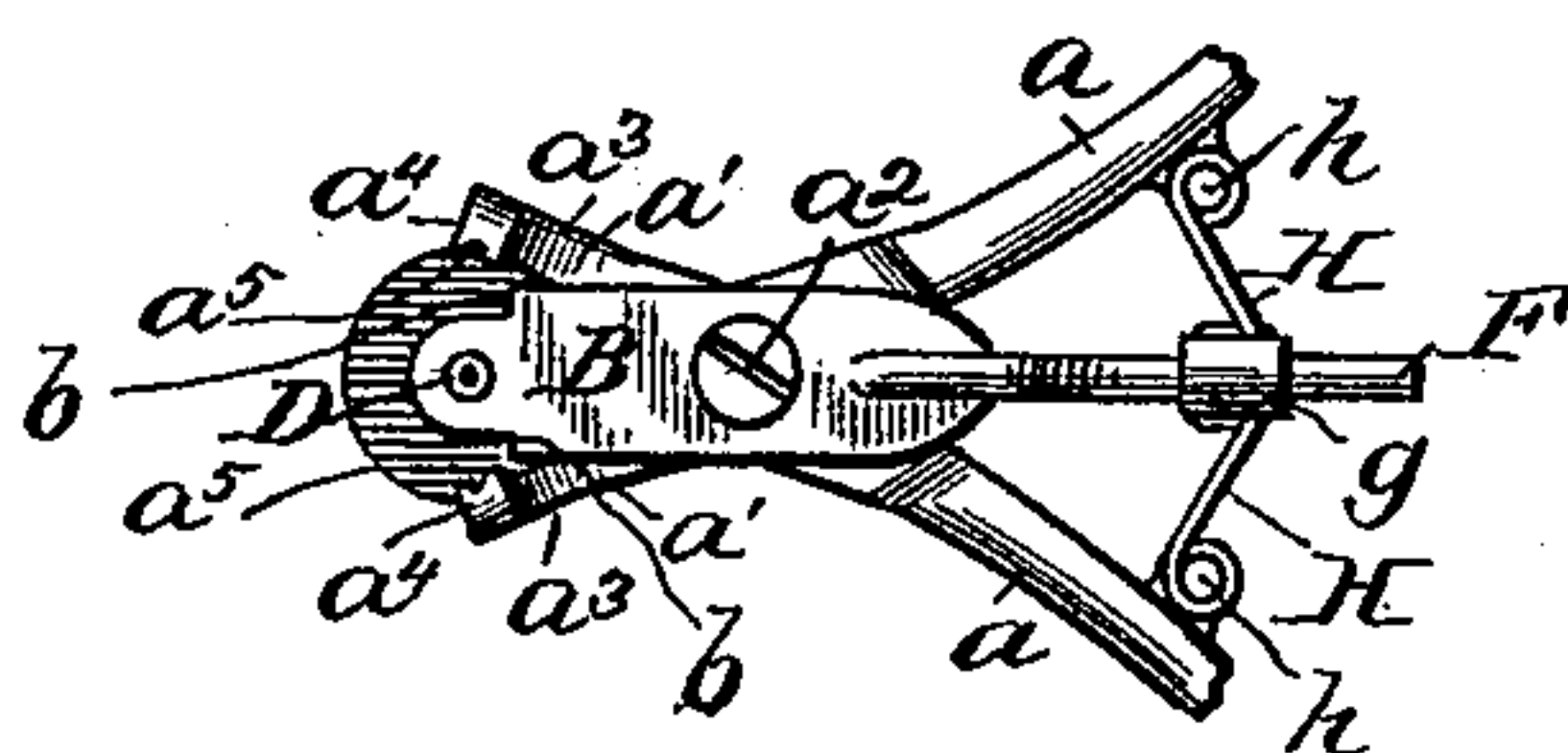


Fig. 3.

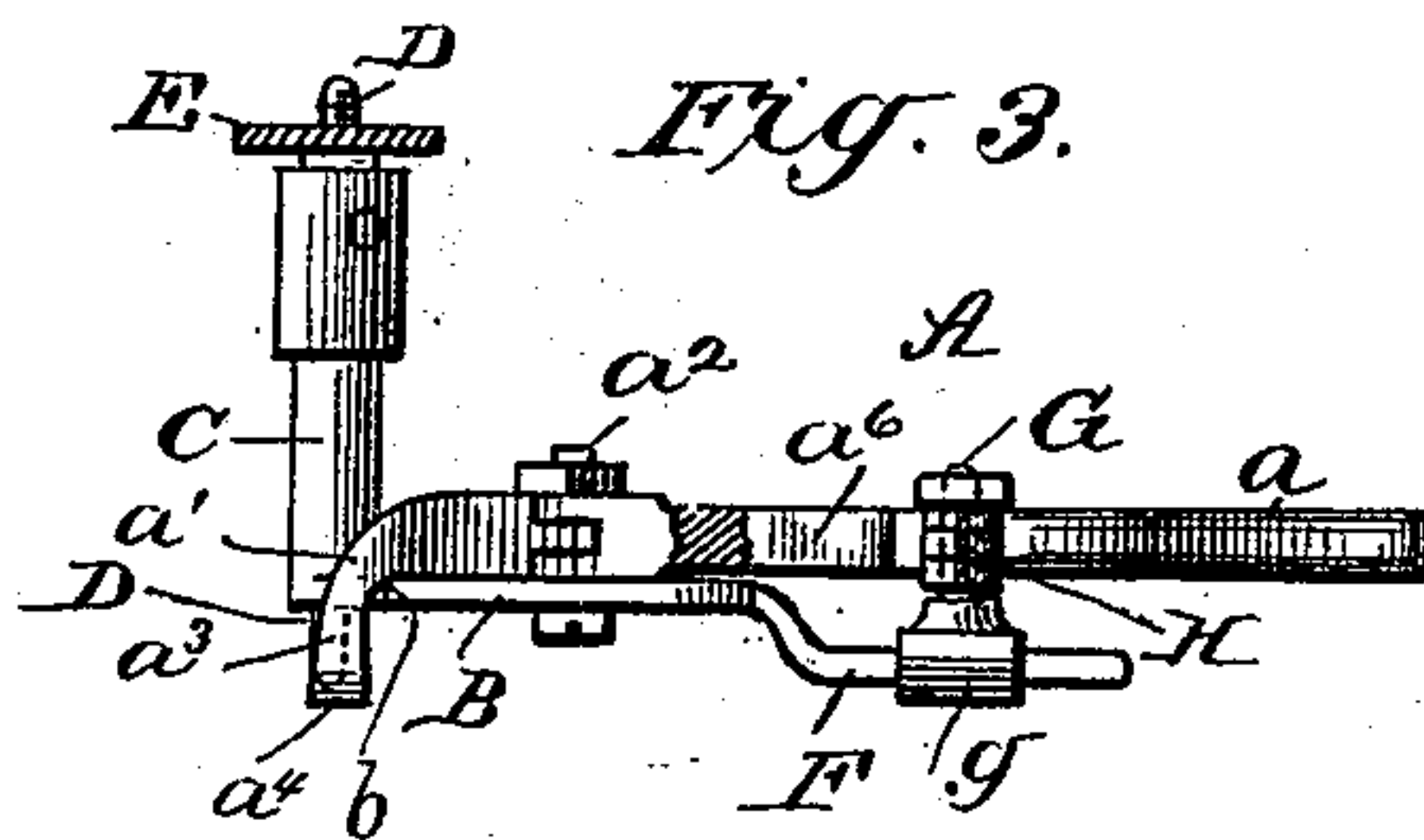
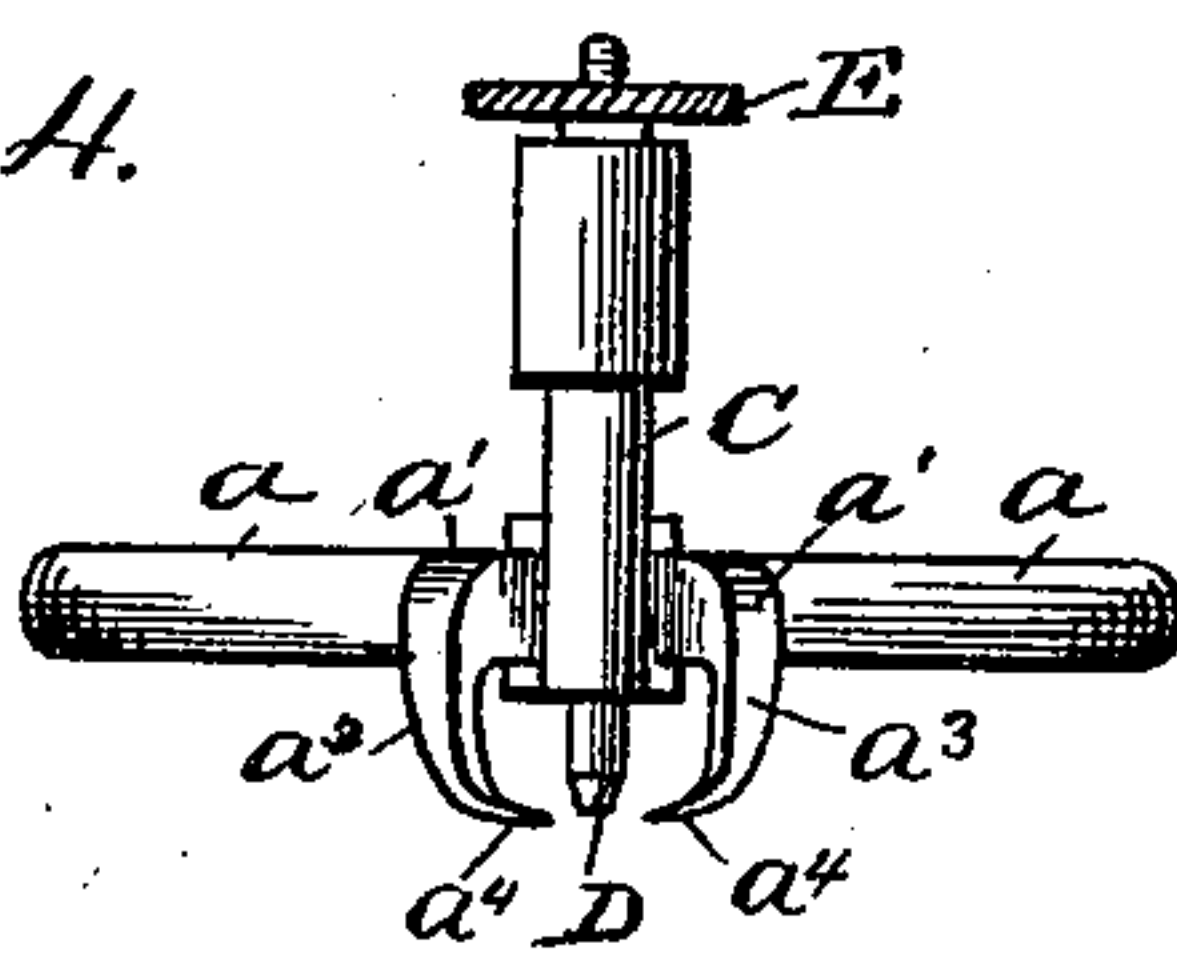


Fig. 4.



WITNESSES:

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WATCHMAKER'S TOOL.

SPECIFICATION forming part of Letters Patent No. 512,942, dated January 16, 1894.

Application filed June 6, 1893. Serial No. 476,748. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. BRICKER, of Atlanta, in the county of Cass and State of Texas, have invented a new and useful Improvement in Watchmakers' Tools, of which the following is a specification.

This invention relates generally to watchmakers' tools and particularly to an improved device for removing the roller from the balance wheel staff or the hands from their shafts.

Heretofore roller extractors and hand removers have been constructed in such manner that the wheel was held upon any object while both hands were employed to adjust the instrument. These methods and construction often result in bending or breaking the staff or pivot, and it is to overcome these objections that I have constructed my device in a manner hereinafter described, so that the wheel can be held in one hand, while the instrument is fastened upon the roller by the other.

Another object of my invention is to provide a novel form of centering device, and also to provide certain auxiliary appliances whereby the movements of the extractor are rendered accurate and even.

With these objects in view my invention consists in a pair of spring actuated pinchers having an adjustable centering pin connected therewith, a longitudinal guide rod and connections between the handles of the pinchers and said guide rod whereby the said handles move evenly and likewise the jaws.

My invention consists also in certain details of construction and combination of parts all of which will be fully described and claimed.

In the drawings forming a part of this specification—Figure 1 is a top plan view of my improved tool. Fig. 2 is a bottom plan view. Fig. 3 is a side view one handle being removed and Fig. 4 is a front view.

In carrying out my invention I employ a pair of pinchers A, comprising the handles a , the jaws a' and the central pivot pin a^2 . The jaws a' are bent downwardly as at a^3 , and then inward toward each other as at a^4 , the inner ends of said jaws being notched at a^5 if desired. A spring a^6 , preferably of the bow pattern is secured in the crotch of the pinch-

ers and normally holds the handles and jaws apart.

A flat metallic plate B is secured to the lower face of the pinchers A at the intersection of its arms, the pivotal bolt or pin a^2 serving also to secure said plate to the pinchers. The plate B extends forward as far as the jaws a' , and is cut away at each side as shown at b to receive the portions a^3 , when the ends a^4 , are brought together beneath the end of the plate. A short tubular standard C is secured to the forward end of the plate B and extends vertically between the jaws a' the curve and length of the ends a^4 being such that they may meet without the jaws a' contacting with the standard C. Working in this standard is a centering pin D, said pin being threaded, and adjusted vertically by means of a thumb nut E secured in the upper end of the standard C. The centering pin D is capable of an adjustment equal to the distance between the plate B and ends a^4 of the jaws, it of course being understood that the plate B is perforated to permit the passage of the pin therethrough.

A guide rod F is connected to the rear end of the plate B, and projects centrally between the handles a and sliding upon this guide rod F is a bolt G having an eye g by means of which the bolt slides upon the guide rod and pivotally connected with the bolt G are the toggle arms H H, said arms being pivotally connected at their outer ends to the handles a by means of bolts h . It will now be noticed that the jaws can be opened or closed without interfering with the centering pin and standard, and it will also be observed that by having the plate B below the pinchers the guide rod, bolt, toggle arms and spring can be arranged between the handles without interfering with one another thereby providing a very simple and compact tool.

Now in operation I will suppose it is desired to remove the roller from the staff of a balance wheel. In such case the balance wheel is held in one hand, (usually the left) and the jaws of the pinchers closed beneath the same, and as I employ the longitudinal guide rod, sliding bolt and toggle arms it follows that the movement of the jaws must be accurate and even, that is they must neces-

sarily always meet at a common center. The roller being thus held, the hand is removed from the wheel and the nut operated to adjust the centering pin and this being set to
5 its proper place the roller can be easily removed without danger of bending or breaking the staff. In removing the hands of a watch the operation is exactly the same.

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

1. In a roller extractor and hand remover, the combination with a pair of, spring actuated pinchers, of a plate connected therewith,
15 and a centering pin adjustable in said plate and between the jaws, substantially as shown and described.

2. In a roller extractor and hand remover, the combination with a pair of pinchers, of a
20 plate connected thereto and projecting forward between the jaws of the pinchers, a tubular standard mounted upon the end of said plate and a centering pin adjustable in said

standard, substantially as shown and described. 25

3. In a roller extractor and hand remover, the combination with a pair of pinchers of a longitudinal guide rod the toggle arms and sliding bolt connecting the rod and pinchers substantially as described. 30

4. In a roller extractor and hand remover, the combination with a pair of pinchers of a vertically adjustable centering pin arranged between the jaws of the pinchers and at right angles to the body of the pinchers, substantially as shown and described. 35

5. In a roller extractor and hand remover, the combination with the pinchers of the plate secured thereto, the adjustable centering pin, the guide rod, sliding bolt and toggle arms
40 all arranged substantially as shown and described.

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Witnesses:

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