

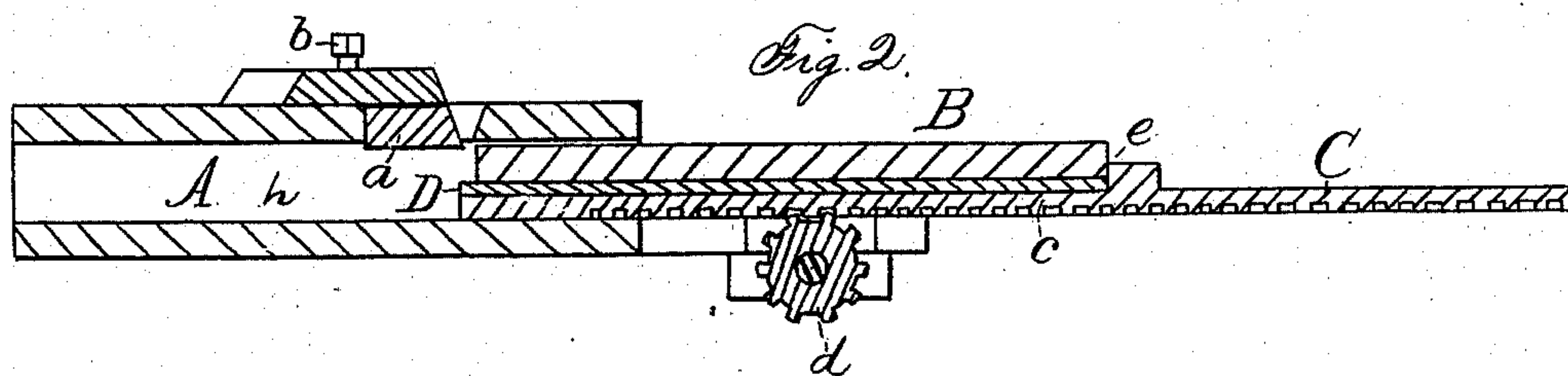
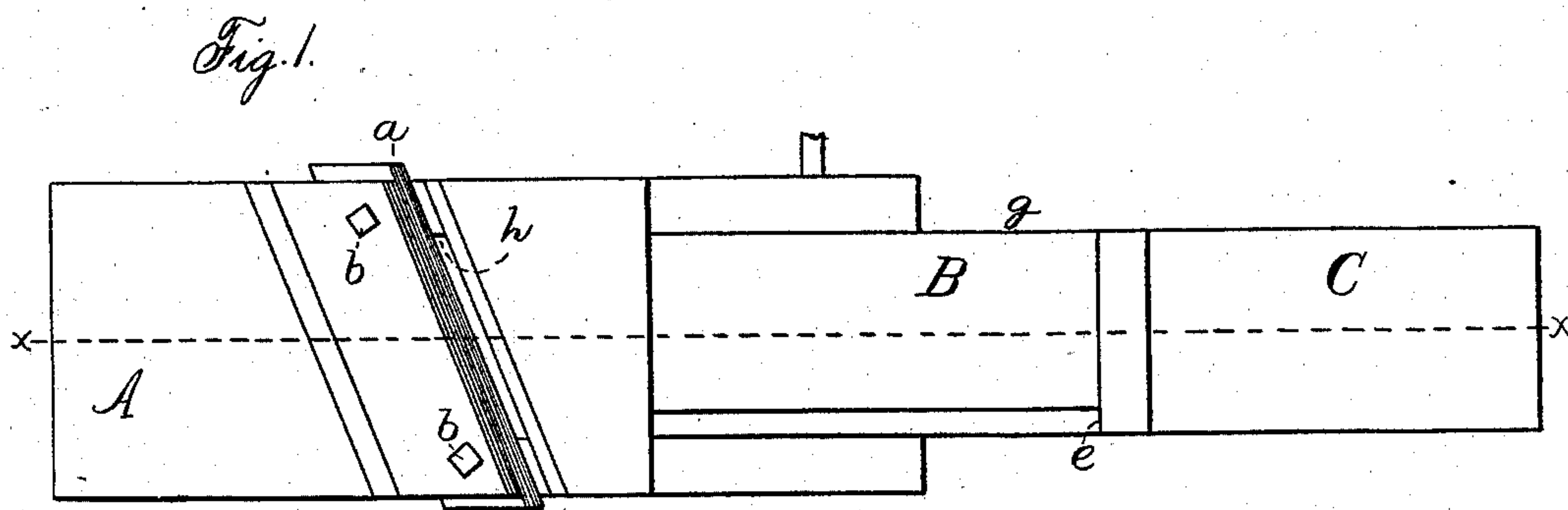
(No Model.)

C. C. HORN.

MACHINE FOR SCALPING INGOTS.

No. 284,302.

Patented Sept. 4, 1883.



Witnessed.
John Edwards Jr.
Martin A Bond

Inventor.
Charles C. Horn.
By James Shepard
att.

UNITED STATES PATENT OFFICE.

CHARLES C. HORN, OF WATERBURY, CONNECTICUT.

MACHINE FOR SCALPING INGOTS.

SPECIFICATION forming part of Letters Patent No. 284,302, dated September 4, 1883.

Application filed October 31, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. HORN, of Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Machines for Scalping Ingots, of which the following is a specification.

My invention relates to improvements in machines for scalping ingots preparatory to rolling. It is well known that when ingots come from the mold they are rough and imperfect in the surface, owing to oxidation and other causes present in casting, so that it is necessary to cleanse the surface from all imperfections, &c., before rolling them into plate or sheet metal. Sometimes the ingot is put through the rolls several times before the scalping or scraping operation, after which scalping process the rolling is completed. This scalping is now done by scrapers, which smooth the surface of the ingot by taking off a small portion of the metal at a time, requiring several hundred forward and backward movements of the scraper to cleanse one side of an ordinary ingot of German silver. These scrapers have been moved both by hand and by machinery, the latter giving greater rapidity to the movement of the scraper, but requiring a similar number of movements. This scalping by scrapers leaves the surface very unequal, and makes the ingot thicker in some places than at others, so that the subsequent operation of rolling leaves the metal of greater density in some places than in others, thereby causing the metal to warp and oftentimes to crack and break in rolling. This want of uniform density also causes the metal to anneal and finish unevenly and oftentimes to be imperfect when finished.

The objects of my improvements are to scalp the ingots more rapidly and at less cost than heretofore, to produce a smooth and even surface thereon, and to bring them to a uniform thickness throughout their length, thereby making the rolled metal of a uniform density, causing it to roll flat and straight without warping, cracking, or breaking; to anneal and finish evenly, and to be free from imperfections when finished; also, to take off the scalp in larger pieces or chips than heretofore, so that they can be remelted with less waste. I attain

these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my machine, and Fig. 2 is a vertical section thereof on line *x x* of Fig. 1.

A designates a box-like frame, open at both ends, and of a size to admit the ingot B and its carriage C. Upon one side of the frame an opening or throat is left, which extends obliquely across the frame, and in which a chisel or knife, *a*, is held by means of set-screws *b b*. The carriage C is fitted to slide longitudinally in the frame A, and is driven by the rack *c* and pinion *d*. It is provided with a shoulder, *e*, against which the end of the ingot B abuts. Packing D, Fig. 2, of any desired thickness, may be placed under the ingot to raise it up to the desired height. By turning the shaft and pinion *d* to drive the ingot and carriage under the knife, the whole side of an ordinary ingot may be scalped at a single operation. In thus pushing the ingot under the knife it should be placed with one edge near the edge *g* of the carriage C, and when the knife *a* acts upon the ingot the inclination of its edge will have a tendency to force the ingot toward said edge *g*. The ingot then strikes the side *h* of the frame A, which side acts as a guide to prevent the ingot from working edgewise while the oblique knife is scalping the ingot. The carriage is then withdrawn and another ingot placed thereon and passed under the knife, and so on repeatedly. As each ingot is passed through the frame and under the knife it is either taken off before the carriage is drawn back or it is allowed to catch upon the back of the knife *a* and be held there while the carriage is drawn from under it. In such an event the next forward movement of the carriage will push the ingot out of the frame. The shoulder *e* upon the carriage enables the ingot to be pushed under the knife, while the oblique knife and side *h* of the frame properly guide the ingot through the machine after it is merely laid in place upon the carriage, so that there is no necessity for clamping or otherwise fastening the ingot to the carriage. A thicker packing or more packing is then placed on the carriage, when the ingots are placed thereon, with their scalped sides toward the packing, and forced under the

knifeto scalp their opposite sides. The packing of different thicknesses furnishes an approximate adjustment to determine the amount to be removed in scalping, while the knife *a* may be moved slightly by means of the set-screws *b b* for a finer adjustment.

While I have shown the rack and pinion for driving the carriage C, I do not wish to confine myself to any particular mechanism for driving said carriage, as it may be driven by any ordinary means. If desired, the bottom of the frame—that is, the side which is opposite the knife—may be made adjustable.

I am aware that a prior patent shows a machine having upon its reciprocating carriage a clamping device to grip one end of a piece of sheet metal for pulling said metal between a knife and a roller fixed in a stationary bed, both standing squarely across the carriage, so that there was no oblique cut to the knife. The roller and bed are between the knife and the carriage. Said planing or scraping machine is hereby disclaimed. In my machine there is no stationary bed or roller or other device interposed between the carriage and the knife.

I claim as my invention—

1. An ingot-scalping machine consisting of the frame having the knife and open throat

upon one side, and the ingot-carriage fitted to slide into said frame and carry the ingot under the knife, the carriage meantime moving with the ingot and holding it in contact with the knife, substantially as described, and for the purpose specified.

2. In an ingot-scalping machine, the combination of the frame, the knife extending obliquely across said frame, the carriage, mechanism to drive the carriage with the ingot resting thereon, and means against which the edge of the ingot acts to prevent it from working edgewise under the action of the oblique knife, substantially as described, and for the purpose specified.

3. In an ingot-scalping machine, the combination of the frame, the knife extending obliquely across the frame, the guide *h* at one side of the frame, the carriage having the pushing-shoulder *e*, with a part in front of said shoulder for the ingot to rest upon, and mechanism for driving said carriage, substantially as described, and for the purpose specified.

CHARLES C. HORN.

Witnesses:

CHAS. W. GILLETTE,
S. B. TERRY.