No. 620,366. Patented Feb. 28, 1899.

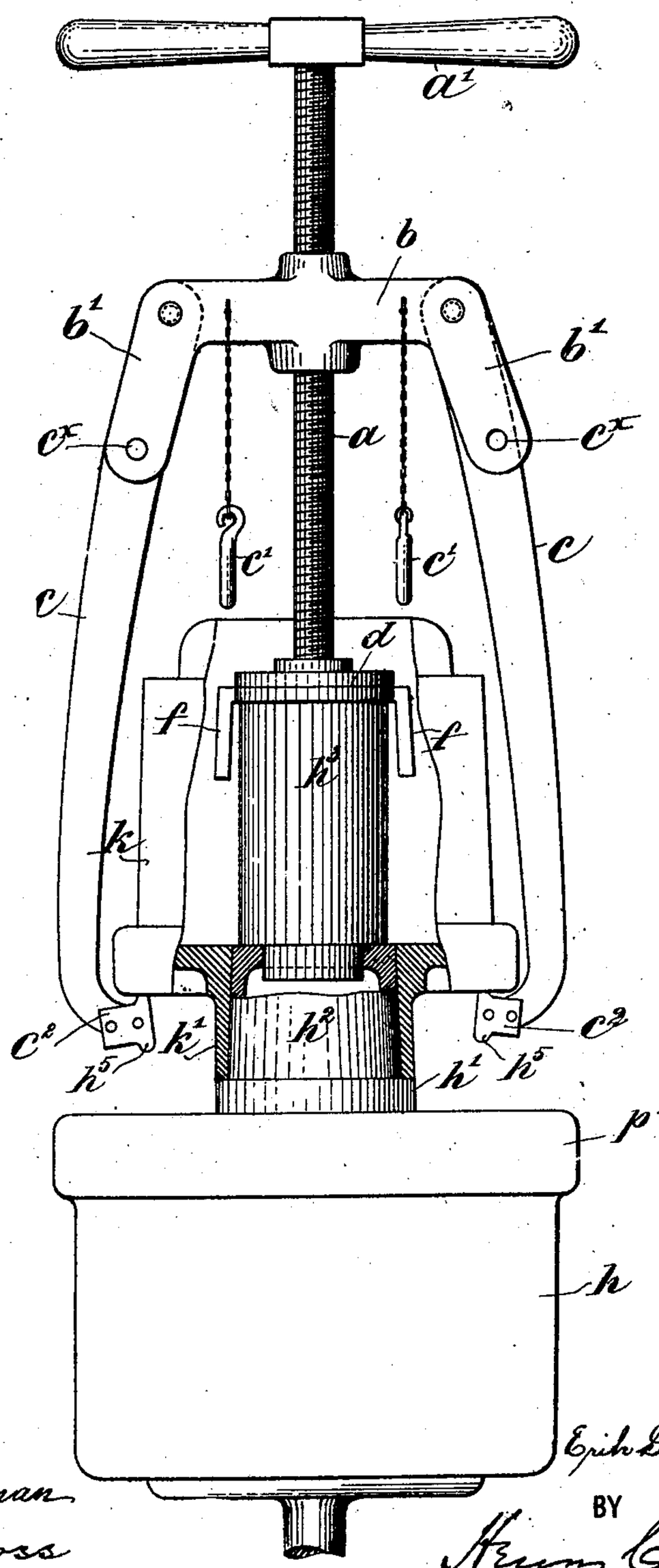
E. G. N. SALENIUS.

TOOL FOR ASSEMBLING AND REMOVING PARTS OF CENTRIFUGAL MACHINES.

(Application filed Je 12, 1899.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

F. H. Hinman

Peter A. Ross

INVENTOR

Epih G. N. Salenius

BY

Henry Connett

ATTORNEY

No. 620,366. Patented Feb. 28, 1899.

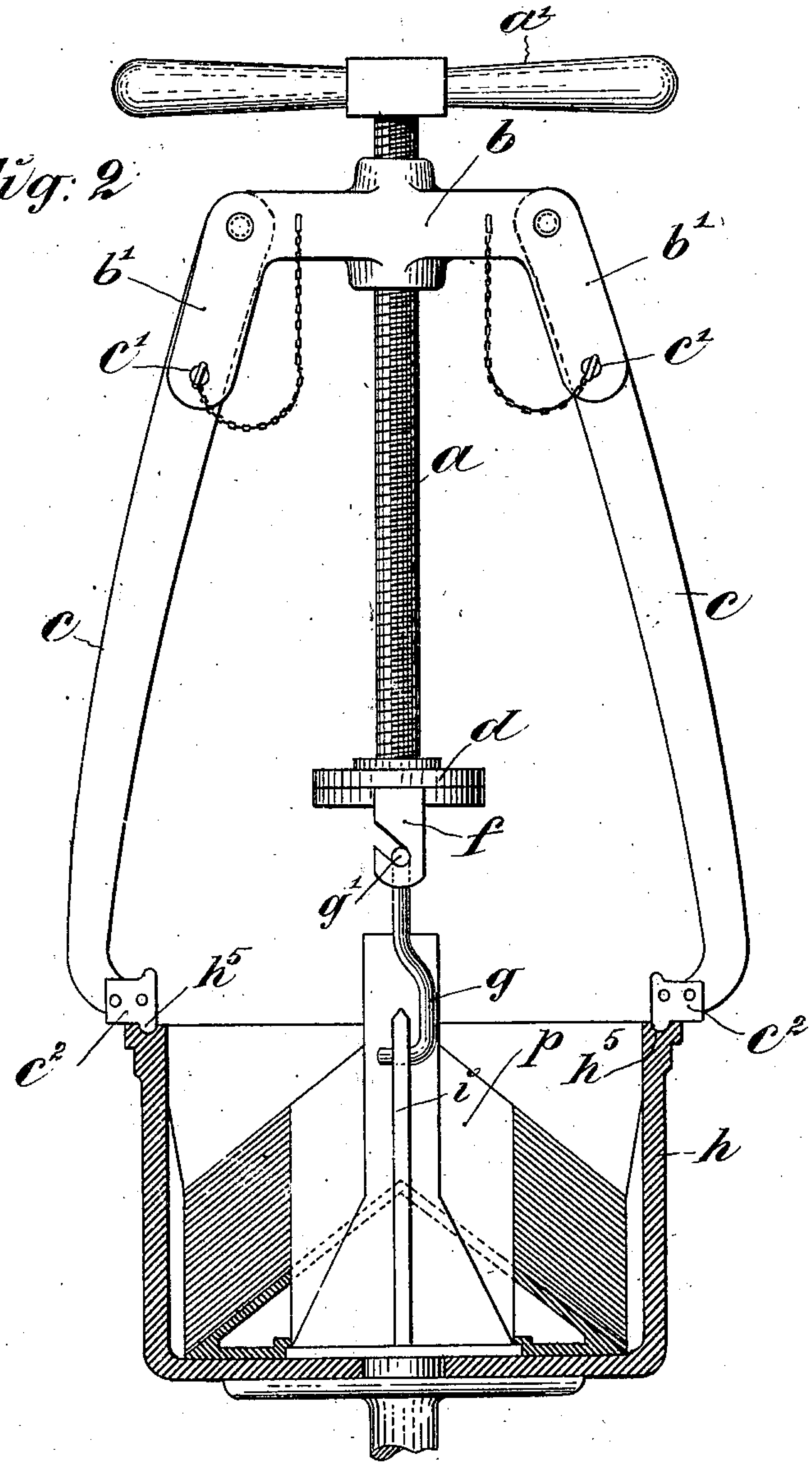
E. G. N. SALENIUS.

TOOL FOR ASSEMBLING AND REMOVING PARTS OF CENTRIFUGAL MACHINES.

(Application filed Jan. 12, 1899.)

(No Model.) 4 Sheets—Sheet 2.

Fig: 2



WITNESSES:

J. W. Hinman

Peter A. Ross,

INVENTOR

Erik G. N. Salenius

BY

Henry Connett

ATTORNEY

No. 620,366. Patented Feb. 28, 1899.

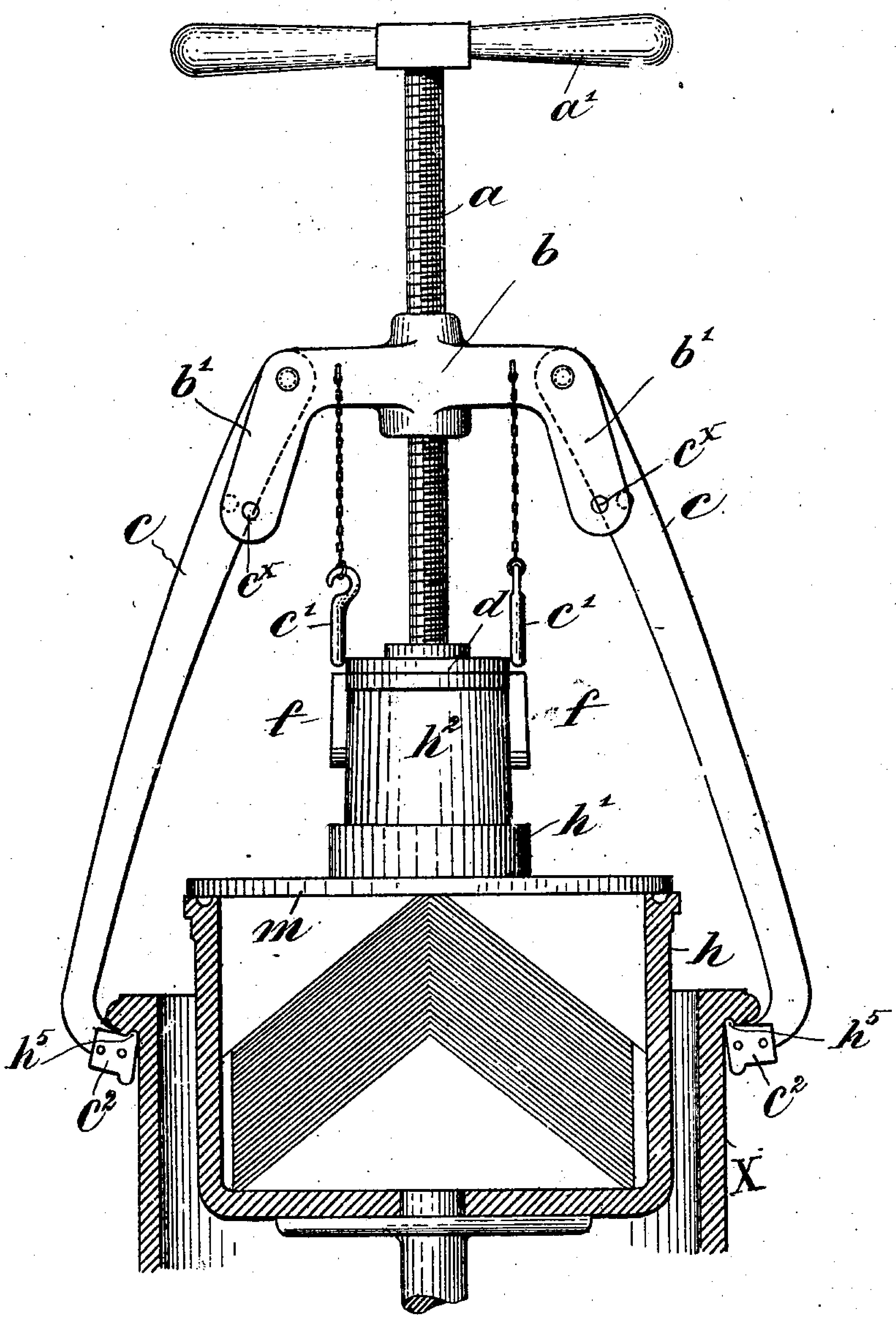
E. G. N. SALENIUS.

TOOL FOR ASSEMBLING AND REMOVING PARTS OF CENTRIFUGAL MACHINES.

(Application filed Jan. 12, 1899.)

(No Model.) 4 Sheets—Sheet 3.

Fig: 3.



WITNESSES:

F. W. Winner

Peter A. Ross

INVENTOR

Erik G. N. Salenius

BY

Henry Connett

ATTORNEY

No. 620,366. Patented Feb. 28, 1899.

E. G. N. SALENIUS.

TOOL FOR ASSEMBLING AND REMOVING PARTS OF CENTRIFUGAL MACHINES.

(Application filed Jan. 12, 1899.)

(No Model.) 4 Sheets—Sheet 4.

Fig: 4.

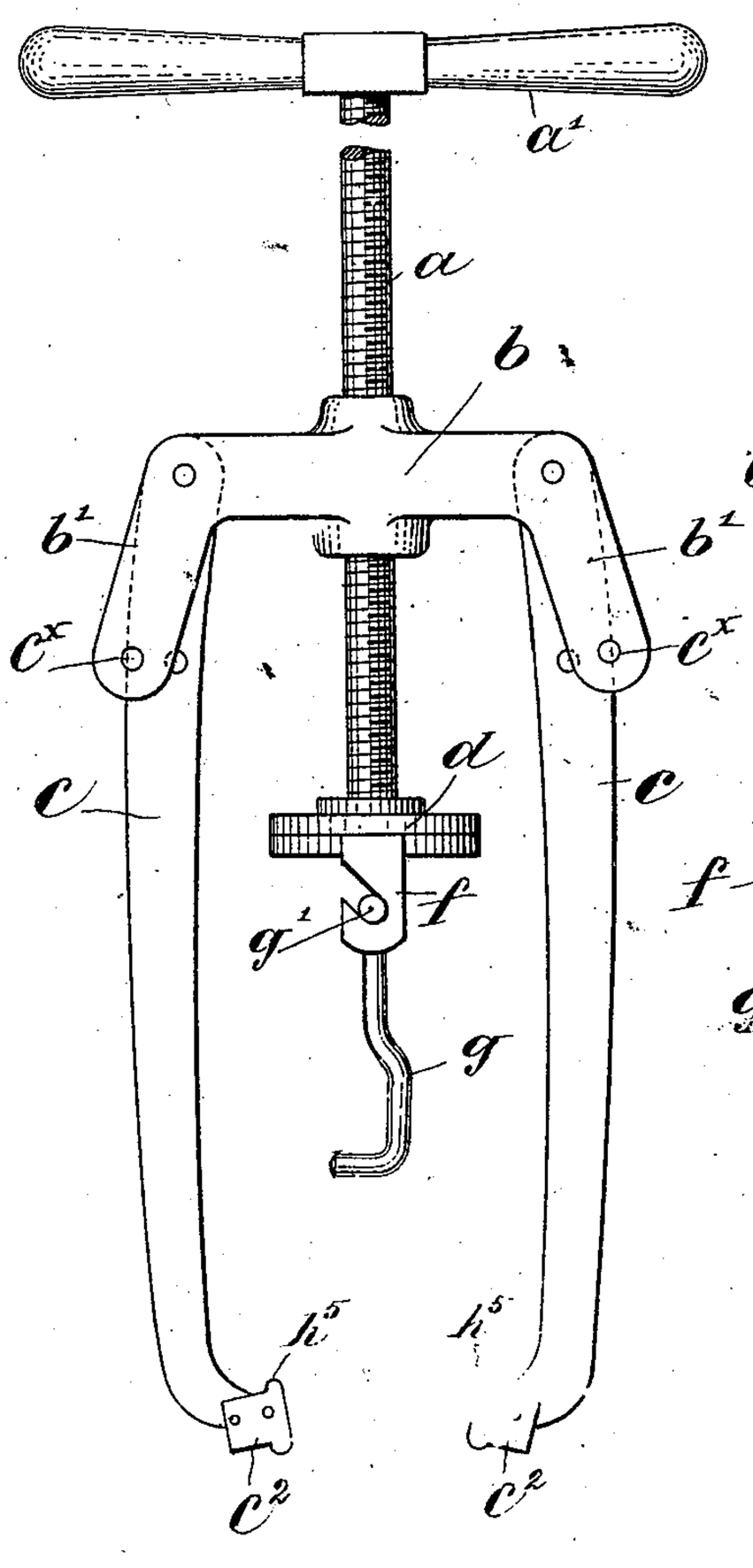
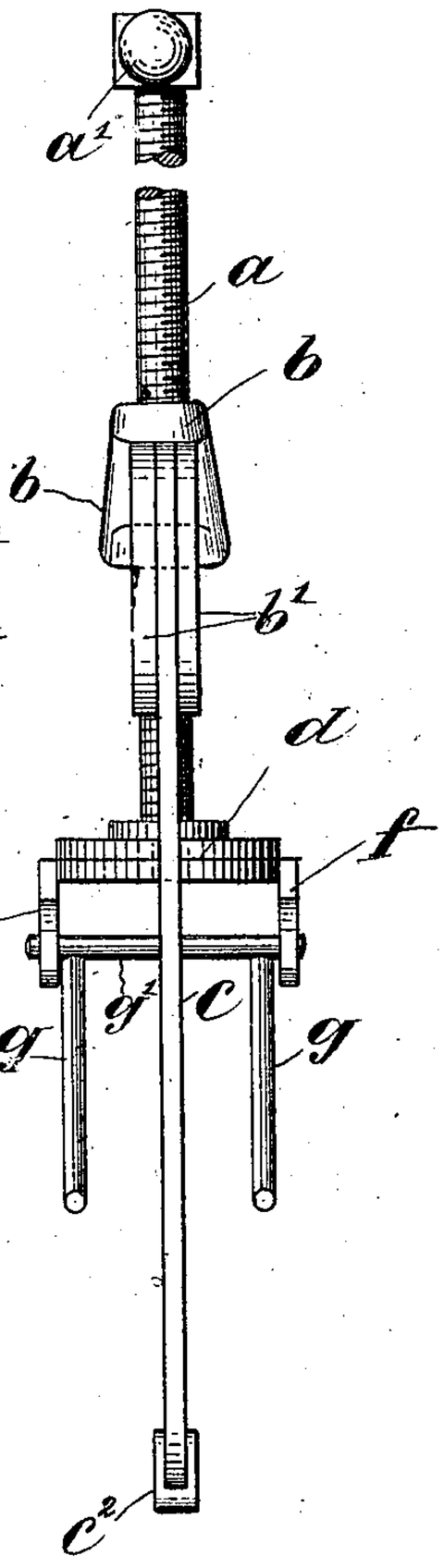


Fig: 5.



WITNESSES:

F. W. Dieman

Peter A. Ross

INVENTOR

Erik G. N. Salenius

BY

Henry Connett

ATTORNEY

UNITED STATES PATENT OFFICE.

ERIK GUSTAF NICOLAUS SALENIUS, OF ALBANO, SWEDEN.

TOOL FOR ASSEMBLING AND REMOVING PARTS OF CENTRIFUGAL MACHINES.

SPECIFICATION forming part of Letters Patent No. 620,366, dated February 28, 1899.

Application filed January 12, 1899. Serial No. 701,908. (No model.)

To all whom it may concern:

Be it known that I, ERIK GUSTAF NICOLAUS SALENIUS, a subject of the King of Sweden and Norway, and a resident of Radiator, Albano, in the Kingdom of Sweden, have invented certain new and useful Improvements in Tools for Assembling and Separating the Parts of Centrifugal Apparatus, of which the following is a specification.

This invention relates to special shop-tools; and it has for its object to provide a special tool for use in setting up and taking down the axially-detachable parts of the drum or bowl of a centrifugal apparatus.

In the accompanying drawings, which illustrate an embodiment of the invention and its several applications in practice, Figure 1 is a side elevation of the tool, showing it in use for removing the upper from the lower part of a centrifugal bowl or drum. Fig. 2 is a similar view showing the tool in use for removing the inset from the drum. Fig. 3 is a similar view showing the tool employed as a press for forcing the inset down into the drum. Figs. 4 and 5 are elevations of the tool as it appears when not in use, the former being a side view and the latter an edge view.

The tool consists of a screw a, screwing through a central nut-boss in a cross-head b. To the ends of said cross-head are hinged, respectively, two long pendent jaws c, having inwardly-hooked extremities, each extremity having on it a shoe c^2, provided at its upper and lower front edges, respectively, with a rounded nose or projection h^5 for purposes to be hereinafter explained. The hinged end of each jaw c is embraced between two downwardly-turned cheeks b' on the end of the cross-head b, and in said cheeks and the jaw there are pin-holes $c^\times$ to receive a pin c' when the holes in the jaw and cheeks are brought to register, and thus hold the jaws c rigid with the cross-head b, as seen in Fig. 2.

On the end of the screw a is secured a foot-piece d, which has fixed to it at opposite sides pendent hooks f. On the upper end of the screw is a suitable operating-handle a'. A detachable part of the tool (seen in Figs. 2, 4, and 5) comprises two connected hooks $g\,g$, pendent from a cross-bar g', the latter being adapted to lie in the hooks f when this part is used.

As stated, Fig. 1 shows the tool in use for detaching and lifting off the upper part of a centrifugal drum. To the main or lower portion h of the drum belong the parts h', h^2, and h^3. The upper part k in setting up the drum has its neck k' forced down over the slightly-tapered neck h^2 of the main part h, and to detach it the pins c' are removed, the jaws c brought under the part k, and the foot-piece d brought to a bearing on the top of the portion h^3. Now by driving down the screw a the part k is raised and detached. In Fig. 1 parts of the drum are broken away to show how they fit together.

In Fig. 2 the tool is represented as employed for removing an "inset," so called, from the drum h, this latter and the inset p being represented in section. The jaws c are locked by the pins c', which bring the shoes c^2 in the proper position for their projections h^5 to engage the packing-groove in the upper edge or margin of the drum. The hooks g are made to engage holes in uprights l, connected with the base of the inset, and the latter is drawn out by means of the screw a.

Fig. 3 shows how the tool may be employed for pressing the inset p down into place in the drum. The pins c' are removed, so as to allow the jaws c to spread until the upper projections h^5 on the shoes c^2 of the jaws take under and engage the flange on the frame X which supports the drum. The inset (which is mainly composed of superposed plates, well known in this art) is placed in the drum, the cover m of the drum placed thereon, and the screw a run down upon the part h^2, (on the cover,) and screw-pressure applied until the cover is brought to its seat on the top of the drum. The ring p' (seen in Fig. 1) is now screwed onto the drum in a well-known way.

It may be stated that the foot-piece d, carrying the hooks f, is rotative on the screw a.

I do not herein claim any feature of the centrifugal drum. The drum is illustrated herein only to show the uses to which my tool is applied.

Having thus described my invention, I claim—

In a tool for the purpose specified, the combination with the screw *a*, having a foot-piece *d*, provided with hooks *f*, the cross-head *b*, through which the screw *a* passes, said cross-head having downwardly-turned cheeks, the jaws *c*, *c*, hinged between the cheeks at the respective ends of the cross-head, said jaws having hooked extremities provided with shoes c^2, and means for locking the jaws *c* to the cross-head, of the connected, detachable hooks *g*, *g*, provided with a cross-bar *g'*, adapted to engage the hooks *f*, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ERIK GUSTAF NICOLAUS SALENIUS.

Witnesses:

ERNST SVANQVIST,

H. B. OHLSSON.