

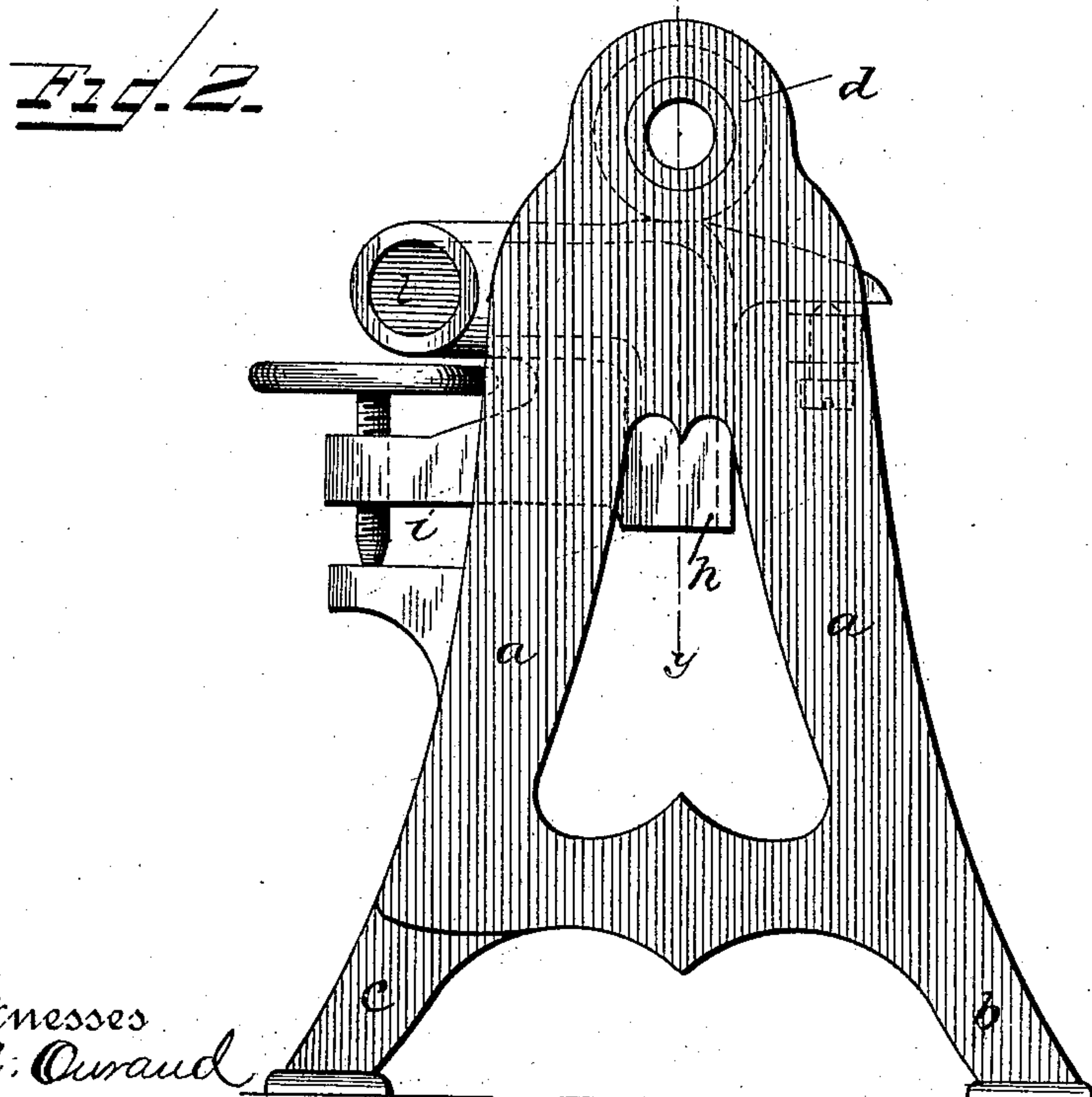
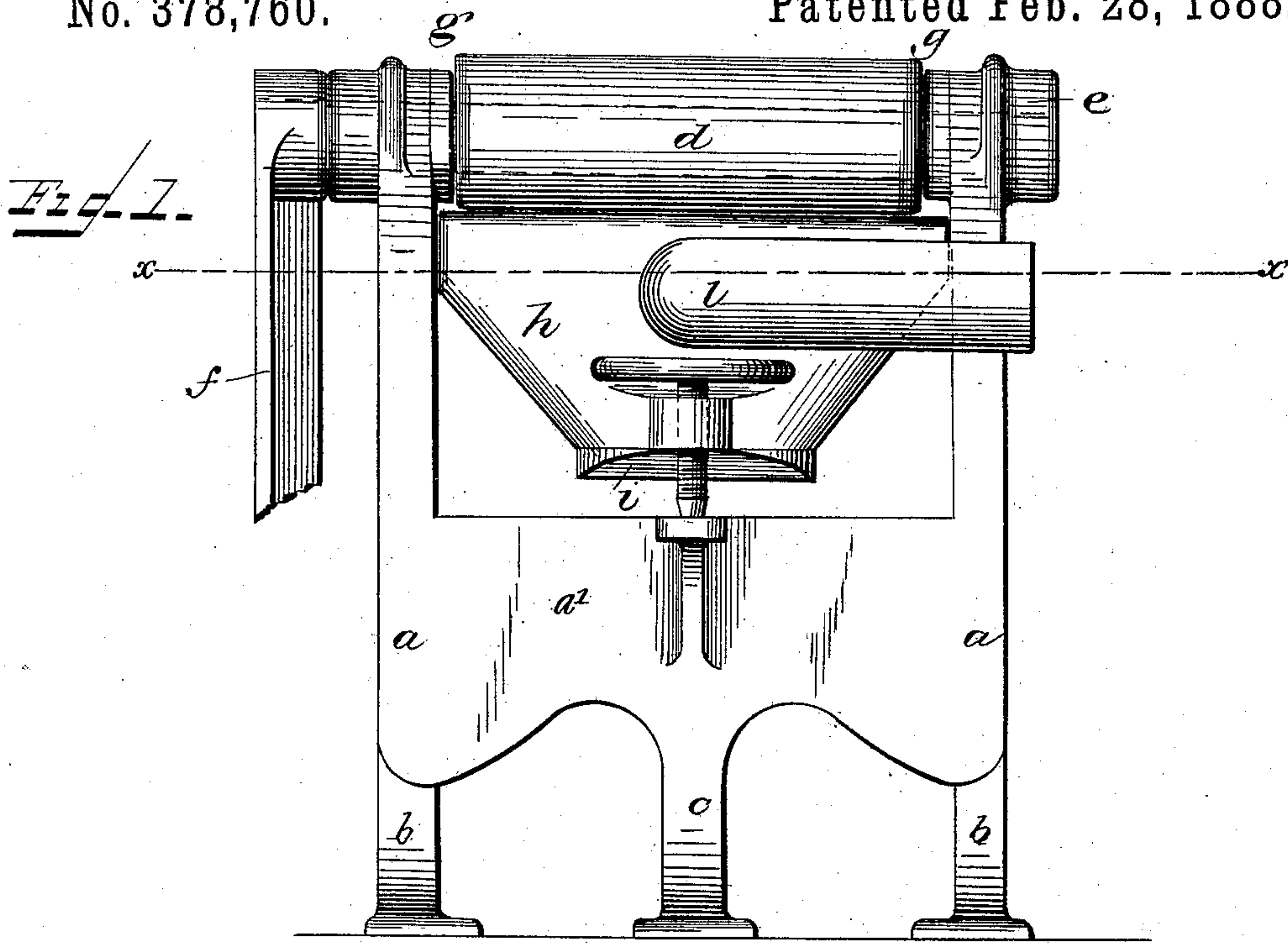
(No Model.)

3 Sheets—Sheet 1.

W. H. BOLES.
BURNISHER.

No. 378,760.

Patented Feb. 28, 1888.



Witnesses
F. L. Couraud
Edwin A. Finckel.

Inventor

Warren H. Boles.
By his Attorney
W. H. Finckel

(No Model.)

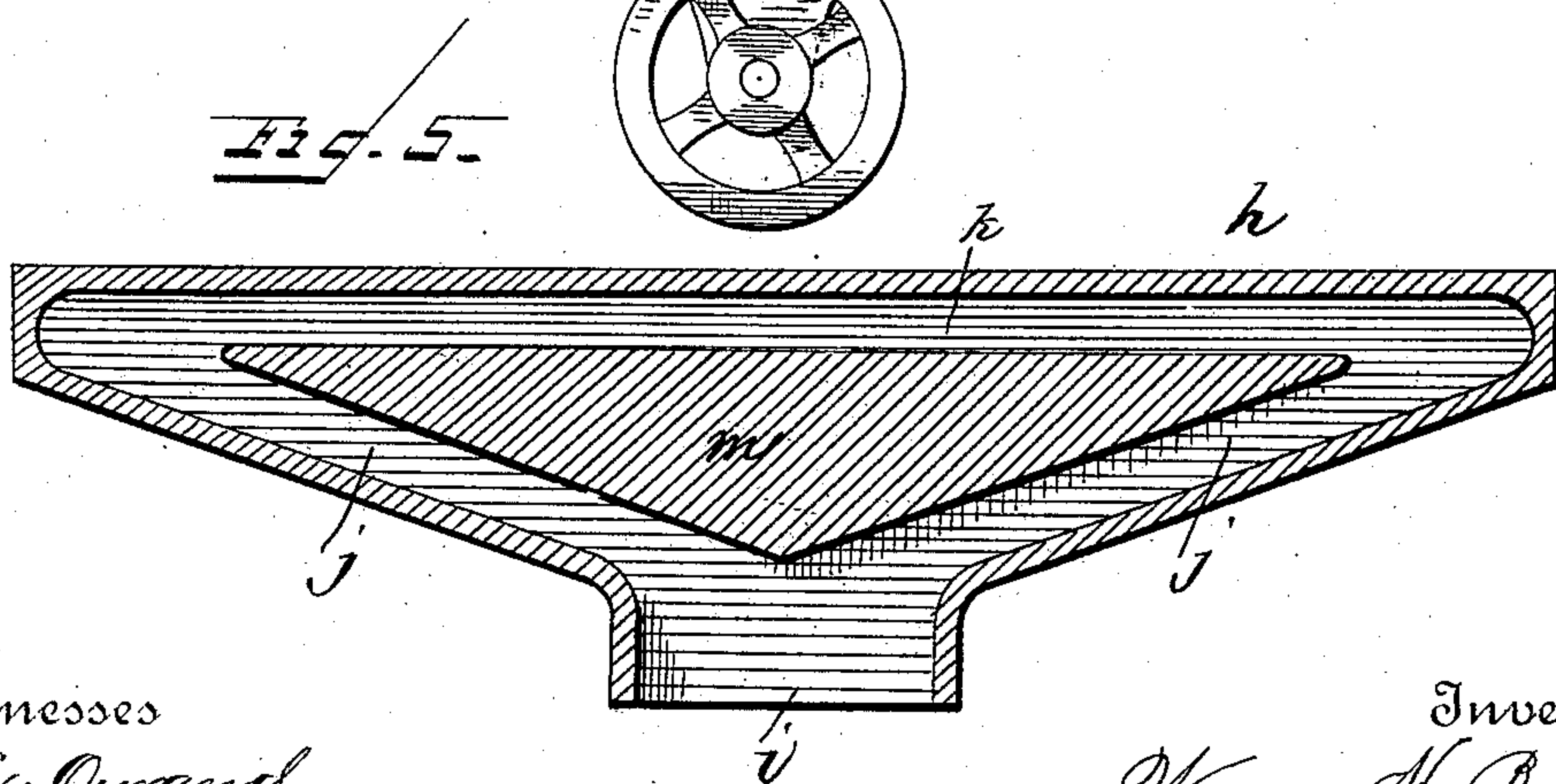
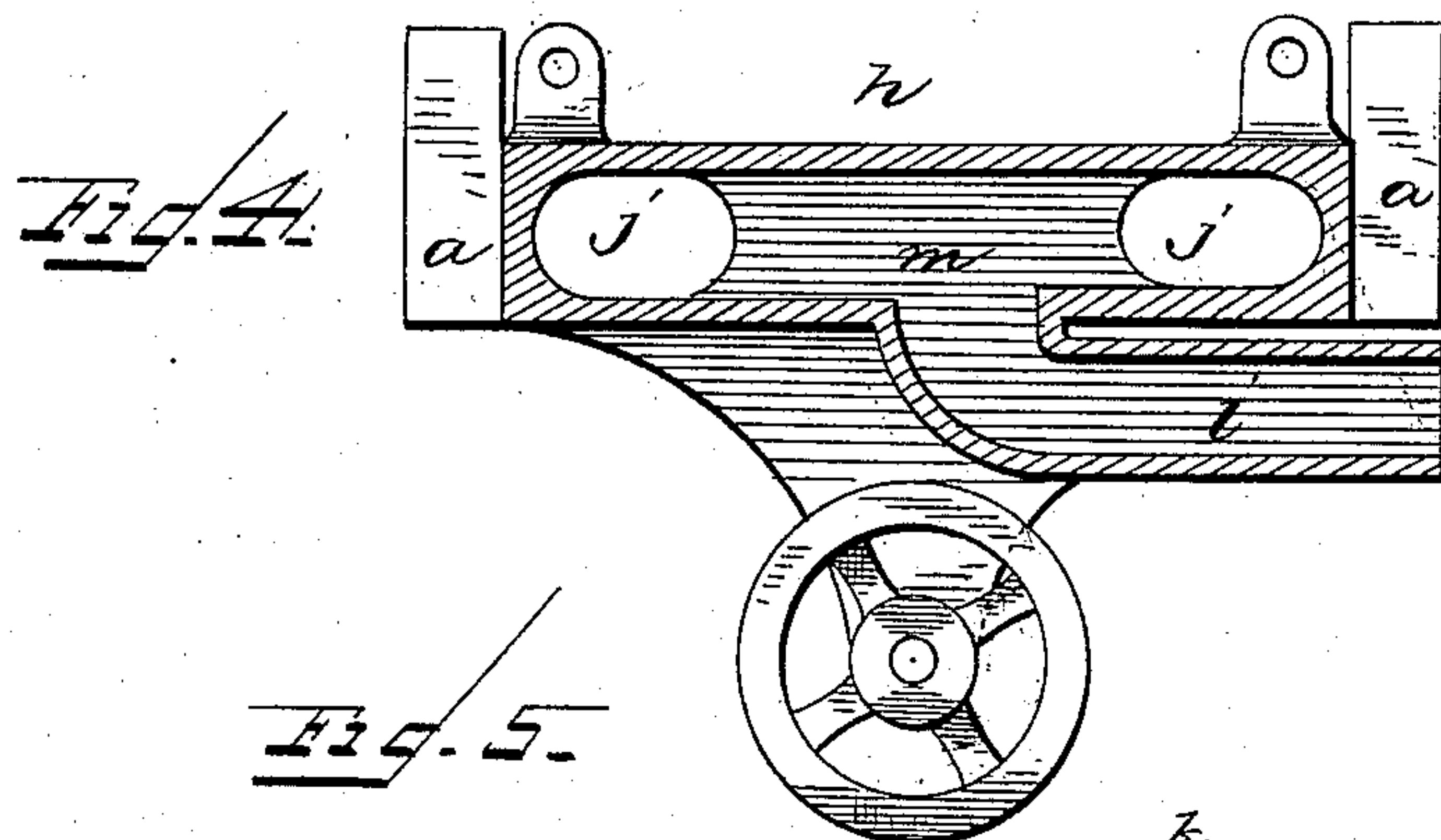
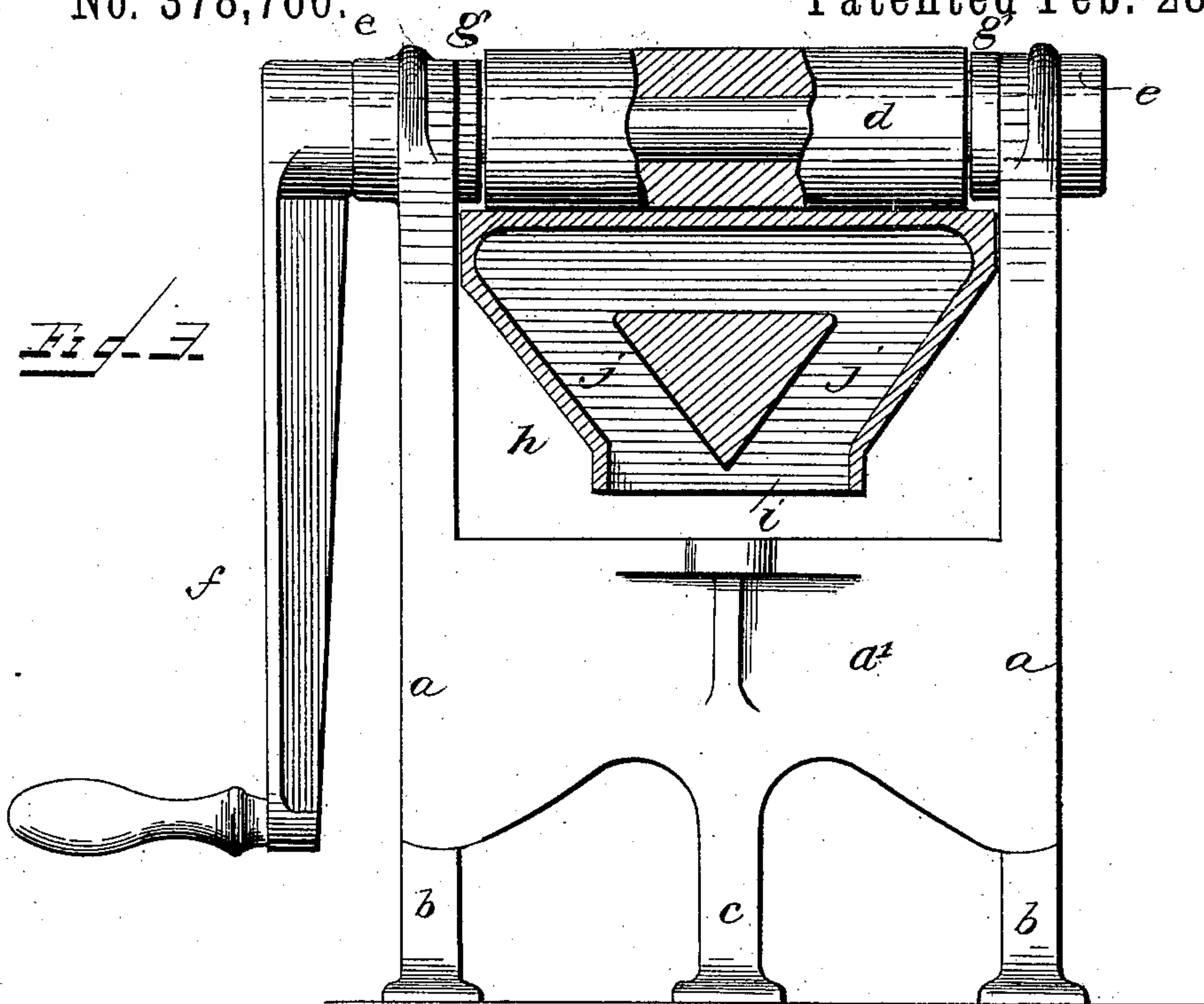
3 Sheets—Sheet 2.

W. H. BOLES.

BURNISHER.

No. 378,760.

Patented Feb. 28, 1888.



Witnesses
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(No Model.)

3 Sheets—Sheet 3.

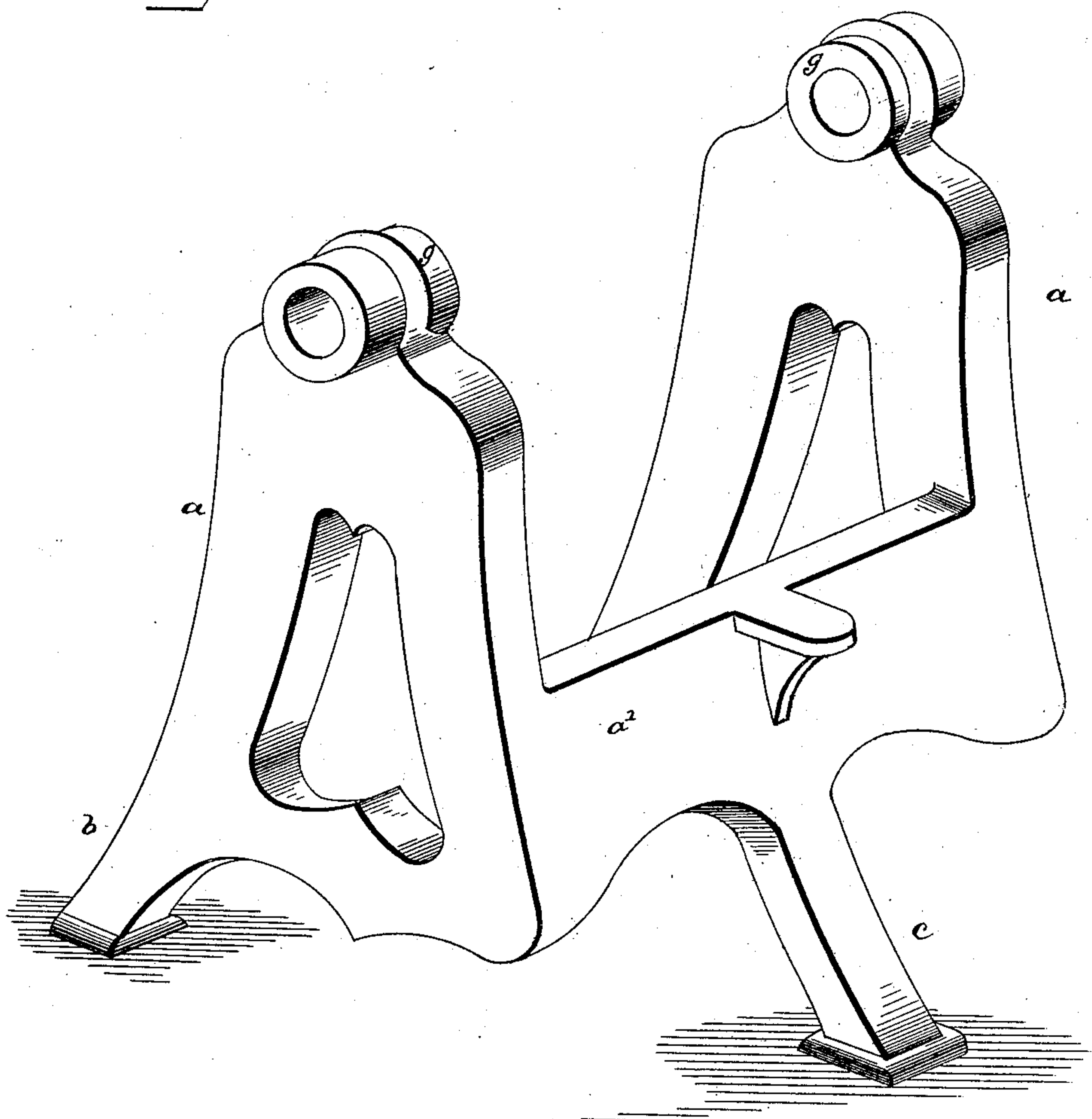
W. H. BOLES.

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Patented Feb. 28, 1888.

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Edwin A. Finckel.

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UNITED STATES PATENT OFFICE.

WARREN H. BOLES, OF SYRACUSE, NEW YORK.

BURNISHER.

SPECIFICATION forming part of Letters Patent No. 378,760, dated February 28, 1888.

Application filed December 18, 1886. Serial No. 221,988. (No model.)

To all whom it may concern:

Be it known that I, WARREN H. BOLES, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Burnishers, of which the following is a full, clear, and exact description.

This invention is in the nature of certain modifications of the machine set forth in my patent, No. 356,399, dated January 18, 1886.

The invention relates to the feed-roll, also to the polishing-tool, and also to a burnisher comprising a frame, preferably a three-legged frame, and this feed-roll and polishing-tool.

With this general statement, I will proceed to particularly set forth and finally claim those parts of the machine which constitute the present invention.

In the accompanying drawings, in the several figures of which like parts are similarly designated, Figure 1 is a rear elevation; Fig. 2, a side elevation; Fig. 3, a rear elevation, partly in section; Fig. 4, a horizontal section taken in the plane of line *x x*, Fig. 1. Fig. 5 is a vertical section of the polishing-tool on a larger scale, and Fig. 6 is a perspective view of the framing.

In order to insure and always maintain a perfect alignment between the flue or polishing-tool and the feed-roll, I provide the frame *a* of the machine with three legs, *b b* and *c*, the two legs *b b* being at the front of the machine and the third leg, *c*, being midway between these two front legs and at the rear of the machine and directly under the tension-screw of the polishing-tool. By such construction the machine may be secured to the table or stand upon which it is to rest while in operation in such a manner that its parts, before referred to, will always be in alignment; and obviously this is impossible where four legs are employed, as has heretofore been the rule; or, to put it less positively, the same result could only be obtained by leveling the machine by blocks placed under one or more legs, and even then the result is not always satisfactory; but in practice it is found that where there is any inequality upon the base upon which the machine is to be placed—that is to say, when its surface is not perfectly horizontal and flat—

operators invariably endeavor to compensate for it, if they notice it, by screwing down the four legs. Now it will be seen that if one leg stands higher from the table than the others and this leg is forced down to the table the result will be that the feed-roll will be thrown to that extent out of alignment with the polishing-tool; and in practice this is usually the way these machines are set, and the result is a great deal of bad work. The sides *a a* and legs *b b c* may be made as one casting, as indicated in the drawings, the sides *a a* being connected by a cross-piece, *a'*, integral therewith, and the latter containing the leg *c*.

The feed-roll *d* may be made hollow, as in the patent above referred to; or it may be provided with a shaft, as indicated in dotted lines, Fig. 3, which forms the journals for it in the bearings *e* of the frame *a*; and this shaft, or a prolongation of the journal of the hollow roll, may receive the operating-crank *f* in the usual manner. This feed-roll I make a trifle shorter than the distance between the sides of the frame *a*, and provide abutments *g* on the inside of the frame *a* for it to bear against and allow the heat in the flue or polishing-tool to pass beyond the end of the feed-roll, so as to avoid collection of moisture or condensation on the end of the feed-roll, and also avoid the catching of the edges of the article being burnished.

The next improvement consists in the construction of the polishing-tool. This tool *h*, I make in substantially the same shape shown in the section, Figs. 3, 4, and 5. It is provided with an opening, *i*, to receive the lamp or other heater, and this opening branches laterally into two flues or channels, *j*, leading to opposite ends of the tool, where they meet a horizontal channel or flue, *k*, extending to the ends of the machine and closed at each end. In order to provide for the escape of the products of combustion, I provide an outlet, *l*, and in the construction shown this outlet may be a piece of gas-pipe suitably attached to the rear of the polishing-tool and about midway of the horizontal flue *k*, extending thence to that side of the machine opposite the handle where the operator stands. By this construction the products of combustion are directed away from the operator. I wish here to say, however, that I do not limit my invention in this particular to any

special construction of exit-flue. With this construction of polishing-tool a practically perfect draft is insured for the lamp or gas used in heating it; but, in addition to this, and more particularly, the heat is thoroughly distributed and equalized. No cold air can enter the flue at the ends, as has heretofore been the case with those polishing-tools having open ends, and this defect in such old polishing-tools has had a very damaging influence in counteracting the effects of the heat and preventing the end of the tool getting hot. Moreover, with the ends of the polishing-tool closed it is impossible for cold-air drafts to affect the flame of the heater, and therefore the offensive smoke heretofore emanating from the heater from this cause is largely, if not altogether, obviated. Then, again, where the opening from the heater into the polishing-tool has been directly in the center of the polishing-tool, the center of the tool has been overheated relative to its ends. Now, with the present polishing-tool, having its center directly over the heater solid, as indicated by the portion *m* in Figs. 3, 4, and 5, the center cannot become overheated; but, as already indicated, the heat is divided and passed equally to opposite ends of the tool and thence toward the center and outlet to the atmosphere. By this arrangement the heat may be thoroughly equalized throughout the tool, and, moreover, the polishing-tool extending to or beyond the ends of the feed-roll, prevents the condensation of moisture on the ends of the feed-roll while heating up.

I desire to be understood as not limiting these improvements to photographic burnishers; but, on the contrary, I desire to expressly state that their application to mangles and paper-calendering machines is within the scope of my invention and the claims herein.

Parts not herein specifically described, but shown, may be similar to corresponding parts in the machine shown in the patent above referred to or of any approved construction. I may remark that the polishing-tool may be supported in the frame substantially as in said patent, and provided with a tension-screw, as therein shown and also as herein illustrated.

What I claim is—

1. A frame, a feed-roll supported in bearings therein, and a polishing-tool having a heating-surface coextensive with or somewhat in excess of the length of the feed-roll and provided with a centrally-arranged inlet for a heater, flues or channels extending laterally from said inlet to the ends of the tool and communicating with another flue or channel common to both and next to the polishing-surface of the tool, and an outlet for said flues, substantially as set forth.

2. A polishing-tool provided with a main centrally-arranged inlet for a heater, flues or channels extending laterally from said inlet to the ends of the tool and communicating with another flue or channel common to both and next to the polishing-surface of the tool, and a common outlet, substantially as described.

3. A polishing-tool having an inlet, channels or flues extending from the said inlet laterally to the ends of the tool, another flue or channel arranged immediately under the polishing-surface of said tool and extending from end to end of the tool, and a central outlet, substantially as described.

4. A polishing-tool having an inlet, channels or flues extending from said inlet laterally to the ends of the tool, another flue or channel arranged immediately under the polishing-surface of said tool and extending from end to end of the tool, and an outlet leading rearwardly from the last-named flue laterally to and beyond one end of the tool, substantially as described.

5. A burnisher comprising a frame, a feed-roll, an operating-handle at one end of said feed-roll, and a polishing tool containing a main inlet for the heater, heat-distributing flues, and an outlet for said flues extending rearwardly from the polishing-tool and thence laterally to the side of the machine opposite to that at which the operating-handle is arranged, substantially as described.

In testimony whereof I have hereunto set my hand this 13th day of December, A. D. 1886.

WARREN H. BOLES.

Witnesses:

EDWIN M. WELLS,

DANIEL S. RAYMOND.