

(No Model.)

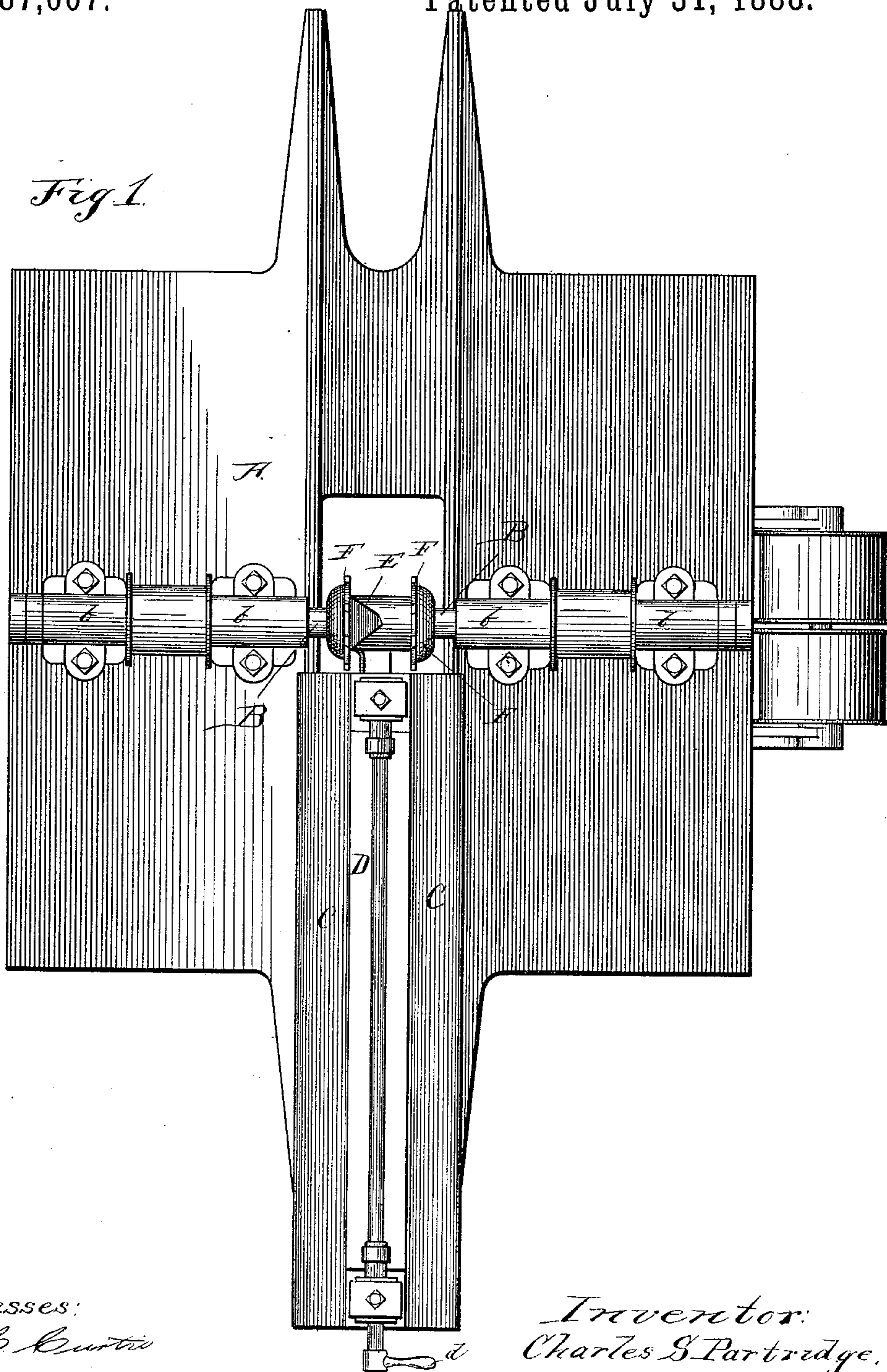
2 Sheets—Sheet 1.

C. S. PARTRIDGE.

STEREOTYPE PLATE FINISHING MACHINE.

No. 387,007.

Patented July 31, 1888.



Witnesses:
Lew. C. Curtis
Mary M. Farr.

Inventor:
Charles S. Partridge.
By Munday Evans & Adcock.
His Attorneys.

(No Model.)

2 Sheets—Sheet 2.

C. S. PARTRIDGE.

STEREOTYPE PLATE FINISHING MACHINE.

No. 387,007.

Patented July 31, 1888.

Fig. 2.

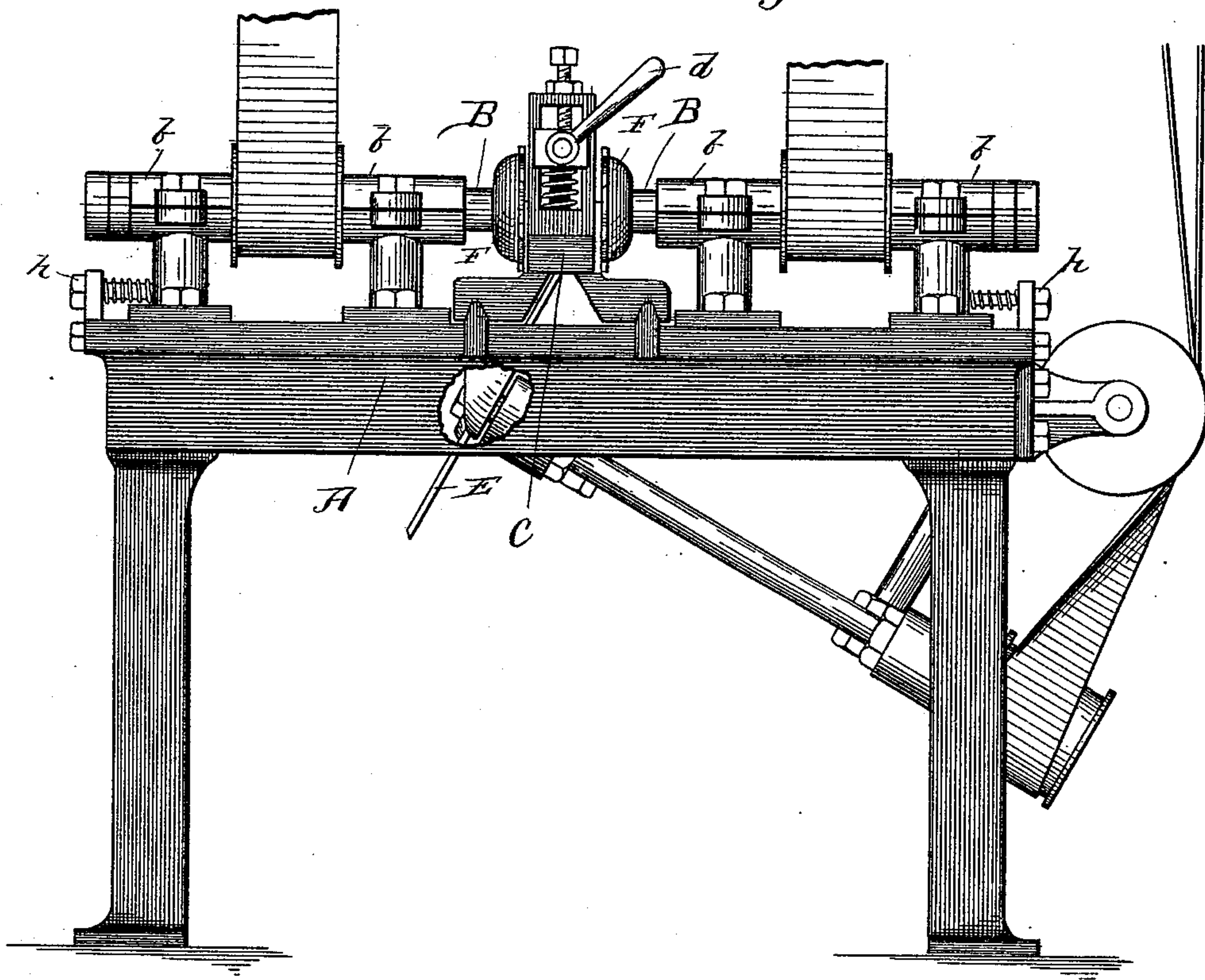


Fig. 3.

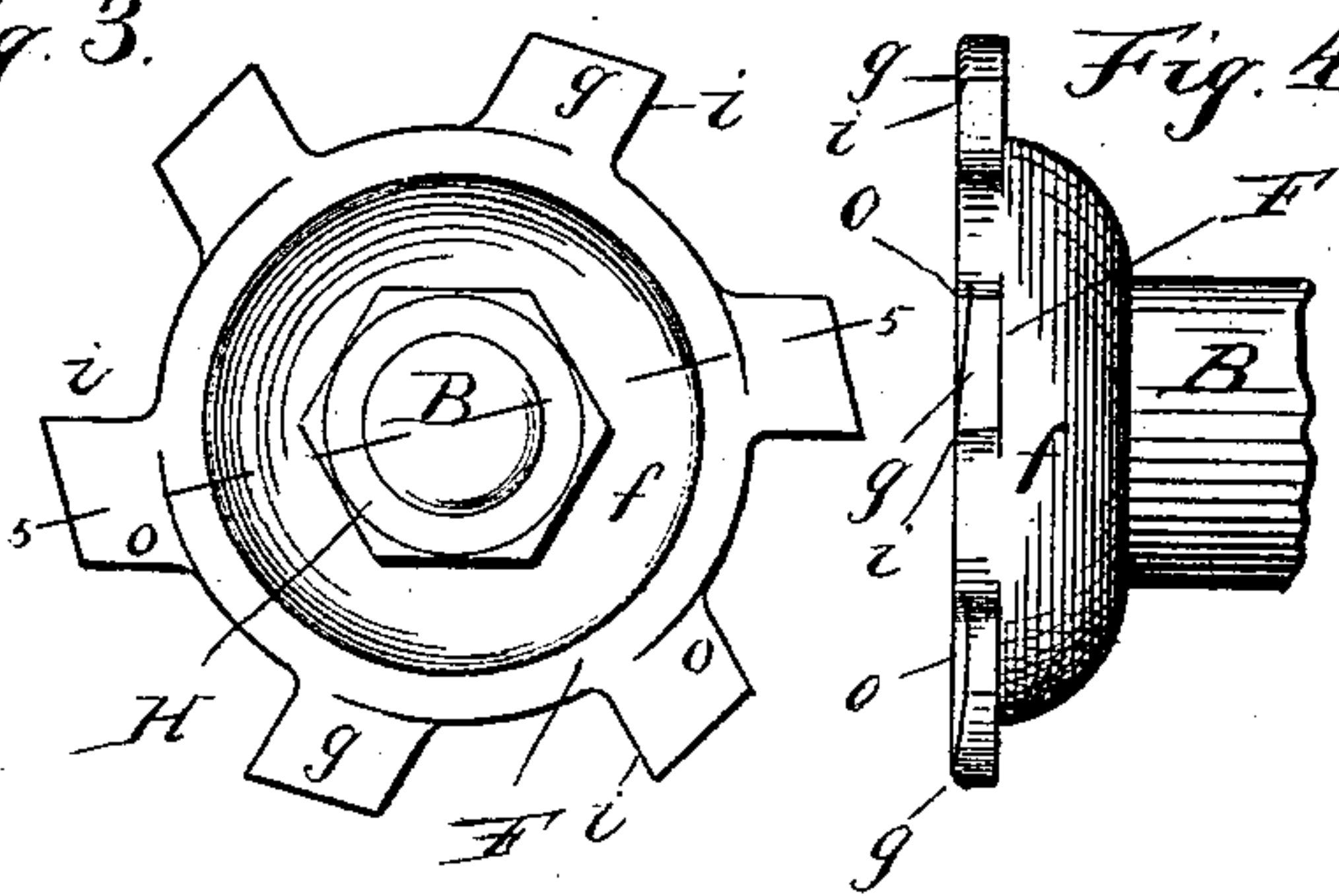


Fig. 4.

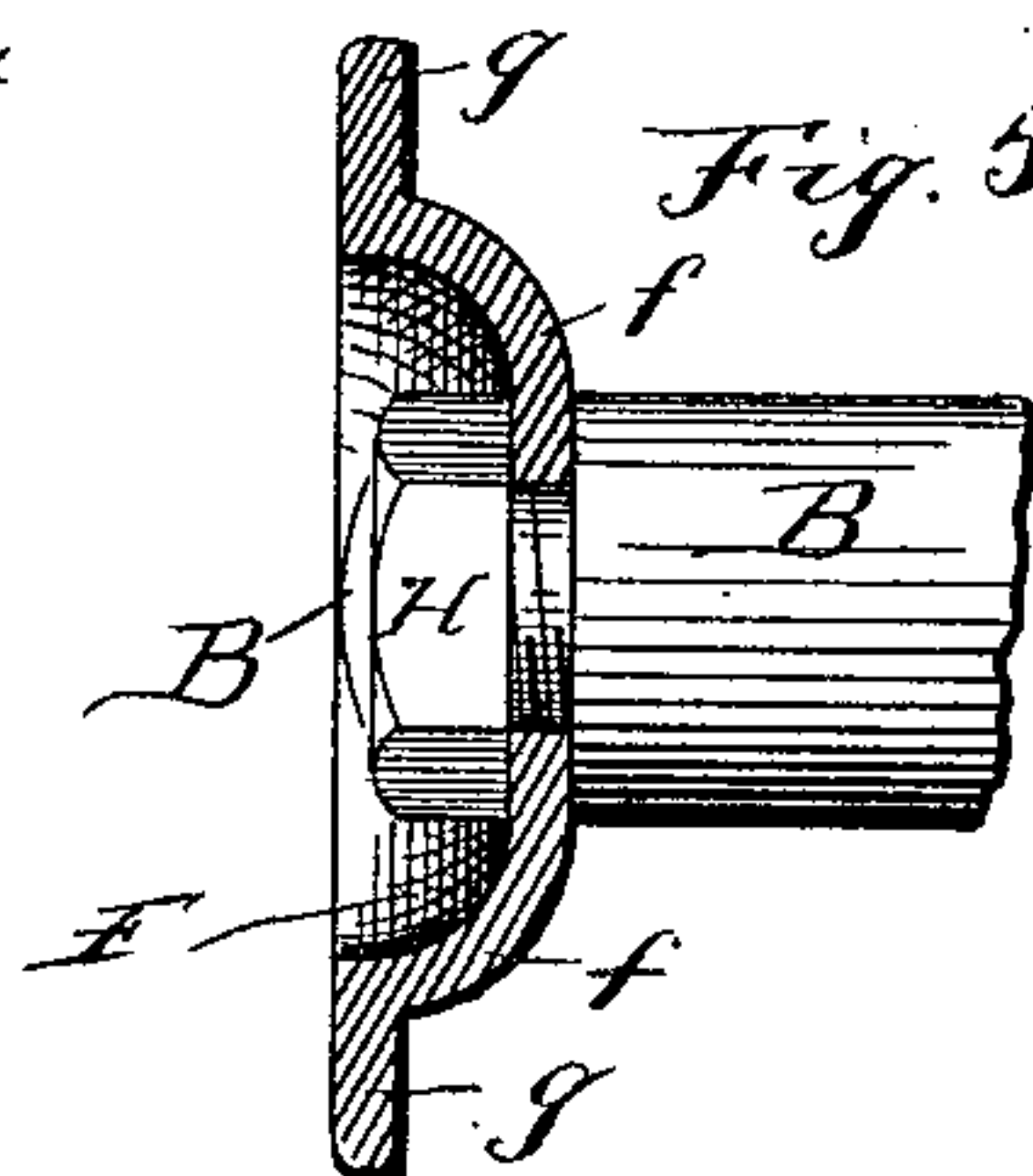


Fig. 5.

Witnesses:

Lew C. Curtis.

Mary M. Farr.

Inventor:

Charles S. Partridge.

By Munday, Evans & Adeock

His Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES S. PARTRIDGE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE A. N. KELLOGG NEWSPAPER COMPANY, OF SAME PLACE.

STEREOTYPE-PLATE-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 387,007, dated July 31, 1888.

Application filed May 10, 1888. Serial No. 273,404. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. PARTRIDGE, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Stereotype-Plate-Finishing Machines, of which the following is a specification.

This invention relates to improvements in machines for finishing stereotype-plates of the kind shown in Letters Patent No. 369,192, of August 30, 1887, to George E. Lloyd and myself, the machine being adapted to trim the side edges of the plate, and also perform other functions, if desired. In these machines the plate is clamped upon a carriage and moved between two rotary cutters positioned and otherwise adapted to trim the side edges of the plate and bring it to the width desired. In the forms of the machine heretofore used by me the rotary cutters employed for this edge-trimming operation have consisted of rotary disks, each carrying a single tool projecting to the side of the disk. The use of these cutters has developed an objectionable feature which it is the object of this invention to obviate, viz: the resultant effect upon the arbor carrying the cutter and its bearing-boxes, due to the fact that the single tool, which operates always at the same point in its revolution, causes a sharp thrust by the arbor against the side of its bearings at each rotation. The continued repetition of such thrusts, with the parts in the same relative position, soon results in an unequal wear upon the arbor, the side thereof feeling the effect of the thrust being worn away thereby, while the other side is comparatively unaffected. In this way the arbor becomes loose in its bearings. Of course the side of the boxes which resist the thrust are likewise affected; but that is necessarily the case where the cutting operations all occur at one point in the path of the cutter, and is more easily remedied than the defect in the arbor. Another objection to the patented machine and other machines for trimming these plates pertains to the character of the cutting-tools employed therein. These tools are usually formed from steel bars, with the cutting-point at one end thereof, and they are placed in the rotary cutter head or disk with such cutting-point

projected laterally to the plane of the disk, so that in operation these tools stand at right angles to the plates which they act upon. The result of this construction and arrangement is that the edges of the plate are not perfectly trimmed, but are left in a rough and ragged condition, necessitating a subsequent smoothing. I overcome these evils by substituting for the single tool a cutter of the following construction: A steel disk is provided with six or some appropriate number of teeth located at equal distances apart around its periphery. These teeth stand at right angles to the arbor, and their front edges are adapted to cut with a shaving cut as distinguished from the tearing-like action of the old form of cutters. The disk is adapted to be secured to the end of the arbor, without interfering with the passage of the plate past its axial center, by making such center cup-shaped, thereby giving room within the cavity of the cup portion for the nut which threads upon the screw at the end of the arbor, and whereby the disk is held to the arbor.

My invention lies in the combination, in a stereotype-plate-finishing machine, of the carriage for carrying the plate, with rotary cutters formed of the disks described located at either side of the path of the carriage and mounted upon separate arbors.

It also consists in the combination, with the carriage of a plate trimming or finishing machine, of a rotary cutter-disk having peripheral teeth adapted to cut with a shaving action, as set forth.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a plan of the plate-finishing machine. Fig. 2 is a front elevation, partly broken away. Figs. 3, 4, and 5 are detail views of the improved cutter, the latter being a section thereof on line 5 5 of Fig. 3.

In said drawings, A represents the table of the machine; B B, the cutter-carrying arbors, each having its own pulley and driving-belt; b b, the arbor boxes or bearings; C, the plate-carrying carriage, having a clamp, D, for holding the plate rigid and immovable during the operation of trimming, such clamp being set or released by a movement of the handle d; 100

and E, the under cutter for trimming the under surface or holding-leg of the plate, the latter being driven by its own pulley and belt and acting through a slot in the carriage. All the parts so far enumerated are found in said patented machine.

F is my improved cutter. It is formed from a steel disk having a cup-shaped center, as at *f*, and peripheral teeth *g*, the latter standing at right angles to the arbor. These teeth are sufficiently numerous and distributed evenly around the disk, so as to cause the thrusts due to the cutting to be felt by all sides of the arbor alike. I find six teeth located, as shown, at equal distances apart to answer very well. The cupped center gives room for the nut of the attaching-screw of bolt H, formed on the arbor, and avoids all possible interference with the plate, which, as seen in the drawings, is moved past the central part of the cutter. The front edges, *i*, perform the work of the cutter, and by a shaving cut, thereby leaving the edge of the plate in a smooth and finished condition. From the front or cutting edge the teeth turn back or away from the plane of cutting, as more particularly shown at *o* in Fig. 4, to give

a clearance and prevent friction. As the tool is ground away in sharpening the arbor may be set up by the set screw *h*.

The cutter shown is also adapted to be used in ordinary electrotypers' trimming-machines, and is much more economical as to power consumed and amount of sharpening, as well as more perfect in its work, than the tools heretofore used in such machines.

I claim—

1. The combination, in a stereotype-plate-finishing machine, of the carriage for carrying the plate, with disk-cutters having cup-shaped centers and peripheral teeth standing at right angles to the arbors, said cutters being located at either side of the carriage-path and mounted upon independent arbors, substantially as specified.

2. The combination, with the carriage of a plate trimming or finishing machine, of one or more rotary cutters armed with shaving-teeth, substantially as set forth.

CHARLES S. PARTRIDGE.

Witnesses:

EDMUND ADCOCK,
EDWARD S. EVARTS.