

Corliss & Harris

Metal Punch,

N^o 14,493.

Patented Mar. 25, 1856.

Fig. 1.

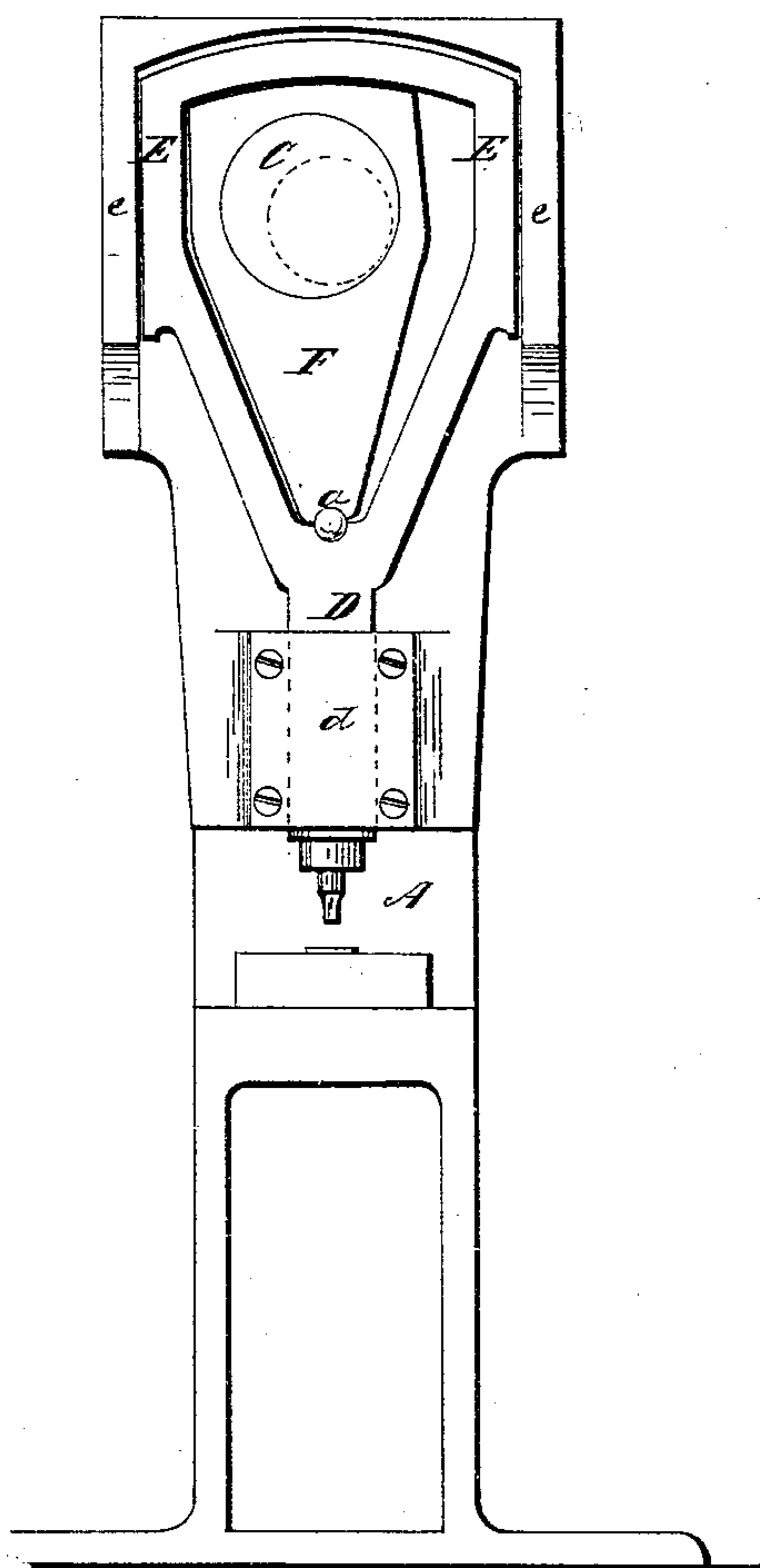
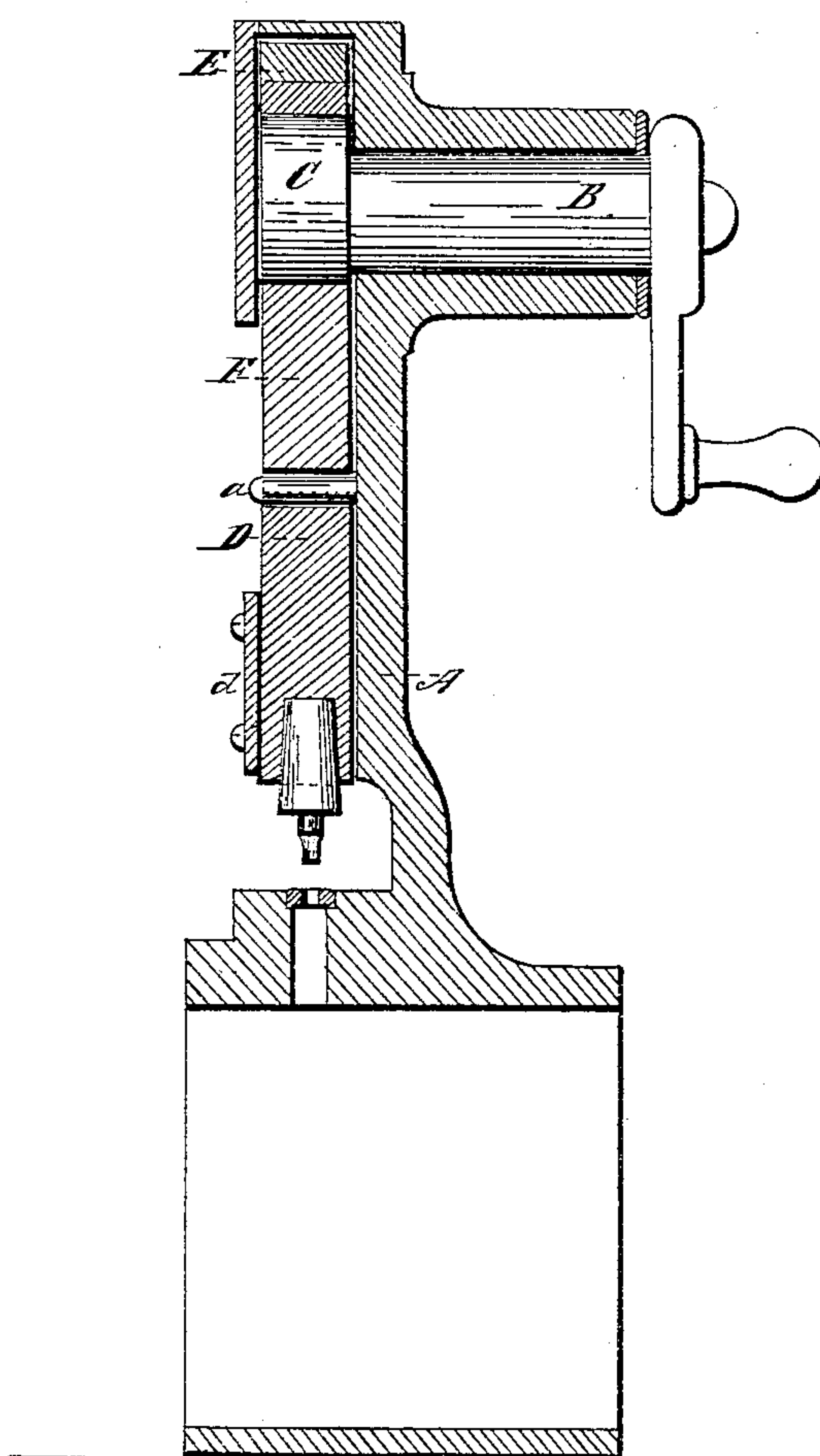


Fig. 2.



UNITED STATES PATENT OFFICE.

GEO. H. CORLISS AND ELISHA HARRIS, OF PROVIDENCE, RHODE ISLAND.

PRESS FOR PUNCHING.

Specification of Letters Patent No. 14,493, dated March 25, 1856.

To all whom it may concern:

Be it known that we, G. H. CORLISS and ELISHA HARRIS, of the city and county of Providence and State of Rhode Island, have invented a new and useful Improvement in Presses for Punching and other Purposes; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a front elevation of a punching press constructed according to our invention, and Fig. 2, is a central sectional elevation of the same, taken at right angles to Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in the employment of an oscillating box working in a yoke of peculiar construction attached to the plunger or follower to transmit, from an eccentric, the force to produce the pressure.

To enable others skilled in the art to make and use our invention we will proceed to describe its construction and operation.

A, is a pillar supporting all the working parts of the press, B, is the eccentric shaft to which the power is applied, and C, the eccentric. D, is the plunger working in a guide *d*, and having the yoke E, firmly attached to it or cast with it, the said yoke also working in a guide *e*, *e*, and assisting to guide the plunger; and F, is the oscillating box which receives the eccentric in a suitable bearing. This box is fitted at the lower end to a small pin or pivot *a*, which rests in a suitable bearing in the bottom of the yoke, and its upper side has the form of an arc described from the pivot *a*. The plunger yoke is of such width as to admit of the oscillating movement of the box on the pivot *a*, produced by the revolution of the eccentric, and its upper side is of arched form internally to fit snugly to the top of the oscillating box. As the pressure is transmitted in a downward direction, by the revolution of the eccentric, the only fric-

tion besides that of the eccentric and shaft is that upon the pivot *a*, and even this may be further reduced by employing a knife edged bearing, as a bearing only, and not a connection, is required at the bottom or oscillating point of the box, for the reason that the power to force down the plunger only is applied through the bottom of the box; the power to raise or draw it back being transmitted from the arched top of the oscillating box to the top of the yoke.

The oscillating box possesses great advantages for punching purposes over the sliding box or connecting rod commonly employed in eccentric presses to transmit the power to the plunger, as in both the latter devices there is much more friction produced in driving the plunger down or forward. In the sliding box, for instance, the box travels as far on its bearing in driving in the punch as it does in drawing it out; and when the connecting rod is employed the connection with the plunger must necessarily be a strong joint in order to get strength enough to draw back the punch and there is as much motion of the bearing surfaces of the joint in drawing back as in forcing in the plunger. But in the oscillating box the friction of the plunger connection is almost nothing in forcing in the punch, though there may be considerable friction in drawing it back, but during the latter stage of the operation, friction is of little importance.

We do not claim of itself an oscillating connection between the eccentric and the plunger or follower for the reason that an oscillating connection in the form of a common pitman has been employed. But

What we claim as our invention, and desire to secure by Letters Patent, is—

The oscillating box, F, applied and operating within a yoke E, in the manner substantially herein set forth.

GEO. H. CORLISS.
ELISHA HARRIS.

Witnesses:

H. S. BARTLETT,
CHAS. V. WARE.