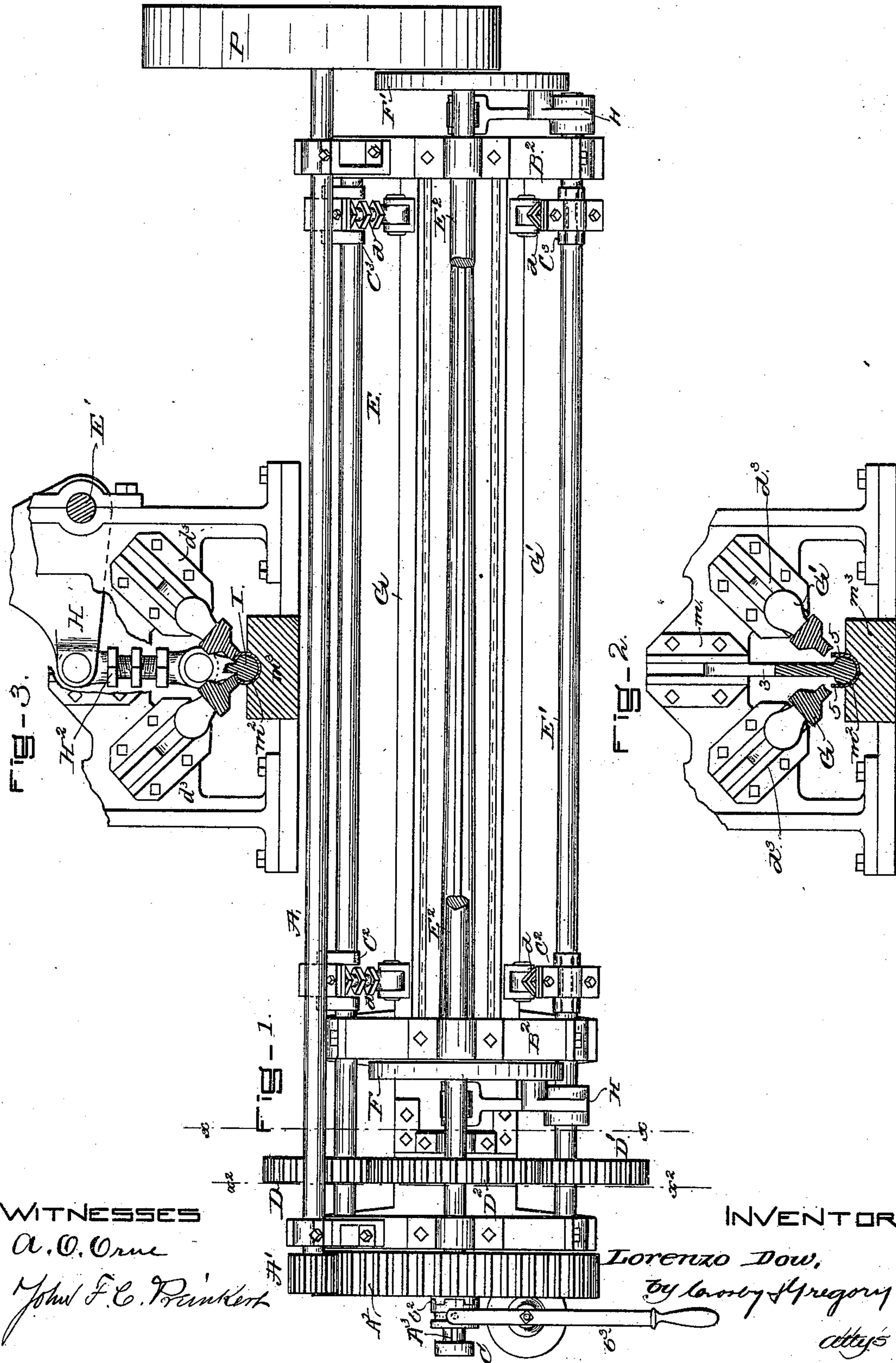


2 Sheets—Sheet 1.

MECHANISM FOR BENDING METAL.

Patented Jan. 4, 1887.



N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.)

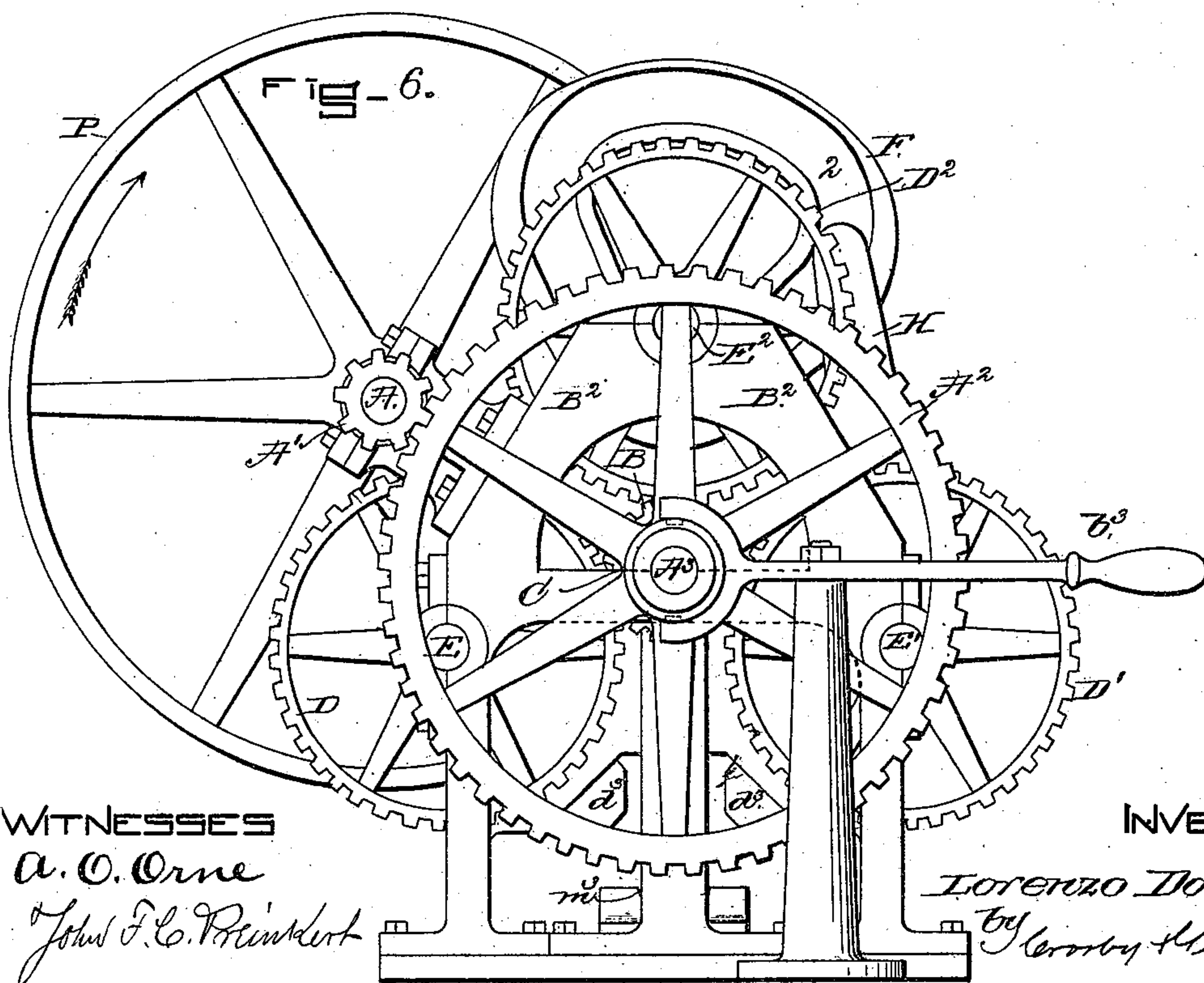
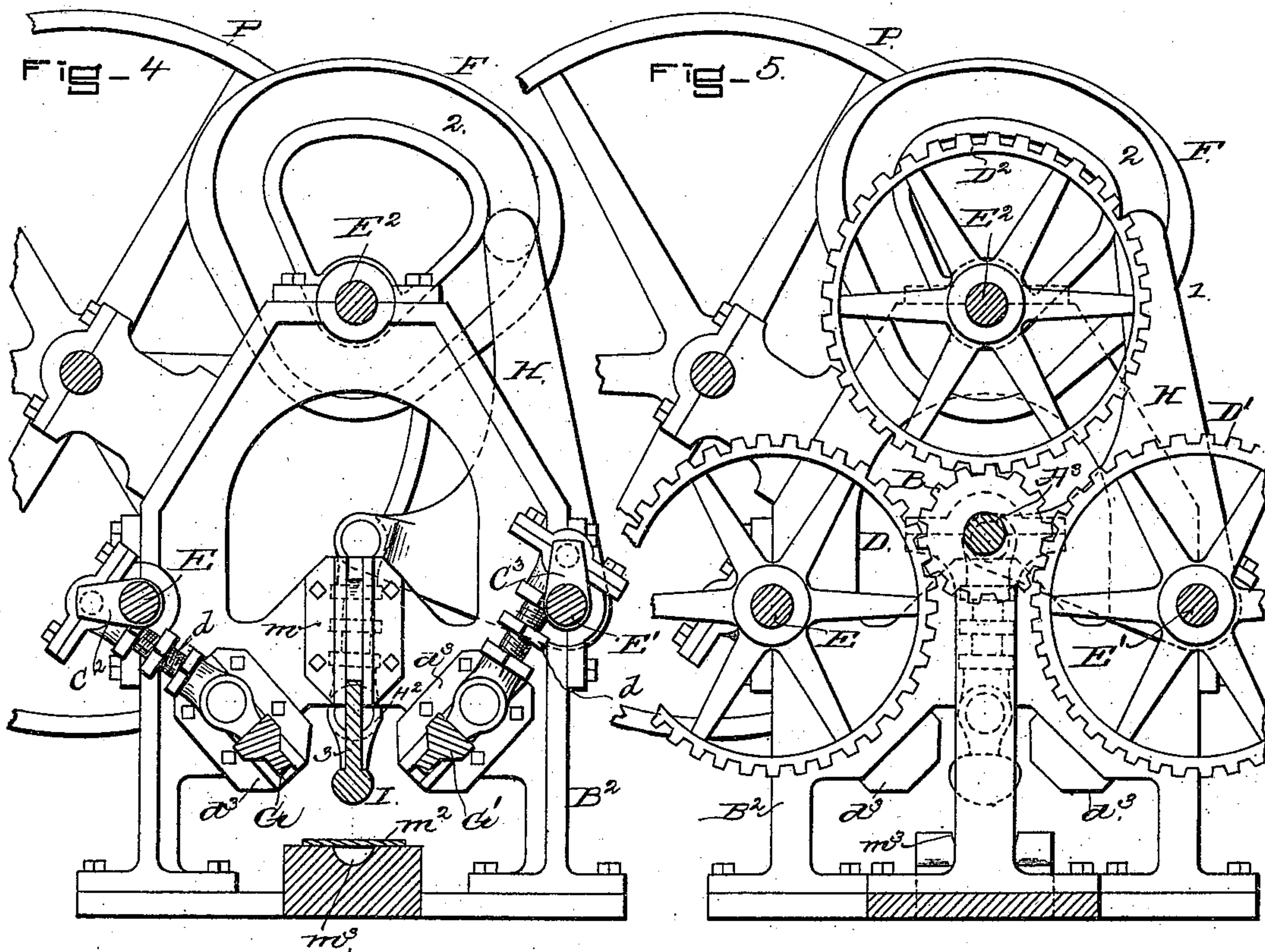
2 Sheets—Sheet 2.

L. DOW.

MECHANISM FOR BENDING METAL.

No. 355,304.

Patented Jan. 4, 1887.



WITNESSES

A. O. Orne

John F. C. Prenderk

INVENTOR

Lorenzo Dow

By Leroy H. Gregory
attys.

UNITED STATES PATENT OFFICE.

LORENZO DOW, OF BOSTON, MASSACHUSETTS.

MECHANISM FOR BENDING METAL.

SPECIFICATION forming part of Letters Patent No. 355,304, dated January 4, 1887.

Application filed September 24, 1885. Serial No. 178,053. (No model.)

To all whom it may concern:

Be it known that I, LORENZO DOW, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Mechanism for Bending Metal, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relating to mechanism for bending metal is more especially adapted for the formation of elongated articles having a peripheral surface of more than one hundred and eighty degrees, and, as herein shown, the article to be made is a post, and it is made tapering from end to end; but it will be understood that the apparatus may be employed to make other sheet-metal articles than tapering posts.

My invention consists, essentially, in a former composed of a tapering bar substantially circular in cross-section and provided with a web extending from its back to stiffen and strengthen it, guides for said web, a die and side plungers, and means to operate the former and plungers, all combined to bend and shape a metal blank while held between the former and die, substantially as hereinafter particularly set forth and claimed.

Figure 1 represents in plan or top view a machine embodying my invention; Fig. 2, a vertical sectional detail taken through the former and die and closing-plungers, showing a piece or strip of metal as just forced down into the die by the former. Fig. 3 is a like detail, but taken at another part of the machine, to show the closing-plungers closed down upon the strip of metal, and also to show one of the adjustable pitmen between the former and its operating-lever; Fig. 4, a cross-section of the machine in the dotted line xx , Fig. 1, looking toward the right. Fig. 5 is a like section on the dotted line $x^2 x^2$, and Fig. 6 is a view of the left-hand end of Fig. 1.

The main shaft A of the machine, driven by a belt on the belt-pulley P, or by power in any usual manner, has upon it a pinion, A', which engages with and drives a toothed gear, A², loose on a stud, A³, at the end of the framework B². The stud A³ has splined upon it a clutch, C, having side teeth (see Fig. 1) adapted to engage corresponding teeth at the adjacent side of the hub of the lower gear, A², the

said teeth being marked b^2 . The clutch part C has an annular groove, which receives pins of a forked hand-lever, b^3 , by which to move the said clutch part that it may be engaged and driven by the said gear A², the stud A³ turning with it, or to be disengaged from the said gear to leave the said stud at rest. This stud A³ has upon it a pinion, B, which engages and drives three like-toothed gears, D D' D², on shaft E E' E². The shaft E² has upon it two cams, F F', each of which, as herein shown, has a cam-groove, 2, such as shown in Figs. 4 to 6, which receives a pin extended from one of two similar elbow-levers, H H', which are loose upon the shaft E', the shorter ends of the said levers being adjustably connected by pitmen H² with suitable lugs on the "former" or forming device I, which, as herein shown, is a long bar nearly circular in cross-section, and having extended from its back a vertical web, 3, which, besides greatly stiffening and strengthening the former, also serves, in connection with guideways m , to direct the former in right line, so that its rounded acting face in the descent of the former will act upon the strip of sheet metal m^2 , (see Fig. 4,) force the latter into the die m^3 , shaped to correspond with the former I, and bend the said metal strip longitudinally, as seen in Fig. 2, leaving its side edges 5 extended above the center line of the former I, as seen in Fig. 2.

Each shaft E E' has two suitable cranks, (shown at C² C³,) which are connected by adjustable links or pitmen d with the closing-plungers G G', herein shown as long bars or beams having their ends placed and fitted into suitable guides, d^3 , the acting faces of the said closing-plungers being shown as concave in shape. The rotation of the shafts E E' cause their closing-plungers to descend upon the side edges of the metal strip bent, as shown in Fig. 2, and close the said side edges over upon and about the former I, as shown in Fig. 3, above the center line.

The shafts E E' may have cams, instead of cranks, by which to reciprocate the closing-plungers. The former I, herein shown, is supposed to be tapering from end to end, this latter shape being especially described for the manufacture of fence and other posts, in accordance with United States Patent No. 247,893, heretofore granted to me.

The metal article shaped on the former I may be removed therefrom by slipping it off the end of the former, when the plungers will have the same taper as that of the former I.

5 I claim—

1. The former consisting of a tapering bar having a web, 3, extending from its back to stiffen and strengthen it, guides for such web, and means to operate said former, combined
10 with the die m^3 and side plungers, all constructed and operated substantially as described.

2. The tapering former I and its web 3, and guides therefor, the two side plungers having
15 working faces shaped to conform to the former, and means to operate said former and plungers, combined with the die, all constructed and operated substantially as described.

3. The tapering former having the back web, 3, guides therefor, and means to reciprocate 20 the said former, the die m^3 , which with the former partly shapes the blank and holds it while operated upon by the side plungers, combined with such plungers, cranks c^2 , pitmen d , shafts $E E'$, and power mechanism for 25 giving the shafts a rotary motion in unison, all constructed and operated substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two 30 subscribing witnesses.

LORENZO DOW.

Witnesses:

G. W. GREGORY,
B. J. NOYES.