

No. 614,125.

Patented Nov. 15, 1898.

J. J. McLARNEY.

MACHINE FOR DRIVING WOODEN HOOPS UPON BARRELS.

(Application filed May 7, 1898.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 2.

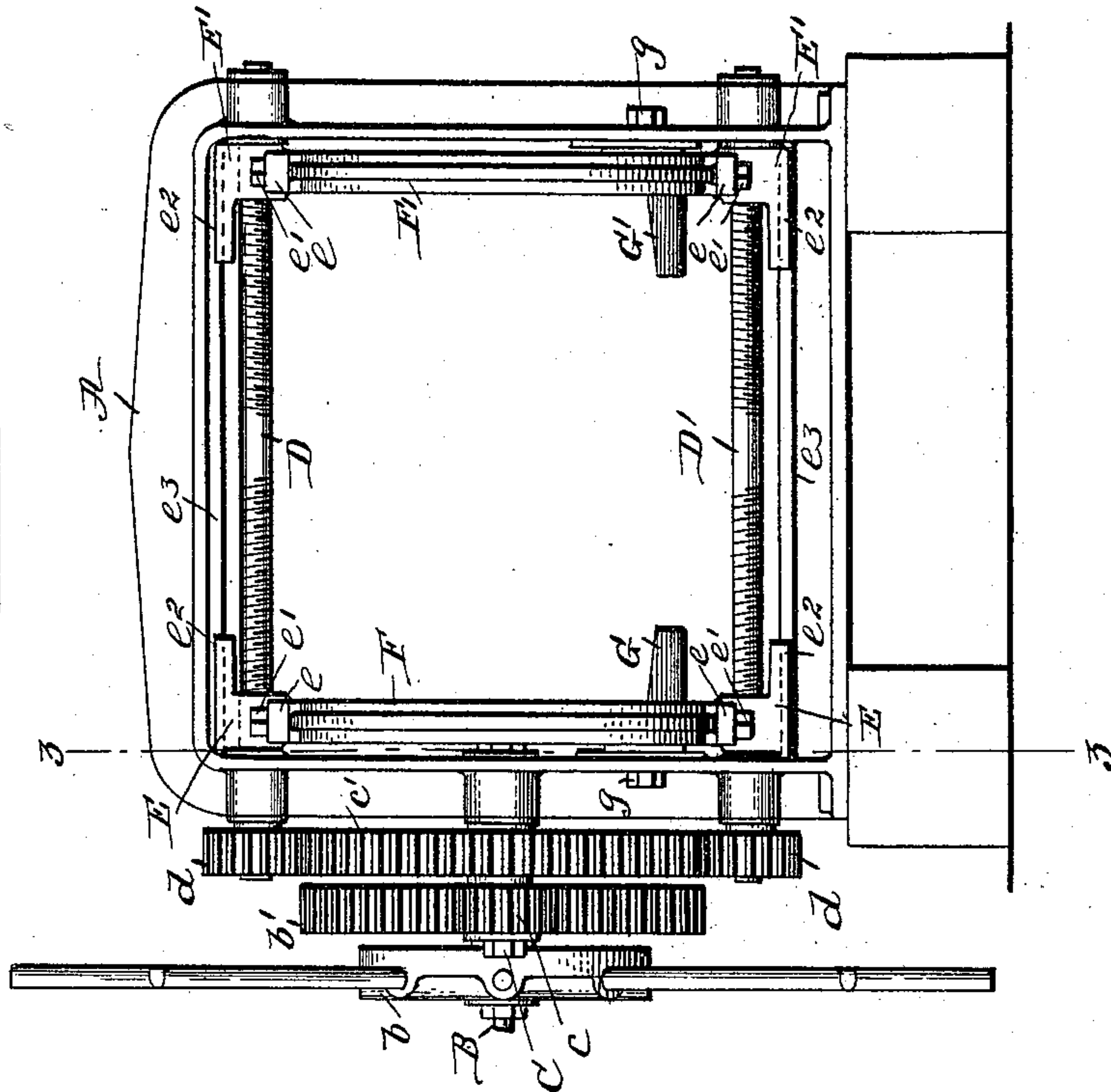
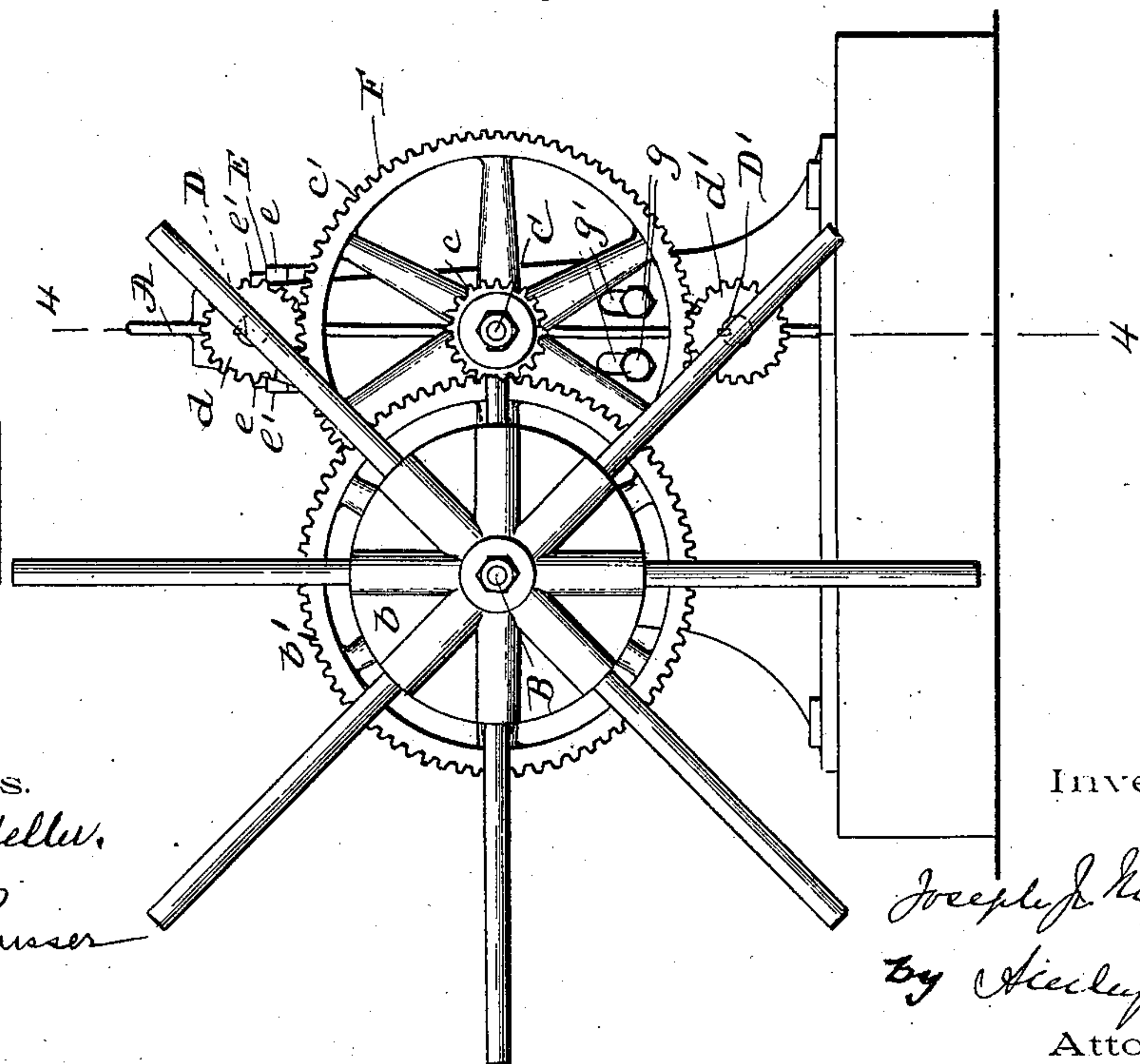


FIG. 1.



Witnesses.

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Fig. 4.

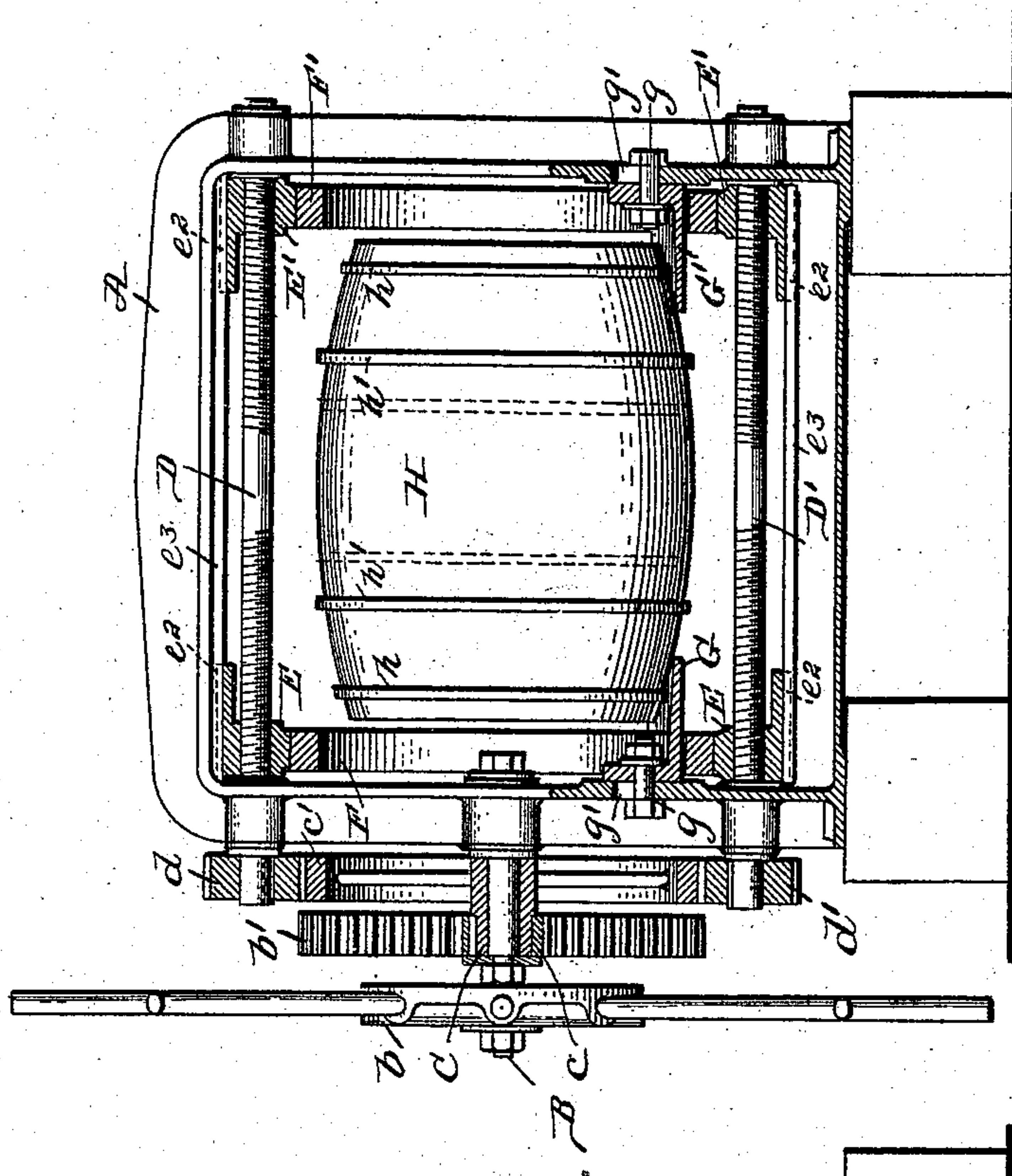
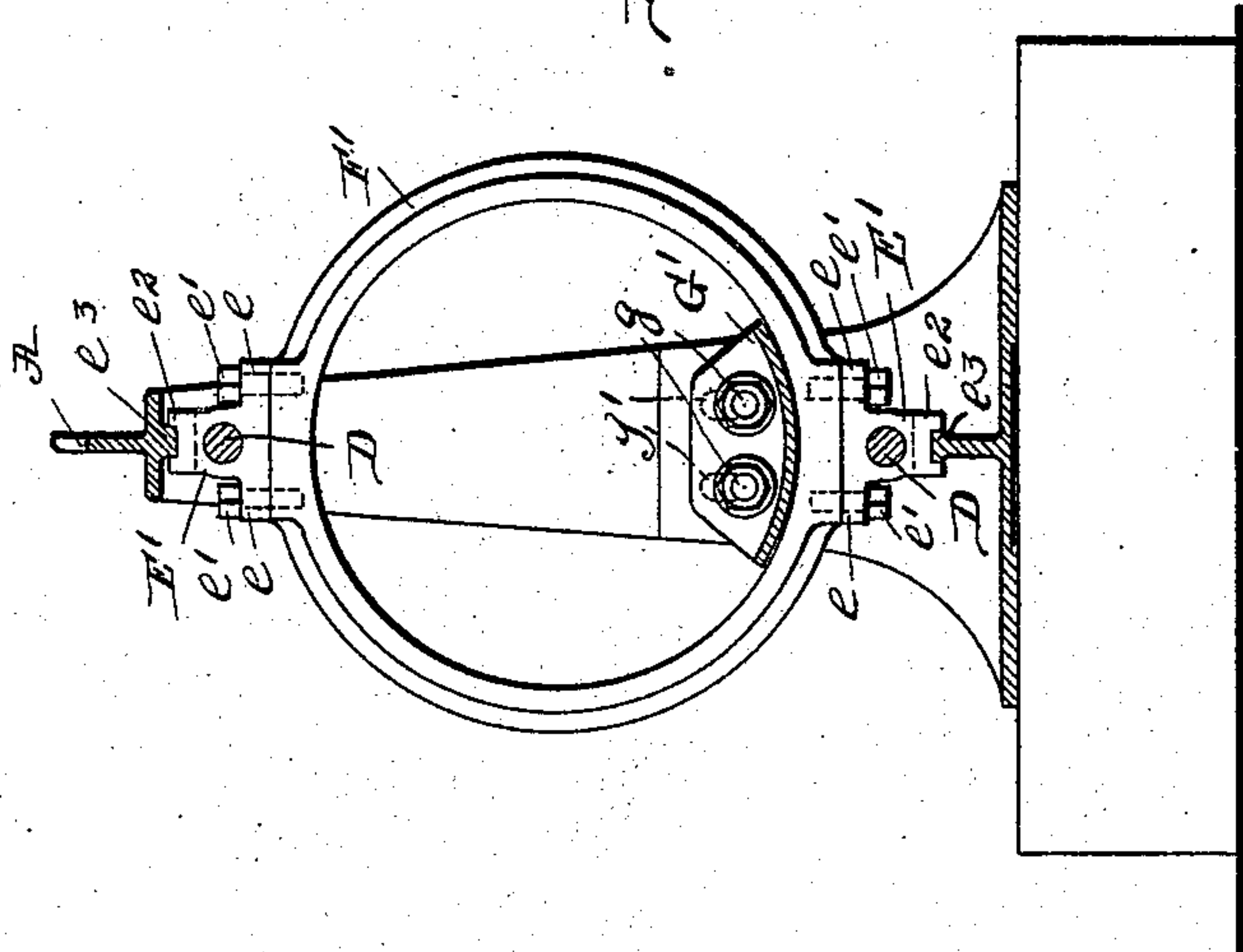


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOSEPH J. McLARNEY, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR DRIVING WOODEN HOOPS UPON BARRELS.

SPECIFICATION forming part of Letters Patent No. 614,125, dated November 15, 1898.

Application filed May 7, 1898. Serial No. 680,006. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH J. McLARNEY, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Machines for Driving Wooden Hoops upon Barrels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to machines for driving permanent wooden hoops upon barrels; and the invention consists of the construction and arrangement of parts illustrated in the accompanying drawings and hereinafter described and claimed. In this construction and arrangement I have shown compressing-rings which are actuated by means of nuts working on oppositely-threaded screws in opposite directions toward each other and directly engage the hoops to drive them toward the center of the barrel and bind them permanently in position thereupon. These rings are continuous and are to be distinguished from wings or arms adapted to move outwardly as they are caused to approach the center of the barrel and which necessarily make discontinuous contact with the hoops. Machines constructed with wings or arms of this character have been heretofore devised for the purpose of leveling barrels and for the purpose of driving upon the barrels temporary iron truss-hoops to truss the barrel and bind the staves tightly together. My machine is not designed for this purpose, but is adapted to operate upon a barrel after it has been leveled and trussed by the action of an ordinary leveling and trussing machine.

Experiment has demonstrated that a machine for driving on the permanent wooden hoops constructed on the principle of an ordinary leveling and trussing machine is wholly ineffective, inasmuch as the hoop, which is only one-third of an inch in thickness at its broadest part, will break between the points of contact. I have devised a compressing-head adapted to make continuous contact with the wooden hoops in the driving operation. Inasmuch as a compressing-head adapt-

ed to make continuous contact with the hoops cannot be automatically contracted and expanded to accommodate itself to hoops of varying diameter in my invention, I have secured the compressing-rings to the nuts, so that they may be readily removed therefrom and other rings of the same exterior diameter but of different internal diameter secured to the nuts whenever it is desired to operate upon barrels of a different diameter. To the same end I have provided supports which are vertically adjustable, so that, whatever the diameter of the barrel, the same may be caused to rest precisely midway between the actuating feed-screws, so as to insure an absolutely uniform pressure of the compressing-rings throughout the whole diameter of the barrel. I further secure these supports on the frame in such position that the barrel is supported on its ends, and thus insure their being supported with the necessary steadiness during the hoop-driving operation.

In the drawings, Figure 1 is an end view of the machine. Fig. 2 is a side elevation of the same; Fig. 3, a partial section on the line 3 3 of Fig. 2, and Fig. 4 is a similar view on the line 4 4 of Fig. 1.

A is the frame, provided at one end with bearings for the shafts B and C. On the shaft B is the hand-wheel *b* and spur-gear *b'*, the last-named gear meshing with and driving the small spur-gear *c* and its shaft C. On the shaft C is the large spur-gear *c'*, which meshes with and drives the spur-gears *d* and *d'* on the feeding-screws D and D'. These feeding-screws are two in number and extend longitudinally of the frame, being supported in suitable bearings at each end of the frame. Each feeding-screw has its two ends oppositely threaded, and on said screw are the nuts E and E', which feed toward or away from each other when the feeding-screws are revolved by the mechanism hereinbefore described. The nuts are provided with lugs *e*, and between and to the upper and lower nuts on the same end of the machine are secured the compression-rings F F' (one at each end of the machine) by means of bolts *e'*, extending through the lugs *e* into projections on the rings. The nuts E E' are also provided with

projections e^2 , which slide in guides e^3 in the frame.

The barrel-supports $G G'$ are secured to the uprights at the ends of the frame by means of bolts g , extending through slots g' in the uprights. Vertical adjustability of the supports is thereby provided for. The supports extend inwardly through the rings $F F'$ and just above the lower part of the inner periphery of the rings.

To drive the hoops upon the barrel, which is designated on the drawings by the letter H , it is first placed on the supports $G G'$, the latter being adjusted to the proper height to cause the barrel to rest midway between the feeding-screws. Temporary hoops h are placed on the barrel to hold the staves in position, and rings of greater or less thickness, dependent upon the exact internal diameter desired, are secured to and between the nuts $E E$ and $E' E'$. The hoops h' to be driven have previously been placed loosely around the barrel and occupy the position shown in full lines on the drawings. The hand-wheel is then turned, which through the gearing revolves the feeding-screws and causes the nuts $E E$ and $E' E'$ and rings $F F'$ to advance toward each other. These rings are of proper size to engage the peripheral edges of the hoops h' . After the rings engage the hoops further turning of the hand-wheel causes the compression-rings to drive the hoops toward the center of the barrel, which operation is continued until the hoops are brought to the desired position upon the barrel.

By reason of the continuous compression-surface acting against the truss-hoops exactly uniform pressure is applied to the hoops at every point of their circumference, driving the hoops securely upon the barrel. The rings are readily removable and when operating on a smaller barrel they are removed and replaced by rings of the same circumference externally, but of a smaller internal circumference, and the supports G are raised to the height necessary to bring the barrel midway between the feeding-screws, so as to secure a uniform pressure of the compression-rings above and below as well as at every point of the circumference of the hoops. I am thus enabled to drive permanent wooden hoops upon barrels of different sizes with absolute uniformity of action and certainty of operation.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. In a machine of the character described, the combination with the frame, of feeding-screws each oppositely threaded, nuts on said feeding-screws toward the ends thereof, compressing-rings secured to the nuts toward opposite ends of the machine, and supports for the barrel secured to the frame at opposite ends of the machine and adapted to support

the barrel at its ends, substantially as described.

2. In a machine of the character described, the combination with the frame, of screws oppositely threaded, nuts on said feeding-screws toward the ends thereof, removable compressing-rings secured to the nuts toward opposite ends of the machine, and adjustable supports for the barrel secured to the frame, at opposite ends of the machine, and adapted to support the barrel at its ends, substantially as described.

3. In a machine of the character described, the combination with the frame, of screws oppositely threaded, nuts on said feeding-screws toward the ends thereof, removable compressing-rings secured to the nuts toward opposite ends of the machine, and adjustable supports for the barrel secured to the frame, at opposite ends of the machine, and adapted to support the barrel at its ends, and guides for the nuts on the frame, substantially as described.

4. In a machine of the character described, the combination with the frame, of screws oppositely threaded, nuts on said feeding-screws toward the ends thereof, removable compressing-rings secured to the nuts toward opposite ends of the machine, and adjustable supports for the barrel secured to the frame, at opposite ends of the machine, and adapted to support the barrel at its ends, guides for the nuts on the frame, gears on the end of each feeding-screw, a gear meshing with and actuating the feeding-screw gears, a gear of smaller diameter moving with the last-named gear, a hand-wheel, and a gear moved by the hand-wheel and meshing with and actuating the gear of smaller diameter, substantially as described.

5. In a machine of the character described, the combination with the frame, of screws oppositely threaded, nuts on said feeding-screws toward the ends thereof, removable compressing-rings secured to the nuts toward opposite ends of the machine, and adjustable supports for the barrel secured to the frame at opposite ends of the machine, extending through the compression-rings and adapted to support the barrel at its ends, substantially as described.

6. In a machine of the character described, the combination with the frame, of screws oppositely threaded, nuts on said feeding-screws toward the ends thereof, removable compressing-rings secured to the nuts toward opposite ends of the machine, and adjustable supports for the barrel secured to the frame, at opposite ends of the machine, extending through the compression-rings, and adapted to support the barrel at its ends, and guides, for the nuts, on the frame, substantially as described.

7. In a machine of the character described, the combination with the frame, of screws oppositely threaded, nuts on said feeding-screws toward the ends thereof, removable compress-

ing-rings secured to the nuts toward opposite
ends of the machine, adjustable supports for
the barrel secured to the frame, at opposite
ends of the machine, extending through the
5 compression-rings and adapted to support the
barrel at its ends, guides, for the nuts, on the
frame, and means for imparting rotation to
the feeding-screws to drive said rings toward

each other and beyond the inner ends of the
barrel-supports, substantially as described. 10

Signed by me, at Philadelphia, Pennsyl-
vania, this 6th day of May, A. D. 1898.

JOSEPH J. McLARNEY.

Witnesses:

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HORACE M. GOODWIN.