

No. 619,258.

J. LEUGERING.

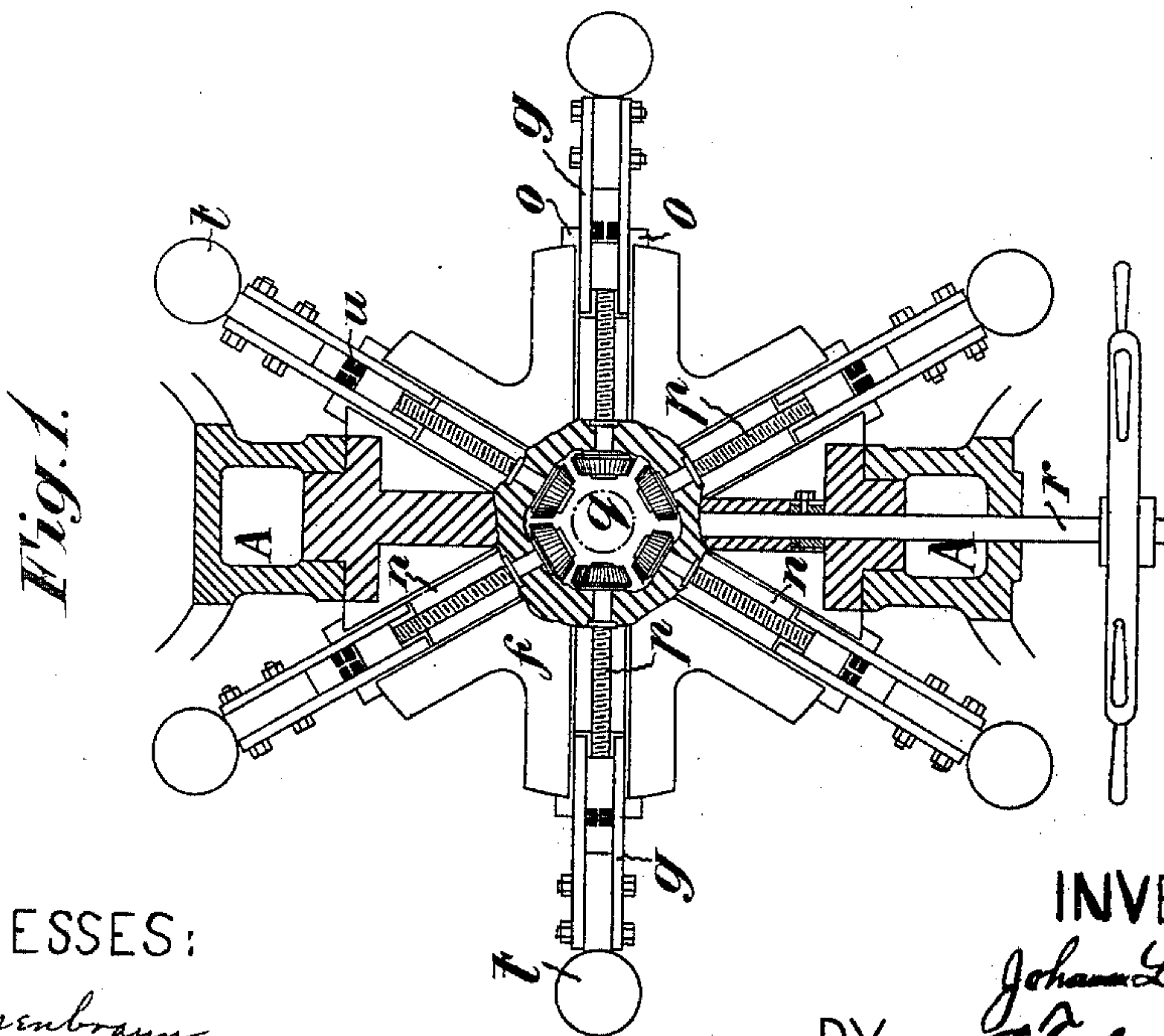
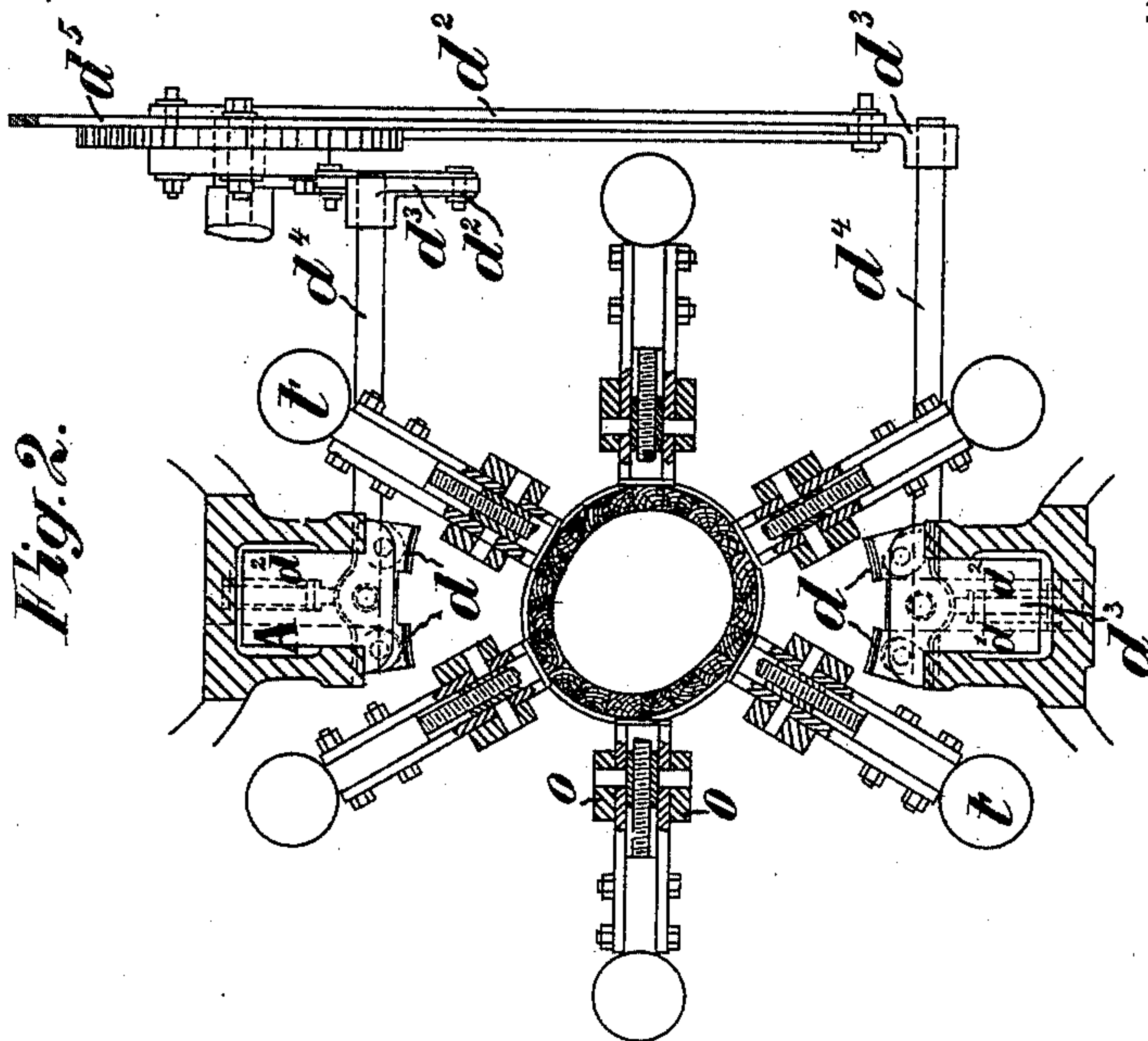
Patented Feb. 7, 1899.

MACHINE FOR FIXING HOOPS ON OVAL CASKS OR THE LIKE.

(Application filed Oct. 23, 1895.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

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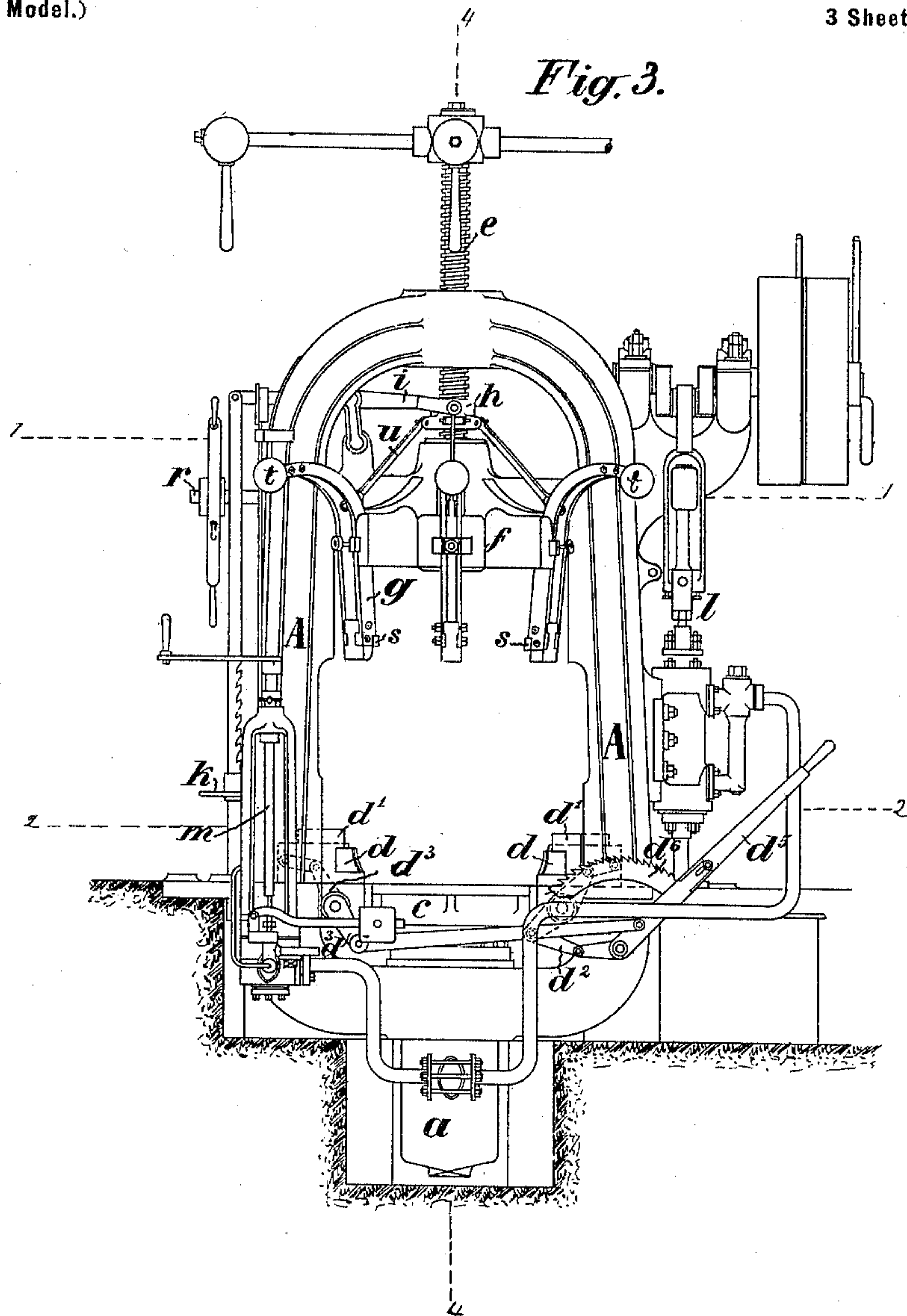
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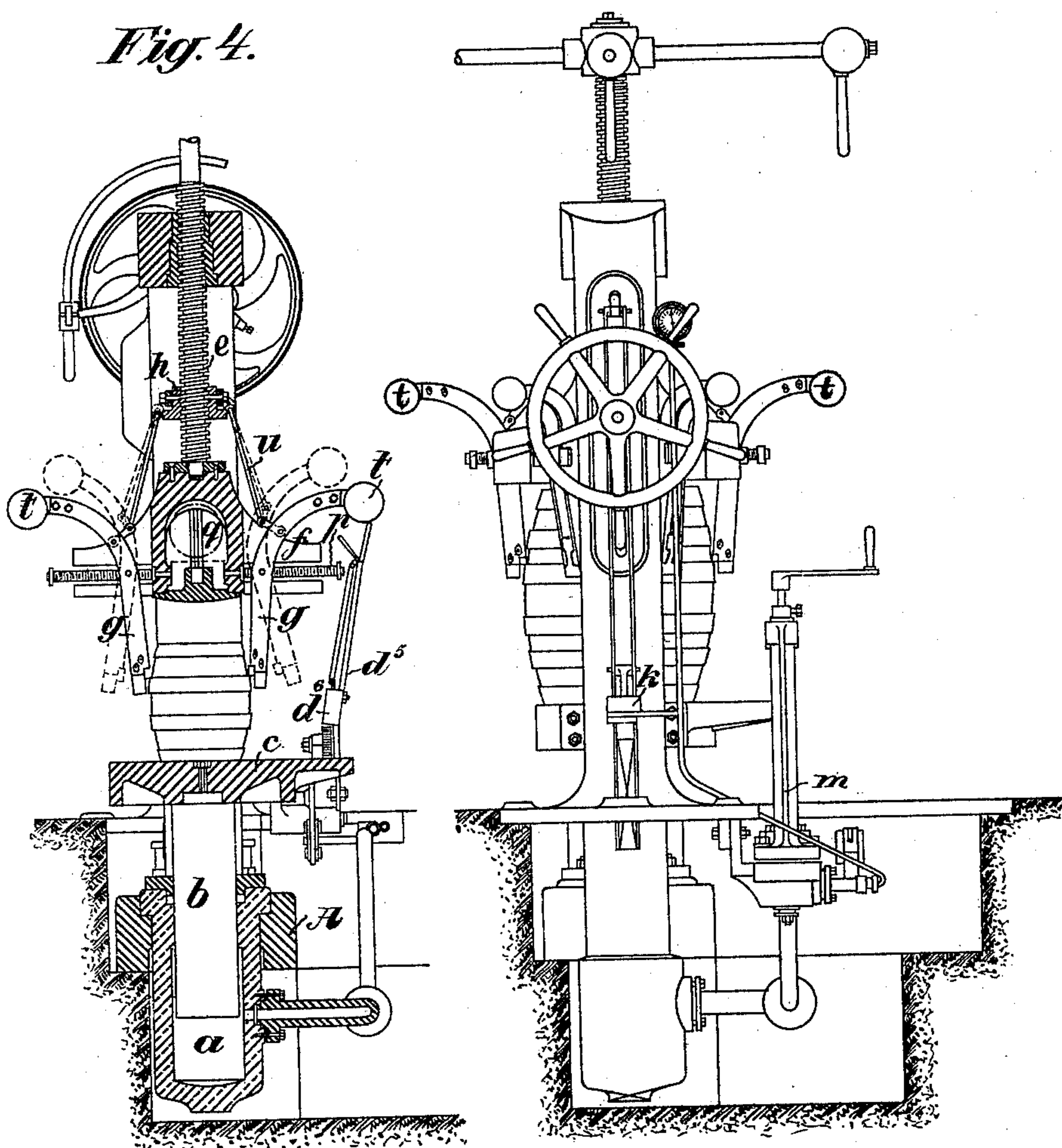
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Fig. 5.

Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHANN LEUGERING, OF DORTMUND, GERMANY.

MACHINE FOR FIXING HOOPS ON OVAL CASKS OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 619,258, dated February 7, 1899.

Application filed October 23, 1895. Serial No. 566,614. (No model.)

To all whom it may concern:

Be it known that I, JOHANN LEUGERING, a subject of the King of Prussia, Emperor of Germany, residing at Dortmund, in the Kingdom of Prussia, Germany, have invented new and useful Improvements in Machines for Fixing Hoops on Oval Casks or the Like, (for which I have obtained Letters Patent in Germany, No. 85,156, dated April 27, 1895,) of which the following is a specification.

This invention relates to a machine for fixing or driving cask-hoops on oval casks.

On the accompanying drawings, Figures 1 and 2 are horizontal sections of the machine. Fig. 3 is a front elevation, Fig. 4 a vertical section, and Fig. 5 a side elevation, of the machine.

The most important parts of such an apparatus, which are collectively mounted in a rigid frame A, are the following: first, the lower part of the press below the ground-level, Figs. 3, 4, and 5, consisting of a press-cylinder *a*, with press-piston *b*, lower plate *c*, on which the casks are placed, with claw-stops or centering devices *d* *d'* *d*² *d*³ *d*⁴ *d*⁵ *d*⁶ for the purpose of firmly securing and properly centering the casks upon the plate *c*; then the central parts of the press, consisting of an upper plate *f*, adjustable in point of height to suit the different heights of the casks by means of a central spindle *e*, and which carries a number of press-levers *g*, arranged radially and radially adjustable to suit the varying diameters of the hoops, in combination with a lever mechanism and arrangement *h* *i* *k* whereby from the workman's position a common radial rocking or swinging motion to and fro can be effected in or imparted to the press-levers *g*, and, finally, the mechanism for working the whole, consisting of a suitable power-driven pump apparatus *l* and on the attendant platform suitable and conveniently arranged distribution-valve mechanism for controlling the operation of the press.

That part with which this specification is principally concerned is more especially the central part of the press with the rocking press-levers *g*. (See Figs. 1 and 2.)

The upper plate *f*, which, like the lower plate *c*, is arranged to move up and down in guides of the frame A, is provided with six

or more radial grooves or recesses *n*, in which duplicate slide-pieces *o* are arranged to slide radially to and fro. The fulera or pivots on which the pressure-levers *g* rotate are lodged in these recesses or slideways, through which pass the screwed spindles *p* for operating the wheels, the said spindles carrying on their innermost ends, in the central hollow *q* of the press-plate, each a bevel-pinion and all these bevel-pinions gearing simultaneously with a central bevel driving-wheel common to all of them. By means of another pair of bevel-wheels, arranged above the hand-wheel, shaft *r* is enabled to communicate radial reciprocating movement to the slide-pieces *o* and the parts connected therewith in the slideways. In addition to this symmetrical movement of the lever fulera or pivots, effected by the simultaneous rotation of all the screwed spindles *p*, there is another movement to be prominently described—viz., a second movement of the lever-claws *a*, rocking in wider limits, Figs. 3 and 4, for the purpose of giving to the fulcrum-points, and therefore the claw ends, the position rendered necessary by the oval shape of the casks. These claw ends, owing to the oblique position of the levers, are located under continually wider limits under the influence of counterpoise-weights *t*, secured to the upper or bent ends of the levers *g*, and therefore they press independently of each other, but with practically equal and invariable strength, laterally against the oval cask-hoops.

For casks exactly round it would suffice to rigidly connect the press-claws directly with the slide-pieces, because they press upon exactly concentric circular points. For casks whereof the cross-section only varies slightly from a correct circular—i. e., imperfectly-rounded casks—nothing more would be needed than at the most a movable pushing or thrusting iron or claw, spring-controlled, so as to allow sufficient radial movement of the claw.

For oval casks or those of elliptical cross-section, wherein consequently the largest and smallest diameters of a cask-section may differ considerably from one another, it is absolutely necessary, owing to the characteristic property of springs in general—viz., that of being able to exert a constant pressure within

small limits, whereby they are disqualified and rendered inapplicable in this case—to bring into use for the present purpose a mechanism of a different kind, (such as, here, the levers *g* and counterpoise-weights *t*,) whereby a greater range and freedom of action with constant local lateral pressure is obtained for the operative claws, because in this case it establishes not only linearly, but also dynamically, a more than proportionate alteration than could be attained by the employment of any springs. This regular dynamic effect increases in importance with the increase in the oval or elliptic form of the casks and grows in importance the more, for consideration, that (apart from casks with wooden hoops, such as cement and butter casks) in driving iron hoops on heavy casks, especially when it is a question of dealing with old casks with hoops loosened by wear and use, when necessarily higher pressure is essential, a position of the lower lever-claws more and more turned inward is required, the path described by the claw ends, until it attains the edge of the wheel, becomes ever greater and greater. In order after the fixture of one hoop to pass on to the next, it is necessary to give the lower claws a backward or return motion (away from the cask-hoop)—*i. e.*, to diminish the action of the counterpoise and relieve its pressure. This is effected by drawing up the crown-ring *h*, Figs. 3 and 4, which is connected by double links *u*, the said ring *h* being connected by a lever *i* with a treadle *k*. On placing a cask on the lower plate *c* it can speedily be centered and directly secured to the said plate by the claw-arms *d*, which can be readily adapted to any-shaped cask and are operatively connected with the guide-ways *d'*, tension and thrust bars *d''*, levers *d'''*, pivoted on shafts *d''''*, hand-lever *d''''''*, and toothed quadrant *d''''''''*.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a machine for hooping casks, the combination with a press-head, of press-levers fulcrumed in said press-head, and double links connected to said levers and adapted to simultaneously oscillate the same, substantially as described.

2. In a machine for hooping casks, the combination with a press-head, of press-levers fulcrumed in said press-head, double links connected to said levers and adapted to simultaneously oscillate the same, and means for forcing inwardly the pressing end of each of said levers independently, substantially as described.

3. In a machine for hooping casks, the combination with an adjustable press-head, press-levers fulcrumed in said press-head, double links connected to said levers, a crown-ring to which the links are connected, a bell-crank lever connected to said crown-ring, and a treadle to which the other end of the lever is connected, substantially as described.

4. In a machine for hooping casks, the combination with a press-head, of a press-platform, press-levers fulcrumed in said press-head, weights on the free ends of said levers, double links connected to said levers to simultaneously oscillate the same, means for centering and gripping a cask, and means for simultaneously adjusting the fulcrum of said press-levers, substantially as described.

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

JOHANN LEUGERING.

Witnesses:

WM. ESSENWEIN,
LAURA LIEBER.