

(No Model.)

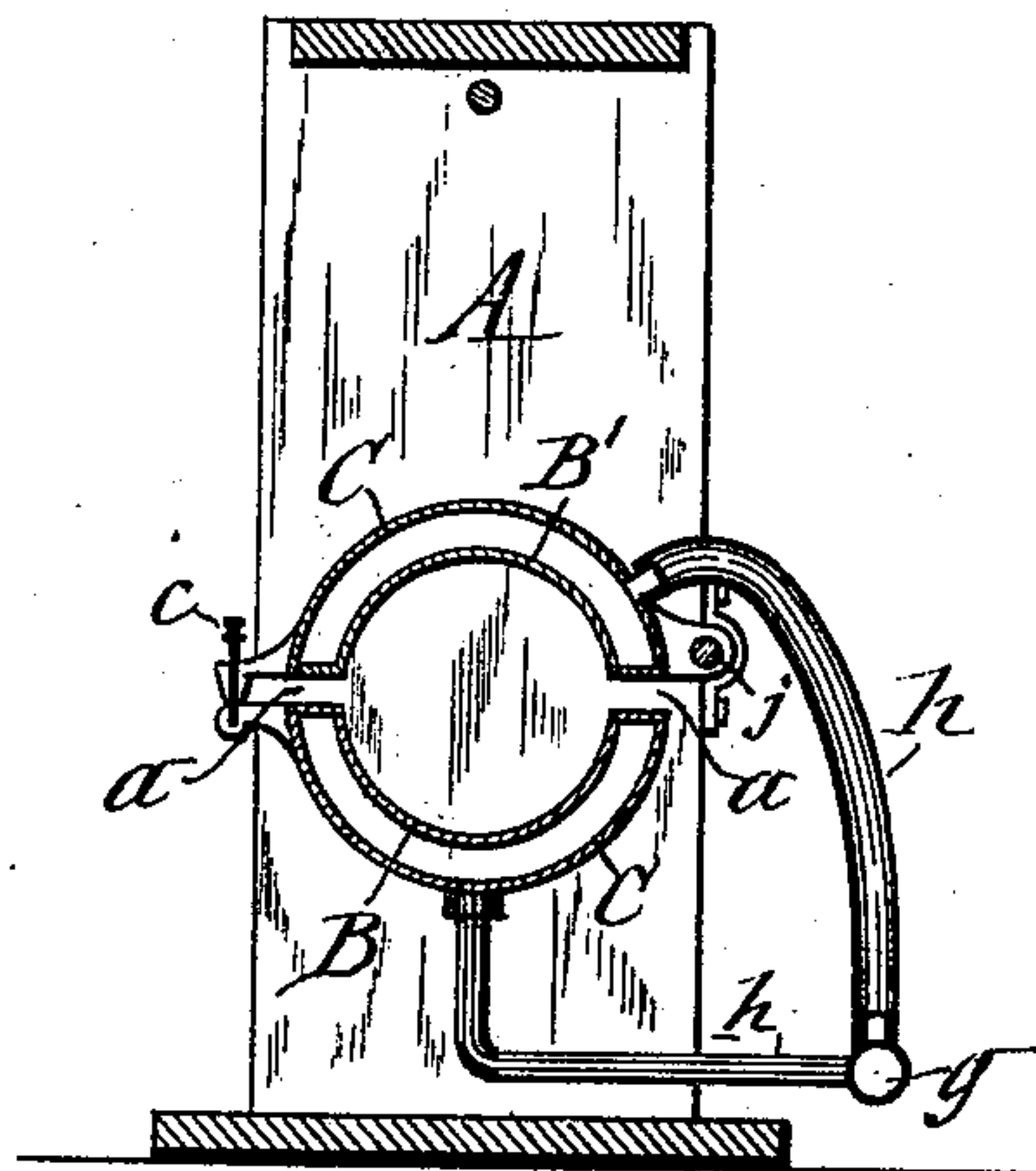
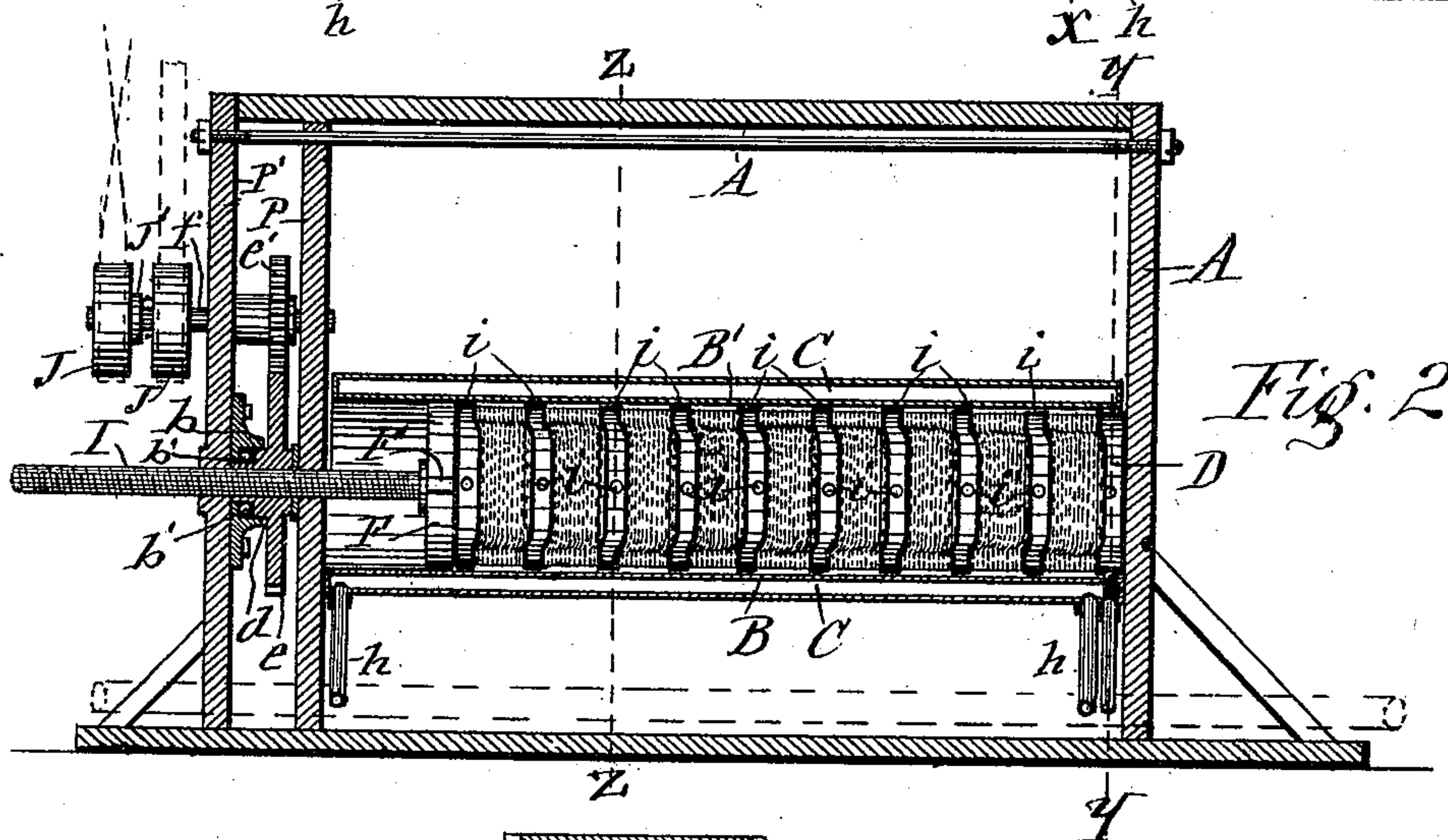
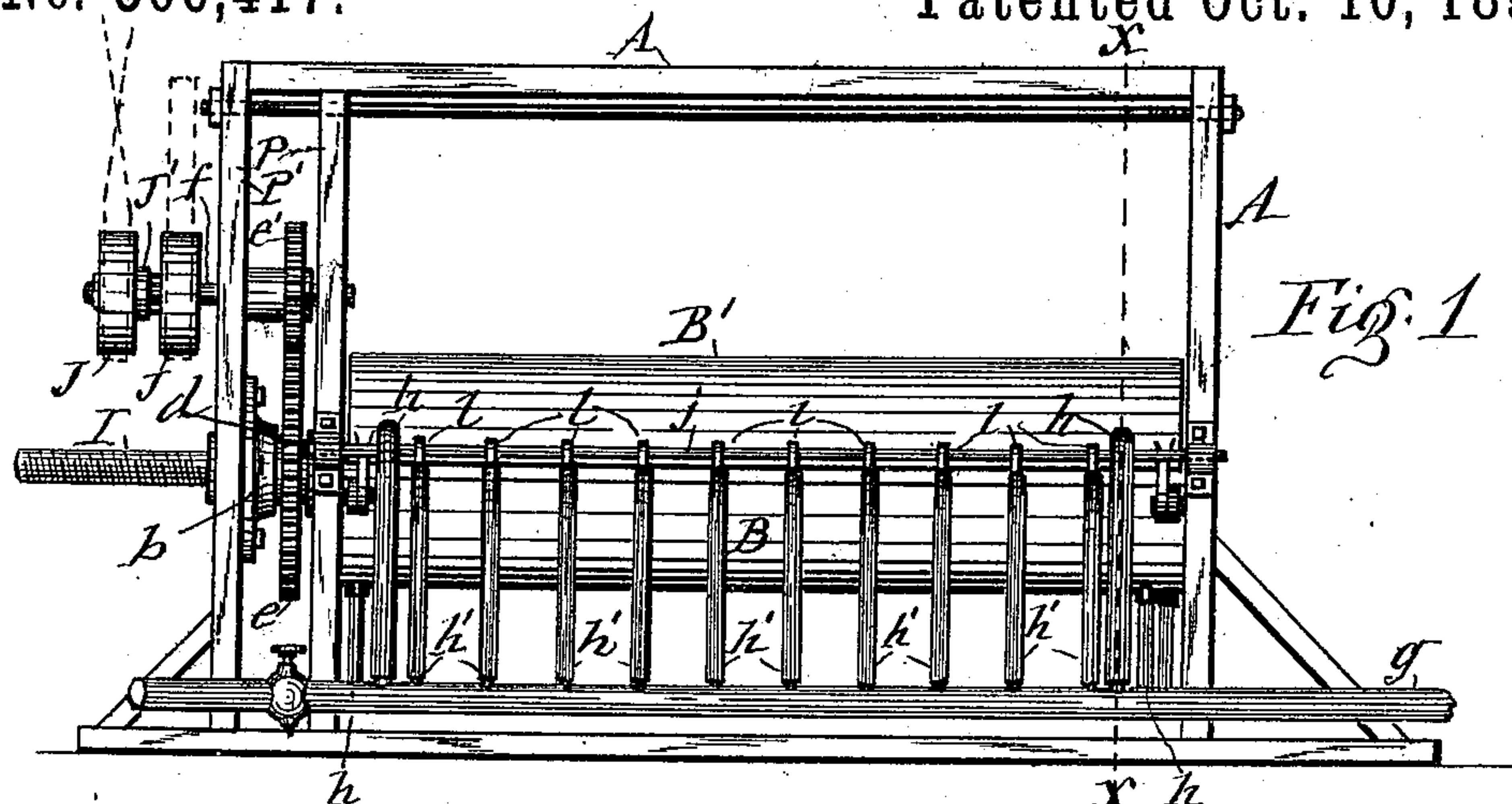
2 Sheets—Sheet 1.

C. W. COLONY.

PRESS FOR SHAPING PLATES FROM VENEERS.

No. 506,417.

Patented Oct. 10, 1893.



WITNESSES:

C. L. Bendixon
H. M. Seaman

Fig. 3

INVENTOR:

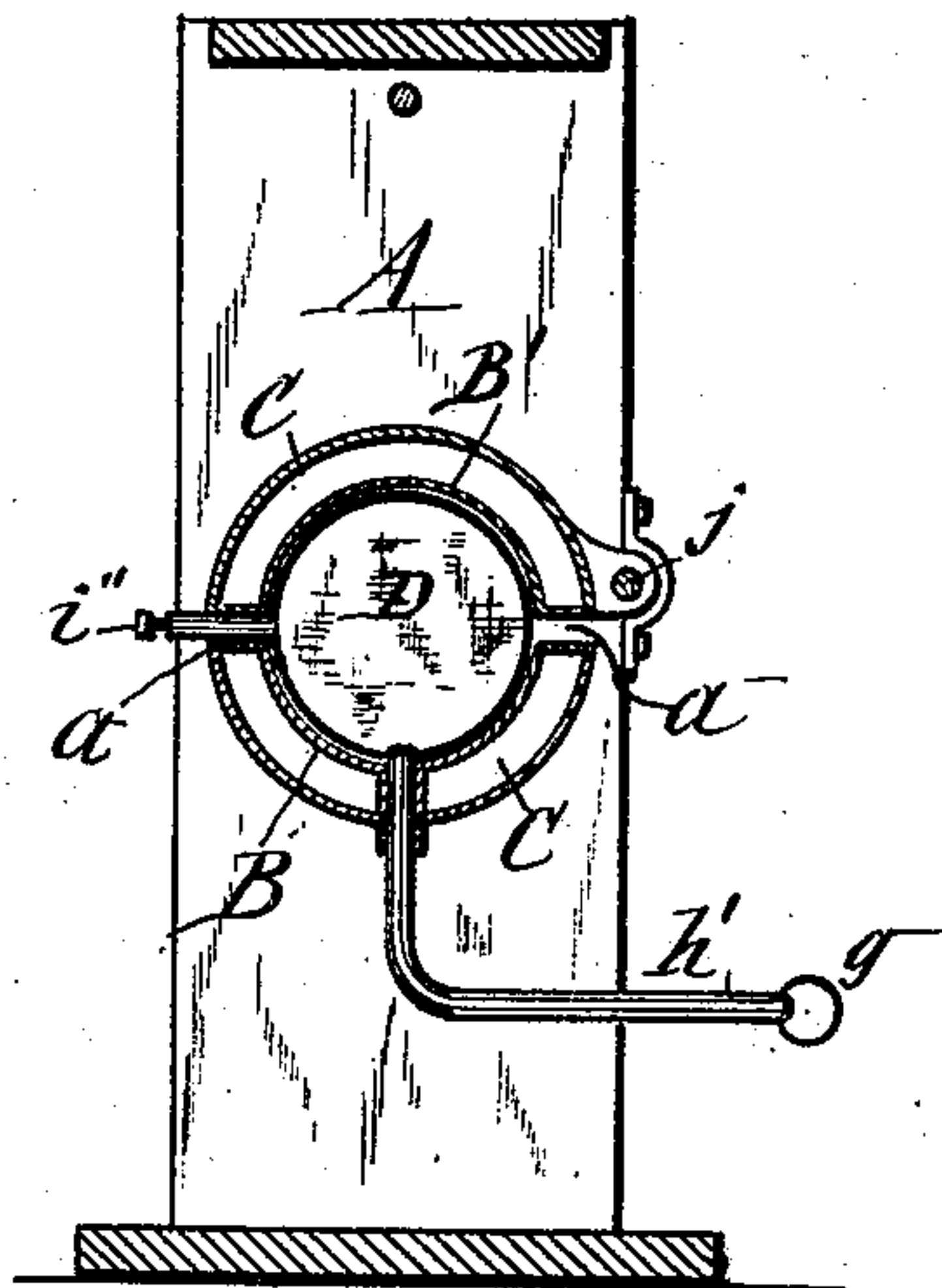
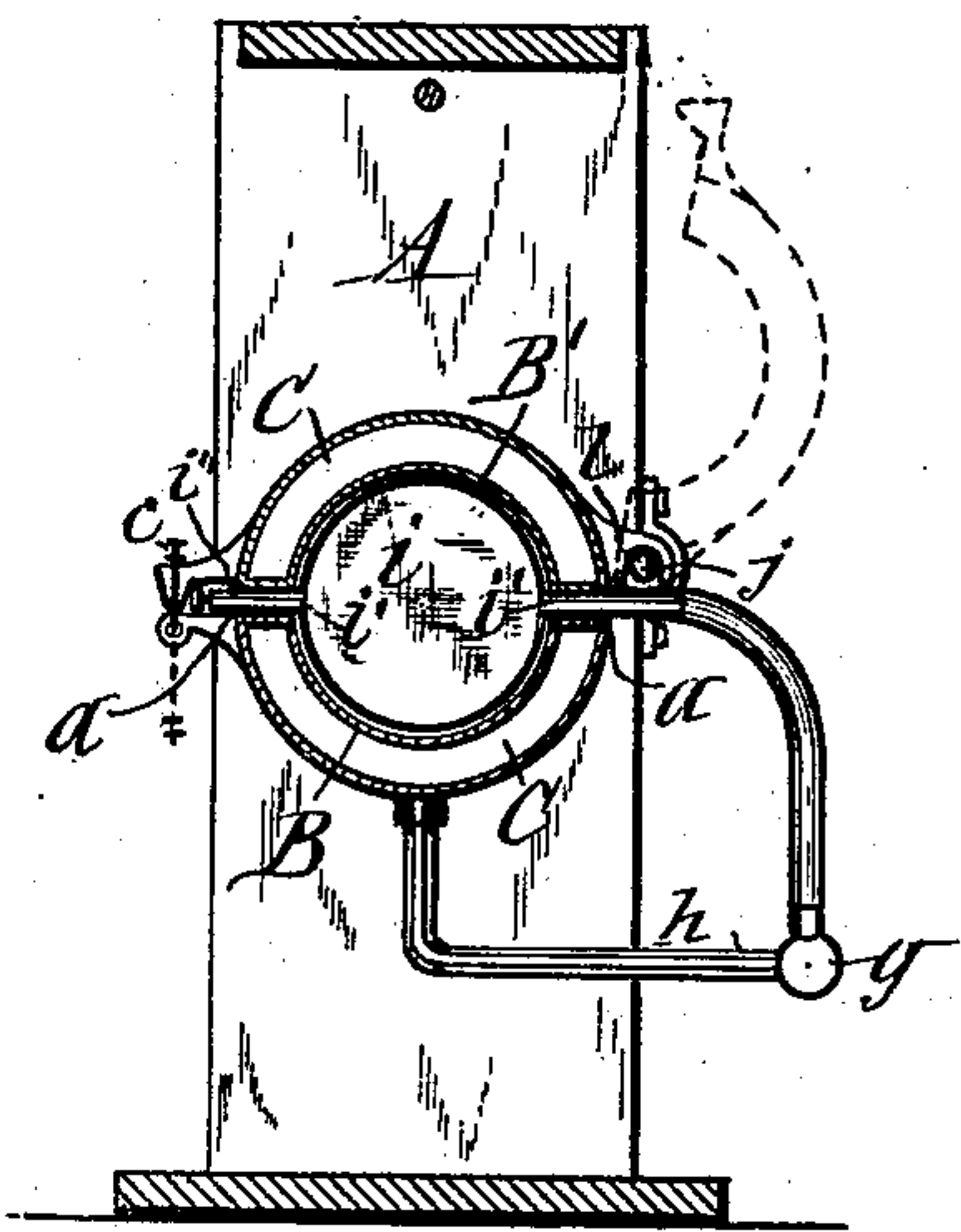
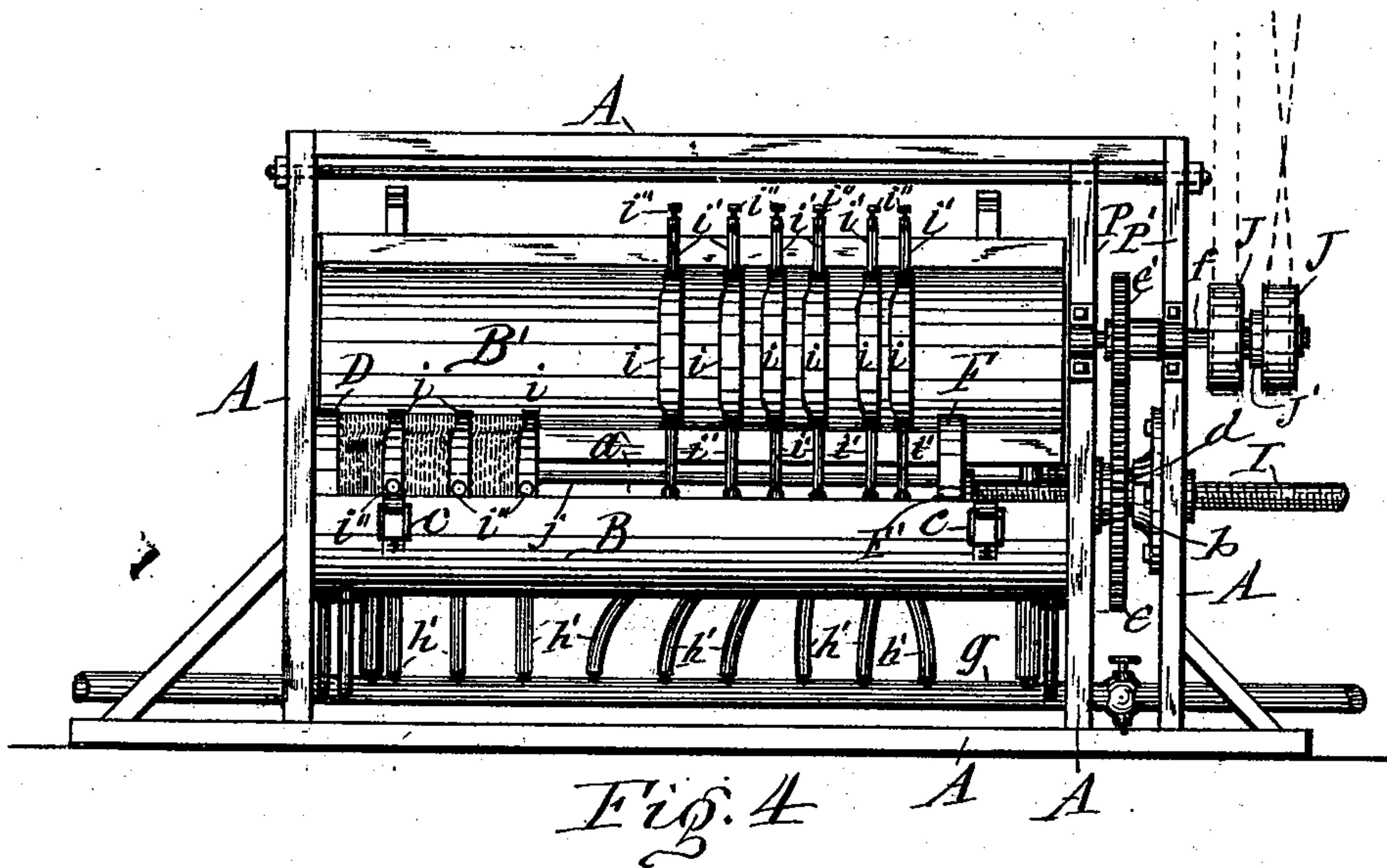
Charles W. Colony
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WITNESSES:

C. L. Burdick
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INVENTOR

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UNITED STATES PATENT OFFICE.

CHARLES W. COLONY, OF SANDY CREEK, NEW YORK.

PRESS FOR SHAPING PLATES FROM VENEERS.

SPECIFICATION forming part of Letters Patent No. 506,417, dated October 10, 1893.

Application filed May 6, 1893. Serial No. 473,216. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. COLONY, of Sandy Creek, in the county of Oswego, in the State of New York, have invented new and useful Improvements in Presses for Shaping Plates from Veneers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention is designed more particularly for shaping plates formed of blanks of veneers or wood-pulp, which shaping is usually effected by subjecting the blanks to the pressure of dirt of the requisite shape.

The invention consists in an improved organization of a hot press by means of which the aforesaid shaping of the plates is accomplished in a more expeditious, convenient and effective manner, as hereinafter described and set forth in the claims.

In the annexed drawings, Figure 1 is a rear elevation of a hot-press embodying my invention. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a vertical transverse section on line *x, x*, in Fig. 1. Fig. 4 is a front elevation showing the same in position for either introducing the blanks or removing the blanks from the press, and Figs. 5 and 6 are transverse sections on lines *y, y*, and *z, z*, in Fig. 2.

Similar letters of reference indicate corresponding parts.

A—A— represent the supporting frame of the press, between the end-walls or posts of which frame is supported the holder for the plates or analogous articles to be compressed and shaped. This holder may be of any suitable shape adapted for the aforesaid purpose. I preferably, however, divide said holder longitudinally or form it of two separate semi-cylindrical sections —B— and —B'— and in order to increase the efficiency of the apparatus I surround each of said sections with a jacket —C— heated either by steam, or by hot air, or by hot water, preferably by steam. The aforesaid sections are arranged to form a horizontal cylinder and preferably with the joint between the sections in a horizontal plane. The lower section is secured stationary in its position, and the upper section is hinged at one of its longitudinal edges to allow it to be swung off from the lower section

so as to obtain access to the interior of the lower section when required for either introducing the blanks or removing the plates or compressed articles. The upper section is supported a sufficient distance above the lower section to form longitudinal slots or guides —a—a— between them when the holder is closed, in which condition it is held by means of suitable removable clamps —c—c.

D— denotes a die which is sustained stationary in one end of the holder, and F— is the follower in the opposite end of said holder. Said follower receives the compressing power which may be either hydraulic or steam, or compressed air, or screw-power as may be desired.

The power illustrated in the annexed drawings consists of the screw —I— which is firmly secured to the follower and extends through the adjacent end of the holder and through the two posts —P—P'— to one of which is fastened a metal plate —b— provided with an aperture through which the screw —I— passes, and with an annular groove surrounding said aperture. In said groove are placed a series of balls —b'— on which bears the nut —d— which works the screw —I. The end-bearing of said nut is thus relieved from friction.

To the nut is fastened a wheel —c— by which to turn said nut. For this purpose I prefer to provide said wheel with cogs meshing with a pinion —e'— attached to a shaft —f— on which are two loosely mounted pulleys —J—J— between which is a suitable clutch-collar —J'— fastened to the shaft. The adjacent faces of the pulleys are provided with suitable means for engaging said clutch-collar by shifting the pulleys toward the same. The driving belt of one pulley is straight and that of the other pulley is crossed and thus said pulleys revolve in opposite directions, and by shifting said pulleys on the shaft so as to cause one of the pulleys at a time to engage the clutch collar the nut is rotated so as to cause it to force the screw in either direction as may be desired.

The follower —F— is provided on opposite edges with lugs or projections —F'— by which it slides in the guides or slots —a—a— and is thus prevented from turning.

Between the end-die —D— and follower —F— are hollow dies —i—i— which have projecting from their side edges hollow trunnions —i'—i'— by which they ride on the guides —a—a— and are thus free to move longitudinally in the holder. The end-die —D— I also form hollow and provide it with the aforesaid hollow trunnion.

For heating the jackets —C—C— and hollow dies I prefer to employ the main steam-pipe —g— which extends lengthwise of the holder —B—B'— at the rear thereof and communicated with the interiors of the jackets by branch pipes or hose —h—h— tapping the lower section —B— at its bottom, and the upper section —B'— at its rear edge, so that in throwing the latter section into its open position the water of condensation will pass from said section down to the pipe —g—. The hollow dies communicate with the steam-pipe —g— by flexible pipes or hose —h'— attached to nipples on the pipe —g— and to the hollow trunnions —i'—i'— on the edges of the dies adjacent to the said steam-pipe. The trunnions on the opposite edges of the dies I prefer to provide with a vent for the escape of air in charging the dies with steam, said vent being provided with suitable removable stoppers or valves —i''. The flexible pipes or hose —h'— are of sufficient lengths to allow the dies to move freely longitudinally in the holder —B—B'— in the operation of the press, and in order to properly support said hose I attach to the trunnions —i'— suitable hangers —l—l— which are loosely mounted on the rod —j— which extends lengthwise of the aforesaid holder at the rear thereof and is secured to the frame —A—. By means of the aforesaid hangers the dies —i—i— are hinged on the rod —j— so as to allow the dies to be swung up out of the lower holder section —B— and over into the upper section —B'— when in its open position. I also prefer to employ the rod —j— for hinging thereon the upper section —B'—.

In operating the described press the upper holder section —B'— is swung back into open position, and a tier of blanks is placed against the stationary die —D—. Then the nearest die —i— is placed against the tier of blanks and another tier placed against the front of the die —i— and this arrangement of tiers of blanks with intervening dies is continued until the space between the stationary die —D— and follower —F— is filled. Then the upper section —B'— is swung over onto the lower section and clamped thereon and steam is admitted into the jackets —C—C— and into the hollow dies and when these parts are properly heated the nut —d— is set in motion to force the screw —I— toward the holder —B—B'— and exert the necessary pressure on the follower —F— to compress and shape the blanks.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A hot press composed of a longitudinally divided holder adapted to receive intiers the articles to be compressed, the lower section of said holder being stationary and the upper section removable, a die seated stationary in one end of the holder the follower in the opposite end of the holder receiving the compressing power, hollow dies arranged movably between the stationary die and follower and riding on the edges of the lower holder-section, and heat conductors communicating with the hollow dies, as set forth.

2. In a hot press the combination of a longitudinally divided holder for the articles to be compressed, the lower section of said holder being stationary, a rod extending lengthwise of said section, the upper section being hinged on said rod, a die seated stationary in one end of said holder, the compressing follower in the opposite end of the holder, hollow dies movable between the stationary die and follower, and heat-conductors mounted movably on the aforesaid rod and communicating with the hollow dies, as set forth.

3. The combination of a longitudinally divided holder for the articles to be compressed, the lower section of which holder is stationary, a rod extending lengthwise of said holder, the upper holder-section being hinged on said rod, a stationary die in one end of the holder, the compressing follower in the opposite end of the holder, hollow dies movable between the stationary die and follower, a main heat-conductor extending lengthwise of the holder, and flexible heat conductors supported on the aforesaid rod movable longitudinally and connecting the hollow dies with the main heat-conductor, as set forth.

4. In combination with the frame and the holder for the articles to be compressed, longitudinal guide-slots in the sides of said holder, the follower having projections entering said slots and preventing the follower from turning with the press-screw attached to the follower, a nut journaled on the frame and receiving said screw through it, and a wheel attached to the nut and transmitting motion to the same, as set forth.

5. In combination with the frame and holder, longitudinal guide slots in the sides of the holder, the follower having projections entering said slots and preventing the follower from turning, the press-screw attached to the follower, a plate secured to the frame and provided with an aperture for receiving through it the aforesaid screw, an annular groove in the plate surrounding the aperture, balls in said groove, the nut seated on said balls and receiving the screw through it, and a wheel fixed to the nut to operate the same as set forth.

6. In combination with the longitudinally divided holder for the articles to be compressed, the lower section of which holder is stationary, a rod extending along one of the top edges of said holder-section, a die and a follower respectively in opposite ends of the

holder, hollow-dies movable between the fol-
lower and end-die, pipes extending from the
hollow dies across the aforesaid rod, hangers
on said pipes mounted loosely on the rod, a
5 main heat conductor extending lengthwise of
the aforesaid holder, and flexible conductors
connecting the aforesaid pipes with the main
conductor, as set forth.

7. The improved hot press consisting of a
10 holder for the articles to be compressed, a
heating-jacket surrounding the holder, a sta-
tionary die and a follower respectively in op-
posite ends of the holder, hollow dies in the
holder movable between the stationary die
15 and follower, and conductors connected to the
hollow dies and conveying thereto the heat-
ing agent, as set forth.

8. A hot-press consisting of a cylindrical
holder for the articles to be compressed, a
20 steam-jacket surrounding said holder, a sta-
tionary die and a follower in opposite ends of
the holder, hollow dies between the stationary
die and follower, a main steam-pipe extend-

ing lengthwise of the holder, and branch pipes
extending from said main pipe to the steam- 25
jacket and hollow dies, as set forth.

9. In a hot press the combination of the
holder for the articles to be compressed, which
holder is composed of two separate semi-cy- 30
lindrical sections each surrounded by a steam-
jacket, and arranged with spaces between the
longitudinal edges of said sections, a die in
one end of the holder, a compressing follower
in the opposite end of the holder, hollow dies 35
between said end die and follower, a main
steam-pipe extending lengthwise of the hold-
er, and branch-pipes extending from the main
pipe respectively to the two sections of the
aforesaid holder and to the hollow dies, sub-
stantially as described and shown. 40

In testimony whereof I have hereunto
signed my name this 1st day of May, 1893.

CHARLES W. COLONY. [L. S.]

Witnesses:

J. J. LAASS,

C. L. BENDIXON.