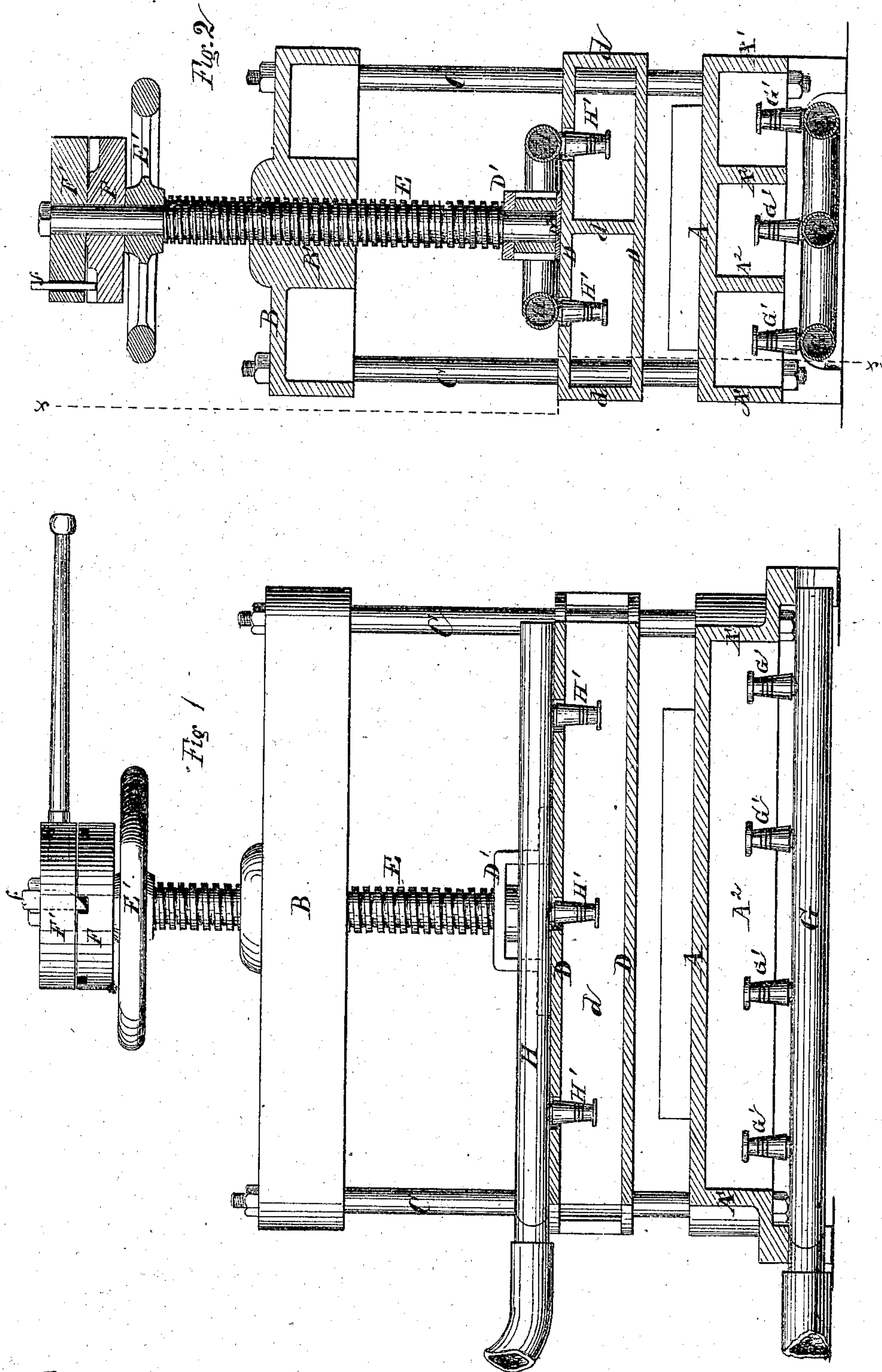


No. 97,266.

PATENTED NOV. 30, 1869.

J. BANIGAN.
VULCANIZING PRESS.



Attest
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JOSEPH BANIGAN, OF SMITHFIELD ASSIGNOR TO WOONSOCKET RUBBER COMPANY, OF WOONSOCKET, RHODE ISLAND.

Letters Patent No. 97,266, dated November 30, 1869.

IMPROVED VULCANIZING-PRESS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOSEPH BANIGAN, of Smithfield, in the county of Providence, and in the State of Rhode Island, have invented a new and useful Improved Vulcanizing-Press, and mode of heating the same; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 represents a sectional elevation on line *x x* of fig. 2.

Figure 2 represents a central transverse vertical section.

The same letters are used in both figures in the designation of identical parts.

This invention relates to that class of presses which is used for pressing and vulcanizing rubber articles.

Its object is to provide simple and effective means for heating to the necessary degree those parts of such a press between which the rubber is confined while being vulcanized. To this end, I introduce under its bed a number of gas-jets, and use a hollow platen, also heated by a number of gas-jets.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, in the drawings, represents the bed of the press—a rather thin cast-iron plate, constructed with a continuous flange, A¹, around its sides and ends. Longitudinal ribs A² may be formed on its under side, strengthening it, so as to be capable of withstanding any pressure which is likely to be exerted upon it. Lugs are formed on the corners of the flange A¹, extending from top to bottom thereof, perforated vertically, to receive the pillars C.

B represents a yoke, secured upon the upper ends of the pillars C. It is constructed, in all respects, like the bed A, except that it is provided, centrally, with a hub, B¹, in which a screw-thread is formed, adapted to a similar thread on the spindle E.

C C represent the pillars, above alluded to, firmly secured in the bed A, from which they rise vertically, to receive and support, upon their upper ends, the yoke B.

Between the bed and yoke, the platen or follower D is suspended, attached to and operated upon by the spindle E, a bridge, D¹, being secured upon it, centrally, for the purpose of receiving and retaining the lower end of such spindle.

D² is a plate, of hard metal, secured upon the platen directly under the foot of the spindle, against which it operates in pressing.

The platen consists of an upper and lower plate, united together by longitudinal flanges or ribs *d*, it being open at its ends. It is to be of about the same

size as the bed, and its corners are also provided with lugs, perforated, to receive the pillars C, upon which it is placed, sliding freely up and down on them as it is raised or depressed by the spindle.

E represents the spindle, the main portion of which is provided with a screw-thread, adapted to the thread in the hub of the yoke B. Its lower end is secured under the bridge on the platen by a collar, in the usual manner. Directly above the point where its screw-thread terminates, a balance-wheel, E¹, is secured upon it, by which it may be revolved, for the purpose of raising or depressing the platen.

Another means for operating the spindle and platen is provided for by what may be termed a ratchet-gear upon the upper end of the spindle, consisting of a fast collar, F, which is notched in its upper surface, and engaged by a key or pawl, *f*, in a loose collar, F¹, the arrangement of these parts being substantially such as fully set forth in Letters Patent of the United States granted to me August 31, 1869.

G G represent pipes, placed under the bed of the press, which are closed at one end, and connected, by their other ends, to a gas-pipe, from which they are supplied with gas. They are provided with a number of burners, G¹, projecting upward, so as to direct the flames against the plate of the bed.

H H represent similar pipes, placed upon the platen, and also provided with a number of burners, H¹, projecting, through perforations in the upper plate, downward, so as to direct the flames against the lower plate.

These pipes should be connected to the gas-pipe by a flexible tube, so as to allow them to rise and fall with the platen.

By means of these gas-jets, I am enabled to heat the bed and platen, between which the rubber is to be pressed and vulcanized, to any required degree.

What I claim as new, and desire to secure by Letters Patent, is—

1. The application of gas for heating the bed and platen of a vulcanizing-press, substantially as set forth.

2. The combination, with the bed of a vulcanizing-press of a number of gas-jets, substantially as and for the purpose set forth.

3. The combination, with the platen of a vulcanizing-press, of a number of gas-jets, substantially as and for the purpose set forth.

The above specification signed by me, this 11th day of October, 1869.

JOSEPH BANIGAN.

Witnesses:

LELAND D. JENCKES,
L. W. MERRIAN.