

(No Model.)

H. E. MERRILL & W. E. DEMPSEY.

PRESS FOR FORMING EARTHENWARE VESSELS.

No. 310,705.

Patented Jan. 13, 1885.

Fig. 1.

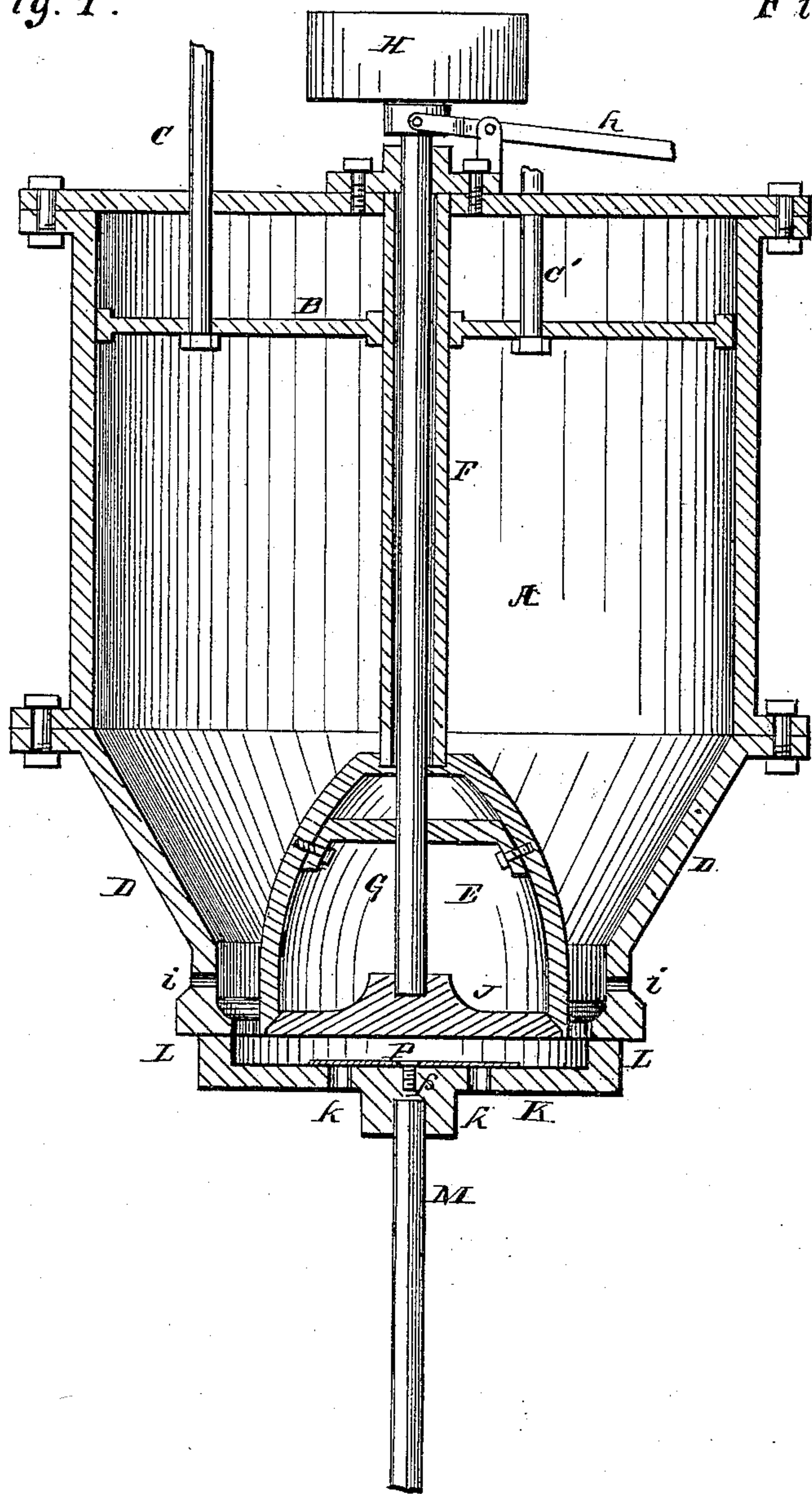
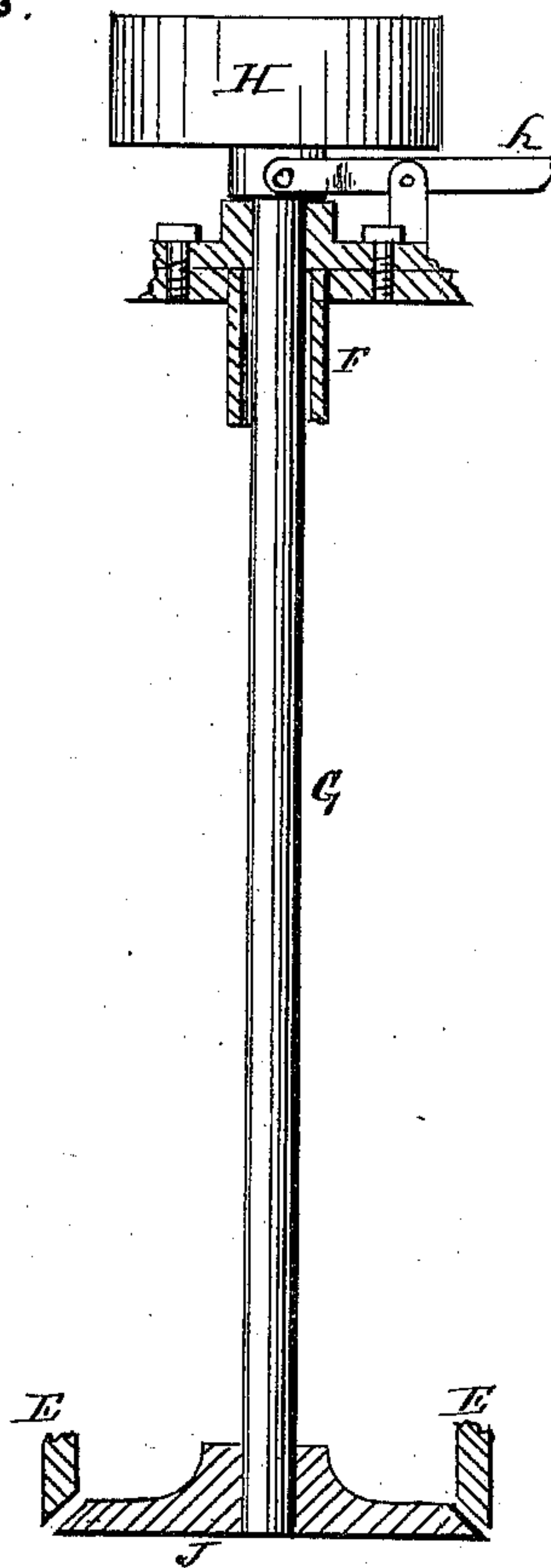


Fig. 2.



Witnesses:

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by O. Humphrey, Atty.

UNITED STATES PATENT OFFICE.

HENRY E. MERRILL AND WILLIAM E. DEMPSEY, OF AKRON, OHIO, ASSIGN-
ORS TO E. H. MERRILL & CO., OF SAME PLACE.

PRESS FOR FORMING EARTHENWARE VESSELS.

SPECIFICATION forming part of Letters Patent No. 310,705, dated January 13, 1885.

Application filed November 12, 1884. (No model.)

To all whom it may concern:

Be it known that we, HENRY E. MERRILL and WILLIAM E. DEMPSEY, citizens of the United States, residing at the city of Akron, in the county of Summit and State of Ohio, have invented a new and useful Improvement in Presses for Forming Earthenware Vessels, of which the following is a specification.

Our invention has relation to improvements in that class of presses in which the body of an earthenware vessel is formed by being forced through an annular orifice, and upon which vessel a bottom is formed prior to its issue from the press; and it has especial relation to and is an improvement upon the press for which a patent, No. 197,853, was granted to Martin J. Housel, December 4, 1877. The construction shown in said patent is in practice objectionable for the following reasons: First, the crock-bottom is liable to be and often is torn and broken in separating from the revolving plate at the bottom of the mandrel, said separation beginning at the outer edge of said plate, at which line no provision is made for the introduction of air; second, the partial rotation necessary in unlocking the lower plate upon which the crock-bottom is formed and rests tends, from the adhesion of the clay to so large a surface, to twist and tear the bottom; and, third, the series of holes in the lower plate through which surplus clay issues tend to cause cracks and imperfections in the crock, particularly at the point of union between the sides and bottom.

The object of our invention is to obviate these difficulties, to cause the plates or disks between which the crock-bottom is formed to readily separate from the bottom when each shall have performed its appropriate function, and to provide a different arrangement for the escape of surplus clay.

Our invention consists in the devices illustrated in the accompanying drawings, in which—

Figure 1 is a vertical central section of a press embodying our invention, and Fig. 2 a similar view of the inside mandrel with the bottom plate forced downward.

In so far as the parts here shown are identical with those in the patent above referred to the same language is adopted to describe

them. As all parts are circular, it is deemed unnecessary to give other views.

A is the clay-cylinder, within which is the piston B, moved by the piston-rods C C'.

D is the lower cylinder-head, which converges to such size as to constitute the outside of the annular discharge-orifice.

E is the mandrel over which the clay is pressed, and is suspended by the shaft F. This shaft is hollow, and within it is a smaller shaft, G, suitably journaled, on the upper end of which is attached a pulley, H, and on the lower end a disk, J, which when raised up forms the base of the mandrel E. The interior of the shaft F is of sufficient size to permit air to pass down around the shaft G to the inside of the mandrel E. The inner lower edge of the mandrel E is beveled inward, and the edge of the disk J is correspondingly beveled, so that when forced up the edges form a joint substantially air-tight.

The shaft G, with disk and pulley, can be moved up and down a short distance by the lever h, so that the disk J may be drawn up against the mandrel, as shown in Fig. 1, or dropped down, as shown in Fig. 2. By this arrangement the air-valves shown in the patent above referred to are dispensed with, and the disk J not only acts as a valve to admit air as the crock is forced down, but permits it to enter at the periphery of the disk, at which line the separation of the bottom therefrom begins, and thereby prevents tearing or breaking the bottom. Below the point of discharge, and concentric with it, is a plate, K, with a rim, L, and arranged to be raised and lowered by the rod M, and locked against the press by devices not shown. The plate K is pierced with a series of holes, k k, arranged in a circle concentric with the plate, above and covering which is a disk of sheet metal, P, attached to the center of the plate K by a screw, p, upon which it turns freely, and constituting, with said holes, an upward-opening valve.

In operation, the cylinder A is filled with clay, the disk J is raised against the mandrel E, and revolved by the pulley H. A layer of clay is placed on the plate K, sufficient to form a crock-bottom, and the plate raised and locked against the press, the layer of clay be-

ing pressed between the plate K and disk J to its proper thickness. The clay in the press is then forced down until its descending edge encounters the clay on the plate K, with which
5 it unites by the combined effects of pressure and the rotation of J. Around the lower cylinder-head, near the point of discharge, are a number of holes, *i i*, through which clay issues as soon as the union is perfected. The
10 plate K is then unlocked by a partial rotary motion, by which its union with the crock-bottom outside of the disk P is broken. The latter, remaining in contact with the bottom, does not move with the plate. K is then
15 lowered; the disk P, springing slightly upward at its edges, permitting air to enter from the holes *k k*, readily separates from the bottom. A board is then placed on the rim L for the
20 crock-bottom to form a support therefor as it descends from the press.

As power is applied to the press the lever *h* is released, and as the crock is pressed out the disk J descends with it a short space, per-
25 mitting air to enter from the mandrel, which enables the disk J to readily separate from the bottom. As the crock descends the streams of clay in the holes *i i* are sheared off, leaving the outside of the crock smooth.

30 We claim as our invention—

1. In a press for making earthenware vessels, the combination, with a hollow mandrel, of a disk fitted to the base thereof, and arranged, by devices such substantially as shown, to be raised against and withdrawn from said base, 35 substantially as shown, and for the purpose specified.

2. In a press for making earthenware vessels, the combination, with a plate to form and hold the vessel-bottom, and having a series of holes through it, of a disk lying upon 40 and attached at one point to said plate, and covering said holes, substantially as shown, and for the purpose specified.

3. In a press for making earthenware vessels, a cylinder-head, which constitutes the outside of the annular space through which the crock-body is formed, pierced near the point of discharge with a row of holes extending around it, substantially as shown, and 50 for the purpose specified.

In testimony that we claim the foregoing we have hereunto set our hands this 24th day of October, A. D. 1884.

HENRY E. MERRILL.
WILLIAM E. DEMPSEY.

Witnesses:

C. P. HUMPHREY,
E. W. STUART.