

No. 690,728.

Patented Jan. 7, 1902.

A. HOLLINGS.
PRESS FOR GUNCOTTON.

(Application filed Apr. 12, 1901.)

(No Model.)

Fig. 1

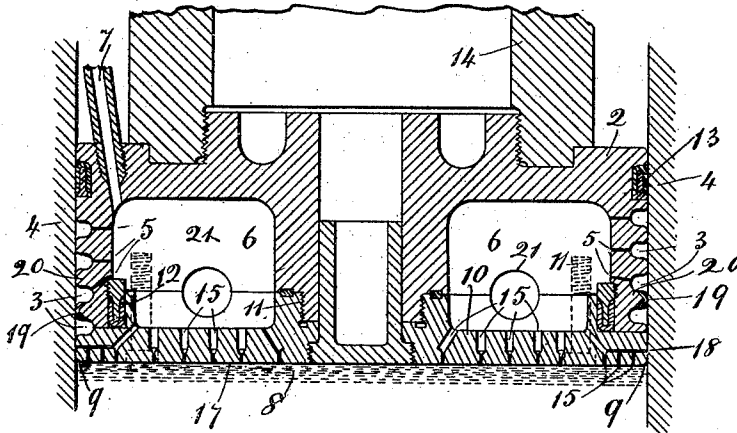
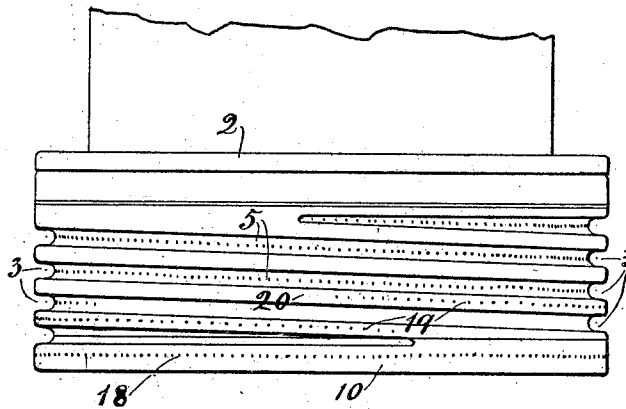


Fig. 2



Witnesses

W. B. Johnson
L. Owen.

Inventor

A. Hollings

UNITED STATES PATENT OFFICE.

ALFRED HOLLINGS, OF CHORLTON-CUM-HARDY, ENGLAND.

PRESS FOR GUNCOTTON.

SPECIFICATION forming part of Letters Patent No. 690,728, dated January 7, 1902.

Application filed April 12, 1901. Serial No. 55,561. (No model.)

To all whom it may concern:

Be it known that I, ALFRED HOLLINGS, a subject of the King of Great Britain, residing at Chorlton-cum-Hardy, in the county of Lancaster, England, have invented new and useful Improvements in Presses for Guncotton or Like Materials, of which the following is a specification.

This invention relates to pressing guncotton or like explosive materials into blocks. Heretofore in pressing such materials in a cylinder or mold there has been a liability of a portion of the material becoming lodged or caught between the pressing ram-head or disk and the side of the mold, in which position it is subjected to great pressure and friction, and thereby becoming dry and highly heated it may explode, and there is a possibility of the explosion being communicated to the remainder or a large portion of the material being pressed, particularly when it is pressed nearly dry. Such an explosion would cause great damage and perhaps loss of life.

The objects of my invention are to provide means whereby the guncotton will be prevented from lodging or being caught between the pressing ram-head or disk and the sides of the mold or, if lodged or caught, will be prevented from becoming dry, and thus obviate any liability to explosion by reason of the cause above mentioned, and, further, to prevent the guncotton or material from adhering to the pressing ram-head when such head is being withdrawn. I attain these objects by a construction of apparatus such as is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the head of a pressing-ram. Fig. 2 is a side elevation of the same head.

For the purposes of the invention and referring to the drawings, which show a convenient construction of parts under my invention, I form the pressing ram-head 2 with a space 3 all around between it and the sides of the mold, which are indicated at 4. The space 3 is preferably in the form of a helical groove passing several times around the ram-head, as shown, although when the pressure on the ram is not very great a single groove or recess might be sufficient. I lead

water into the space 3 through apertures 5, passing from the hollow space 6 in the ram-head.

7 is a pipe through which water is supplied to the hollow space 6, preferably under a pressure sufficient to keep the space 3 full, so that the ram-head 2 is surrounded with water. By this means the guncotton or like material (indicated at 8) which is being pressed in the mold is almost wholly prevented from entering between the ram-head and the sides of the mold at the points 9, or if any material should enter it will be kept wetted by the water, and thus be prevented from being dried by the pressure or friction between the ram-head and the sides of the mold. Any particles of material which may pass the points 9 are retained in the space 3 in a wet condition. The pressure of water maintained in the space 3 may be anything up to or above the pressure which is being exerted by the ram-head on the material.

The hollow space 6 in the ram-head is closed by the face-plate 10, secured to the ram-head by bolts and screws 11 or other convenient means. I prefer to employ a packing leather or ring 12 to make a close joint between the face-plate and the ram-head. When a high pressure of water is maintained in the space 3, I prefer to use a packing leather 13 in the ram-head to prevent escape of water outwardly.

14 is the ram, which may be actuated by any convenient power, such as hydraulic. The water in the space 3 also acts as a lubricant between the ram-head and the sides of the mold, so as to diminish friction. The face-plate 10, which forms the internal or pressing face of the ram-head, is also provided with spaces or apertures 15, into or through which water may be led from the hollow space 6, so as to prevent the material becoming dry at the face 17 or adhering to such face. This allows of easy withdrawal of the ram-head after pressing is complete and without damage to the pressed block of material. Apertures 18 are preferably made from the hollow space 6 to the circumference of the face-plate, as shown, to further assist in wetting any material which may enter at the points 9. Apertures 19 may be made in

the walls 20 of the space 3, as shown, to allow access of water at the points where the walls 20 of the space 3 touch or nearly touch the sides of the mold, and, generally speaking, 5 as many apertures as possible should be made in the face-plate and in the sides of the ram-head, so as to insure a thorough and uniform supply of water all around the ram-head. In 10 this way the whole or nearly the whole outer surface of the ram-head and face-plate are exposed to or covered with water, so there is no liability of any particles of material becoming dry.

21 represents strengthening-ribs in the ram- 15 head.

I do not confine myself to the exact details of construction, as it will be obvious that various arrangements of spaces, passages, or conduits may be devised to effect a similar 20 purpose without departing from the nature of my invention; but

What I claim is—

1. A ram-head for guncotton-presses having a groove in the periphery thereof, a packing-ring in rear of the groove, and water-passages leading to said groove, substantially as 25 described.

2. A ram-head for guncotton-presses having a water-chamber therein, a groove in the 30 periphery of the head, a packing-ring in rear of the groove and water-passages connecting

said groove and chamber, substantially as described.

3. A ram-head for guncotton-presses having an annular hollow chamber therein, a 35 groove in the periphery of the head, a packing-ring in rear of the groove and water-passages leading from said chamber to said groove and to the face of the head, substantially as described. 40

4. A ram-head for guncotton-presses having an annular interior water-chamber, a helical groove in the periphery of said head, and a plurality of passages connecting said chamber and groove, substantially as de- 45 scribed.

5. A ram-head for guncotton-presses having an annular interior water-chamber, a helical groove in the periphery of the head, a packing-ring in rear of the grooved portion 50 thereof, and a plurality of passages connecting said chamber with said groove and with the face of the head, substantially as described.

In testimony whereof I have signed my 55 name to this specification in the presence of two subscribing witnesses.

ALFRED HOLLINGS.

Witnesses:

W. B. JOHNSON,
E. OWEN.