R. H. Gray,

Cotton Press.

No. 58,342. Patented Sep. 25, 1866.

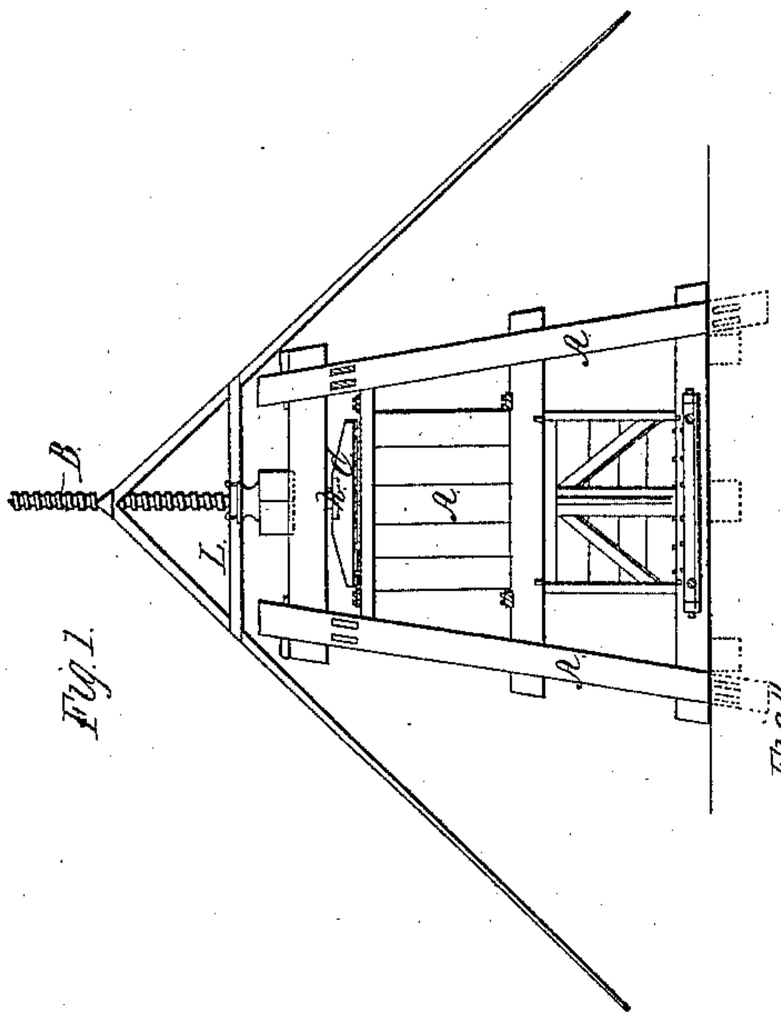

Fig. 1.

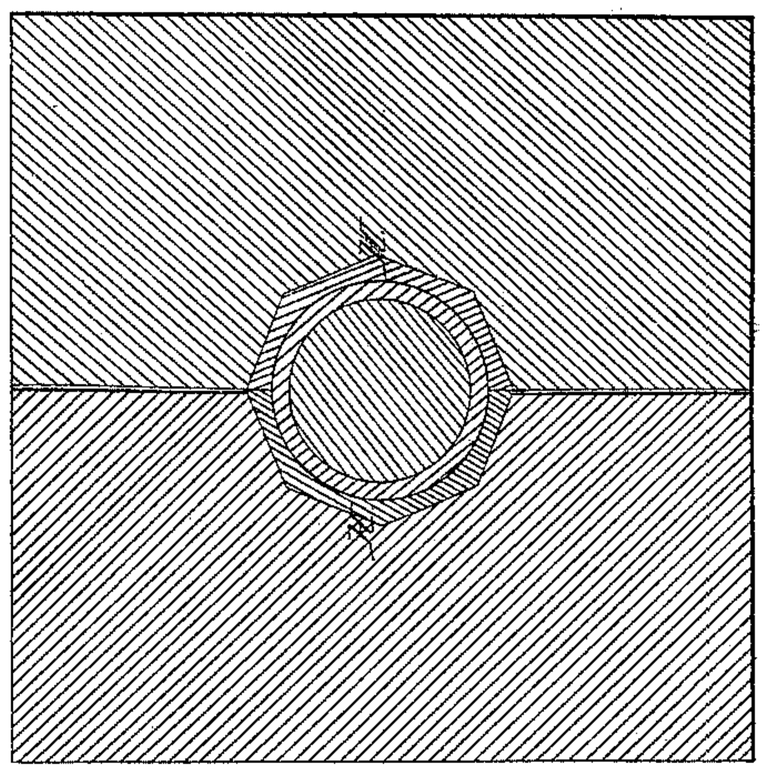

Fig 2.

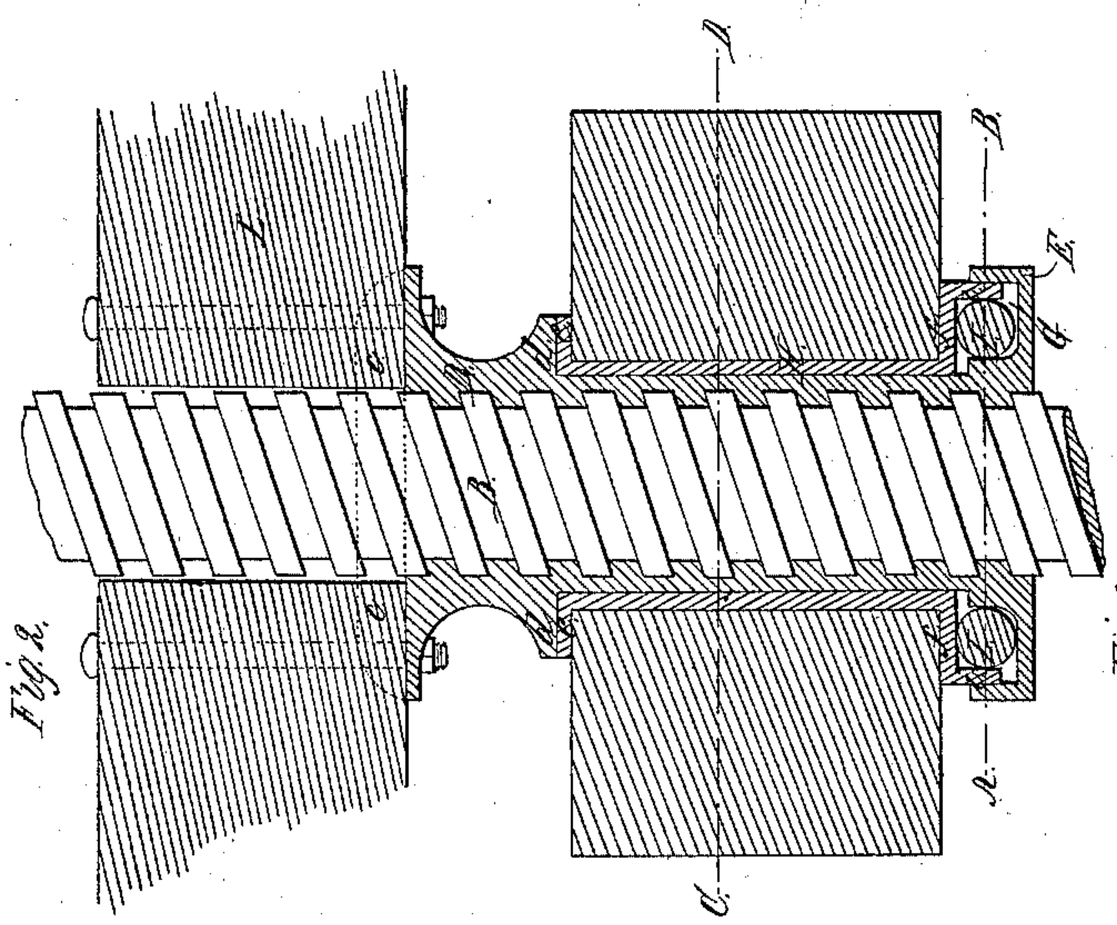

Fig. 2.

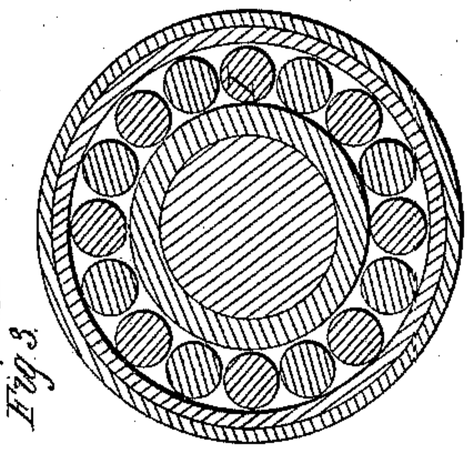

Fig 3.

Witnesses:
J. C. Clayton
George J. Ellis.

Inventor:
Richard H. Gray

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

RICHARD H. GRAY, OF GREENVILLE, ALABAMA, ASSIGNOR TO HIMSELF AND S. ABRAMS, OF SAME PLACE.

IMPROVEMENT IN LIFTING AND PRESSING SCREWS.

Specification forming part of Letters Patent No. **58,342**, dated September 25, 1866.

To all whom it may concern:

Be it known that I, RICHARD H. GRAY, of Greenville, in the county of Butler, and in the State of Alabama, have invented a new and useful Improvement in the Construction and Operation of Lifting and Pressing Screws for Pressing or Lifting Cotton or other Substances; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification.

In the drawings, Figure 1 shows my improvement applied to use as a cotton-press. Fig. 2 is a vertical section, showing the construction and operation of my invention. Fig. 3 is a horizontal section of the same. Fig. 4 is a section through C D.

The nature of my invention consists in the mode of constructing and applying an anti-friction revolving nut to a screw intended to press or lift.

My invention is more particularly adapted to the construction of a cheap and strong cast-iron screw-power press for hay and cotton.

In the drawings, A represents the general frame-work of the press, and is made of heavy timber suitably put together.

B is the screw, which, in a cotton-press, should be made about six inches in diameter, and be cast, as desired, with a follower-block, *b*, at the foot, the said block being about ten by twelve inches, and two inches thick. The main follower-block C, made of heavy timber and the size of a bale of cotton, is bolted to the iron block *b*.

D is the hollow revolving nut, made of cast-iron of sufficient size and strength to receive the screw B, and is about twenty inches deep, so as to act as a strong and steady guide to the screw. The upper part of the nut is cast square, about fourteen by eighteen inches, having flanges *c c*, between which the operating-lever L is fastened.

At the lower end of the hollow nut is cast a flange, E, so as to form the circular cup G, which should have a bottom of about an inch in thickness. In this cup are arranged a number of friction-balls, just touching each, and about sixteen in number.

H is the cast collar in which the nut D revolves. This collar is cast in two vertical sections, so as to fit snugly to the nut, and is hexagonal on the outside, so that it cannot turn in its framing of heavy timbers. At the upper end of the collar is a flange, *e*, to correspond to flange *d* of the nut. On the lower end of the collar is a broad flange, *f*, about twelve inches lower than the flange *e*. The timbers which hold the collar are fitted up against these flanges. Extending downward from flange *f* is a flange, *i*, which fits down within flange E, so as to form a close chamber out of the cup G, in which the friction-balls I are confined.

As the pressure of the screw against its nut is upward, the bottom of the cup G will press against the friction-balls, which so easily turn against the flange *f* of the collar as to avoid most of the friction.

I have shown my invention applied to the hay or cotton press. By a simple inversion of construction it can be applied to machines used for lifting heavy weights.

I am aware that friction-balls have heretofore been used, and therefore do not broadly claim them; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

The combination and arrangement of the cast-iron screw B *b* and cast hollow nut D, provided with cup G, with the two-part cast collar H, provided with flanges *f* and *i*, the whole being constructed and operating with friction-balls I in the manner and for the purpose set forth.

In testimony that I claim the above-described invention I have hereunto signed my name this 27th day of August, 1866.

RICHARD H. GRAY.

Witnesses:

JNO. H. MCCUTCHEN,

JO. C. CLAYTON.