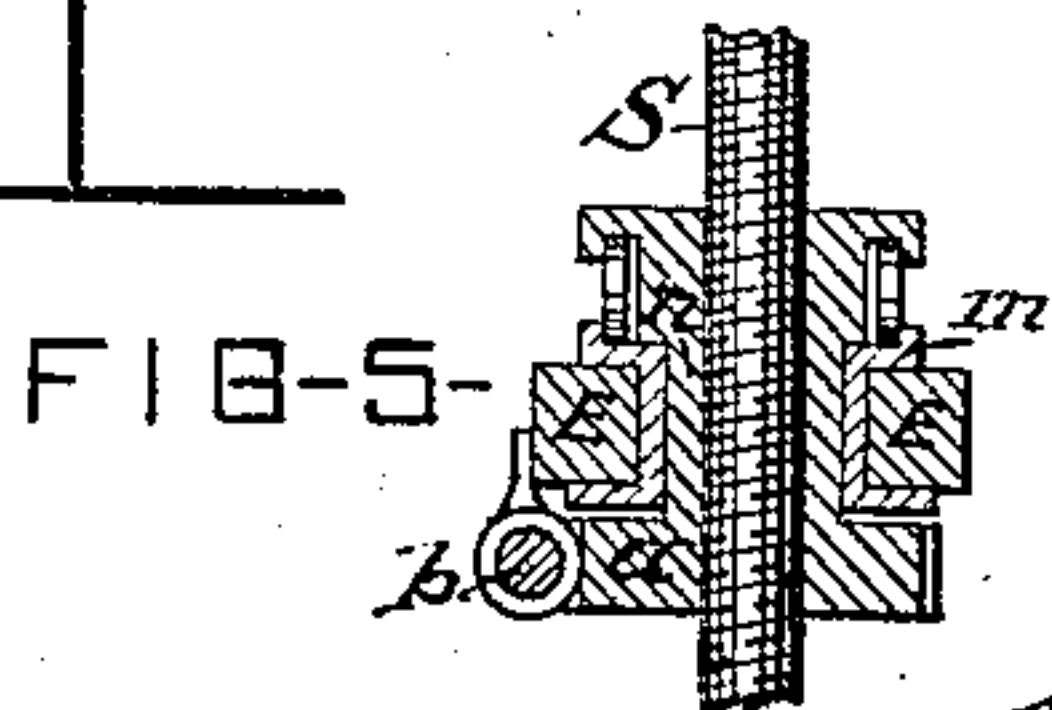
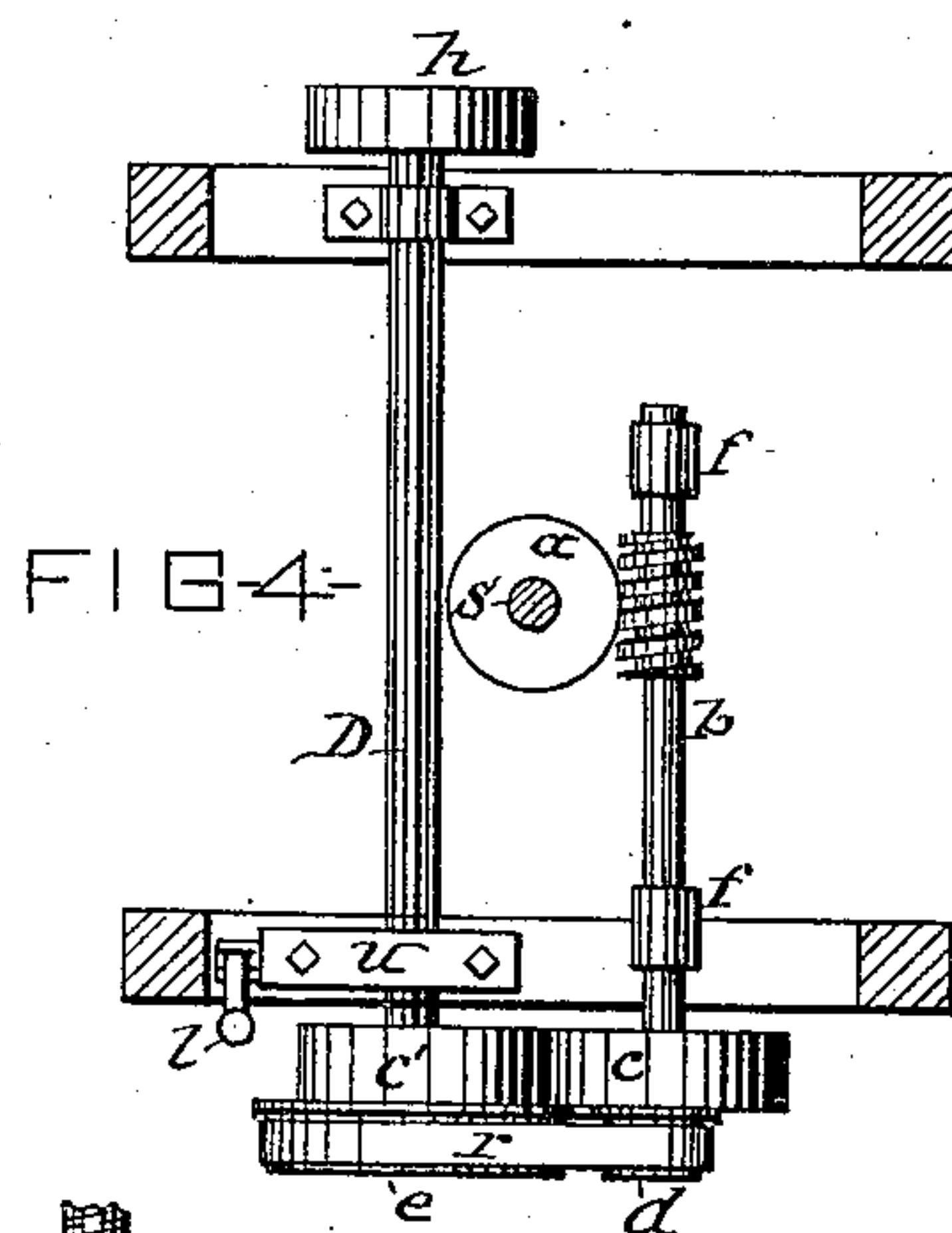
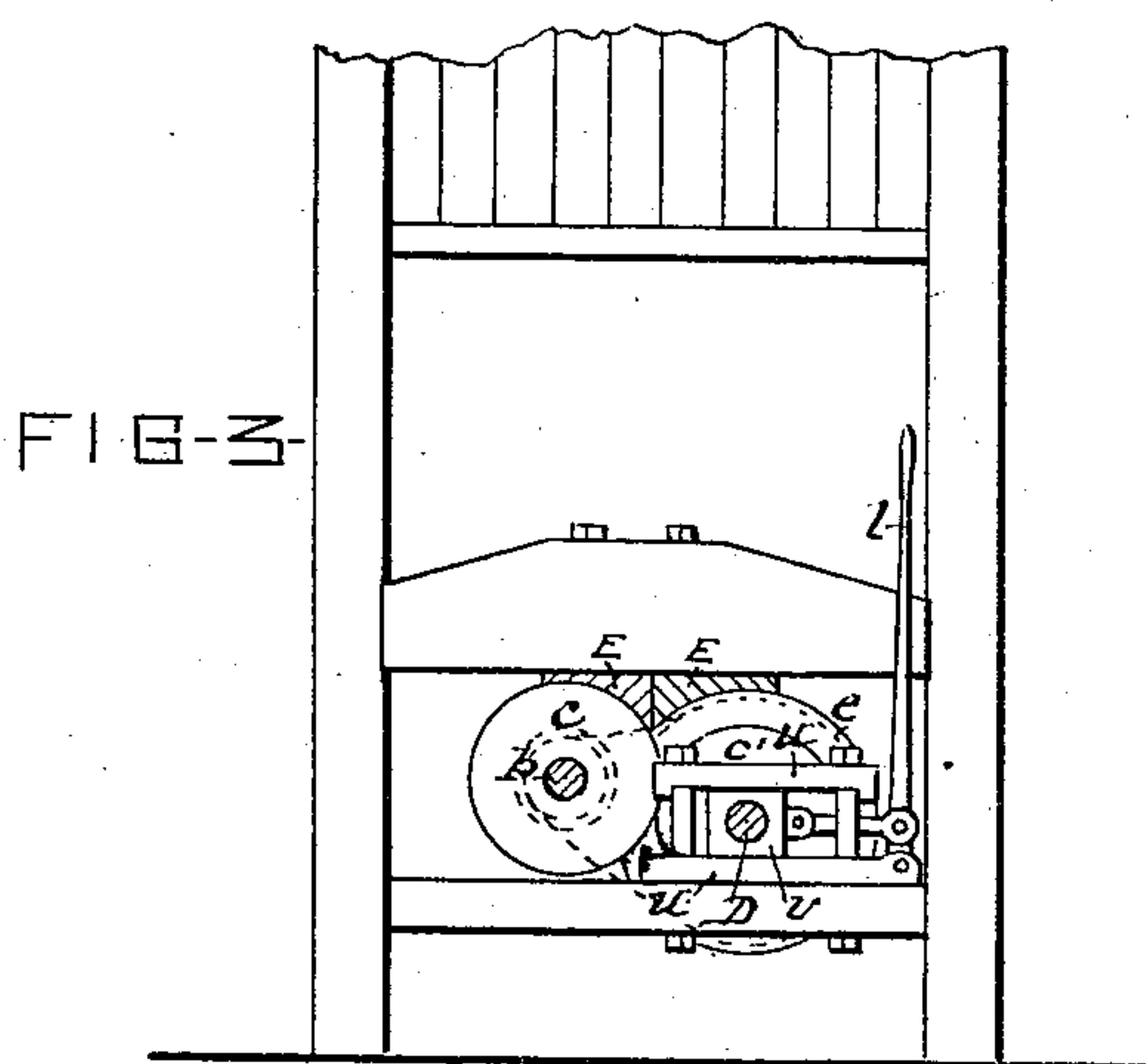
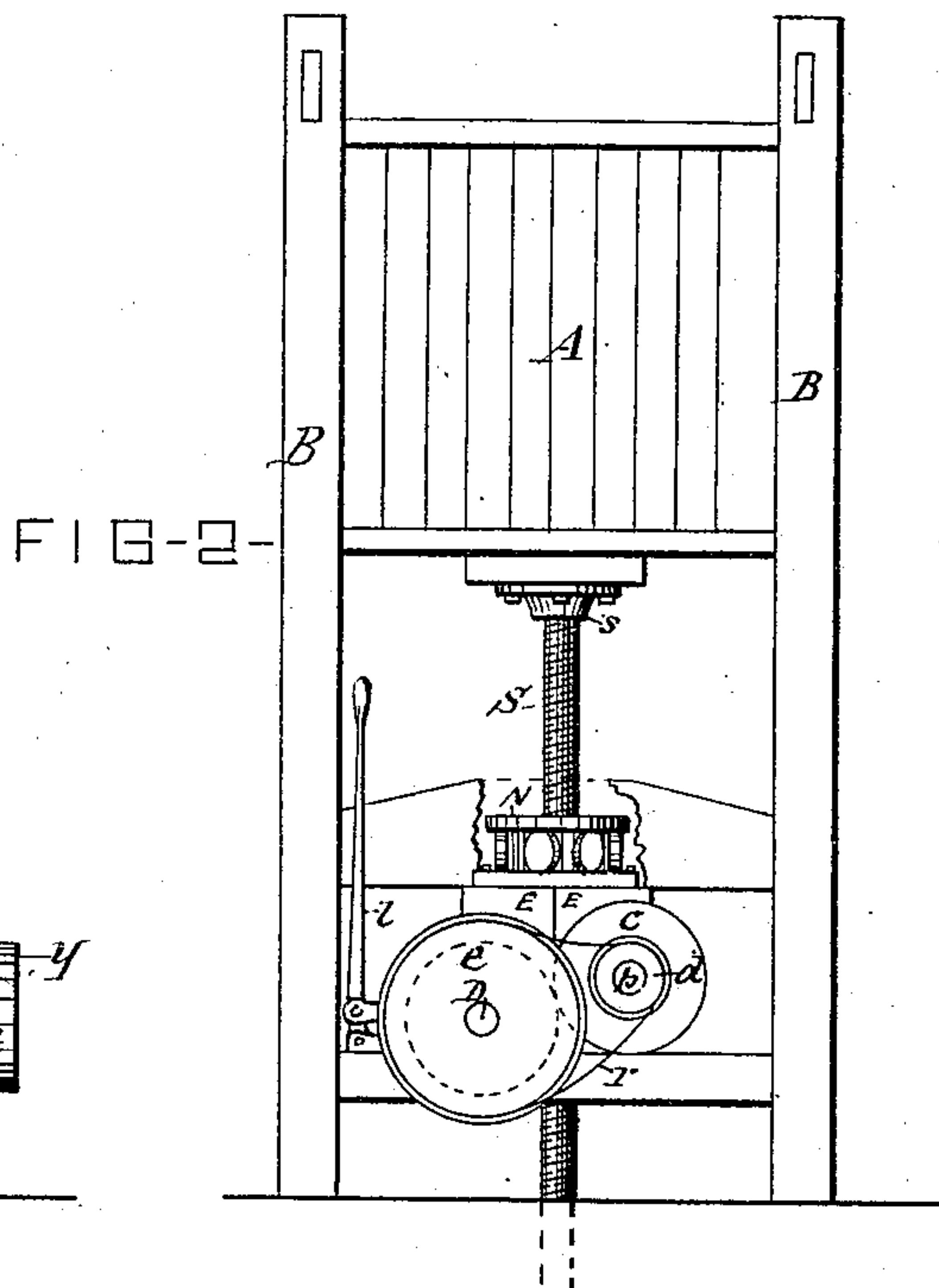
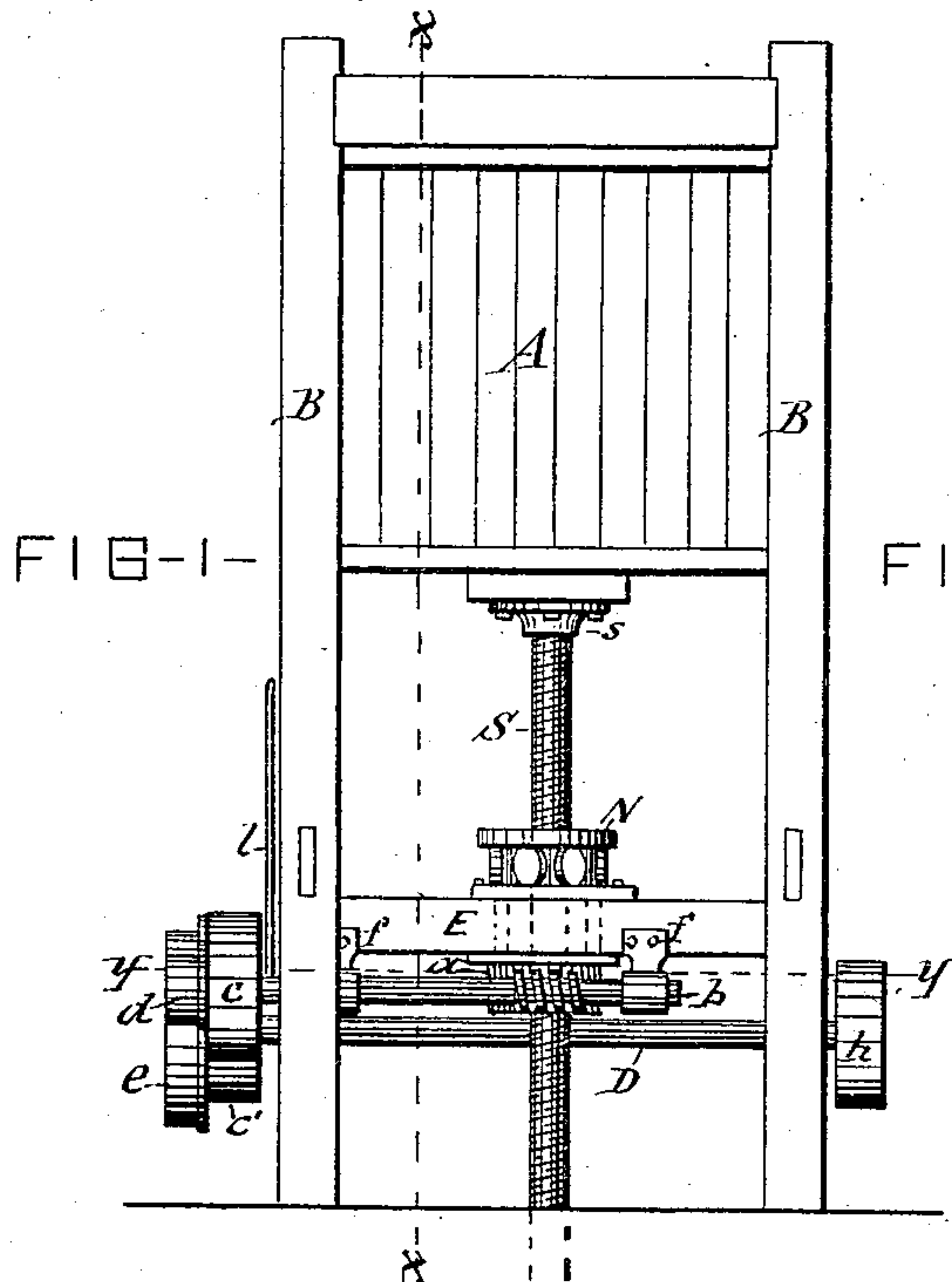


(No Model.)

G. A. PORTER.
Power Movement for Presses.

No. 243,399.

Patented June 28, 1881.



WITNESSES=
L. Bendixon
C^o L. Raymond.

INVENTOR=
George A. Porter
per Duell, Laaso & Key
his Attorneys—

UNITED STATES PATENT OFFICE.

GEORGE A. PORTER, OF SYRACUSE, NEW YORK.

POWER MOVEMENT FOR PRESSES.

SPECIFICATION forming part of Letters Patent No. 243,399, dated June 28, 1881.

Application filed May 14, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. PORTER, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and
5 useful Improvements in Power Movement for Presses for the Purpose of Pressing Cotton, Hay, &c., of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

10 This invention relates to improved means of transmitting power to the screw of a press; and it consists, essentially, in the combination, with said screw, of a nut provided with a worm-gear, a worm-shaft engaging said gear and
15 provided with a friction-wheel and a belt-pulley, the driving-shaft mounted in a sliding box and provided with a friction-wheel and a belt-pulley, a belt connecting said pulleys, and a lever or other suitable device connected with
20 the sliding box for the purpose of shifting the driving-shaft, and by the resultant change in the position of its friction-wheel and belt-pulley in relation to those of the worm-shaft reversing the motion of the screw, all as herein-
25 after more fully described.

In the annexed drawings, Figure 1 is a front view of a power-press provided with my improvements. Fig. 2 is a side view of same with a piece of the frame broken away to better illustrate the connection of the screw with
30 the nut which operates it. Fig. 3 is a view of the actuating mechanism of the press, taken on the line *x x* in Fig. 1; Fig. 4, a plan view taken on line *y y*; and Fig. 5 is a vertical section of the nut, showing the detail construction of
35 same and its connection with the screw, press-frame, and worm-shaft.

Similar letters of reference indicate corresponding parts.

40 A represents the hopper or case in which to place the hay, cotton, or other substance to be pressed, said case being supported by a suitable upright frame, B, adapted to firmly hold the cover on the case. The bottom of the case
45 is movable and constitutes the follower of the press.

S denotes the press-screw, having its upper end fixed stationary in a socket or step, *s*, properly secured to the follower.

50 N represents a nut fitted to the screw S, and

having a cylindrical body, *n*, by which it is journaled in a box, *m*, secured to cross-beams E E of the press-frame, as best seen in Fig. 5 of the drawings. One end of the nut N is provided with a worm wheel or gear, *a*, which is
55 rigidly secured or cast thereon. The worm-wheel *a* is operated by a worm-shaft, *b*, journaled in suitable bearings, *f f*, on the press-frame, and having fixed to its extremity a friction-wheel, *c*, and a belt-pulley, *d*. 60

D denotes the driving-shaft, arranged parallel to the worm-shaft, and provided at one end with a driving-pulley, *h*, and at the opposite end with a friction-wheel, *c'*, and a belt-pulley, *e*, which latter is connected with the pulley *d*
65 of the worm-shaft by a belt, *r*. That end of the driving-shaft which carries the friction-wheel *c'* and belt-pulley *e* aforesaid is mounted in a box, *v*, which slides in guides *u* secured to the press-frame, as shown in Figs. 3 and 4 of
70 the drawings. By means of a pivoted lever, *l*, connected with the box *v*, the latter can be moved back and forth in the guides *u*, thereby swinging the end of the shaft mounted therein toward and from the worm-shaft. 75

The two friction-wheels *c* and *c'* are of such diameters as to cause them to be brought in contact with each other by the approach of the driving-shaft, and the belt *r* is of such a length
80 as to allow the driving-shaft sufficient play to disengage the two friction-wheels aforesaid and simultaneously tighten the belt. Since the direct contact of the two friction-wheels causes said wheels to rotate in contrary directions, while the belt-connection drives the two
85 pulleys in one direction, the shifting of the driving-shaft and resultant change in the transmission of the motion, as before described, reverses the motion of the nut N and screw S. The friction-wheels are used for imparting a
90 forward movement to the screw, while the belt-pulleys are employed for retracting the screw. I therefore make the pulley *d* of the worm-shaft considerably smaller than the pulley *e* of the driving-shaft, so as to accelerate the re-
95 tracting of the screw.

It will be observed that by the described actuating mechanism of my improved press I am enabled to readily apply the power to the screw and as readily remove said power, and 100

either hold the screw stationary or retract it whenever desired simply by the manipulating of a lever.

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

In combination with the screw S, the nut N,
provided with the gear *a*, the worm-shaft *b*,
having fixed to it the friction-wheel *c* and pul-
10 ley *d*, and the driving-shaft D, mounted in the
sliding box *v*, and provided with the friction-
wheel *c'* and pulley *e*, the belt *r*, connecting said

pulley, and the lever *l*, connected with the slid-
ing box *v*, all combined and operating substan-
tially as shown and set forth.

15

In testimony whereof I have hereunto signed
my name and affixed my seal, in the presence
of two attesting witnesses, at Syracuse, in the
county of Onondaga, in the State of New York,
this 10th day of May, 1881.

GEORGE A. PORTER. [L. S.]

Witnesses:

D. A. BONTA,
H. H. HOYT.