(No Model.)

# C. C. CAMPBELL.

## COTTON COMPRESSOR.

No. 306,130. Patented Oct. 7, 1884.

FIG. 1.

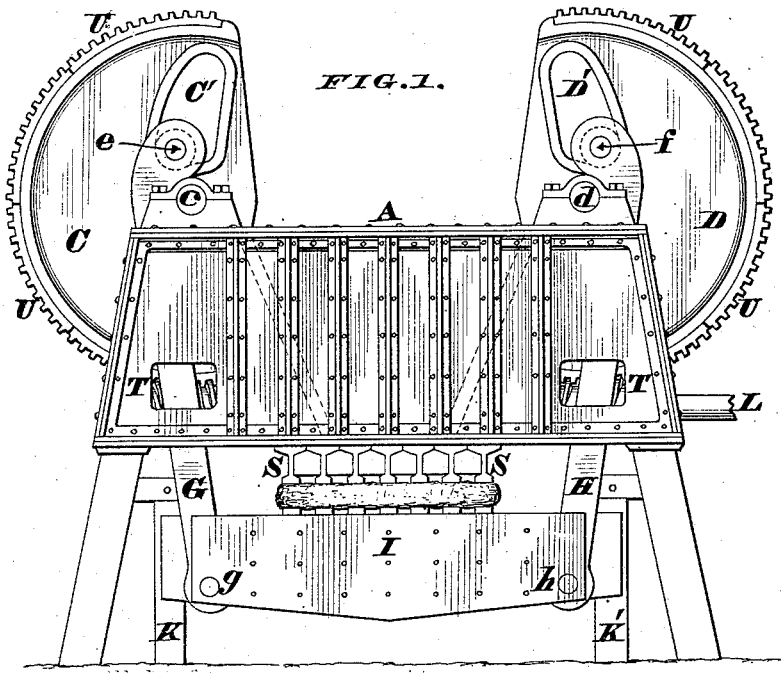



FIG. 3.

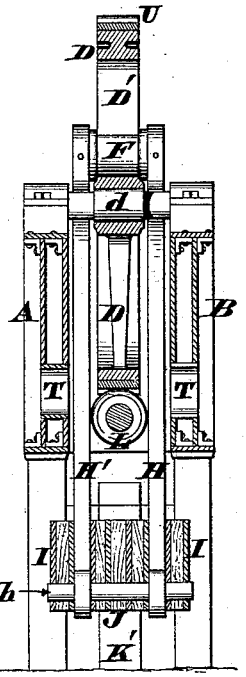



FIG. 2.

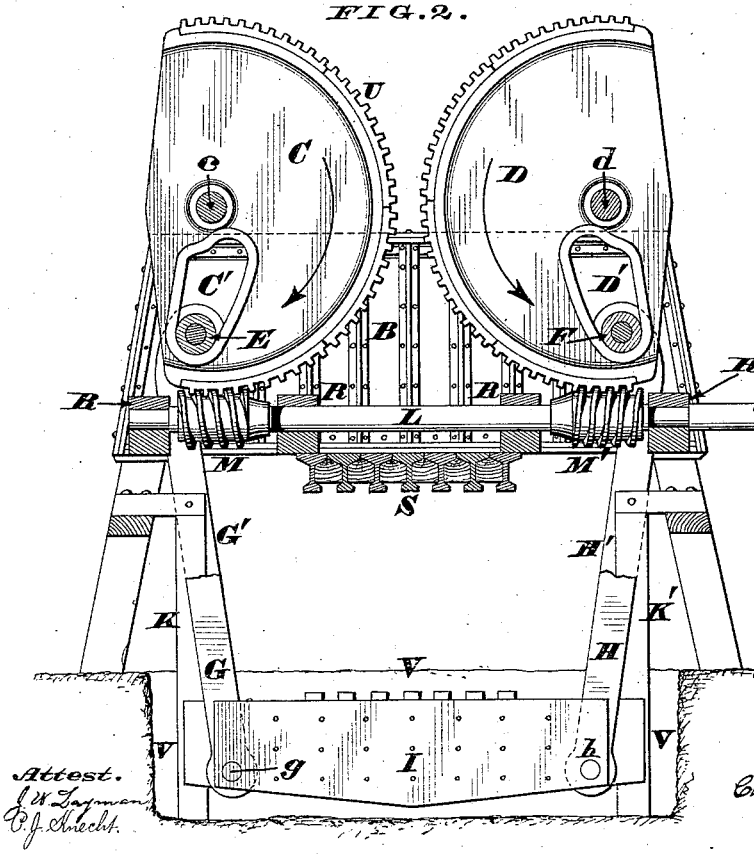
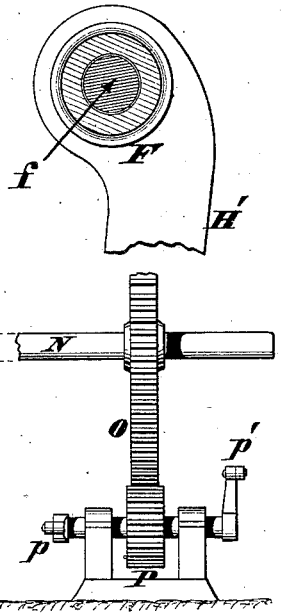



FIG. 4.

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# UNITED STATES PATENT OFFICE.

CHARLES C. CAMPBELL, OF CINCINNATI, OHIO.

## COTTON-COMPRESSOR.

SPECIFICATION forming part of Letters Patent No. 306,130, dated October 7, 1884.

Application filed August 11, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES C. CAMPBELL, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Cotton-Compressors, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to those presses which are employed for compacting bales of cotton, hay, &c., into the smallest possible compass, for the purpose of facilitating the transportation of such articles either on vessels or on cars, and my improvement comprises a novel combination of devices for operating the follower or platen, which latter has preferably a vertical movement. Said combination includes a pair of eccentrically-slotted segment-wheels driven by worms on the main shaft of the press, and four connecting-rods whose upper ends carry rollers that traverse said eccentric or cam-shaped slots, while the lower ends of said rods are coupled to the platen or follower, the arrangement of the slots being such as to impart a progressive leverage to the connecting-rods and the attached platen, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a side elevation of my improved compress, the platen thereof being shown in its most elevated position. Fig. 2 is a longitudinal section of the compress taken in the plane of the worm-shaft, the platen being shown in its lowered position. Fig. 3 is a transverse section of the compress taken in the plane of the shaft *d*. Fig. 4 is an enlarged elevation of the upper end of one of the connecting-rods and its accessories.

The main frame or housing of the compress consists of two similar box-girders, A B, made of very heavy plates and stiffened with a system of angle-iron braces, so as to enable the frame to resist the severe strain incidental to repressing cotton, hay, and other materials.

Journaled on top of these girders and near their opposite ends are short transverse shafts *c d*, that carry, respectively, segment-wheels C D, which wheels are slotted eccentrically at C′ D′.

Adapted to traverse these slots are rollers E F, (seen in Fig. 2,) the rollers having flanges on their ends, as represented in Fig. 3. Roller E is journaled on a pin, *e*, secured in the upper ends of a pair of parallel and precisely similar connecting-rods, G G′. Roller F is journaled on a pin, *f*, of another pair of connecting-rods, H H′.

*g* is a pin that couples the lower ends of rods G G′ to the platen or follower I J. *h* is a pin that couples the other rods H H′ to the platen, which latter is composed of heavy plates I with wooden beams J between them, as seen in Fig. 3. Furthermore, some of these plates are prolonged to serve as guides that bear against posts K K′, by which arrangement the platen is confined to a vertical path, and all lateral play is prevented.

Disposed longitudinally of the housing, and directly under the wheels C D, is a shaft, L, carrying two oppositely-pitched worms, M M′, that gear, respectively, with said segment-wheel. This worm-shaft L may be operated in any suitable manner; but I prefer coupling it to a driving-shaft, N, provided with a spur-wheel, O, that gears with a pinion, P, of an engine-shaft, the latter being actuated by two cranks, *p p′*, disposed at right angles to each other, for the purpose of obtaining the utmost regularity of motion.

R are bearings for the worm-shaft, and S the fixed platen or bed of the press, which shaft and bearings serve as binders to unite the box-girders A B.

T are openings in the girders to permit ready lubrication of the worms M M′.

Finally, the gearing or teeth of the wheels C D are made in sections U, which are bolted or otherwise secured to the rims of said segment-wheels.

When the wheels C D are in the position seen in Fig. 2, the follower or platen I is lowered and occupies the pit V, so as to allow the bale of cotton or hay or other compressible material to be conveniently placed in a proper position upon said platen, after which act the engine is started and shaft L set in motion so as to cause the worms M M′ to turn said wheels in the direction indicated by the arrows.

It is evident this turning of the wheels C D brings the curved or eccentric sides of the slots C′ D′ in contact with the rollers E F, thereby lifting the platen and causing the bale to be compressed between said platen and the immovable bed S, as seen in Fig. 1. Further-

more, it is evident that the eccentric or cam-shaped slots C′ D′ exert a progressive leverage or pull on the connecting-rods G G′ H H′, and when said slots arrive at the position seen in Fig. 1, the press is exerting its utmost power against the material interposed between the movable platen I and fixed bed S. Reference to Fig. 4 shows that the upper ends of the connecting-rods are bent inwardly or toward the respective shafts *c d*, so as to allow the rollers E F to be brought almost vertically above said shafts when the platen is completely elevated. Consequently the eccentric or cam-shaped slots develop the greatest power at the precise moment the repressing of the bale is finished.

I claim as my invention—

1. The combination, in a press, of a main frame having the fixed bed attached thereto, and supporting a pair of segment-wheels, said wheels being pierced with eccentric slots, with which latter are engaged the connecting-rods that carry the platen or follower, for the purpose described.

2. The combination, in a press, of a main frame having the fixed bed attached thereto, and supporting a pair of segment-wheels, said wheels being pierced with eccentric slots, which latter are traversed by rollers journaled in the upper ends of the connecting-rods that carry the platen or follower, for the purpose herein described.

3. The combination, in a press, of a main frame having the fixed bed attached thereto, and supporting a pair of segment-wheels, said wheels being pierced with eccentric slots, with which latter are engaged the connecting-rods that carry the platen or follower, said wheels being turned in opposite directions by worms mounted on a common shaft, for the purpose described.

4. The combination, in a press, of eccentrically-slotted wheels C C′ D D′, rollers E F, journals *e f*, connecting-rods G G′ H H′, pins *g h*, platen I, shaft L, and worms M M′, for the purpose described.

5. In combination with a press of the class specified, the connecting-rods G G′ H H′, having their upper ends turned inwardly toward the shafts *c d* of the eccentrically-slotted wheels C C′ D D′, which latter operate said connecting-rods in the manner specified, and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES C. CAMPBELL.

Witnesses:
JAMES H. LAYMAN,
E. C. BUSH.