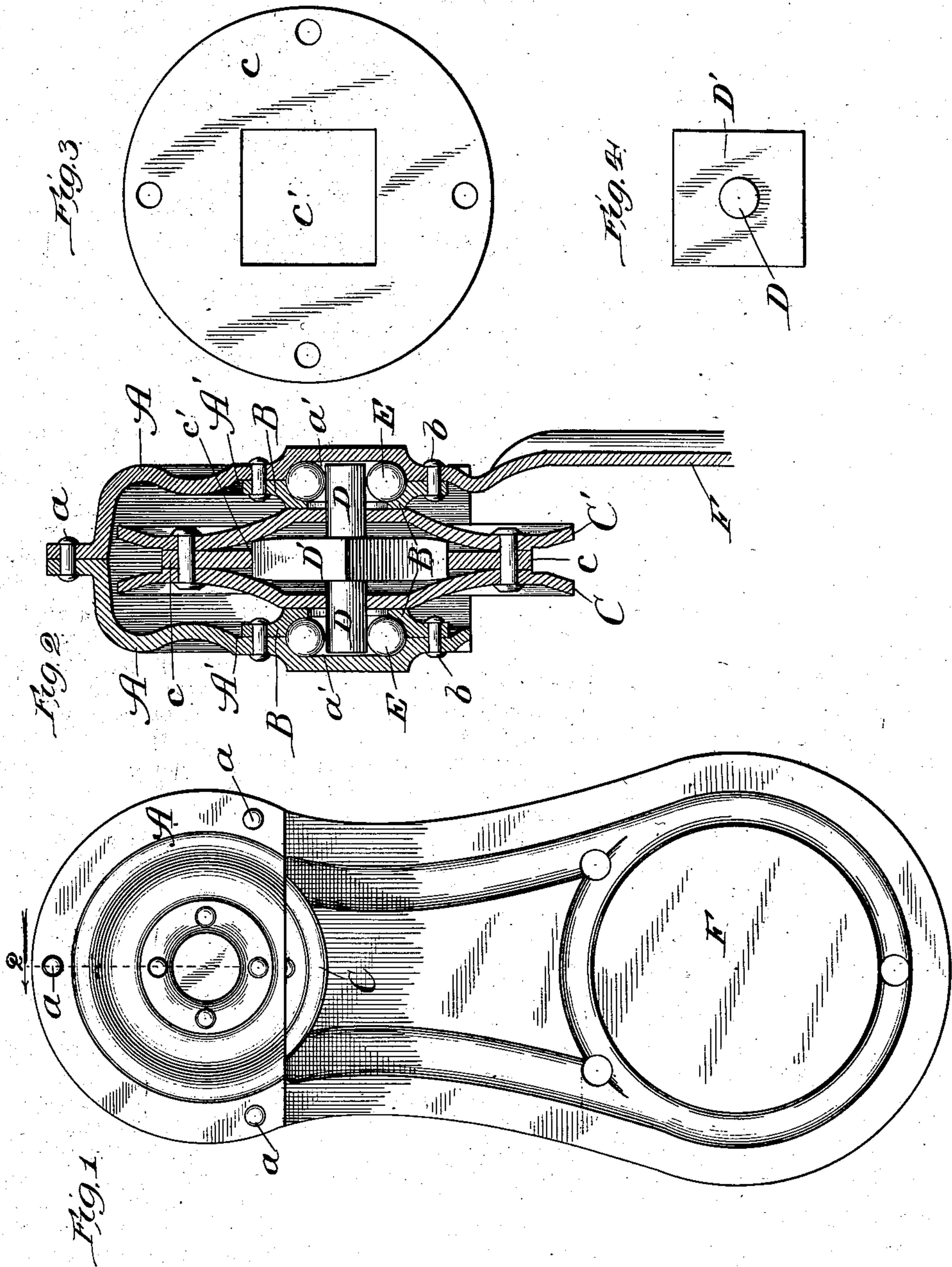


(No Model.)

D. NICKEL.
DOOR HANGER.

No. 604,887.

Patented May 31, 1898.



Witnesses:
Eas. E. Gaylord,
Lute J. Vetter.

Inventor.
David Nickel,
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Attys.

UNITED STATES PATENT OFFICE.

DAVID NICKEL, OF MORRIS, ILLINOIS.

DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 604,887, dated May 31, 1898.

Application filed May 17, 1897. Serial No. 636,923. (No model.)

To all whom it may concern:

Be it known that I, DAVID NICKEL, a citizen of the United States, residing at Morris, Illinois, have invented certain new and useful Improvements in Door-Hangers, of which the following is a specification.

In the drawings, Figure 1 is a front elevation of my improved door-hanger; Fig. 2, a sectional elevation taken on line 2 of Fig. 1, and Figs. 3 and 4 are detail parts of the pulley or wheel.

In making my improved door-hanger I make a hanger-frame A of sheet-steel or other similar material, preferably stamped or pressed into the desired shape. The frame is made of two sides or parts where the wheel or pulley is intended to be placed, as shown in Fig. 2, which may be connected or secured together by rivets or bolts a. I make each of the sides of the frame with two cups or depressions, as shown at A' and a'. The depression or cup A' is larger than the cup or depression a' and is intended to include or contain it within its circumferential limits. When the sides of the hanger-frame are put together in position for use, these double cups or depressions are intended to face or oppose each other, as shown in Fig. 2. I arrange cup-shaped caps B, which may be stamped or pressed out of sheet-steel or similar material into the desired shape. These caps are intended to be received and contained within the larger cups or depressions A' and to be held in position by bolts or rivets b. When in position for use, the cups or depressions in the caps face or oppose the smaller cups or depressions in the sides of the frame, so as to make a chamber or raceway adapted to receive a series of balls, as shown in Fig. 2. The wheel or pulley is formed of three disks or pieces C, C', and c, made of sheet-steel or similar material, which permits the sides, C and C', of the wheel to be stamped or pressed into a cup-shaped form, with the cups or depressions facing or opposing each other, as shown in Fig. 2. The central disk c of the wheel is

of smaller diameter than the sides and is provided with an angular hole c', preferably made rectangular, as shown in Fig. 3. The axle of the wheel is formed of a pin D, carrying an angular block or nut D', made of a size and shape to fit the hole c' in the central disk of the wheel. This block or nut is made fast to the pin or axle D and is shrunk, pressed, or otherwise securely inserted in the hole c', so that in rotating it will rotate the disk. The sides of the wheel and disk are connected or fastened together by rivets, as shown in Fig. 2, so that the whole forms a wheel or pulley with the ends of the axle or pin projecting and forming spindles, as shown in the drawings. A series of balls E are arranged in the chambers or raceways formed between the cups a' and the cup or depression in the caps B, and the ends or spindles of the pins D pass through holes in the inner face of the caps larger than the diameter of the axle, so as to rest and ride upon the balls, as shown in Fig. 2. The parts are then attached or connected together by the rivet a, so that they will form a completed structure. (Shown in section in Fig. 2.) One side of the hanger-frame has a depending portion F, by which it may be attached to a barn or other door in the usual way.

What I regard as new, and desire to secure by Letters Patent, is—

In a door-hanger, the combination of a wheel-frame provided with two internal cups on each side—one circumscribing the other—facing or opposing each other, caps arranged within the larger cups and provided with cups facing or opposing such smaller cups, balls arranged between the cups in the caps and the smaller cups in the frame, and a wheel or pulley provided with an axle having its spindles resting and riding upon the balls, substantially as described.

DAVID NICKEL.

Witnesses:

H. C. CLAYPOOL,
T. L. ROBINSON.