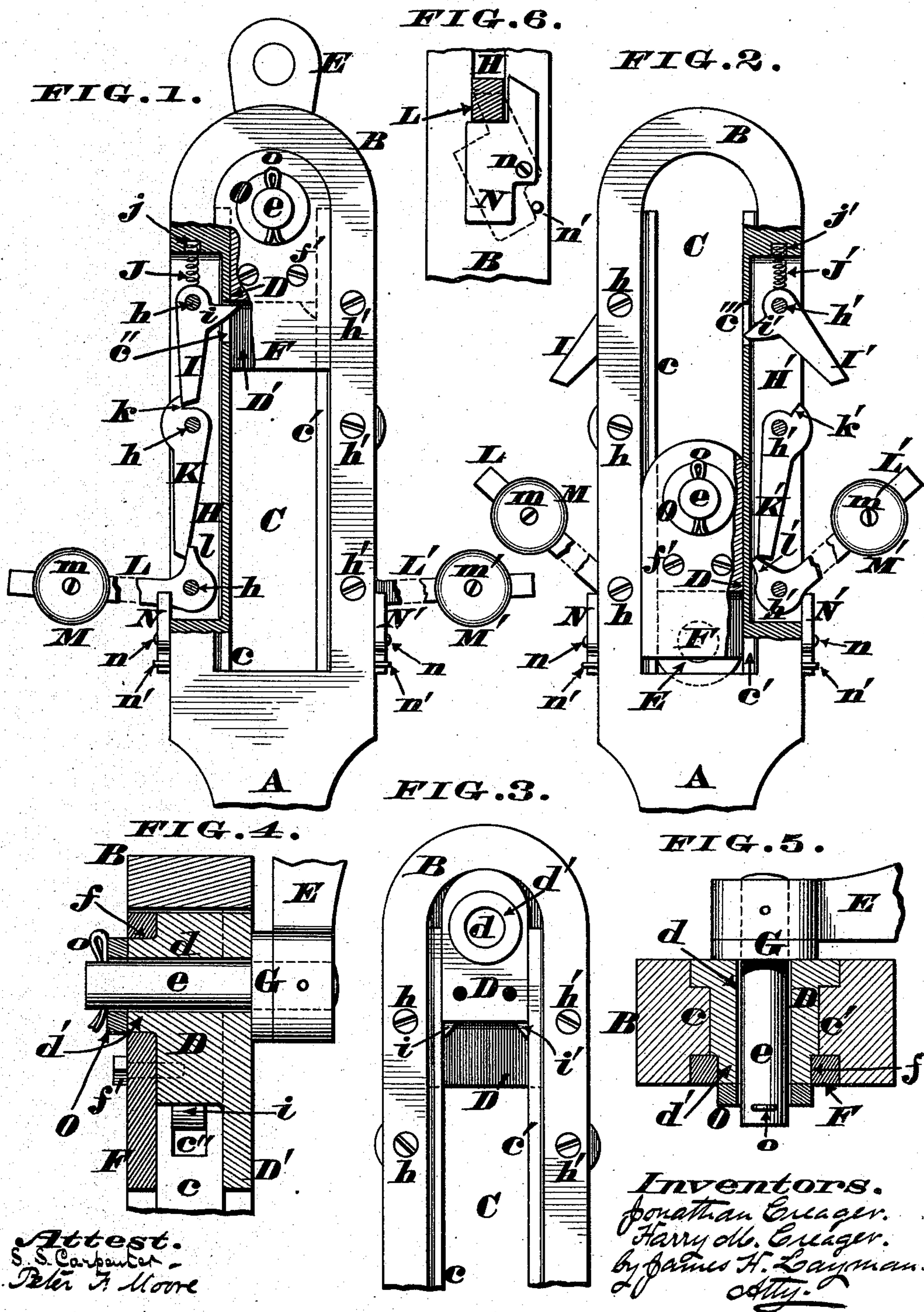


(No Model.)

J. & H. M. CREAGER.
PITMAN.

No. 413,929.

Patented Oct. 29, 1889.



UNITED STATES PATENT OFFICE.

JONATHAN CREAGER AND HARRY M. CREAGER, OF CINCINNATI, OHIO.

PITMAN.

SPECIFICATION forming part of Letters Patent No. 413,929, dated October 29, 1889.

Application filed August 2, 1889. Serial No. 319,512. (No model.)

To all whom it may concern.

Be it known that we, JONATHAN CREAGER and HARRY M. CREAGER, both citizens of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Pitman; and we do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the annexed drawings, which form part of this specification.

The object of our invention is to provide a pitman that will automatically disengage itself from a crank pin or wrist the instant a certain predetermined pressure is reached, and thereby prevent breaking of the machine to which the pitman is applied. To accomplish this result we slot the pitman-head longitudinally and insert within said slot a slide that is bored transversely to admit the crank pin or wrist, said slide being confined to its normal position within said slot by means of a pair of trip-levers. These levers constitute part of a system of compound levers suitably pivoted to the pitman-head, and a pair of these levers have adjustable weights applied to them, which weights can be so set as to determine the resistance that must be overcome before the slide is released and the pitman rendered inoperative, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a sectionized side elevation of a pitman embodying our improvements, the slide being locked to the pitman-head. Fig. 2 is a similar elevation of the pitman, but showing the slide released therefrom. Fig. 3 is an elevation of a portion of the pitman-head detached from the crank and the cap removed from the slide. Fig. 4 is an enlarged vertical section of the slide and part of the pitman-head, the section being taken in the plane of the crank-pin. Fig. 5 is an enlarged horizontal section taken in the same plane. Fig. 6 is an enlarged side elevation of that portion of the pitman-head to which one of the lever-catches is pivoted, the lever being sectioned.

A represents a portion of an ordinary pitman, and B is the head thereof, said head being slotted longitudinally at C, which slot is flanked with parallel guides $c\ c'$, that confine the slide D to a proper path within said slot,

said slide being bored transversely at d , as seen in Fig. 3, to admit the pin or wrist e of a crank E, that either operates the pitman or is driven by it. Slide D is preferably arched at top, and has in front a short cylindrical neck d' , that enters a circular hole f near the top of a cap-plate F, as seen in Fig. 4, bolts f' being passed through said plate for the purpose of securing it to said slide. The rear of this slide has an integral downward extension D' , which coacts with the cap F in confining said slide against the guides $c\ c'$.

G is a washer placed between the slide D and crank E.

H H' are longitudinal grooves in the sides of the pitman-head and running parallel with the guides $c\ c'$, said grooves being provided with a series of bolts or other pivots h and h' , upon which are hung the compound levers previously referred to. Of these pivoted devices the upper pairs I I' are called the "trip-levers," because they operate the other levers, and each trip-lever is provided with inwardly-projecting spurs $i\ i'$, against which the slide D normally rests, said spurs being passed through slots $c''\ c'''$ in the guides $c\ c'$.

J J' are springs fitted in sockets $j\ j'$ at the upper ends of grooves H H' and bearing firmly against the levers I I', so as to prevent the latter accidentally swinging in either direction. The toes of trip-levers I I' press against bearings $k\ k'$ at the heels of intermediate levers K K', and the toes of the latter are at all times in contact with bearings $l\ l'$ of weighted levers L L'.

M M' are weights capable of being shifted along said levers and maintained at any specific adjustment by clamp-screws $m\ m'$.

N N' are catches pivoted to the sides of the pitman-head, as at n , which pivots are so located as to cause the catches to gravitate toward the levers L L', as seen in Fig. 6.

n' are stop-pins that arrest the swing of said catches.

O is a washer near the outer end of the crank-pin, and o is a spring-pin that retains said washer in place.

In the normal condition of our pitman the various parts of the same are disposed as seen in Fig. 1, the slide D being now confined between the spurs $i\ i'$ and the upper end of slot C, said spurs being maintained in this

protruded position by the weights $M M'$ of levers $L L'$, which weights are so adjusted as to prevent any swinging of the levers until an excessive strain is brought to bear on the pitman. Therefore, the slide is normally locked to the pitman-head and partakes of the crank-motion the same as an ordinary pitman, provided the strain is not more than the machine can bear; but the instant such an excessive strain occurs, from any cause whatever, the pressure exerted against the spurs $i i'$ is greater than the weights $M M'$ can resist, and therefore the trip-levers $I I'$ swing outwardly and the intermediate levers $K K'$ swing inwardly, thus throwing the other levers $L L'$ up to the position seen in Fig. 2. Trip-levers $I I'$ are held in their new position by the springs $J J'$, while the catches $N N'$ fall over to the position indicated by dotted lines in Fig. 6, and thus maintain the levers $L L'$ at the angle shown. Evidently there is nothing now to lock the slide D to the pitman-head B , and when the crank turns this slide simply reciprocates freely within the slot C and vibrates said head from side to side, but without imparting any longitudinal motion to the same. After removing from the machine the obstruction that caused the excessive pressure the crank is allowed to turn until the slide D reaches the upper end of slot C , and then the trip-levers $I I'$ are forced back by hand. Catches $N N'$ are now pulled forward, so as to allow the levers $L L'$ to drop down to a horizontal position and enable the weights $M M'$ to again resist the action of slide D . Consequently all the parts are restored to their normal positions and the pitman operates as previously described.

The above is an explanation of the preferred form of our pitman; but the construction may be modified by using a single set of compound levers, and in some cases springs may be substituted for the weights $M M'$.

Finally, the invention is not limited to any particular use; but the pitman herein shown is especially adapted for operating the plungers or pistons of brick-making machines, in-

asmuch as it will prevent serious damage to such machines when stones and other hard obstructions lodge within the press box or molds.

We claim as our invention—

1. A pitman-head and a slide driven by a crank, a stop that locks said slide to said head, and automatic devices that liberate said stop and thereby release said slide whenever a certain pressure is exceeded, substantially as described.

2. A pitman-head having a longitudinal slot or groove, a slide driven by a crank and traversing said slot or groove, a trip-lever having a stop that locks said slide within said slot, and a system of levers operated by said trip-lever, one of the levers of said system having a weight applied to it, substantially as described.

3. The combination of slotted pitman-head B , guides $c c'$, slide D , pivoted trip-levers $I I'$, intermediate levers $K K'$, and levers $L L'$, which latter are provided with weights $M M'$, for the purpose described.

4. The combination, with a slotted pitman-head, of a slide driven by a crank and traversing said slot, a system of levers that automatically liberate said slide, as herein described, a pair of weighted levers and a pair of drop-catches pivoted to said head, and a pair of stops that arrest said catches, for the purpose stated.

5. The combination, with a slotted pitman-head, of a slide driven by a crank and traversing said slot, a system of levers that automatically liberate said slide, as herein described, and a pair of springs, as $J J'$, that bear against the trip-levers $I I'$ of said system, for the purpose stated.

In testimony whereof we affix our signatures in presence of two witnesses.

JONATHAN CREAGER.

HARRY M. CREAGER.

Witnesses:

JAMES H. LAYMAN,

SAML. S. CARPENTER.