

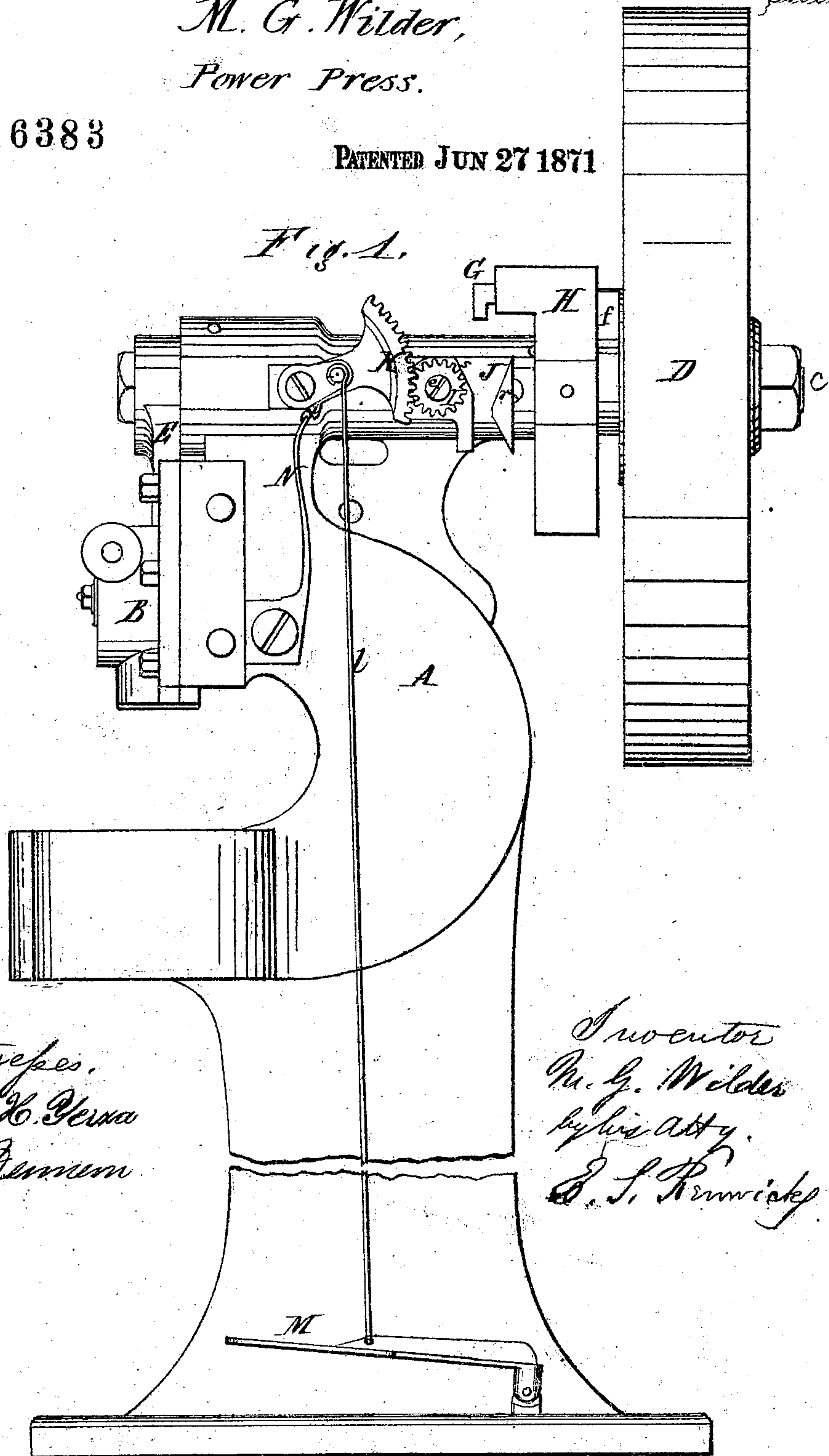
M. G. Wilder,
Power Press.

116383

PATENTED JUN 27 1871

Sheet 1

Fig. 1.



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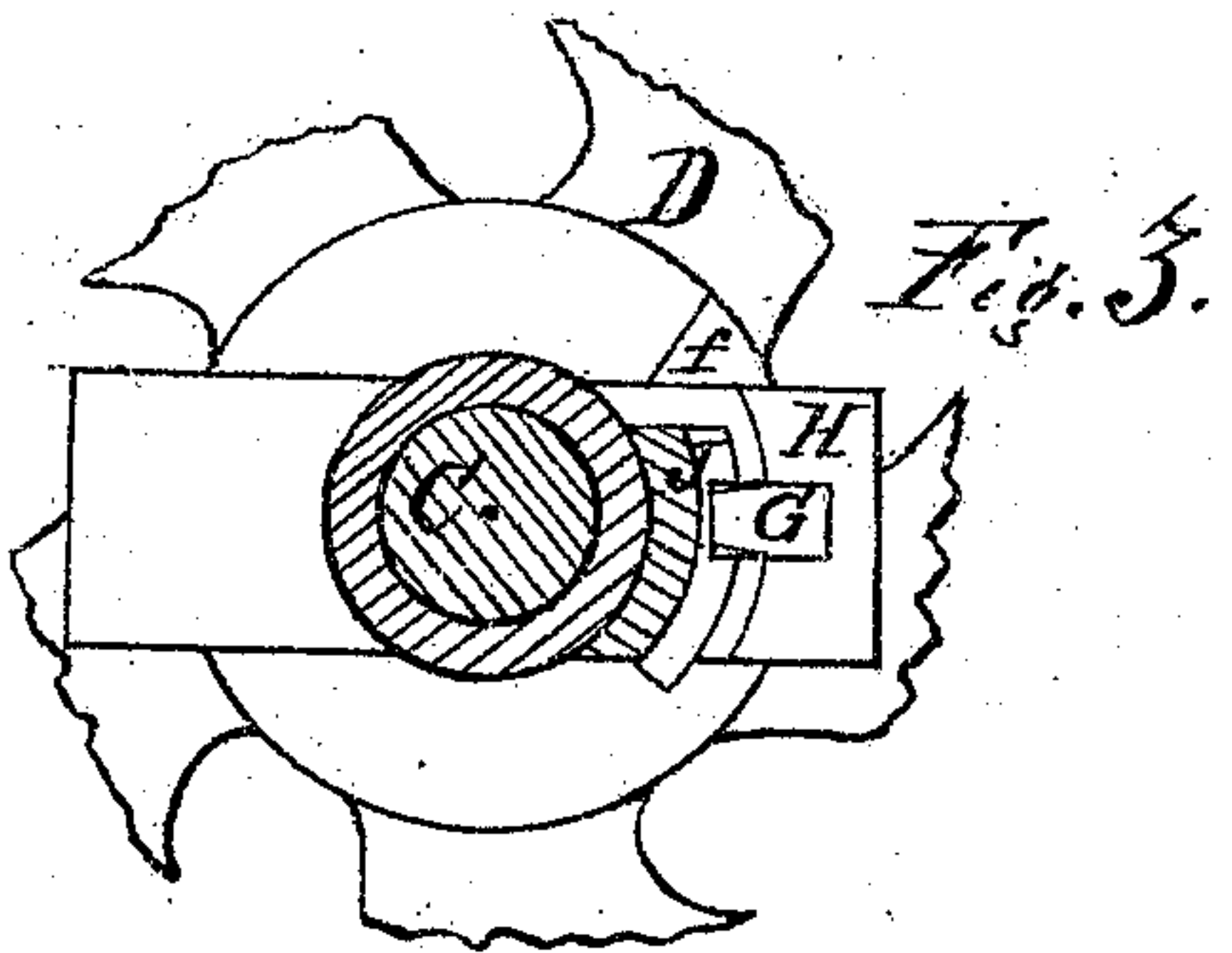


Fig. 3.

Sheet 2.2

Fig. 2.

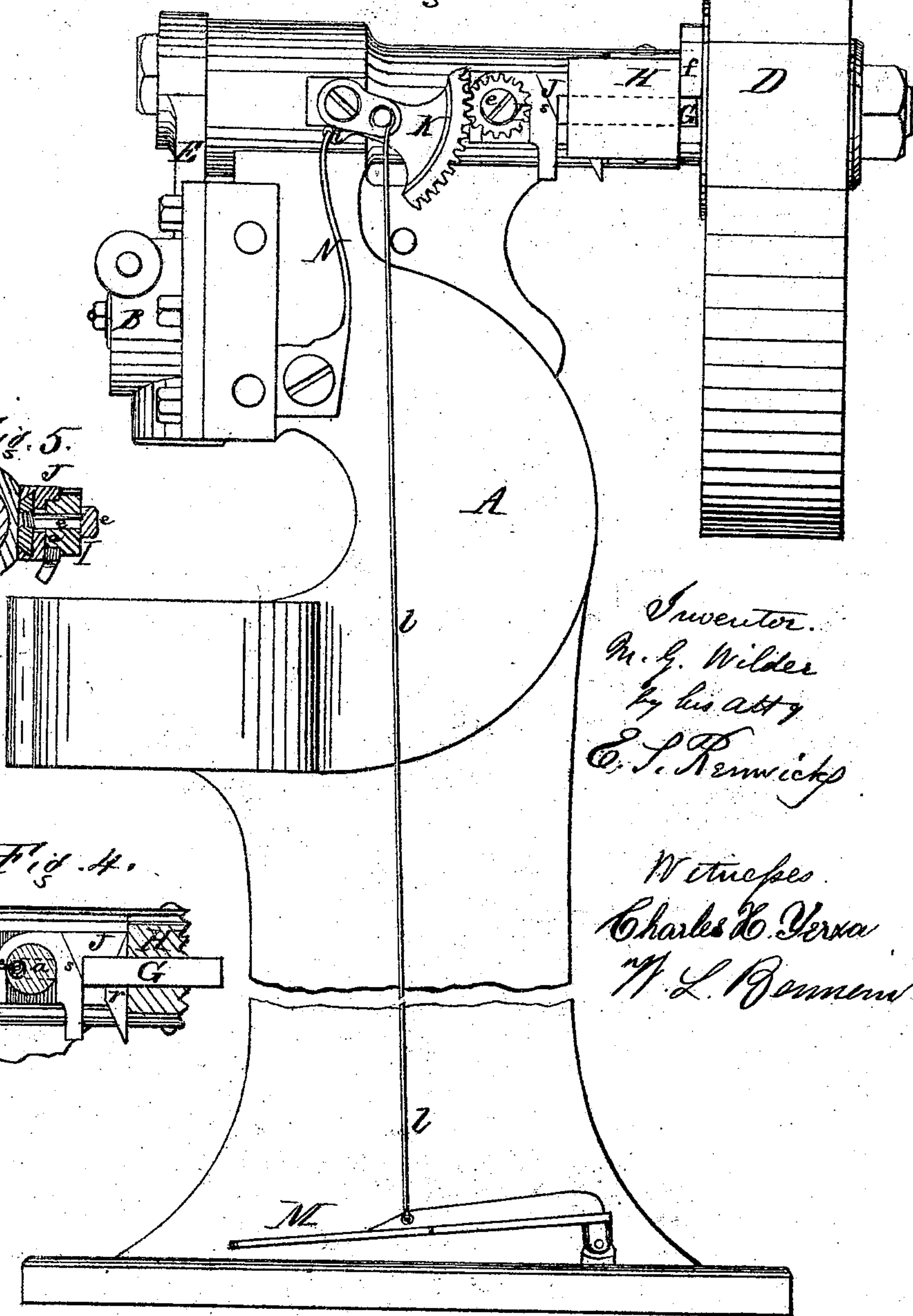


Fig. 5.

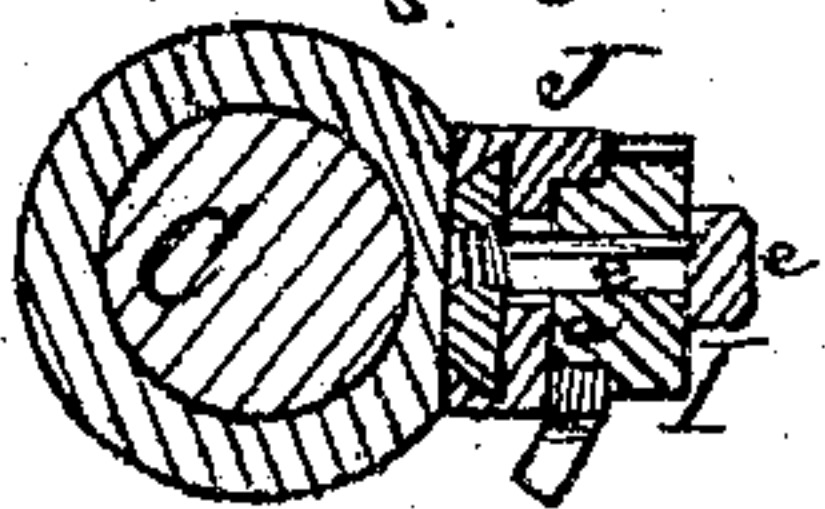
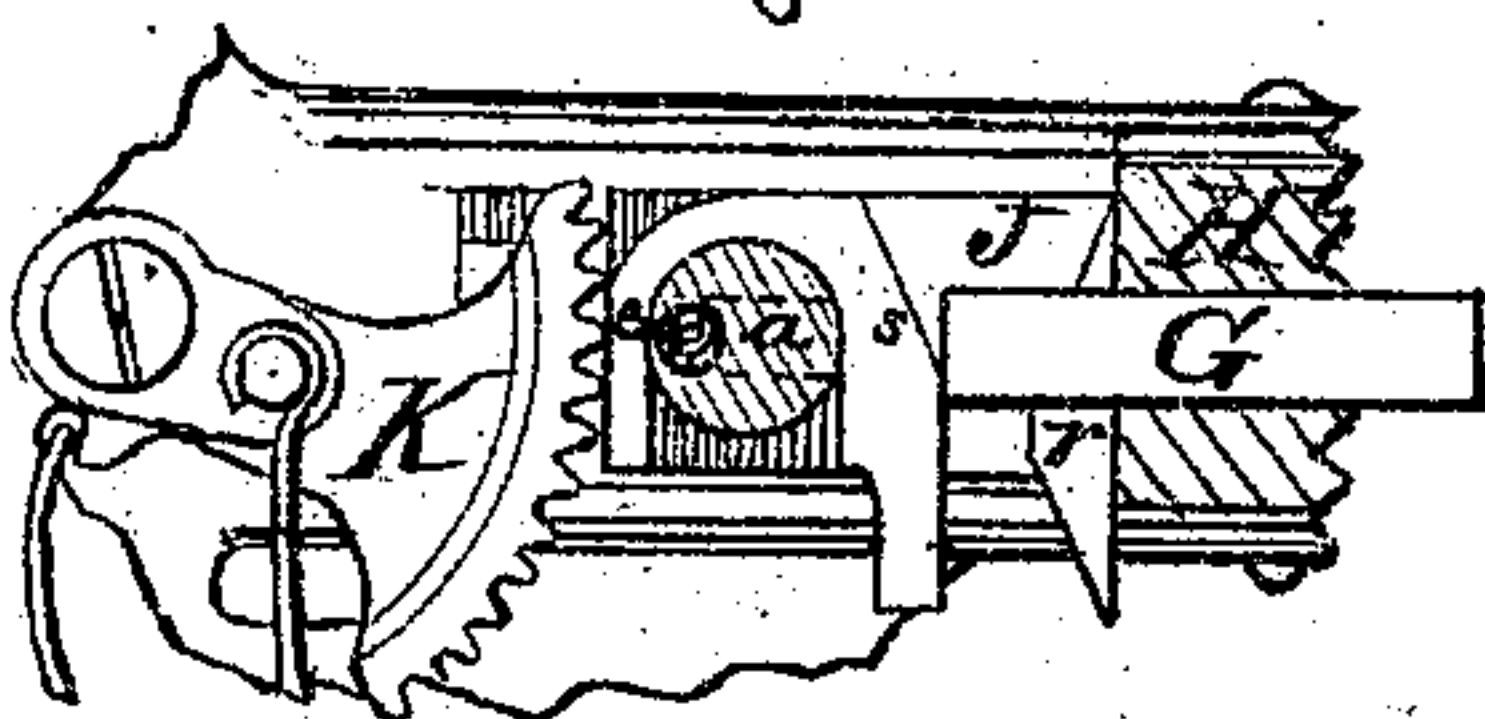


Fig. 4.



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UNITED STATES PATENT OFFICE.

MOSES G. WILDER, OF WEST MERIDEN, CONNECTICUT.

IMPROVEMENT IN POWER-PRESSES.

Specification forming part of Letters Patent No. 116,383, dated June 27, 1871.

To all whom it may concern:

Be it known that I, MOSES G. WILDER, of West Meriden, in the county of New Haven and State of Connecticut, have made an invention of a new and useful Improvement in Power-Presses for Punching and for other purposes; and that the following is a full, clear, and exact description and specification of the same.

The object of my invention is to enable the punch-slide to be rapidly and surely connected with and disconnected from the fly-wheel; and my invention for this purpose consists of certain combinations of mechanical instrumentalities which are specified at the close of this specification.

In order that my invention may be understood, I have represented in the accompanying drawing a power-press embodying my invention.

Figure 1 of said drawing represents a side view of said press. Fig. 2 represents a side view of the same, with the positions of some of the parts changed. Figs. 3, 4, and 5 represent views of some parts of the press detached from the residue.

The press proper does not materially differ from others in use, A being its main frame; B, the punch-slide; C, the fly-wheel shaft; D, the pulley fly-wheel; and E, the connecting-rod, connecting the punch-slide with the eccentric upon the fly-wheel shaft C. The fly-wheel D is constructed to revolve freely upon the fly-wheel shaft C, and, in order that the former may be connected with and disconnected from the punch-slide and the fly-wheel shaft, with which the punch-slide is permanently connected, a snug, *f*, is secured to the hub of the fly-wheel, and a sliding clutch-bolt, G, is arranged to slide in an arm, H, which is permanently secured to the fly-wheel shaft C. The clutch-bolt is arranged to slide longitudinally with the shaft, so that its end may be pushed into or withdrawn from the range of the snug *f*. In the former case the fly-wheel becomes connected with the fly-wheel shaft and punch-slide, so that the fly-wheel, in its revolution, turns the fly-wheel shaft and operates the punch-slide. In the latter case the fly-wheel is disconnected from the shaft, and the latter stops moving with the fly-wheel. The clutch-bolt is held in either position in which it may be placed by the frictional pressure of a spring, which is concealed in the arm H.

The movement of the clutch-bolt G is effected, at the will of the operator at the press, as follows: The end of the bolt furthest from the fly-wheel is gib-headed, and a movable cam-plate, J, fitted with inclined guides *r s*, is provided to operate upon this gib-head. The cam-plate J is arranged to slide upon the frame of the press toward and from the fly-wheel, and is perforated to embrace an eccentric, *a*, Fig. 4, which is constructed to turn upon a pivot, *e*. The eccentric has a pinion, I, secured to it, and a cog-segment, K, is pivoted to the frame of the press to actuate the pinion. The cog-segment is connected, by a rod, *l*, with a treadle, M, beneath, in convenient reach of the foot of the operator at the press; and is also fitted with a projection, *i*, upon which a spring, N, operates antagonistically to the treadle. The action of the spring N is to raise the segment K and thereby turn the pinion I and the eccentric to the positions in which the longest radius of the eccentric is furthest from the fly-wheel; and the clutch-bolt G is held in the position represented in Fig. 1, with its end out of range of the snug *f* of the fly-wheel; consequently, the fly-wheel is then disconnected from its shaft and from the punch-slide, and is free to revolve without the latter. On the other hand the depression of the treadle M by the foot depresses the segment K, turns the pinion, and also turns the eccentric *a* to the position represented at Fig. 4, with its longest radius toward the fly-wheel D, thereby moving the cam-plate J to the position represented at Figs. 2 and 4, during which movement the guide *s* is borne against the clutch-bolt G and the latter is thereby moved within the range of revolution of the snug *f* of the fly-wheel D, so that the snug engages with the bolt, thereby connecting the fly-wheel with the fly-wheel shaft and press-slide, and permitting the press-slide to operate. The operation of the press-slide will continue so long as the treadle is held depressed; but when the foot is removed from the treadle the spring N restores the cam-plate J to the position represented at Fig. 1; and as the gib-head of the clutch-bolt G is brought in contact with the inclined guide *a* the clutch-bolt is withdrawn from engagement with the snug of the fly-wheel, and the punch-slide (being thereby disconnected) ceases to operate.

The use of the invention is attended with a

very important practical advantage, viz.: that there is no danger of the press being accidentally started by the movement of the treadle during the time the dies are being adjusted; because, as the inclined guides can effect the engagement of the clutch-bolt with the snug during only a limited portion of revolution of the fly-wheel shaft, the turning of the fly-wheel shaft backward by hand until the clutch-bolt is out of the range of the guides renders it impossible for any movement of the treadle to put the press into operation. I prefer to adjust the parts of the press so that the punch-slide is at its lowest position when the fly-wheel shaft is turned about one-quarter of a revolution backward from the center of the guides, in which position the movement of the guides cannot effect the engagement of the clutch-bolt and snug. The shaft, with the clutch-bolt, may be readily turned by hand to this position for the adjustment of the dies; and, after that operation is completed, the shaft, with the clutch-bolt, may be turned back again until the gib-head of the clutch-bolt is between the guides, as in Fig. 2, when the punch is again ready to be thrown into operation by operating upon the treadle.

The machine above described may, of course, be varied by the substitution of a cam for the ec-

centric; and either instrument may, if desired, be connected with the treadle by a cord passing round a pulley secured to the cam or eccentric in place of by the pinion, segment, and rod. The clutch-bolt also may, if preferred, be carried by the fly-wheel, by being arranged to slide through a mortise in its hub; in which case the snug will be secured to the fly-wheel shaft, and the cam-plate will be arranged in the proper position to operate upon the gib-head of the clutch-bolt in its different position.

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

1. The combination of the shaft of the press, the sliding clutch-bolt, the clutch-bolt arm, the snug, and the movable cam-plate provided with the inclined guides, substantially as before set forth.

2. The combination of the snug, the clutch-bolt, the cam-plate provided with two inclined guides facing each other, the eccentric, and the treadle, as before set forth.

In witness whereof I have hereto set my hand this 26th day of October, A. D. 1870.

MOSES G. WILDER.

Witnesses:

CHAS. F. HARDWICK,

MILTON L. DORLAND.