

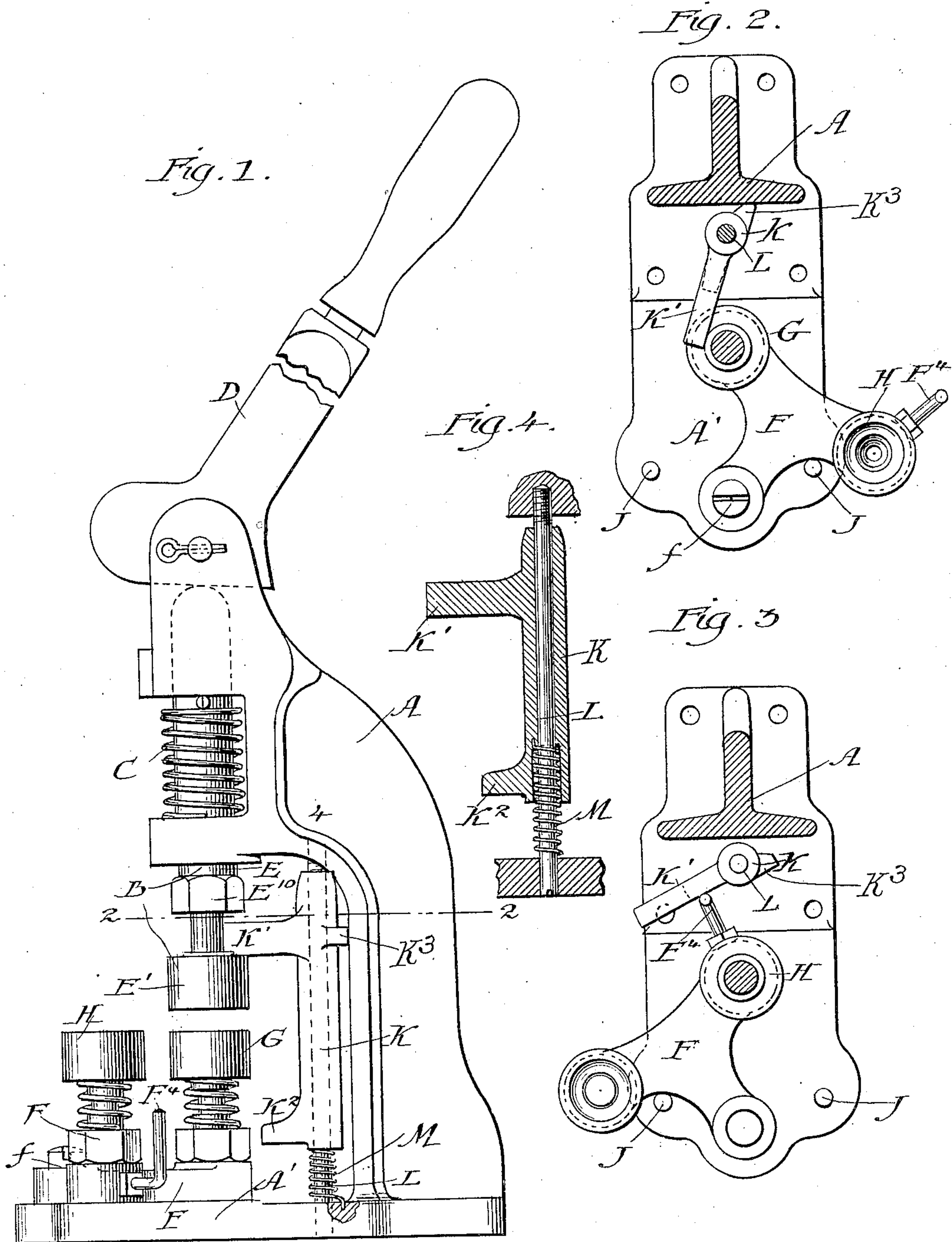
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J. G. BREITENSTEIN.

PRESS FOR BUTTON MAKING AND LIKE PURPOSES.

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Witnesses
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UNITED STATES PATENT OFFICE.

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INDEPENDENT BUTTON AND MACHINE COMPANY, OF CHICAGO,
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PRESS FOR BUTTON-MAKING AND LIKE PURPOSES.

No. 836,916.

Specification of Letters Patent.

Patented Nov. 27, 1906.

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To all whom it may concern:

Be it known that I, JULIUS G. BREITENSTEIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Presses for Button-Making and Like Purposes, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to the class of machines which are commonly in the form of a press having dies which cooperate by movement toward and from each other in successive processes, such as are required in making buttons composed of a plurality of elements which are assembled and clenched together in the processes performed by the dies.

The purpose of the invention is to provide improved means for causing one of the dies which has a yielding member to act as if said member were unyielding when cooperating with one of two opposed dies with which it is alternately brought into cooperation, while permitting it to act by the yielding of its yielding member when it cooperates with the other of the two opposed dies. It consists of the features of construction set out in the claims.

In the drawings, Figure 1 is a side elevation of this improved machine. Fig. 2 is a section at the line 2 2 on Fig. 1, showing the upper die, which has the yielding member in position for cooperating with the lower die with which it is designed to cooperate without the yielding of said member. Fig. 3 is a view similar to Fig. 2, showing the upper die in line with the other of the two lower dies. Fig. 4 is a detail section at the line 4 4 on Fig. 1.

The structure shown in the drawings comprises a press-standard A, having mounted in its upper part a vertically-reciprocating head B, normally upheld by a spring C and thrust downward for cooperation of the dies by a cam-lever D, whose action will be obvious from the form shown in Fig. 1. The upper die carried in the reciprocating head B comprises a fixed member E and a yielding member E'.

F is an oscillating carrier fulcrumed at *f* on the bed A' of the standard and carrying the two lower dies G and H, the range of oscillation of the carrier being such as to bring the

two dies into line, respectively, with the upper die at the two limits of such oscillation. Any suitable stops, as the pins J, encountered by the carrier at the two limits, respectively, of the oscillation of such carrier determine the position of the respective dies G and H for cooperation with the upper die.

On the fixed member E of the upper die there is a flange E¹⁰, which is conveniently formed by a nut, which serves as a means of securing the die to the reciprocating head B, (this being, however, merely incidental,) such flange being in position overhanging the yielding member E' of the die and constituting a stop limiting the upward yielding movement of said member. The interval between the flange and the said yielding member when the latter is at its lower position corresponds to the range of yielding movement.

K is a rock-shaft mounted vertically on the standard A back of the dies. Preferably this rock-shaft is tubular, constituting a sleeve, and is mounted for its rocking movement on a fixed vertical shaft L, whose lower and upper ends are engaged, respectively, with the bed and overhanging head portion of the standard. The rock-shaft K has an arm K' of suitable length to be swung against the side of the upper die and of suitable width vertically at its end to enter and occupy the interval between the flange E¹⁰ and the yielding member E' of said die. The tubular rock-shaft K has a range of vertical movement on its supporting rod or shaft L to permit it to move with the upper die in the reciprocating action of the latter, so that when the arm K' is engaged between the flange E¹⁰ and the yielding member E' of the die at the upper position of said die the downward movement of the die carries the vertical rock-shaft with it, and the presence of the end of the arm K' between the flange E¹⁰ and the yielding member E' prevents the yielding of the latter and causes the die to operate as if it were a single rigid element.

A spring M is coiled around a fixed shaft L of the rock-shaft, the latter having its cavity enlarged to form a recess or chamber for the spring at the lower end, and the upper end of the spring is also engaged with said rock-shaft, as seen in Fig. 4, the lower end of the spring being stepped on the bed and also en-

gaged with the latter. The spring thus operates to yieldingly uphold the rock-shaft and also to yieldingly resist its rocking or swinging action about the shaft L and tending to restore it to its elevated position and also to the position at which the arm K' rests against the side of the upper die. The rock-shaft K has near the lower end another lever-arm K², and the oscillating die-carrier F has an arm or finger F⁴, which encounters the lever-arm K² of the rock-shaft when the carrier is swung away from the position at which the die G is in line with the upper die, and by such encounter and in the further swinging movement of the carrier swings the rock-shaft in direction to carry the arm K' out from between the flange E¹⁰ and the yielding member E' of the upper die, and at the opposite limit of the oscillation of the carrier, being the position at which the die H is in line with the upper die or lever-arm or finger F⁴ of the carrier, stands at right angles to the lever-arm K² of the rock-shaft, and thus locks the shaft positively in the position to which it has thus been forced, the relation of the parts preventing any tendency of the spring M to react against the carrier to reverse its movement or displace it from its proper position for registering with the upper die. In this position, therefore, it will be seen that the yielding member of the upper die will be free to yield when that die is depressed for cooperation with the lower die H and that when the die-carrier is again swung back to its first position the arm K' of the rock-shaft will be restored to position between the flange E¹⁰ and the yielding member E' and insure the rigid action of the upper die, as already described.

In order to prevent the arm K' from swinging past the position of the upper die when the die is removed, as in changing dies, and so being left through oversight on the wrong side of the die when the latter is replaced, there is preferably provided a little lug K³, projecting from the back side of the rock-shaft K, which will collide with the standard A to limit the swing of the arm K', as will be easily understood from Fig. 2.

I claim—

1. In a machine for the purpose stated, in combination with a standard, a reciprocating die having a yielding member; a plurality of dies mounted for movement transverse to that of the reciprocating die; an arm extending transversely to the direction of reciprocation of the reciprocating die and mounted on the standard for movement with and also for movement transverse to that of said die and adapted to be interposed by such transverse movement in one direction between the yielding and the unyielding member of the latter die.

2. In a machine for the purpose stated, in combination with a standard, a reciprocating

die having a yielding and an unyielding member; a die-carrier and a plurality of dies mounted thereon, the carrier having movement transverse to that of the reciprocating die to bring the dies which it carries one by one into line with the reciprocating die for cooperation therewith; a rock-shaft having its bearings on the standard parallel with the path of reciprocation of the reciprocating die, mounted both for oscillating and for longitudinal movement with respect to its bearings on the standard, said rock-shaft having an arm which is adapted to be interposed by the oscillating movement of the rock-shaft between the yielding and the unyielding member of the reciprocating die.

3. In a machine for the purpose stated, in combination with a standard, a reciprocating die having a yielding and an unyielding member; a die-carrier mounted for movement transverse to that of the reciprocating die; two dies carried by such die-carrier adapted respectively at the two limits of the transverse movement of the carrier to stand in line with the reciprocating die for cooperation therewith; an arm extending transversely with respect to the direction of reciprocation of the reciprocating die and mounted on the standard for movement with and also for movement transverse to that of said die and adapted by transverse movement in one direction to enter between the yielding and the unyielding member of said die, and means by which the transverse movement of the die-carrier gives said arm transverse movement in one direction for entering between said members of the reciprocating die and in the other direction for withdrawing from between them.

4. In a machine for the purpose stated, in combination with a standard, a reciprocating die having a yielding and an unyielding member; a die-carrier having an oscillating movement transverse to that of the reciprocating die; two dies mounted on such carrier adapted respectively at the two limits of said oscillating movement to register with the reciprocating die; a rock-shaft mounted on the standard for movement parallel with and also for movement transverse to that of the reciprocating die, having an arm adapted by transverse movement in one direction to be interposed between the yielding and the unyielding member of the latter; means tending to hold said rock-shaft yieldingly at the limit of its transverse movement at which said arm is thus interposed and also at the limit of its longitudinal movement corresponding to the withdrawn position of the reciprocating die; an arm or finger of the oscillating carrier and a second lever-arm on the rock-shaft which cooperate in the movement of the carrier in one direction to rock the shaft for carrying the interposed arm out of said interposed position.

5. In a machine for the purpose stated, in combination with the standard; a reciprocating die mounted therein; a die-carrier mounted thereon for transverse movement and two dies carried thereby, the reciprocating die having a yielding and an unyielding member and adapted to cooperate with one of the dies of the carrier by the yielding of said member and to cooperate with the other without such yielding; a vertical rock-shaft mounted in the standard back of the dies; a spring which yieldingly upholds the rock-shaft and resists its rocking in one direction, the rock-shaft having a lever-arm adapted to be interposed between the yielding and the unyielding member of the reciprocating die at the position of the rock-shaft at which it is yieldingly held by the spring, the rock-shaft having a second lever-arm at the lower end and the carrier having a lever-arm or finger for cooperation with said lower arm of the rock-shaft to rock the shaft to carry its upper arm out of such interposed position by movement of the carrier in one direction and permit it to return by its movement in the opposite direction.

6. In a machine for the purpose stated, in combination with a standard, comprising a bed and a head overhanging the bed, a reciprocating die mounted in the head; a die-carrier mounted on the bed with a range of transverse movement; two dies mounted on the carrier adapted at the respective limits of such movement to register with the reciprocating die, the latter having a yielding and an unyielding member; a vertical shaft fixed in the standard back of the dies; a rock-shaft sleeved on said fixed shaft with range of

vertical movement thereon; a spring which tends to uphold the sleeved rock-shaft and also to yieldingly resist its rocking movement in one direction, said rock-shaft having a lever-arm adapted to be interposed between the yielding and the unyielding member of the reciprocating die at the limit of the rocking movement of the sleeved shaft at which it is yieldingly held by the spring, said rock-shaft having a second lower lever-arm, the carrier having also a lever-arm or finger adapted to encounter said lower lever-arm of the rock-shaft in one movement of the carrier for rocking the shaft to carry the upper arm out of said interposed position.

7. In a machine for the purpose stated, in combination with a standard, a reciprocating die having a yielding member; a plurality of dies mounted for movement transverse to that of the reciprocating die; an arm mounted on the standard for movement with and also for movement transverse to that of the reciprocating die and adapted to be interposed by such transverse movement in one direction between the yielding and the unyielding member of the latter die, and means independent of the presence of the reciprocating die for preventing said arm from passing by the operative position of said die.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Chicago, Illinois, this 9th day of November, 1905.

JULIUS G. BREITENSTEIN.

In presence of—

CHAS. S. BURTON,
J. S. ABBOTT.