M. MENKIN.

BUTTON DIE.

APPLICATION FILED AUG. 31, 1914.

1,197,384.

Patented Sept. 5, 1916.

2 SHEETS—SHEET 1.

Fig: 1.

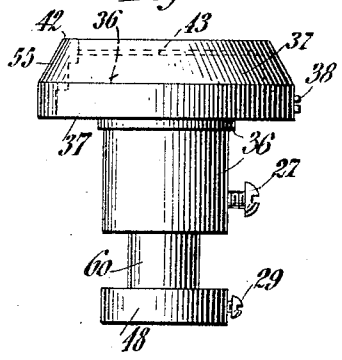



Fig: 2.

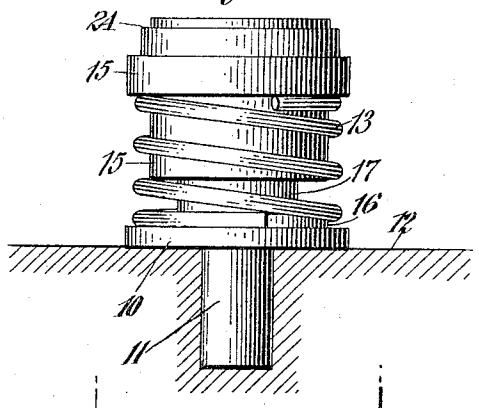



Fig: 3.

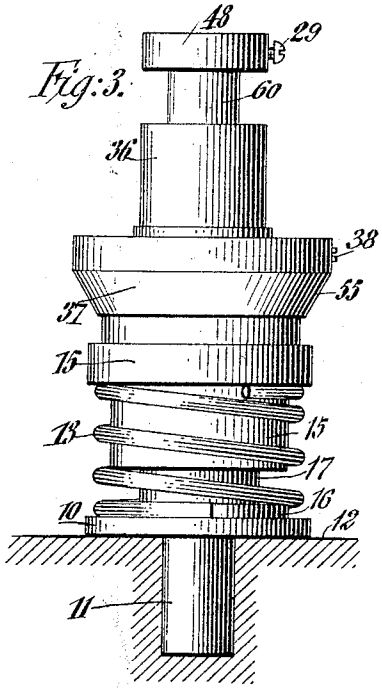
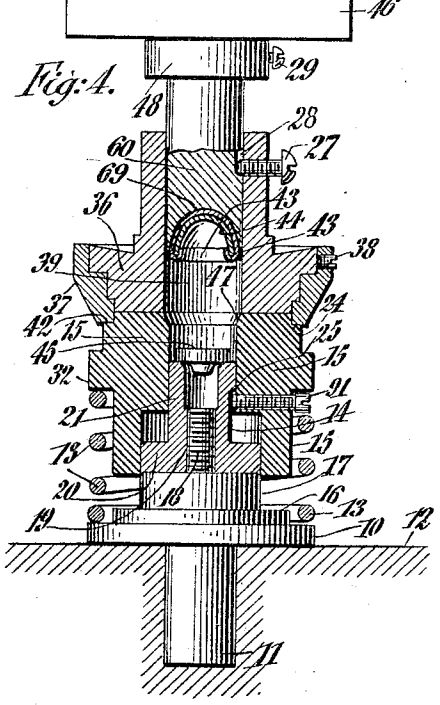



Fig: 4.




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2 SHEETS—SHEET 2.

Fig: 5.

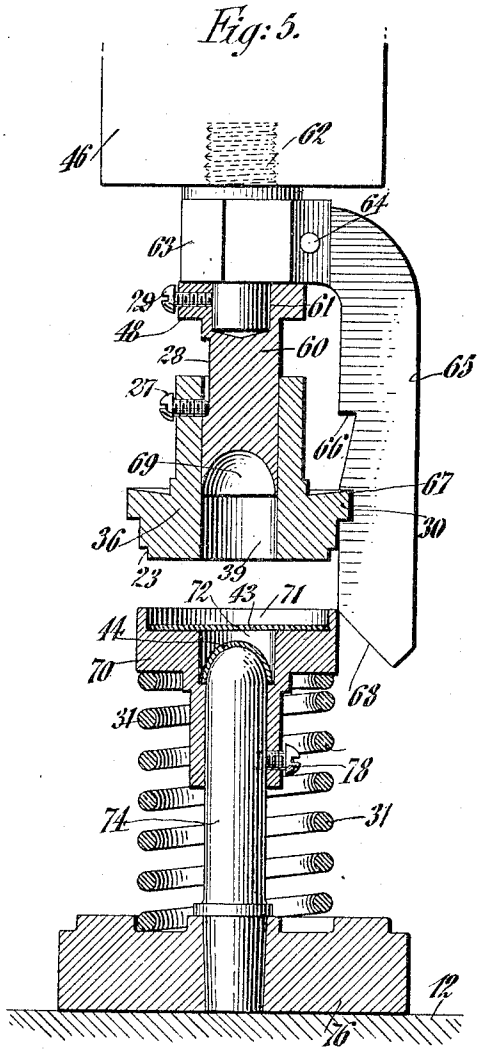



Fig: 6.

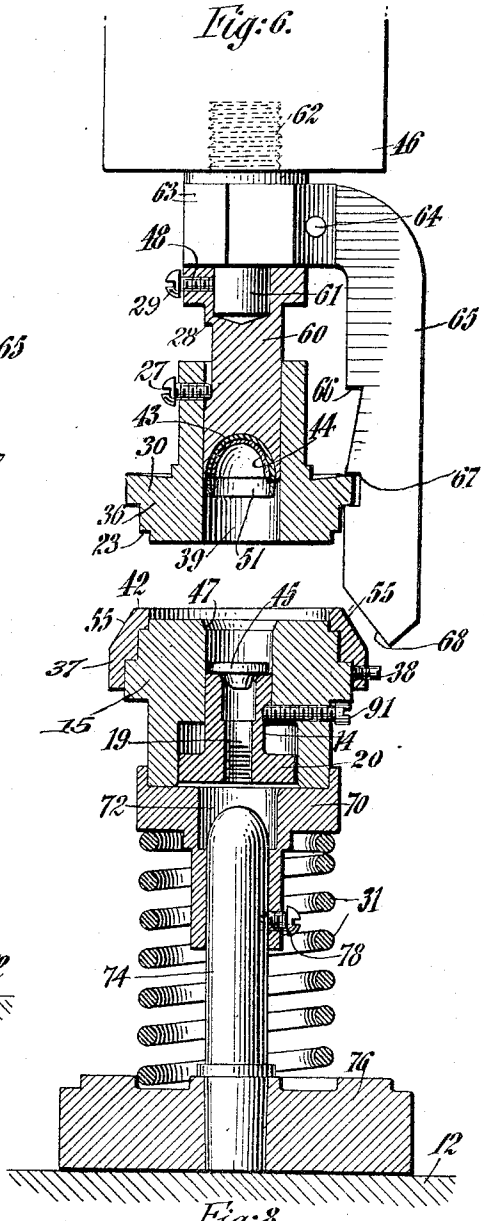



Fig: 7.

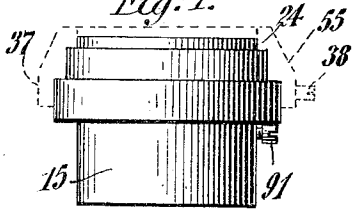
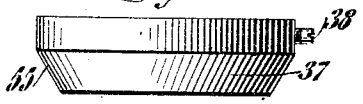



Fig: 8.




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# UNITED STATES PATENT OFFICE.

MAX MENKIN, OF NEW YORK, N. Y.

## BUTTON-DIE.

1,197,384. Specification of Letters Patent. Patented Sept. 5, 1916.

Application filed August 31, 1914. Serial No. 859,444.

*To all whom it may concern:*

Be it known that I, MAX MENKIN, a subject of the Czar of Russia, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Button-Dies, of which the following is a specification.

This invention relates to dies for making cloth-covered buttons of the well-known type in which the body of the button comprises a hemispherical or other shell of sheet-metal over which the cloth is stretched, and a tuft, so-called, composed of a metal disk and an exposed wad of cloth to receive the securing thread, which tuft is inserted into and closes the open end of the shell, at the back of the button, and at the same time secures the cloth thereto, said shell being by the dies bent at its edge into firm engagement with the "tuft." In place of the "tuft," an all-metal "shank" is sometimes employed, having holes for receiving the button-thread. The invention is equally applicable to both forms of button. In the manufacture of these buttons two kinds of dies were, in general, employed, namely a die of simple form known as the "two-part" die, and a die of more complicated and expensive form, known as the "three-part" die. When, for example, at the beginning of a season a button-maker was not sure that a particular style of button would be adopted by his customers, or, when he had only small quantities to make, and plenty of time in which to make them, he would purchase from the die-maker a "two-part" die, because of the lower initial cost of such a die, the cost thereof being approximately one-third the cost of the "three-part" die. In case the style was adopted, however, and it then became necessary to make larger quantities of the buttons, and to make them more rapidly, and of better quality than was possible with the two-part die, he was then compelled to purchase the "three-part" die. The "two-part" die in such case became of no use to the button-maker, was placed entirely out of use, and its cost was a loss. To button-makers having a considerable business, the numbers of such discarded dies, of different sizes and styles, was large, even in a single season, and the accumulated discarded dies of several seasons represented an expense of hundreds of dollars.

The object of the present invention is to so change the form of the parts of the "two-part" die that that die need not be discarded when the change is made from the "two-part" to the "three-part" die, but the parts of the "two-part" die are utilized as parts of the "three-part" die, in place of parts of that die which would otherwise have to be purchased. The cost of the "three-part" die is thus materially reduced; and the "two-part" die, and the capital which it represents, is kept employed.

The particular changes in the construction of the "two-part" die whereby this result is attained, will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a side-view of the upper member of the new two-part die, Fig. 2 is a side-view of the lower member thereof, Fig. 3 shows the two parts in position before operation, Fig. 4 is a vertical central section of Fig. 3, Fig. 5 is a vertical central section of a three-part die having as parts thereof one of the members of the new two-part die, arranged for one of the operations carried on in the three-part die, Fig. 6 is a vertical central section of the three-part die having as parts thereof both members of the new two-part die, and Figs. 7 and 8 are side-views of portions of the two-part die, which are employed also in the three-part die.

Similar reference numerals indicate corresponding parts in all the figures.

The lower member of the new two-part die comprises a base 10 having a central pillar 11 by which it may be positioned upon the bed 12 of the press. A tuft-holder 20 is provided with a threaded bore 19 and secured by a screw 18 to the base. A clamping-block 15 is provided, which is slidable vertically on the upper, reduced portion 21 of the tuft-holder and on the lower portion of the same and on a cylindrical extension 17 of the base, which is of the same diameter as the lower portion of the tuft-holder 20. A screw 91 is threaded in the clamping-block and enters the path of the tuft-holder at a flattened part 14 of the same. The screw does not bear against said part 14 but permits free vertical movement for a limited distance and prevents free rotation of the tuft-holder, so that the screw 18 may be readily screwed in or out. The screw 91 prevents the tuft-holder from separation from the clamping-block, by engaging the upper overhanging portion 25 at the top of

the flat 14, when the tuft-holder is in lower position, as seen in Fig. 4. A helical compression spring 13 is interposed between a shoulder 32 on the clamping-block, and the base 10, and retains the parts in the position shown in Fig. 4.

The upper member of the new two-part die comprises a shell-carrier 36, having therein a follower 60, which is retained by a screw 27 entering a flat 28 of the follower. The shell-carrier 36 and the follower 60 carried thereby constitute a former. The lower end of the follower is formed as a hemispherical seat 69, or is otherwise shaped, to correspond with the shape of the button. At its outer end the follower is provided with a socket to receive a stub shaft 61 at the head of the three-part die (see Figs. 5 and 6) and with a set-screw 29 for securing the follower thereto. A combined centering and trip-ring 37 is secured on the enlarged part of the shell-carrier 36, and projects vertically beyond the same and enters at its projecting portion 42 a corresponding annular recess 24 of the clamping-block, when the parts are superposed for operation as shown in Fig. 4. A set-screw 38 frictionally secures the ring 37 on the shell-carrier 36, and permits its ready removal therefrom for use in the "three-part" die.

The "two-part" die thus made is employed in the following manner: The upper part is inserted as shown in Fig. 1, and while in such position the operator places a circular piece of cloth 43, which is to form the covering of the button, upon the shell-carrier 36, and within the upwardly-projecting annular rim 42 of the ring 37, whereby the cloth is centered. A shell 44 is now placed upon the cloth 43, and by pressure on the shell both the shell and the cloth are forced into the bore 39 of the shell-carrier, the cloth being thereby tightly drawn over the shell. The outer edge portions of the cloth project beyond the edge of the shell, and are tucked by the operator by means of any suitable instrument, into the shell. A tuft 45 is then placed upon the upper end of the tuft-holder 20, and the upper member is turned over and placed upon the lower member of the die, all the parts then having the positions shown in Fig. 4. The head 46 of the press now descends, forcing downwardly the follower 60 until the shell is brought against the beveled clamping-face 47 of the block 15. The edge of the shell is not at this time bent inwardly to any great extent by said face 47, but the shell is sufficiently strong so that continued downward pressure serves, through the shell, to move the block 15 downward against the power of spring 13. The downward movement continues until the edge of the shell arrives opposite the tuft which is supported on the tuft-holder 20. The edge of the shell surrounds the tuft, and the tuft thereby fills and closes the opening of the shell, and the loose portions of the cloth therein are securely inclosed. The clamping-block has now reached its limit of downward movement, and rests upon a step 16 of the base. Downward movement of the follower 60 is then continued, which has the result of forcing the shell downward a short additional distance, whereby its edge is turned inwardly by the beveled clamping-face 47, into tight engagement with the tuft. Further downward movement is limited by abutment of the outer enlarged end-portion 48 of the follower with the shell-carrier 36. The head 46 of the press is then permitted to rise, the upper member is lifted from the lower member of the die, and the button is found resting on the lower member.

The three-part die comprises a lower member which is entirely in addition to the two-part die, and a latch-head forming a part of the upper member, which is also in addition to the two-part die. With these parts, and the two-part die, the new three-part die is made.

The lower member of the three-part die comprises a base-block 76 which may be secured by any suitable clamping means to the bed of the press. A post 74 rises from the base-block 76. On the upper part of the post is slidably mounted a cup-shaped rest 70, which is sustained by a spring 31 between the same and the base-block 76, and which is guided and limited in vertical movement by a screw 78 entering a groove of the post. The latch-head comprises a block 63 having at its top a screw 62 for attachment to the sliding head 46 of the press, and at its bottom the stub shaft 61 previously mentioned, to which the follower 60 is secured. The latch 65 is pivoted at 64 to the block 63, and depends therefrom into engagement with the flange 30 of the shell-carrier 36, as shown in Fig. 5, the ring 37 having been first removed from the shell-carrier so as to expose the flange.

The base 10 of the lower member of the two-part die is unscrewed from the tuft-carrier 20, and said base and the spring 13 are removed, leaving only the clamping block with the tuft-carrier therein. The ring 37 is now applied to the clamping-block 15.

The parts being in the position shown in Fig. 5, a shell 44 is placed, edge down, in the socket 72 provided for it in the rest 70, and inclosing the upper end of the post 74. A circular piece of covering-cloth 43 is placed on the rest 70, above the shell, and is centered and retained by the upwardly-projecting rim 71 of the rest. Pressure is now applied, which causes the upper member of the die to descend. The latch remains in engagement at its notch 67 with the flange

30 and prevents upward movement of the member 36. Continued downward movement causes the forcing of the shell and the cloth into the shell-carrier 36, by the post 74, the cloth being by this operation drawn tightly over the shell. Upon permitting the upper member of the die to rise, the shell and the cloth thereon are retained in the part 36, as seen in Fig. 6.

The intermediate member of the die, which is constituted by the parts 15, 20 and 37 of the two-part die, is now placed upon the rest 70 as seen in Fig. 6, and a tuft placed upon the tuft-carrier. The head 46 of the press descends, and a beveled face 68 at the lower end of the latch 65 rides upon the correspondingly beveled face 55 of the ring 37, whereby the latch is swung outward, out of engagement with the flange 30 of the shell-carrier. For permitting the latch to engage continuously the ring 37 and be controlled thereby, an inclined recess 66 is provided in which the flange 30 moves in its upward travel without engaging the latch. The rim 42 of the ring 37 enters a corresponding annular recess 23 in the shell-carrier 36, and thereby holds the parts centered during descent of the upper member. The intermediate member being pressed downwardly, the tuft-carrier 20 is brought into contact with the upper end of post 74, whereby its further descent is arrested. The other parts descend against the force of spring 31, and thereby the shell and tuft are brought together at the clamping-face 47 of the clamping-block. The tuft turns inwardly into the shell the depending portion 51 of the cloth. By further pressure the shell is clamped to the tuft, as previously described in relation to the two-part die. The upper member is then permitted to rise, the lower and intermediate members are lifted by the spring 31 to original position, and the button is found supported on the intermediate member. The intermediate member may then be removed from the rest 70, and the described operation repeated for making another button.

The upper member of the old form of two-part die had no separable ring 37. The follower had no means of attachment to any part of the three-part die, and was finished at the top only with a flat head against which the slide 46 of the press contacted in its descent. Such an upper member was impossible of use in a three-part die because its outer rim 42 was not of the size, or in the location, to coöperate with the latch thereof, and because, had it so been, there were no means for attaching the follower to the head of the press.

The lower member of the old two-part die had its base and tuft-carrier integral. Its upper portion or clamping-block had no outer face adapted to coöperate with the lower end of the latch for releasing the latter.

It will therefore be seen that the parts which the button-maker was compelled to buy when changing from the two-part to the three-part die comprised the entire three-part die, namely the lower member, the upper member, and an intermediate member. The intermediate member consisted of a clamping-block having its upper part beveled to coöperate with the latch, and located within said block was the tuft-carrier. This clamping-block, owing to the care necessary in its manufacture, represented one of the chief items of expense which is now avoided by using the clamping block of the lower member of the two-part die, and the ring 37 in place thereof. When now changing from the two-part to the three-part die, the button-maker therefore need purchase only the lower member of the three-part die, and the latch and its screw-head, while the more expensive parts are furnished by the two-part die. The cost of the die is thereby greatly reduced, and the two-part die is kept in use.

The convertibility of the die is not only of advantage when changing from the two-part to the three-part die, but is also valuable in that it permits at any time a use of the parts as a two-part die. Thus, if after the cessation of the demand for buttons of a particular style there comes a renewed demand for a small lot of buttons of that style, and all the three-part dies of the button-maker are in use on buttons of other styles, the required quantity may be made up by using the parts as a two-part die.

The invention has been described with reference to a button and a die of circular form. It is obvious, however, that the invention is equally applicable to dies for example of elliptical, triangular, or other shapes, as commonly found in the art, and is in no sense limited to a circular button or die, these having been employed herein merely for convenience and as one application of the invention.

One embodiment only of the invention has been described, and changes may be made therein without departing from the spirit of the invention as set forth in the following claims:

I claim:

1. A die for making covered buttons, comprising a base, a former, a member adapted to hold a tuft, a member removably mounted on said base, detachable alining means for alining the said former and removably mounted member, adapted to be attached to either the upper or the lower members to guide the action of said former and removably mounted member.

2. A die for making covered buttons, comprising a base, a member adapted to hold a

tuft, a former provided with an annular recess, a member removably mounted on said base and provided with a similar recess, spring means disposed between said removably mounted member and the base, detachable alining means for alining said former and removably mounted member, means on the said removably mounted member adapted with the said recessed portion thereof to be engaged by the said detachable alining member, and like means on the said former, this said annular recess of the former adapted to be engaged by the said detachable alining means of the removably mounted member.

3. A die for making covered buttons, comprising a base, a spring pressed slidable member on said base, a former, a member adapted to hold a tuft, a member removably mounted on said base, detachable alining means for alining said former and removably mounted member, means on the said removably mounted member adapted to be engaged by said detachable alining means, like means on the said upper member, and means for detachably securing the said alining means to the said removably mounted member.

4. A die for making covered buttons, comprising a base, a spring pressed slidable member on said base, a lower member having a flange and a recessed portion, and adapted to be seated on said slidable member, an upper member provided with a like flange and recessed portion, a slidable member in said upper member, a latch on said slidable member adapted to engage the said flange of said upper member, a detachable centering device for alining said upper and lower members engaging the flange and recessed portion of said lower member and adapted to trip the said latch, means for securing said centering device to the said lower member in position to engage the recess of said upper member.

5. A die for making covered buttons, comprising a base, a post on said base, a slidable rest provided with a socket for the shell of a button, mounted on said post, a spring between the base and the rest, normally retaining the latter in raised position, a centering rim for positioning the cloth over the said shell, an upper member provided with a flange, a recessed portion adapted to engage the said rim, and a socket adapted to receive the said cloth and shell, a slidable follower in said upper member, a latch on said follower adapted to engage the said flange and to lock the said follower in respect to the said upper member, a lower member provided with a flange and a recessed portion corresponding to the said flange and recessed portion of the said upper member, and adapted to be seated on the said rest and centered by the said rim, a tuft carrier slidably mounted in said lower member, a detachable centering member for alining said upper and lower members, engaging the said flange and recessed portion of the said lower member, and adapted to trip the said latch upon downward movement of the said upper member, means for securing said centering member to said lower member in position to engage the recess of the upper member, and means on the upper end of said follower adapted to be engaged to the sliding head of a press.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

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Witnesses:
F. Hogg,
Jos. Bisbano.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**