

No. 688,000.

Patented Dec. 3, 1901.

J. MAITLAND & W. J. BEATTIE.
MACHINE FOR FOLDING COLLAR BLANKS, &c.

(Application filed June 16, 1900.)

(No Model.)

Fig. 1.

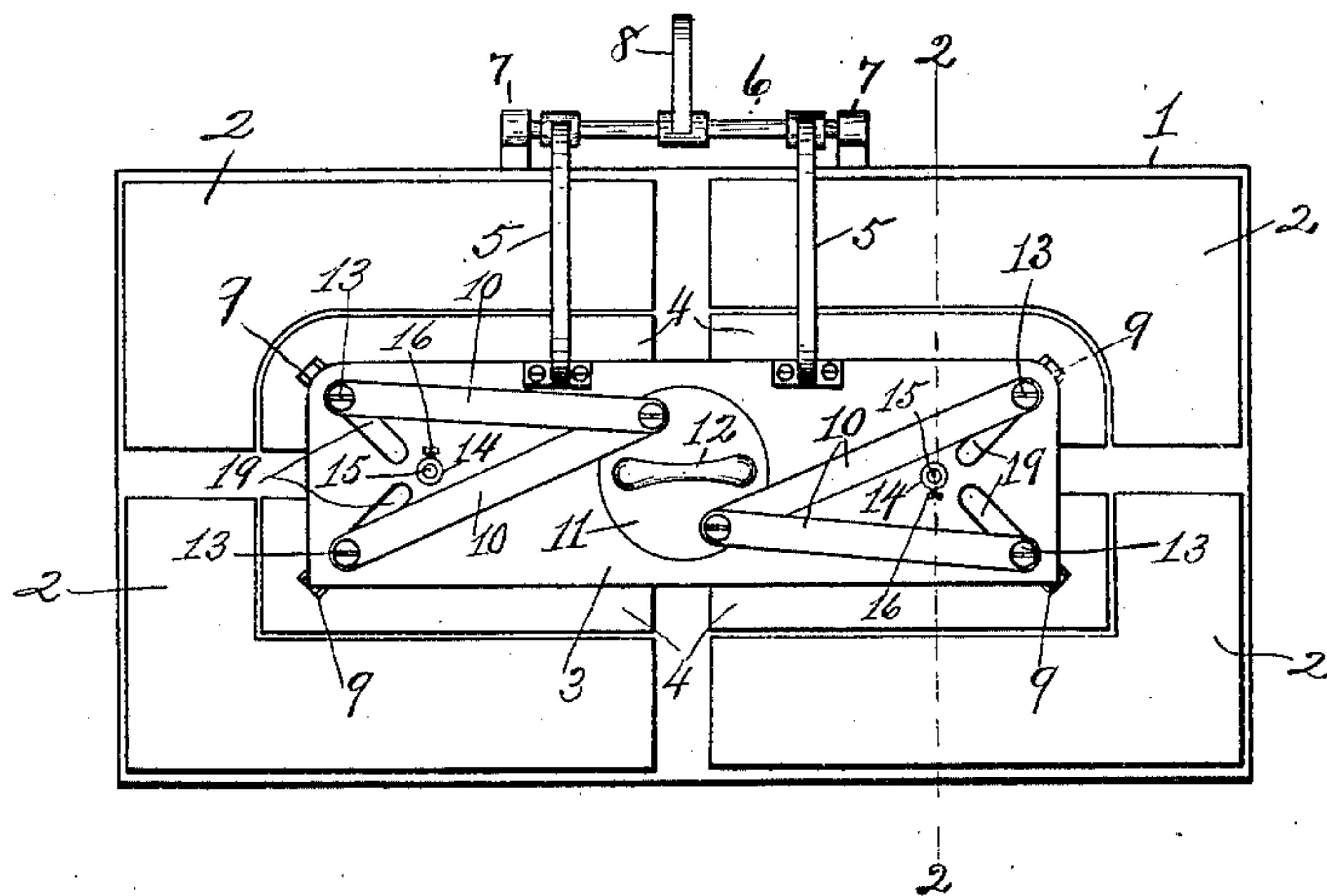
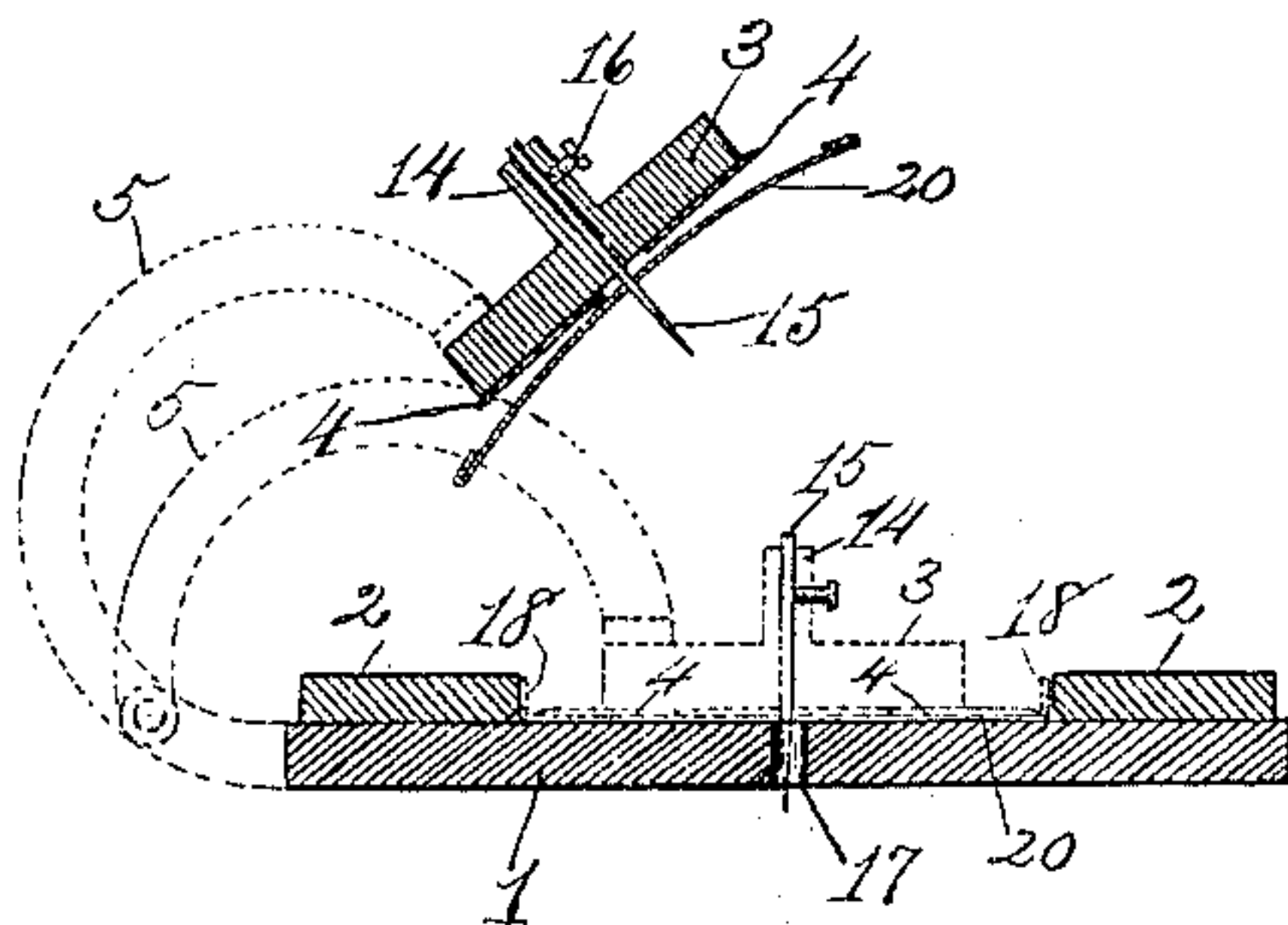


Fig. 2.



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JOHN MAITLAND AND WALTER JOHN BEATTIE, OF COHOES, NEW YORK.

MACHINE FOR FOLDING COLLAR-BLANKS, &c.

SPECIFICATION forming part of Letters Patent No. 688,000, dated December 3, 1901.

Application filed June 16, 1900. Serial No. 20,510. (No model.)

To all whom it may concern:

Be it known that we, JOHN MAITLAND and WALTER JOHN BEATTIE, citizens of the United States, residing at Cohoes, county of Albany, and State of New York, have invented certain new and useful Improvements in Folding-Machines, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in both figures.

Figure 1 of the drawings is a top plan view of the improved folding-machine. Fig. 2 is a vertical cross-section of the same, taken on the broken line 2 2 in Fig. 1.

The object of this invention is to provide means for automatically raising the folded blanks from the bed of a folding-machine having a contractible and expansible former after the blanks have been folded and the former contracted and withdrawn from the fold.

The invention is applicable to any folding-machine having a former contractible and expansible on one or more sides.

Referring to the drawings, 1 is the bed of the machine, adapted to support the blank to be folded, and 2 the folders mounted upon the bed and adapted to cooperate with a former movable toward and from the bed, all in the usual manner, to fold a blank of fabric, as in the manufacture of collars, cuffs, and the like.

The former comprises a former-block 3 and a plurality of former-plates 4, movably mounted upon the under side of the block. The former may be fixed to a frame 5, fixed upon the shaft 6, having bearings in the brackets 7, projecting from the bed of the machine, whereby the former may be moved toward and from the bed in the path of an arc of a circle. Movements may be imparted to the former-supporting frame by means of the arm 8, fixed upon the shaft 6, which arm, if desired, may be connected with a treadle (not shown) or operated by hand or in any known manner.

The former may be of any known construction, expansible and contractible on one or more sides, the construction shown being expansible and contractible on all four sides and the respective former-plates 4 being connected to slide-blocks 9, respectively movable in slideways in the under side of the former-block, which slide-blocks are connected by means of the links 10 with the crank-disk 11, rotatively supported upon the former-block and provided with the operating-handle 12. One end of each link 10 is connected with a slide-block 9 by a screw 13, passed down through a slot 19, formed in the former-block. By imparting to the crank-disk 11 reciprocating partial rotary movements the former can be expanded and contracted on all sides simultaneously.

The folders 2 may be of any known form and operated in any known manner.

As a means for raising from the bed the folded blanks after the former has been contracted and withdrawn from the folds of the blanks, the former is provided with blank-penetrating mechanism adapted to engage and penetrate the blank when the former is depressed upon the same preliminary to the folding operation, whereby the adhesion of the fabric of the blank to the penetrating mechanism will cause the blank to be raised from the bed with the former after the former has been contracted and the blank left wholly unsupported by the former-plates. Any known form of penetrating mechanism may be employed and supported upon the former in any known manner.

The former-block is shown provided with two sockets 14, located near its opposite ends, in which sockets are inserted pins 15, which project through the former-block and from the face of the former, each socket being provided with a set-screw 16, adapted to securely hold the pin in position. The bed is preferably provided with a recess 17 in the path of and adapted to receive each pin. The pins 15 may be ordinary steel needles, if desired, the construction shown permitting the pins to be easily and quickly replaced if broken.

The operation of the machine is as follows: The former being raised from the bed, as to the position shown in Fig. 2, a fabric blank to

be folded is placed upon the opening formed by the folders, and the former is depressed upon the blank, forcing the same down upon the bed and forcing the pins 15 to penetrate the fabric of the blank and enter the respective recesses 17, and this operation of depressing the folder upon the blank causes the edges of the blank which overlap the inner edges of the folders to be upturned to the position indicated by dotted lines 18 in Fig. 2. The former being expanded, the folders are moved inwardly in the usual manner to inturn said upturned edges of the blank over upon the former-plates, thereby causing the blank to partake of the shape of the expanded former. The blank having been thus folded, the former is contracted in the usual manner to withdraw the former-plates from the folded edges of the blank, and the folders being withdrawn also from said folded edges of the blank the former is raised from the position indicated by dotted lines in Fig. 2 to that shown by solid lines in said figure, carrying with it the folded blank 20, which adheres with considerable force to the penetrating-pins 15. It has been found by experiment that sufficient adhesion to raise the blank can be secured between the ordinary fabric employed in the manufacture of collars, cuffs, and the like and a penetrating-pin of a diameter so small as to afford no injury whatever to the fabric when forced through the same. Any desired number of

pins may be employed, a single pin being sufficient in many cases.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a folding-machine, the combination with a recessed bed, of a former movable toward and from the bed, and expansible and contractible on one or more sides; and a blank-penetrating pin projecting from the former and adapted to enter the recess in the bed, substantially as described.

2. In a folding-machine the combination with a recessed bed; and folders; of a former movable toward and from the bed and comprising a former-plate-supporting block and former-plates movably supported upon said block; means for moving said former-plates to expand and contract the former; means enabling the former to be moved toward and from the bed; and a blank-penetrating pin mounted upon the former-block and projecting from the face of the former in position to enter the recess in the bed, substantially as described.

In testimony whereof we have hereunto set our hands this 9th day of June, 1900.

JOHN MAITLAND.

WALTER JOHN BEATTIE.

Witnesses:

GEO. A. MOSHER,

FRANK C. CURTIS.