

M. P. Dorroh, Collar Machine.

No. 44,615.

Patented Oct. 11. 1864.

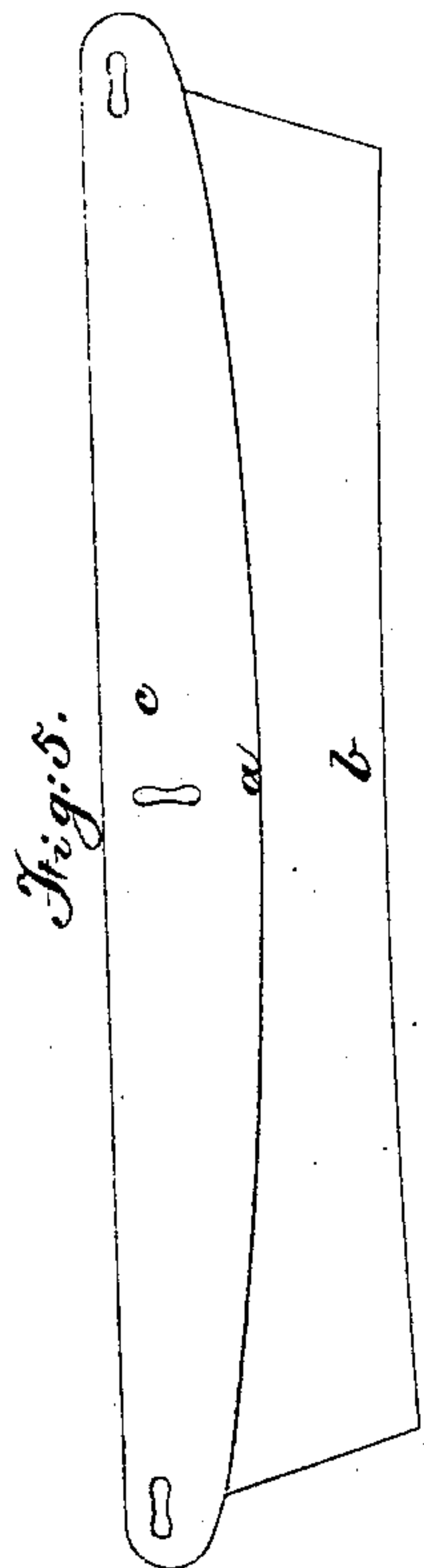


Fig: 3.

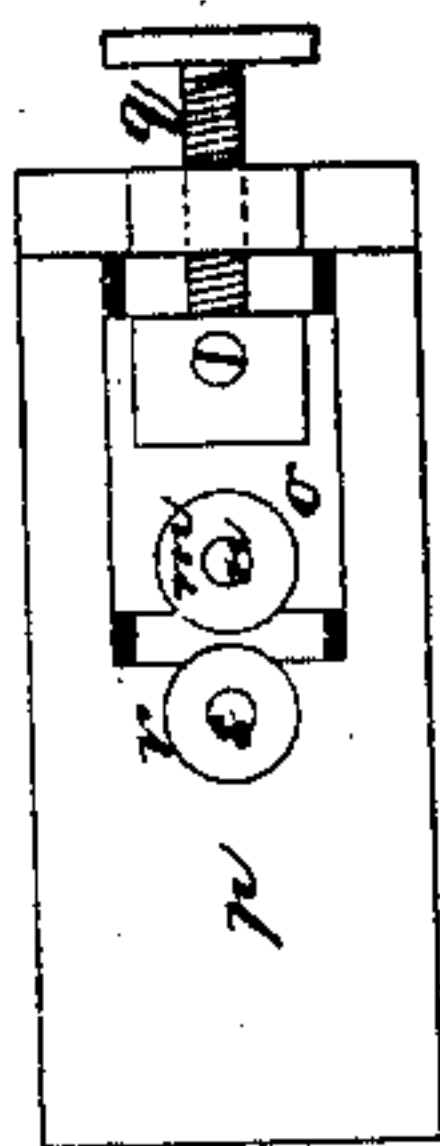


Fig: 4.

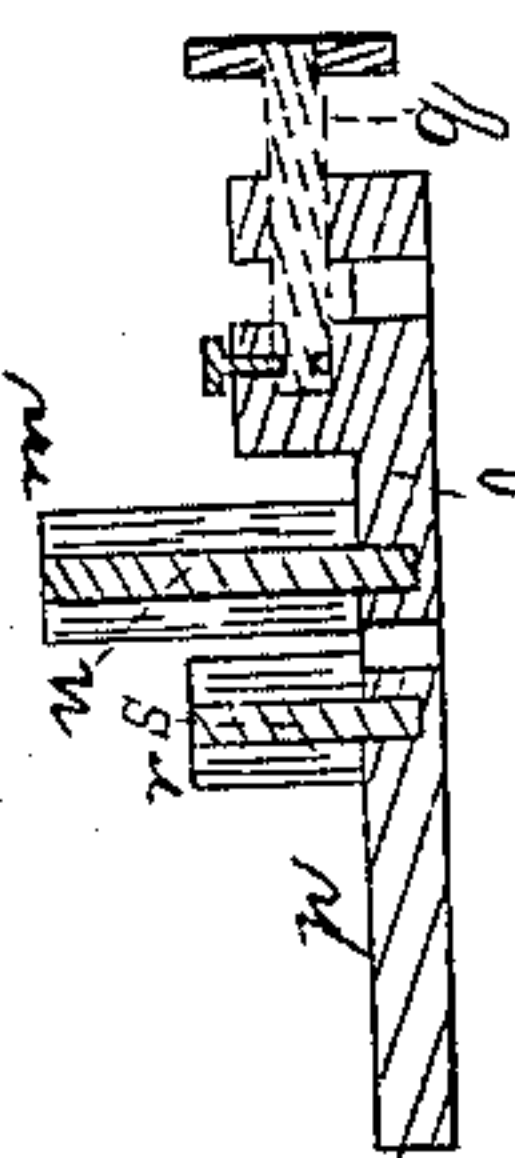


Fig: 6.

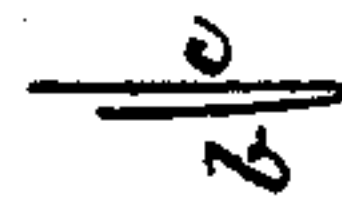


Fig: 1.

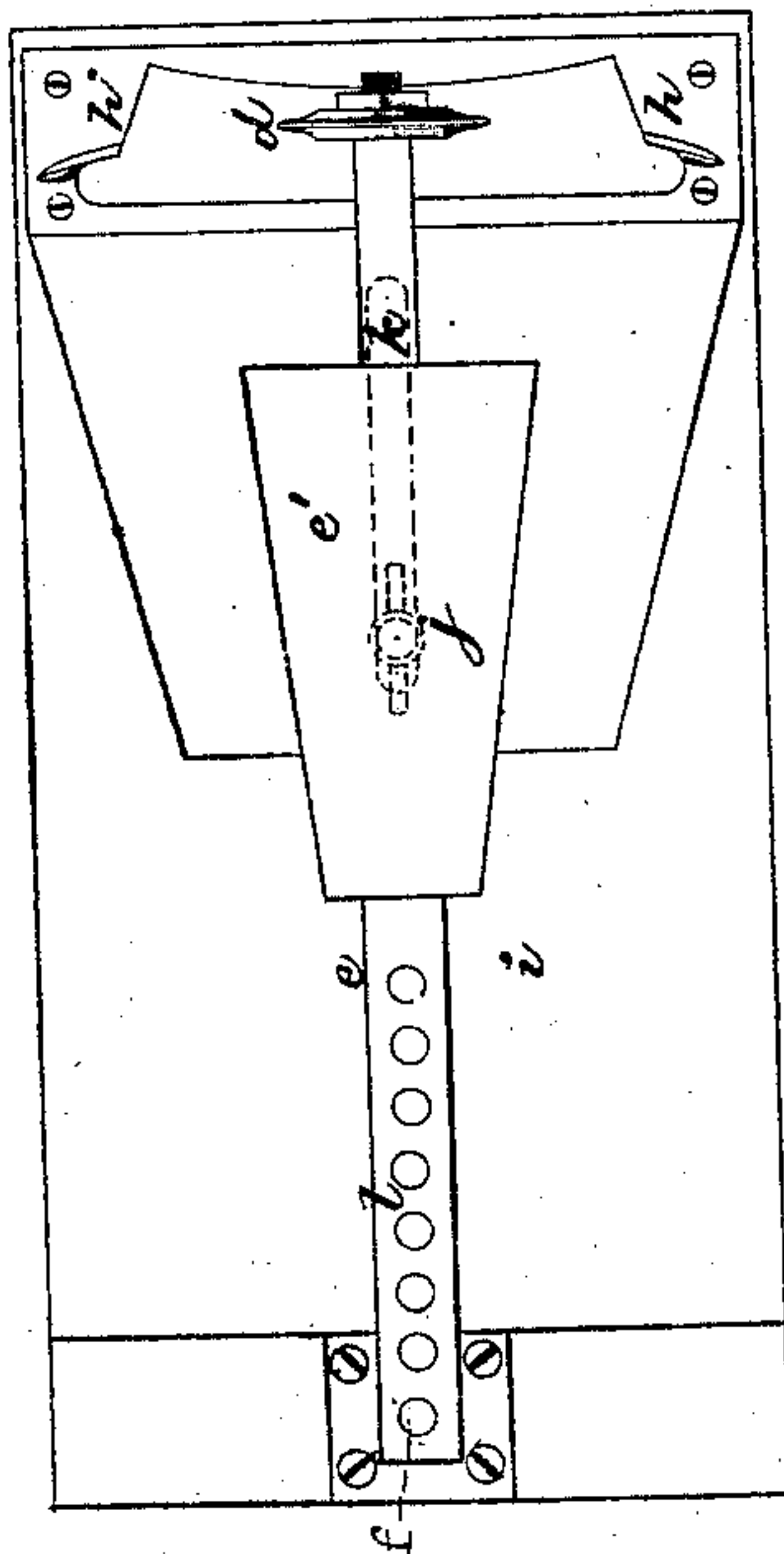
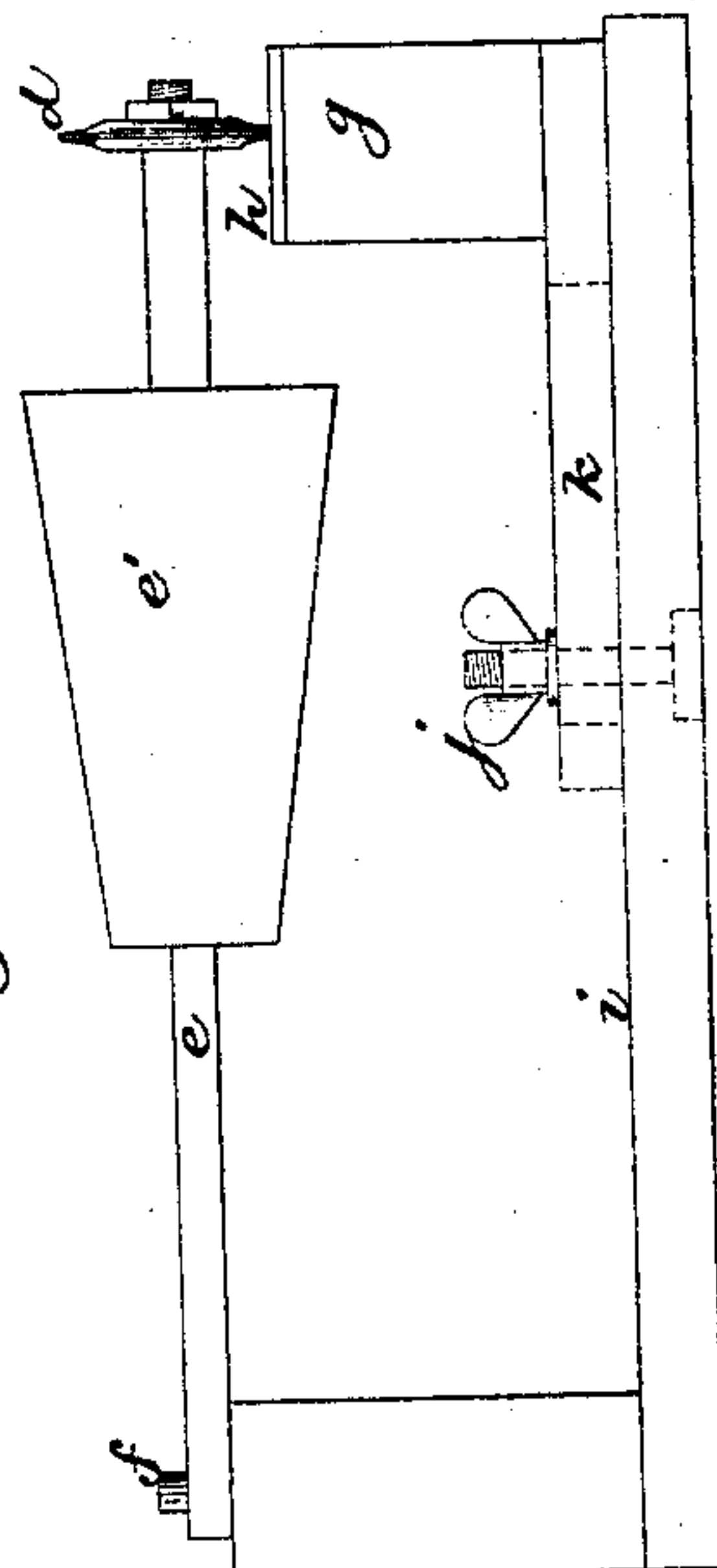


Fig: 2.



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UNITED STATES PATENT OFFICE.

MERRIMAN P. DORSCH, OF NEW YORK, N. Y.

IMPROVEMENT IN FOLDING PAPER COLLARS.

Specification forming part of Letters Patent No. 44,615, dated October 11, 1864.

To all whom it may concern:

Be it known that I, MERRIMAN P. DORSCH, of the city, county, and State of New York, have invented certain new and useful Improvements in the Method of Folding Paper Shirt Collars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan, and Fig. 2 a side elevation, of the machinery used for preparing the fold; and Fig. 3 a plan, and Fig. 4 a vertical section, of the machinery used for completing the fold; and Fig. 5 is a face view of a collar, with a red line indicating where the fold is made; and Fig. 6 is a cross-section of the collar folded.

The same letters indicate like parts in all the figures.

In making paper collars it is important to make the fold along a curved line—such as represented in red color at *a*, Fig. 5—that the part *b*, turned over, may stand out from the band *c* sufficiently to receive the cravat freely.

Serious difficulty has been experienced in preparing collars so that in completing the fold the paper will not break; and as the fold is made, for the reason stated, along a curved line, *a*, it has been found impracticable to complete the fold by passing the collar between two rollers, as heretofore arranged for completing the fold of collars which are folded along a straight line, for an obvious reason.

I have successfully overcome the difficulties above pointed out, by the following method: I subject the collars, one by one, to the action of a roller or wheel, *d*, the edge of which is thin and rounded so as not to cut the paper. This wheel is mounted so as to turn freely but accurately on the end of a radial arm, *e*, which is weighted as at *e'*, and which vibrates on a fulcrum-pin, *f*. A collar properly shaped is placed on a table, *g*, which I prefer to make of wood, and to the surface of which table is secured a gage, *h*, that is a thin plate cut out inside of the form of a collar. There should be one such gage-plate for every size of collar. This table *g* is connected with the bed-plate *i* by a screw-bolt, *j*, passing through a slot, *k*, so that it can be set at any desired distance from the fulcrum-pin *f*, and the radial arm *e* is formed with a series of holes, *l*, to

fit the fulcrum-pin, so that the creasing-wheel *d* and the table *g* can be readily set at any desired distance from the fulcrum-pin, and in that way the curve of the line *a*, which represents the line of travel of the wheel *d*, can be regulated at the will of the operator.

A collar is placed on the table *g* and within the gage *h*, and with that surface upward which is to be inside when folded, and then the wheel *d* is rolled over it from end to end. The vibrating arm *e* being weighted, the edge of the wheel *d* in rolling over the paper forms a crease on that surface in the arc of a circle without breaking the grain of the paper on the opposite surface, which rests on the table, so that when taken from the table it can be folded over without breaking the grain. After a collar has thus been creased and folded over, it is necessary, to complete the fold, to press the two thicknesses together along the whole length, and as the fold is made along a curved line, *a*, it will be obvious that such pressure cannot be made between two flat pressing-surfaces, nor by passing the whole collar between two rollers, as both of the said modes would destroy the curved line of the fold and either change it into a straight fold or wrinkle the outer part of the collar, and thus render it worthless. I however perform this operation by drawing the collars, one by one, between two rollers arranged in a peculiar manner.

In Figs. 3 and 4 of the accompanying drawings, *m* is a cylindrical roller mounted to turn freely on a vertical stud-pin, *n*, projecting from the upper surface of a block, *o*, fitted to slide horizontally in ways formed in a table, *p*, so that it can be moved for adjustment by a screw, *q*. This roller *m* should be about as long as the width of the widest part of a collar after it has been folded; and there is another roller, *r*, mounted to turn freely on a stud-pin, *s*, projecting from the upper face of the table *p*, and so located relatively to the roller *m* that this latter can be adjusted so that collars of any thickness, when folded, can be gripped when passed between them. The said roller *r* is much shorter than the one *m*, and much shorter than the width of the folded collar. After the rollers have been adjusted, a collar which has been partially folded is taken by an operative, one end is inserted between the rollers *m* and *r*, with the folded edge toward the table *p*, and with the band against the roller

m, and, taking the end thus pushed through, he draws the folded part through between the rollers, the bite of which completes the fold, the short roller *r* permitting the swell of the part *b* of the collar, caused by the making of the fold on a curved line, to pass mainly above it without restraint.

By the performing the two operations above described by the means specified I am enabled to make the fold of paper collars in a perfect curve and without breaking the paper in the slightest degree.

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

1. Preparing paper collars for making the

fold in a curved line by subjecting the paper while resting on a table or equivalent surface to the action of a creasing-wheel on a radial vibrating arm, substantially as described.

2. Completing the fold of paper collars which are folded in a curved line by drawing them between two rollers which are free to turn on independent studs, when one of the said rollers is shorter than the other and shorter than the width of the outer or folded part, substantially as described.

MERRIMAN P. DORSCH.

Witnesses:

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