

UNITED STATES PATENT OFFICE.

CHARLES A. ENSIGN, OF NAUGATUCK, CONNECTICUT.

MACHINE FOR MAKING CORDED BINDING FOR INDIA-RUBBER AND OTHER FABRICS.

Specification forming part of Letters Patent No. 56,393, dated July 17, 1866.

To all whom it may concern:

Be it known that I, CHARLES A. ENSIGN, of Naugatuck, county of New Haven, and State of Connecticut, have invented certain new and useful Improvements in Machines for Making Binding for India-Rubber or other Fabric; and I do hereby declare that the same is described and represented in the following specification and drawings, so as to enable others skilled in the art to make and use the same therefrom.

Letters marked thereon indicate like parts in each of the figures.

The nature of this improvement consists in making a machine automatic in its operation, so that by introducing the material into one part of the machine it will be delivered therefrom in readiness for use.

In the accompanying drawings, Figure 1 is a sectional side elevation. Fig. 2 is an end elevation. Fig. 3 is a top view.

a is the frame-work of the machine. b' b^2 b^3 b^4 are rolls fitted into bearings formed in the frame-work in the usual way, between which the material passes on its introduction into the machine. The rolls b' and b^2 have one or more depressions, c , formed in the surface thereof. b^3 has one or more projections, c' , which are fitted into the depressions so as to correspond in shape with the shape of said depressions. b^4 is a roll having a V-shaped depression, which is so made or arranged as to guide the cord d from the spool e to the center of the fabric into which it is to be closed while passing through the machine.

f f' are rolls fitted in bearings in a yielding or adjustable manner in the frame a by means of elastic pads g or set-screws h , (one or both, as desirable.) The lower roll, f' , is provided with a depression about the size of the cord d , so that as the fabric passes from the rolls b' b^2 b^3 , with the cord d lying on the upper side and in the center thereof, the upper roll, f , will press the cord with the fabric into said depression formed in the bottom roll, f' .

i is another roll just forward of the latter, having a groove made V-shaped, the bottom of which is about the width of two thicknesses of the fabric and the diameter of the cord d , and about the depth of half the width of the fabric.

i' is a wheel arranged on a shaft having its bearings also in the frame-work a . Said wheel is made about the thickness of the diameter of the cord d , and having a circular groove in its edge, so that as the fabric passes forward from the rolls f the wheel i' will press the cord with the fabric into the depression of the roll i , the object of which (the roll i and wheel i') is to turn up the edges of the fabric and hold the cord d in its angle in readiness to be pressed together, thereby inclosing the cord d in the center or angle of the fabric, which thence passes between two perpendicular press-rolls, k , having each circular grooves about the shape of a half-circle to receive the cord-enlargement and press the folds or two parts of the fabric together. These two rolls k are arranged in a perpendicular position in the projecting ends of properly-formed arms or springs l , just in front of which are arranged guide-plates k' , to guide and aid in closing together the edges of the fabric passing from the roll i and wheel i' . These springs are made in a proper or desired shape and secured in any proper manner to the frame-work a . From these rolls the fabric passes forward between two horizontal rolls, n . These rolls are also secured in bearings in the frame-work in a yielding or adjustable manner, as the rollers f , so as to allow or compensate for any inequality of the thickness of the material, and thus prevent any injury thereto. The lower roll, n' , is provided with a recess about the size and shape of the cord d , so that as the material is passing through these rolls the folded parts will be closely and firmly pressed together. Each of these rollers have their respective gears for transmitting and equalizing motion from one to the other through the whole train.

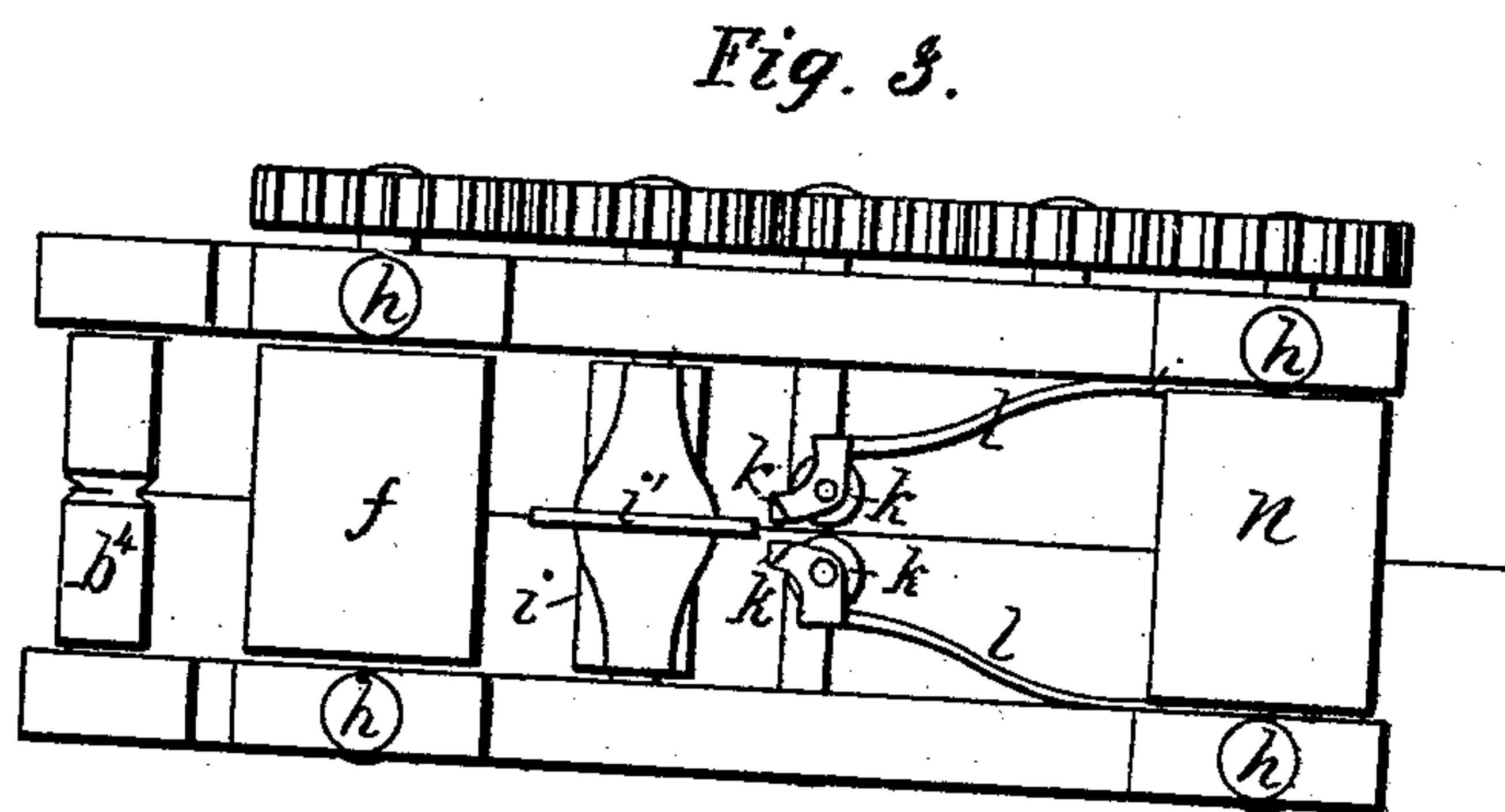
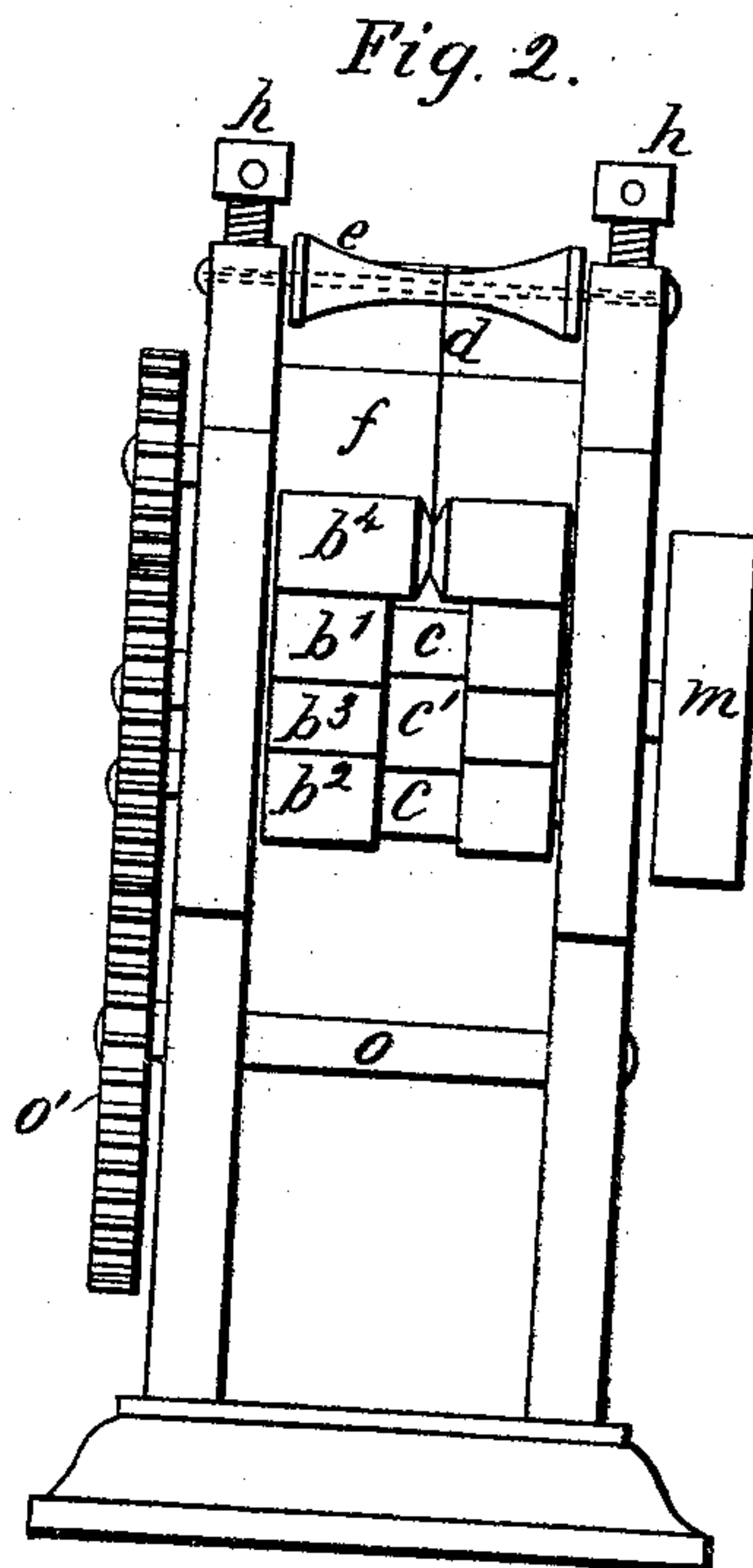
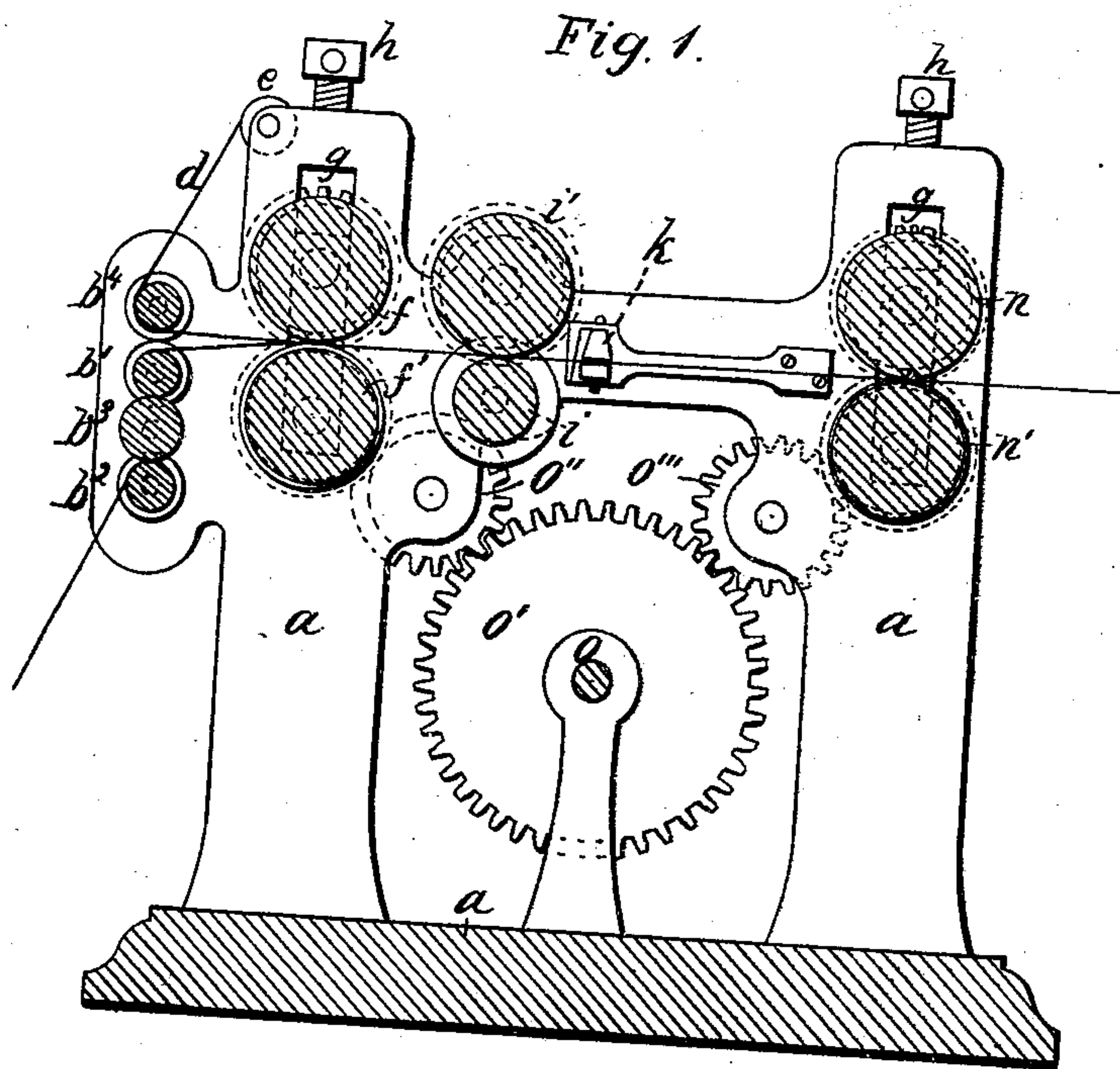
The power by which the machine is operated may be applied by means of a belt to the pulley m in the usual way, or to a pulley which may be placed on the shaft o , on which is a gear, o' . The gears o' o'' o''' are for the purpose of transmitting motion from the gear of the roller f' to the gear of the roll n' .

Thus it will be seen that by setting the machine in motion and inserting the end of the strip of fabric between the rollers b , and also inserting one end of the cord d near the center

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N^o 56,393.

Patented Jul. 17, 1866.



Witnesses.

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