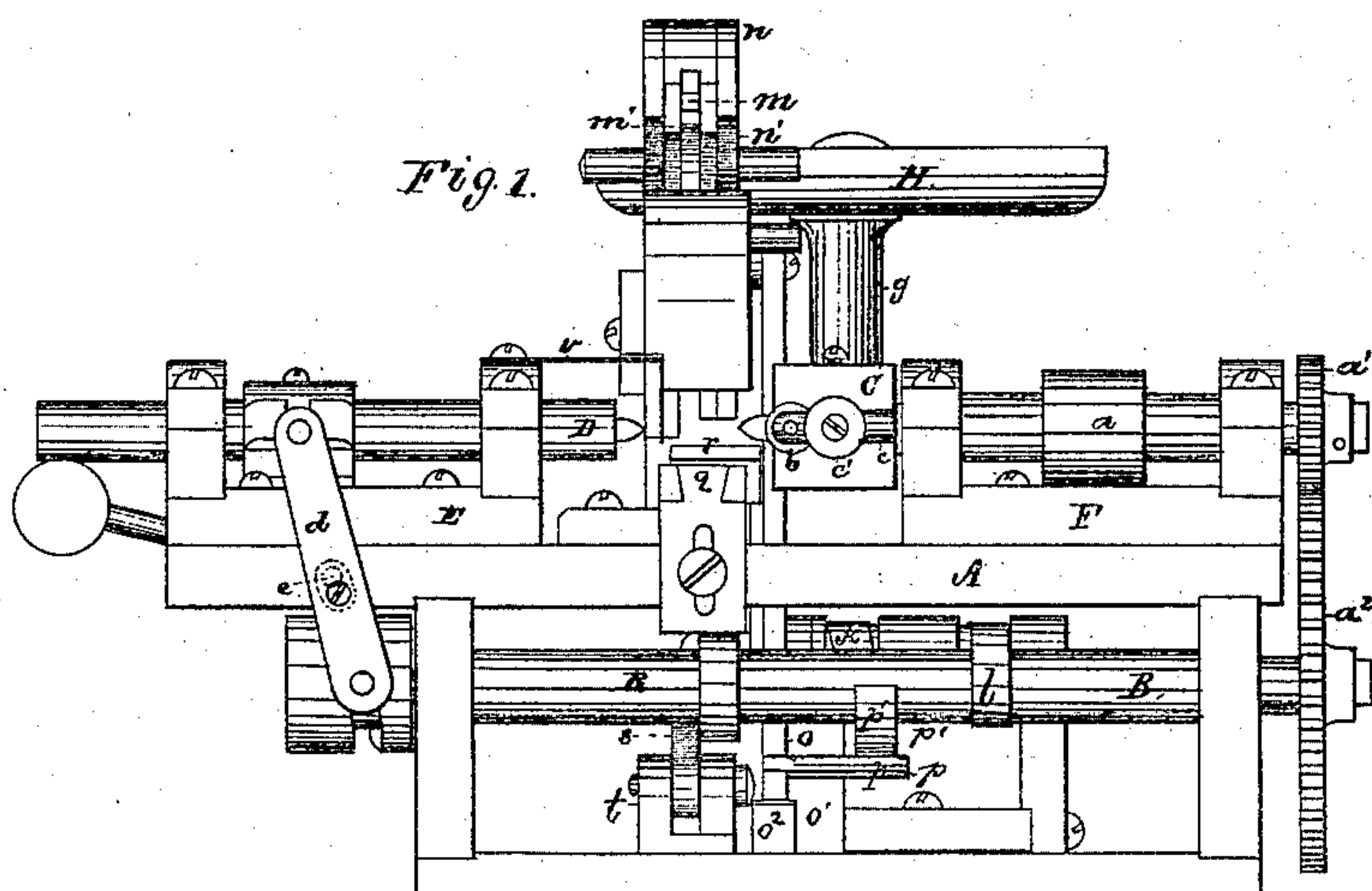
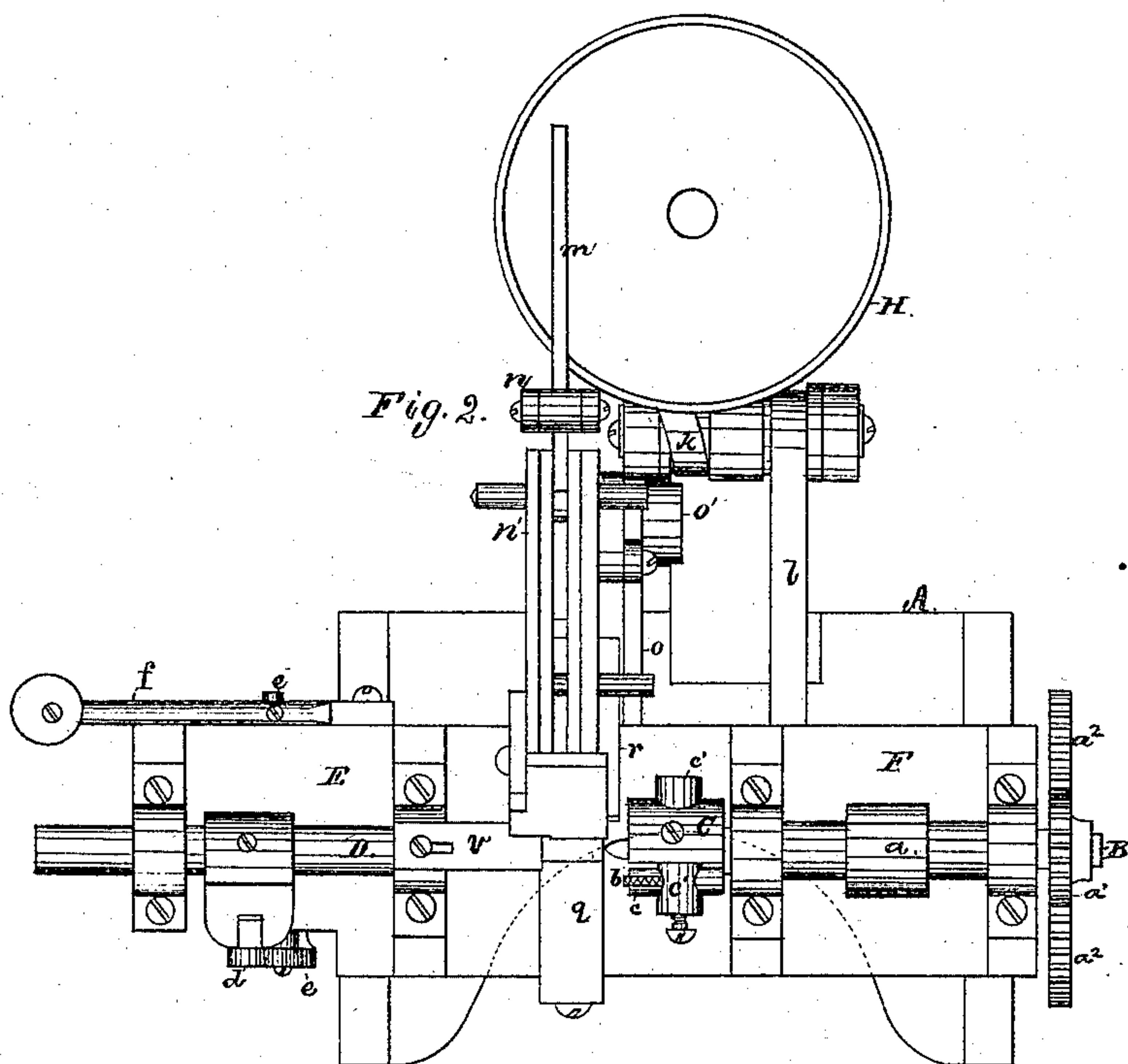


L. H. DWELLEY.

Machinery for Embossing Spool-Heads.

No. 137,601.

Patented April 8, 1873.



Witnesses.

Geo. Gray

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by his attorney.

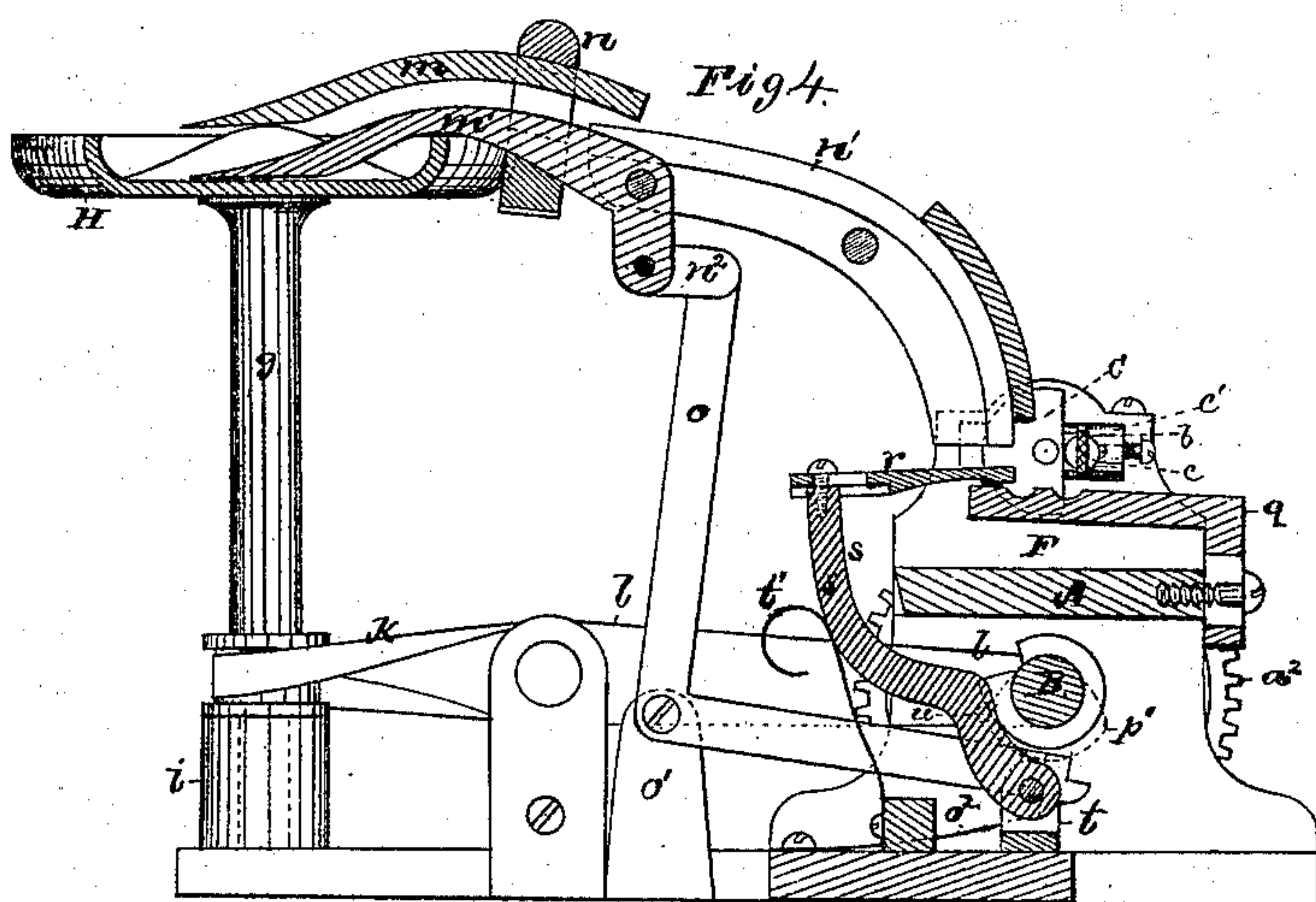
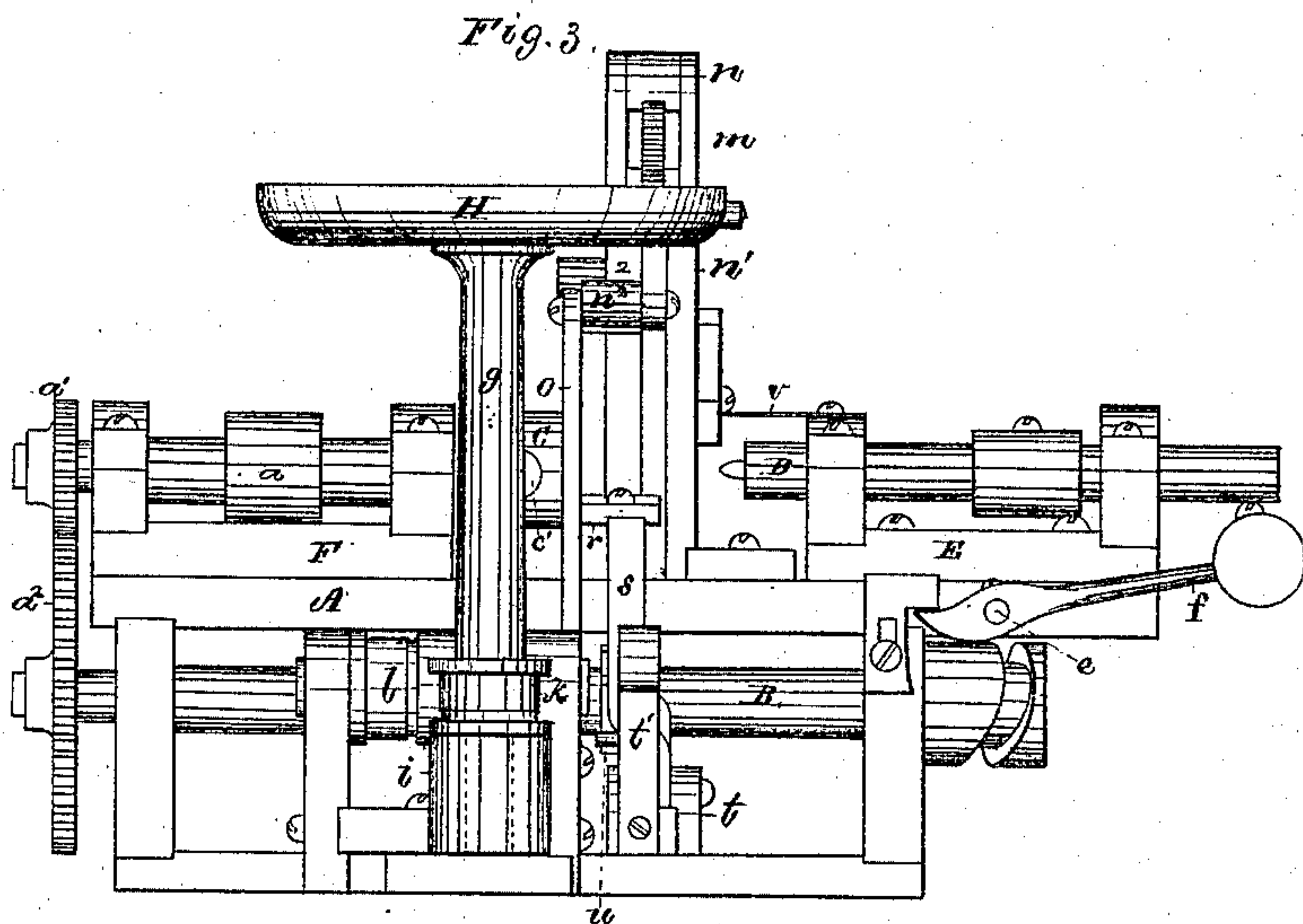
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UNITED STATES PATENT OFFICE.

LUCIUS H. DWELLEY, OF SOUTH BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINERY FOR EMBOSSING SPOOL-HEADS.

Specification forming part of Letters Patent No. **137,601**, dated April 8, 1873; application filed August 3, 1872.

To all whom it may concern:

Be it known that I, LUCIUS H. DWELLEY, of South Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machinery for Embossing Spool-Heads; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, in which—

Figure 1 denotes a front elevation, Fig. 2 a top view, and Fig. 3 a rear elevation, of a machine embodying my invention.

The object of my invention is to provide a simple, effective automatic machine for embossing the heads of spools, whereby the spools, being placed in a suitable receptacle, may be taken therefrom in succession, carried forward to the embossing apparatus, embossed, and discharged from the machine without the aid of manual labor, as heretofore required.

My invention may be found embodied in a machine containing the following elements: A receptacle for holding the spools to be embossed; mechanism or means for consecutively seizing and transferring the spools from the hopper to the inclined chute; mechanism or means for receiving the spools from the chute, supporting, and advancing them to their centering-mandrels; mechanism for embossing the heads of the spools; and mechanism for discharging the spools when embossed.

In the said drawing, A denotes the table or bed for sustaining the main operating parts. B is the main driving-shaft, which extends longitudinally of the machine, and suitably supported in bearings in the frame. C is the rotary mandrel; and D the reciprocating sliding mandrel, both of the same being formed and supported in frames E F in the ordinary manner. *a* is a drum or pulley, disposed on the mandrel C, by which, by means of a band from any suitable motor, rotation may be imparted to the said shaft or mandrel. This shaft carries on its outer end a pinion, *a*¹, which engages with a gear, *a*², affixed to the main driving-shaft B. *b* is the embossing-wheel, whose carrier, *c*, is affixed to a shaft, *c*¹, extending through the head of such mandrel, both the shaft and the carrier being adjustable to enable the wheel to fit to heads of different diameters, the plane of revolution of such

wheel being at a right angle to that of the mandrel. The sliding mandrel D receives its reciprocating movements by means of a rocker-lever, *d*, pivoted near its center to a shaft, *e*, which extends transversely through the frame, the upper end of the lever *d* being pivoted to an adjustable sleeve embracing the mandrel, its lower end carrying a stud or arm which works in a cam or groove formed in a drum on the main driving-shaft B. The said shaft *e* is an eccentric one, and carries on one of its ends a weighted lever, *f*, the object of such construction and arrangement of the said shaft *e* and lever *f* being to allow the mandrel and parts connected therewith to yield slightly in case any undue strain, from any cause, should be brought to bear upon them, the weight of the lever *f* serving to restore the parts to their normal position after the strain or cause thereof has been removed. H is the receptacle or hopper in which the spools to be embossed are placed. This consists of a circular shallow vessel mounted upon a shaft, *g*, having its lower end stepped in a support, *i*. This hopper is made with the interior surface of its bottom inclining from its center to its circumference, in order that the spools, by the action of gravity, may be brought into the path of movement of the seizers, to be hereinafter described. Rotary motion is imparted to the said shaft and hopper by means of endless bands *k* and *l*, connecting with pulleys and the shaft B, or in any other suitable manner.

The mechanism for seizing the spools and transferring them from the hopper to the inclined chute will next be described. This mechanism consists of two curved arms, *m m'*, the upper one, *m*, of which is affixed to the lower one by means of an adjustable frame, *n*, by which the relative distance between the two may be varied in order to allow spools of different diameters to pass between them. The lower arm is pivoted to the upper end of a curved inclined chute, *n*¹, which is so made as to be adjustable transversely to fit spools of different lengths. The lower end of the said lever or arm *m'* is pivoted to a short horizontal arm, *n*², which in turn is pivoted to a two-armed lever, *o*, which is pivoted to a standard, *o*¹. The free end of the said lever rests on a spring, *o*², which serves to press upward the

end of the said arm, and, acting in conjunction with the series of levers connected with it, serves to intermittently elevate the rear ends of the seizers or arms in m' . p is a stud or arm projecting at right angles from the lower extremity of the lever o , and operates in connection with a cam, p' , disposed on the main driving-shaft, as shown in Fig. 1, the said stud p and cam p' serving, with the system of levers described, to intermittently depress the seizers or arms $m m'$ within the hopper, so as to allow the spools, as they are pressed forward by the rotation of the hopper, to enter between the said arms. The spools having been received between the arms, the latter, through the action of the spring o^2 , will be so elevated as to cause the spools, by the impulse of gravity, to descend into the chute n^1 , through which they will pass and fall in succession upon the table q , which is so affixed to the frame A as to be adjustable vertically in accordance with the diameter of the spools to be embossed. r is an adjustable slider, which is disposed below the said chute, its rear end being affixed to a curved rocker-lever, s , pivoted to a support, t , as shown in Fig. 1. t' is a spring whose free end bears against the rocker-lever, and serves to force forward the said slider. u is a stud projecting from the face of the said lever, and operates with a cam disposed on the main driving-shaft. This cam is so formed as to impart to the slider two independent movements at each revolution of the shaft B —one to impel the spool forward to the centering-pivots, and the other to discharge the spool when embossed. v is an adjustable gage, whose front face is disposed on line with one of the vertical walls of the chute, it being so formed as to allow the head of the flanged pivot of the sliding mandrel to play through the same, and also support the spool while the flanged pivot is being withdrawn.

Having described the construction of the machine, its operation is as follows: The mass of spools is thrown into the hopper and rotation imparted to the latter, the seizers or arms $m m'$ being depressed to a level with the plane of the bottom of the hopper, during a part of the revolution of the driving-shaft, by the mechanism hereinbefore described, the spools

forced out toward the perimeter or outer edge of the hopper by the action of gravity, are seized or enter between the arms, the latter being elevated by means as stated, so that their outer ends shall stand at a higher altitude than their lower ends; the spools descend by gravity into the chute, from which they fall upon the rest or table, and into a receiving-groove made transversely across the same. From this groove each one in succession is moved by the action of the slider suitably timed and forced into a second groove, by which the spool is retained in position while the centering-pivots enter the axial bore of the spool. The sliding mandrel, having its pivot flanged, holds the spool and prevents its being rotated, (or the same may be held by means of spurs projecting from the face of the mandrel,) while the rotary mandrel, revolving, carries the embossing-wheel against the contiguous head of the spool, by which it is embossed, when by a further revolution of the shaft the pivots are withdrawn from the spool. The slider next carries forward and discharges the spool from the table and into a suitable receptacle.

Having described my invention, what I claim is—

1. The combination of the hopper H , the arms $m m'$, and their actuating mechanism with the chute n^1 , substantially as and for the purpose set forth.

2. The slider r , in combination with the table q and the centering-mandrels, substantially as and for the purposes set forth.

3. The combination of the chute n^1 , pivotal mandrels $C D$, and embossing-wheel e , substantially as set forth.

4. The combination of the chute n^1 , table q , slider r , pivotal mandrels $C D$, and the embossing-wheel e , substantially as described.

5. An organized automatic machine for embossing the heads of spools, consisting of the hopper H , vibrating arms $m m'$, chute n^1 , table q , slider r , pivotal mandrels $C D$, and the embossing-wheel e , arranged and operating together substantially as above set forth.

LUCIUS H. DWELLEY.

Witnesses:

F. P. HALE,

F. C. HALE.