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C. H. BLAU & G. W. KELLY.

CORE MAKING MACHINE.

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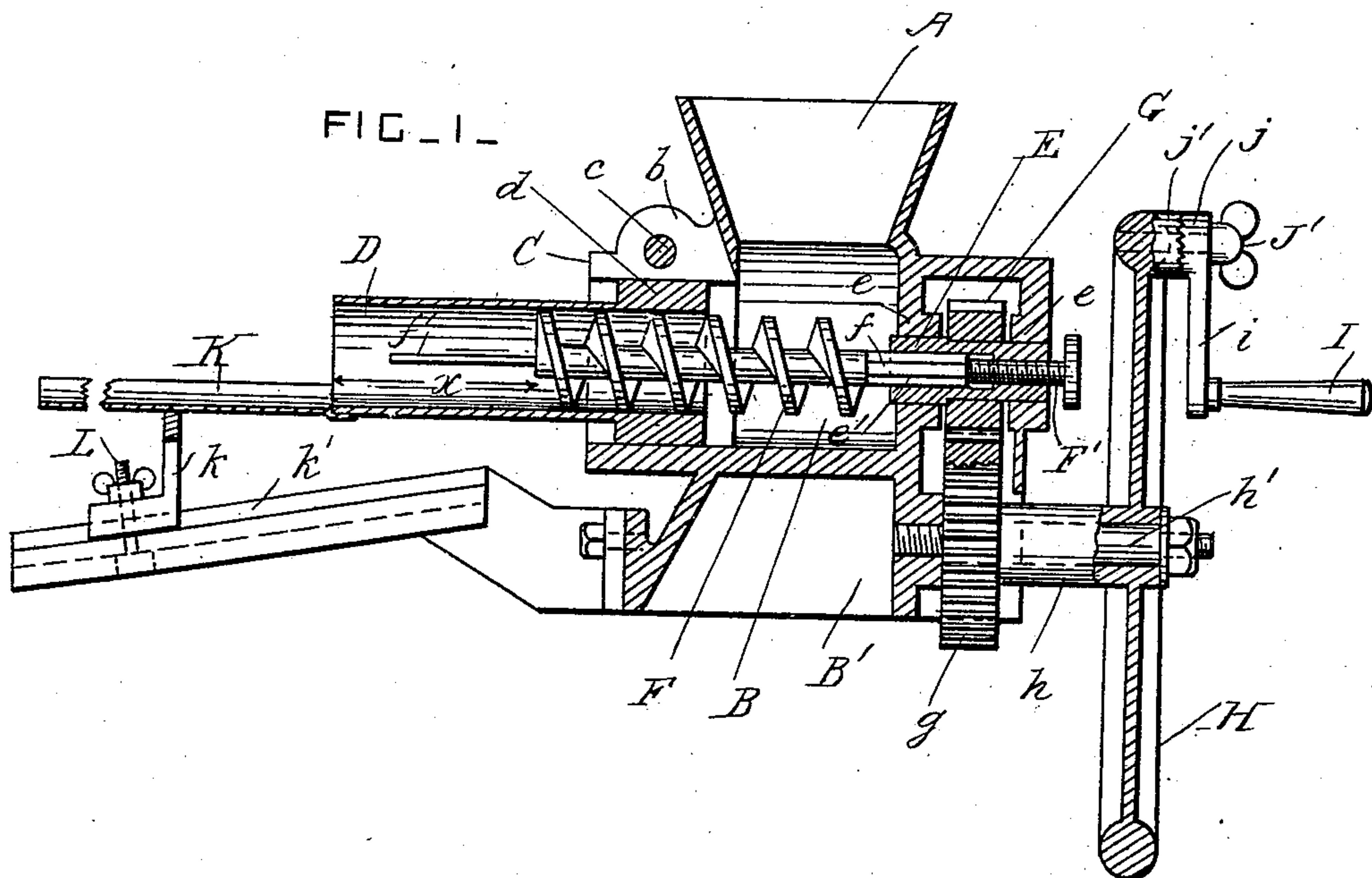
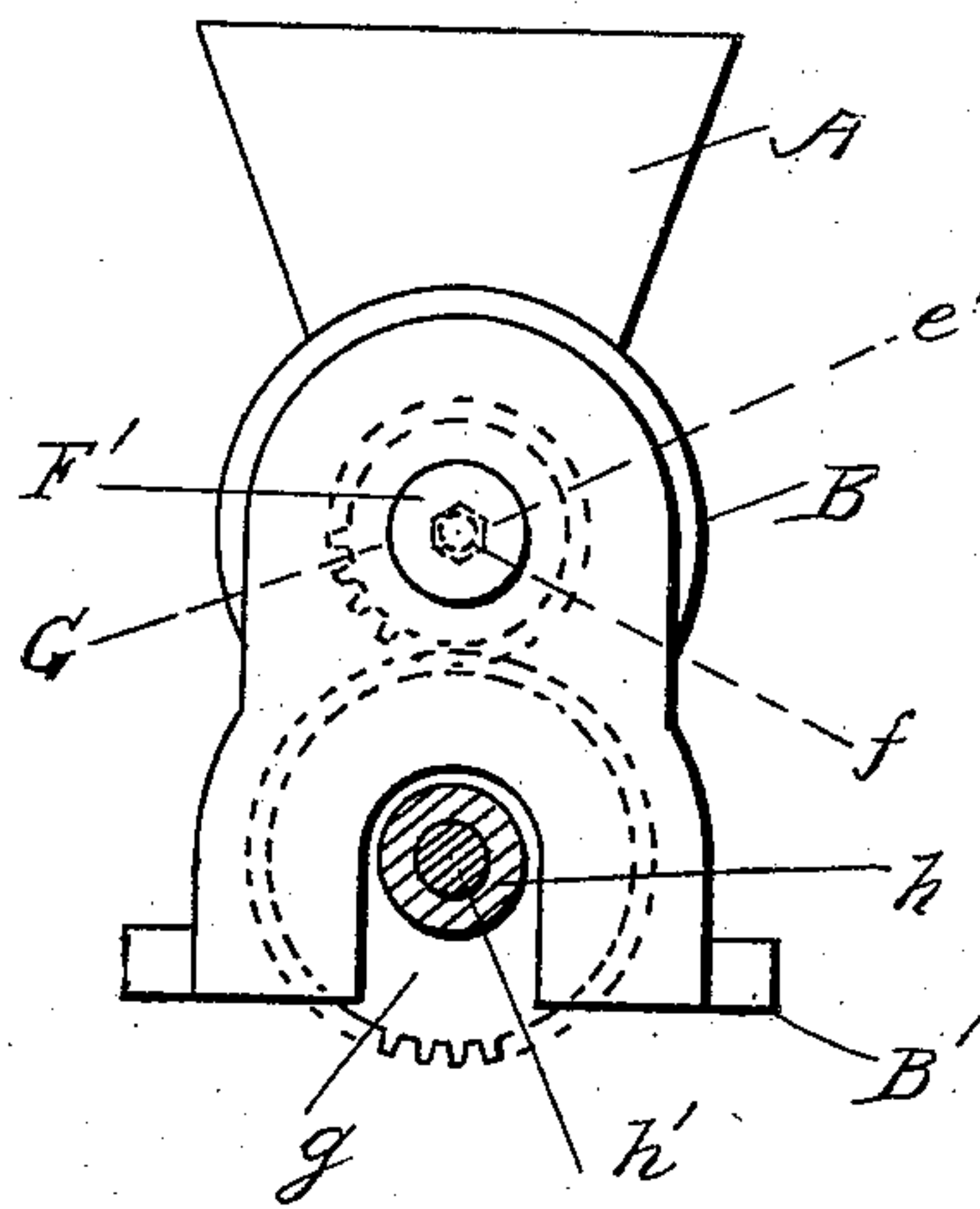
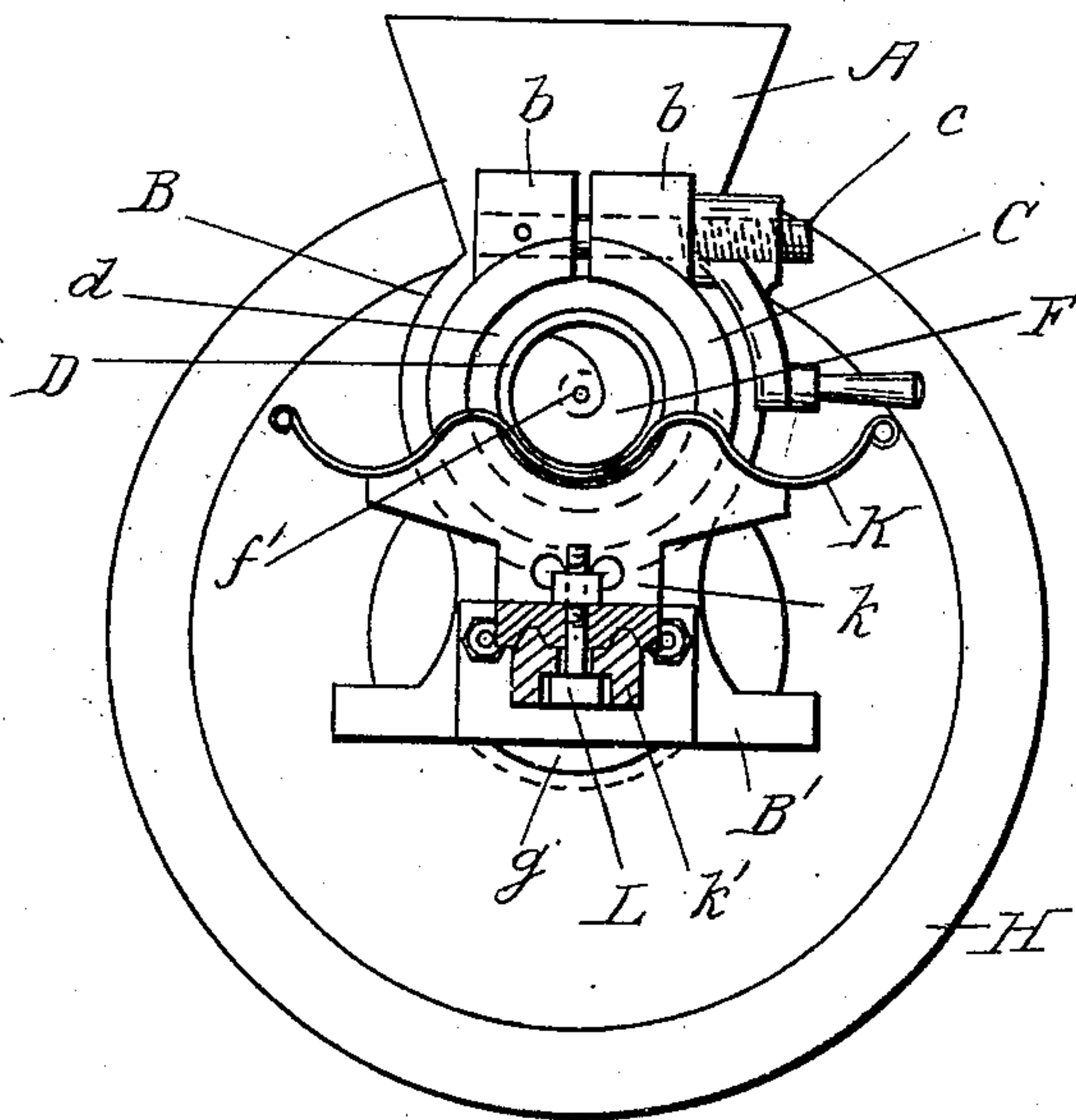


FIG. 2.

FIG. 3.



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CORE-MAKING MACHINE.

No. 886,927.

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To all whom it may concern:

Be it known that we, CHARLES H. BLAU and GEORGE W. KELLY, residing at Columbus, in the county of Muscogee and State of Georgia, have invented certain new and useful Improvements in Core-Molding Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines used in metal foundries for molding cores by expressing sand through suitable dies; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a longitudinal section through the machine. Fig. 2 is an end view showing the support for the core tray in section. Fig. 3 is a view of the opposite end of the machine from that shown in Fig. 2, and showing the hub of the fly-wheel in section.

A is the hopper in which a mixture of sand with other ingredients, suitable for forming cores, is placed. B is the sand chamber below the said hopper. The chamber B is provided with a clamp C at one end and this clamp is preferably cylindrical. The clamp is split upon one side, and it is provided with lugs *b* and a clamping screw *c*.

D is a die having an enlargement *d* at one end which is adjustable longitudinally in the clamp C. When the position of the die has been adjusted it is clamped to the sand chamber by means of the clamping screw and clamp. E is a revoluble sleeve which is journaled in bearings *e* at the other end of the said chamber from the die, and which is provided with a rectangular driving socket *e'*.

F is the packing-screw which is provided with a rectangular driving projection *f* which is slidable in the socket *e'*.

F' is a thrust screw which engages with the end portion of the sleeve and which bears against the end of the projection *f* so that the position of the packing-screw may be adjusted.

The packing-screw extends through the sand chamber and projects partway through the die. A vent former *f'* is secured centrally of the said packing-screw in the other end portion of the die, and it consists of a small rod. The packing-screw and its die are made of various sizes to form cores of

corresponding size, and all the dies have similar enlargements *d* which are adjustable in the clamp C.

G is a toothed pinion secured on the sleeve E, and *g* is a toothed wheel which gears into the pinion G. The wheel *g* is secured on the hub *h* of a fly-wheel H, and the said hub is journaled on a pin *h'* which projects from the supporting base B' of the sand chamber B.

I is a handle which is mounted on an arm *i* which is provided with a clutch member *j*. This clutch member engages with a similar clutch member *j'* formed on one side of the fly-wheel.

J is a thumb-screw which holds the two clutch members in engagement with each other, and which permits the arm and handle to be adjusted so that the handle may be placed at different distances from the center of the fly-wheel, according to the resistance of the sand in the machine.

K is a tray or plate for receiving the cores which are expressed from the die. This tray is secured to a supporting bracket *k* which is slidable longitudinally upon a guide *k'*. This guide is arranged in an inclined position, and it is secured to the base B' below the die.

L is a bolt provided with a thumb-nut for securing the bracket to the guide. The guide is preferably provided with two parallel tracks or bars upon which the base of the bracket is slidable, and the clamping bolt is arranged between the said bars.

The tray is adjusted to the die by sliding the bracket on the guide to the position shown in the drawings.

The core-sand is fed from the sand chamber into the die by the screw which packs it in the die. The density of the core depends upon the length of the space *x* between the end of the packing screw and the delivery end of the die. When the length of this space is increased the frictional resistance of the sides of the die to the sand is also increased, and the core is consequently more dense. Various mixtures of sand with other materials are used to form the core-sand according to the size of the core and the use to which it is to be put, and it is very important to be able to form the cores of any prearranged density.

The length of the consolidating space *x* is varied by sliding the die in the clamp before securing it by the clamping screw. A finer adjustment of the space *x* is obtained by means of the screw F' which slides the pack-

ing-screw to a limited extent in the die, and this adjustment may be effected at any time without unclamping the die.

What we claim is:

5 1. In a core molding machine, the combination, with a sand chamber provided at one end with a clamp, of a die adjustable longitudinally in the said clamp, a driving-sleeve
10 ber and provided with means for revolving it, a packing - screw operatively engaging with the said sleeve and projecting through the said chamber and engaging with the said die, and an adjusting screw bearing against
15 the end of the said packing-screw and engaging with the end of the said sleeve.

2. In a core molding machine, the combination, with a sand chamber provided with a die at its front end, of a driving sleeve journaled at the other end of the said chamber
20 and provided with means for revolving it, a packing-screw operatively engaging with the said sleeve, and a screw for adjusting the said packing-screw longitudinally, engaging
25 with the end of the said sleeve and bearing endwise against the said packing screw.

3. In a core molding machine, the combination, with a sand chamber and a die at one end thereof, of a sleeve journaled at the
30 other end of the said chamber and provided with a driving device, a packing screw working in the said chamber and die and also pro-

vided with a rectangular portion slidable longitudinally in engagement with the afore-
said driving device, a thrust-screw engaging 35 with one end of the said sleeve and bearing endwise against the packing-screw for adjusting the position of the said packing-screw in the said die, and means for revolving the said sleeve. 40

4. In a core molding machine, the combination, with a sand chamber, a die secured thereto, and a revoluble packing-screw working in the said chamber and die; of an inclined guide secured to the said sand cham-
45 ber, and a support for receiving the core from the said die adjustable on the said guide.

5. In a core molding machine, the combination, with a sand chamber, a die secured thereto, and a revoluble packing-screw work-
50 ing in the said chamber and die; of an inclined guide secured to the said sand chamber, a supporting bracket adjustable on the said guide and provided with a fastening device, and a core-receiving tray carried by the
55 said bracket.

In testimony whereof we affix our signatures, in presence of two witnesses.

CHAS. H. BLAU.
GEO. W. KELLY.

Witnesses:

H. T. MORREFIELD,
WALTER E. McCRARY.