

(No Model.)

3 Sheets—Sheet 1.

F. H. KANE.  
STAVE DRESSING MACHINE.

No. 403,596.

Patented May 21, 1889.

Fig. 1.

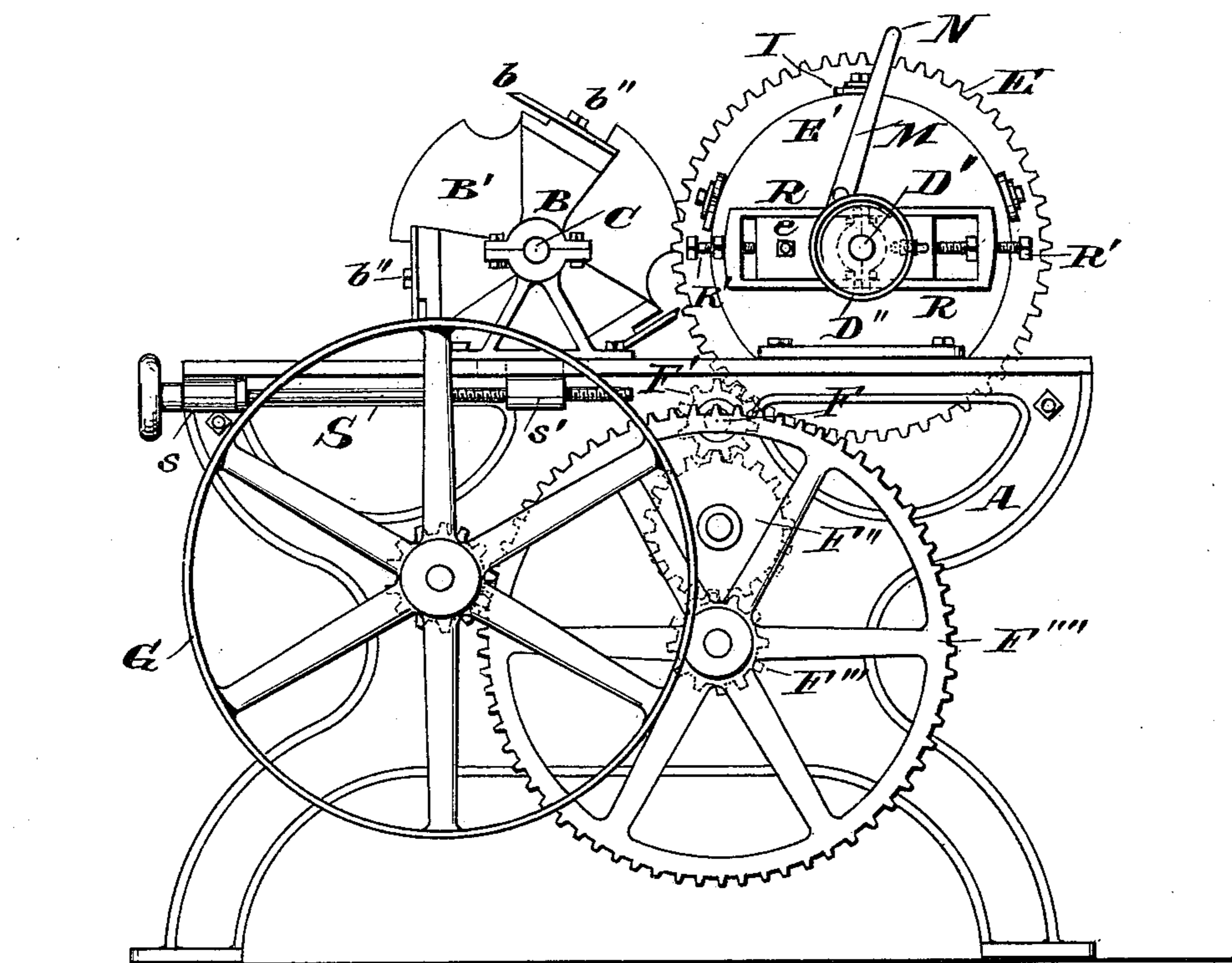
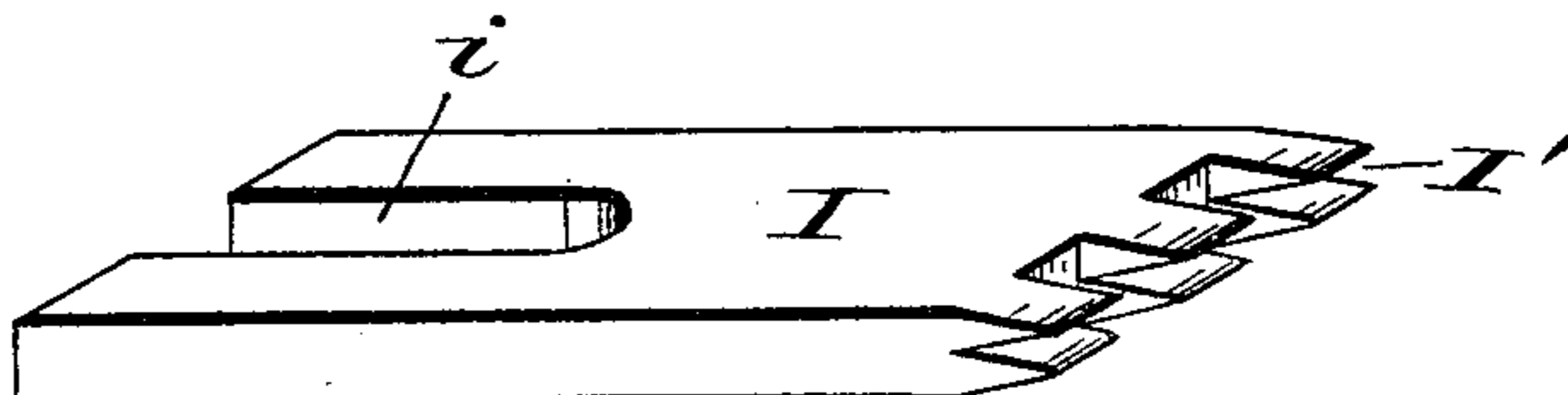


Fig. 3.



Attest  
Frank O. Loveland,  
August J. Herbaleb.

Inventor  
Frank H. Kane  
By Parkinson Parkinson Attys.

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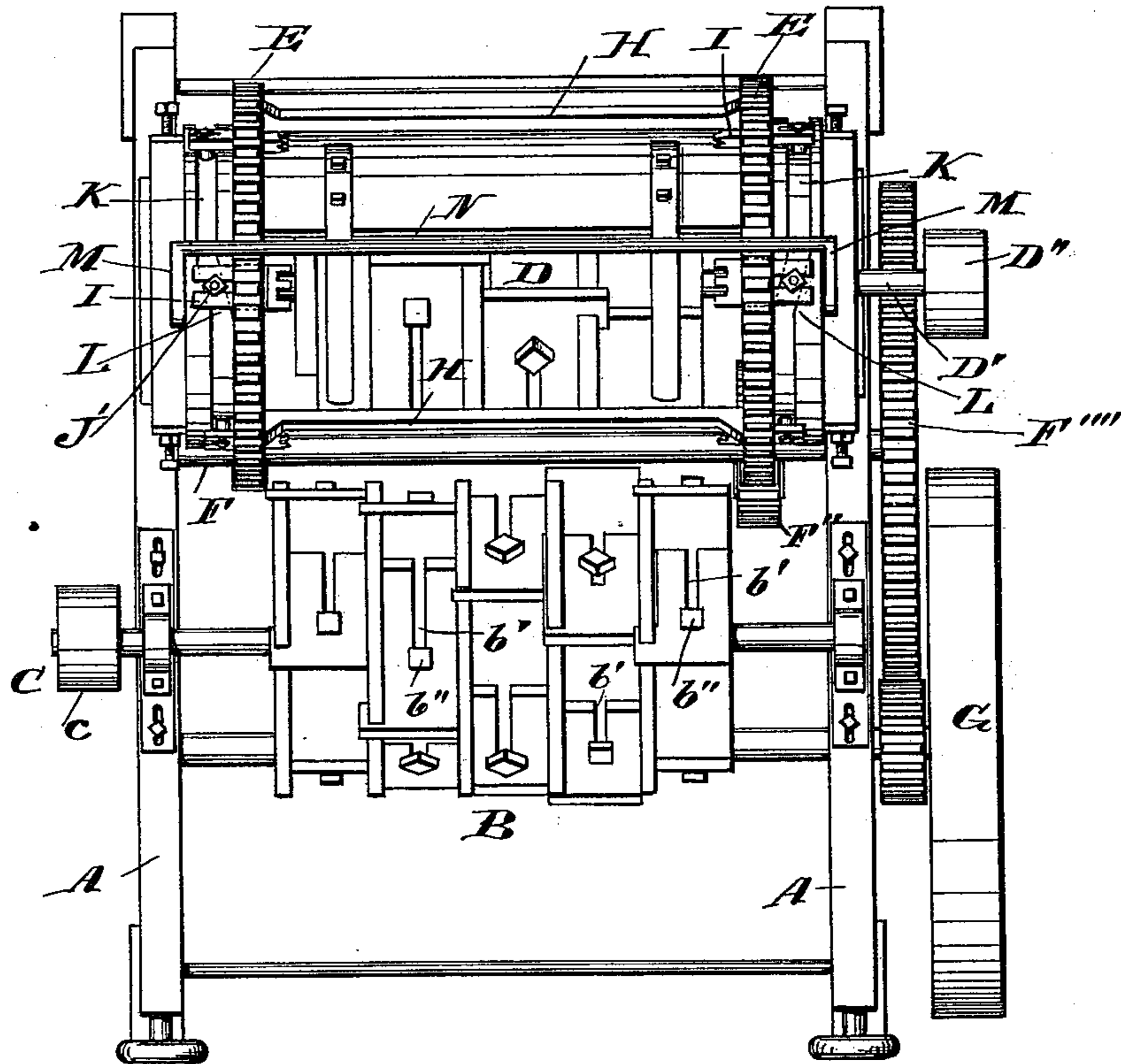
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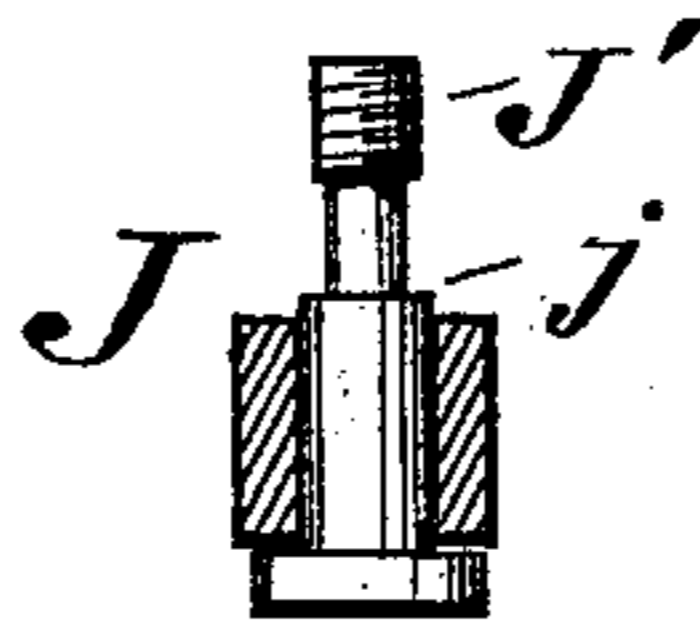
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*Fig. 2.*



*Fig. 4.*



*Attest*  
*Frank O. Loveland*  
*August F. Herbsleb.*

*Inventor*  
*Frank H. Kane*  
*By Parkinson Parkinson Attys.*

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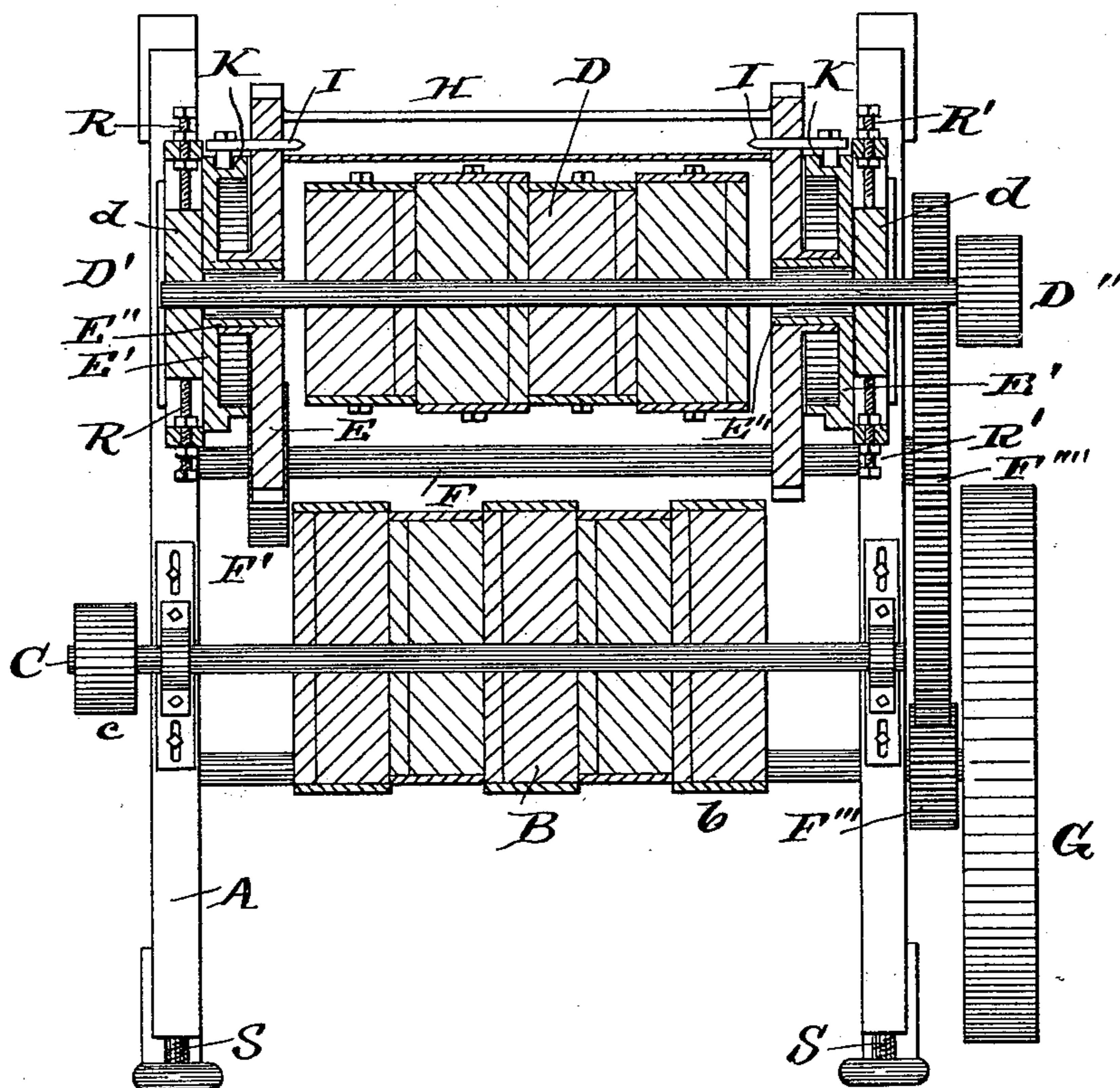
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*Fig. 5.*



*Attest*  
*Frank O. Loveland*  
*August J. Herbert.*

*Inventor*  
*Frank H. Kane*  
*By Gardner Gardner, his Atty's.*

# UNITED STATES PATENT OFFICE.

FRANK H. KANE, OF RIVERSIDE, ASSIGNOR TO THE CINCINNATI COOPERAGE COMPANY, OF CINCINNATI, OHIO.

## STAVE-DRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 403,596, dated May 21, 1889.

Application filed September 14, 1888. Serial No. 285,386. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK H. KANE, a citizen of the United States, residing at Riverside, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Stave-Dressing Machines, of which the following is a description.

My invention consists, essentially, of the parts and combinations of parts hereinafter described and claimed.

Referring to the drawings, Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a perspective view of a dog provided with a series of bifurcated tangs. Fig. 4 is a sectional view of an anti-friction roller. Fig. 5 is a transverse section of the machine.

A is a frame-work for a stave-dressing machine; B, a revolving cutter-head having knife-plates *b* fixed thereon by means of slot *b'* and bolt *b''*, so as to be readily detached for the purpose of grinding and adjusted to compensate for wear. Between the cutting-plates are segmental supports *B'* for the staves as they pass between the cutting-cylinders.

C is the axle for the revolving cutter-head, and is operated by a pulley, *c*, or other suitable mechanism.

D is another revolving cutter-head upon a shaft, *D'*, which is operated by a belt-pulley, *D''*, or other suitable mechanism. The knives of the revolving cutter-head B dress the inner surface of the stave to its proper contour, while the knives on the revolving cutter-head D dress the outer surface of the stave to its proper contour, the two cutter-heads being adjustable with reference to each other and to a stave-carrying reel, E, embracing the revolving cutter-head D, and adapted to deliver the staves between the two cutting-cylinders to be dressed for different thicknesses of staves.

The cutter-head B is adjusted by means of a screw-threaded rod, S, working in a journal, *s*, and a nut, *s'*, which projects through a slot in the frame A and supports the box-bearing for the axle C. Both ends of the axle C are provided with means for adjustment, so that the cutter-head may be advanced to-

ward and withdrawn from the stave-carrying reel, so that their axes of rotation may be always parallel. The cutter-head D is adjustable by means of an axle-box plate, *d*, sliding in gibs R R, and adjusting-screws R' R'. These gibs are secured by bolts *e* to the housing E'. Short collars E'' project inwardly from this housing to form a bearing upon which the reel E turns. These collars embrace the axle D', so as to permit an adjustment longitudinally of the machine.

The reel E has the periphery of both its heads suitably cogged.

F is a pinion-shaft, having pinions F' F' mounted thereon, which mesh into the cogs on the periphery of the two heads. The pinion-shaft is operated by means of gearing F'', F''', and F''', which is actuated by means of the belt-wheel G.

H H are cross-pieces, which unite the two heads of the reel E, and serve also to support the stave as it is placed on the reel. The staves are clutched by means of dogs I before they reach the knife, and are held in position until the knife ceases its action upon them. The dogs are provided with a series of bifurcated tangs, I I. Dogs provided with a series of tangs are liable to split the stave, or, if there is a crack in the stave, to enter this and not hold the stave firmly in position. Bifurcated tangs are far less liable to split the stave, and if there is a crack in the stave one tang at least will hold the stave firmly as it is passed between the knives. The dogs (see Fig. 3) I I are provided with slots *i i*.

J J are anti-friction rollers (see Fig. 4) having shoulders *j j* and screw-threaded projections J' J', provided with nuts taking through the slots in the dogs. The anti-friction rollers extend downward toward the axis of the reel into a cam-groove, K. The frame-work is provided at either side with a cam, L, working in groove K to drive the dogs into and to release them from the end of the stave at the proper time. By the above arrangement the dogs are capable of adjustment for different lengths of staves.

M M are braces connected by the cross-bar N to prevent the housing from spreading when the dogs are forced into the stave.

When in stave-dressing machines a reel is employed driven by power applied at one head only, the other head lags behind the power-driven head and carries the stave through between the knives diagonally, and it is dressed unevenly, its contour being irregular. Where power is applied to both ends of the reel alike, the stave is carried through between the knives parallel with the line of rotation, and the stave is dressed evenly to its proper contour.

The operation of the machine is simple. When the machine is set in operation, the two cutter-heads will rotate rapidly and the reel less rapidly. The stave to be dressed is placed with its edge on the cross-bar H and carried forward by the reel until the dogs clutch it, being forced forward by the cam-grooves and anti-friction rollers, hereinbefore described, and are not permitted to retract until the stave has been carried forward between the knives, where it is dressed. The stave is then passed out under the machine. The reel is supplied with several cross-bars, so that the operator can feed the staves as rapidly as he can handle them.

I claim—

1. In a stave-dressing machine, the combination of a revolving cutter-head, a stave-feeding reel carrying dogs provided with bifurcated tangs adapted to automatically clutch the staves and having the periphery of its heads suitably cogged, pinions engaging therewith, and power-driven gear mechanism, substantially as and for the purpose specified.

2. The combination, in a stave-dressing ma-

chine, of a revolving cutter-head provided with adjustable and detachable knives, a stave-carrying reel carrying thereon dogs provided with a series of bifurcated tangs adapted to clutch the staves, in the manner and for the purpose described.

3. The combination, in a stave-dressing machine, of two revolving cutter-heads adjustable with reference to each other, and a stave-carrying reel embracing one of the cutter-heads and adapted to deliver the staves between the two cutter-heads to be dressed, adjustable dogs on said reel provided with bifurcated tangs and adapted to clutch the staves, and the hereinbefore-described means for adjusting the same, in the manner and for the purpose specified.

4. The combination, in a stave-dressing machine, of a revolving cutter-head having knives mounted thereon, and a stave-carrying reel carrying thereon adjustable dogs provided with a series of bifurcated tangs adapted to clutch the staves, in the manner and for the purpose described.

5. The combination, in a stave-dressing machine, of a revolving cutter-head, a stave-carrying reel carrying thereon adjustable dogs provided with a series of bifurcated tangs, and anti-friction rollers moving in cam-grooves, connected with and adapted to actuate said dogs, in the manner and for the purpose described.

FRANK H. KANE.

Witnesses:

FRANK O. LOVELAND,  
JAMES N. RAMSEY.