

No. 616,616.

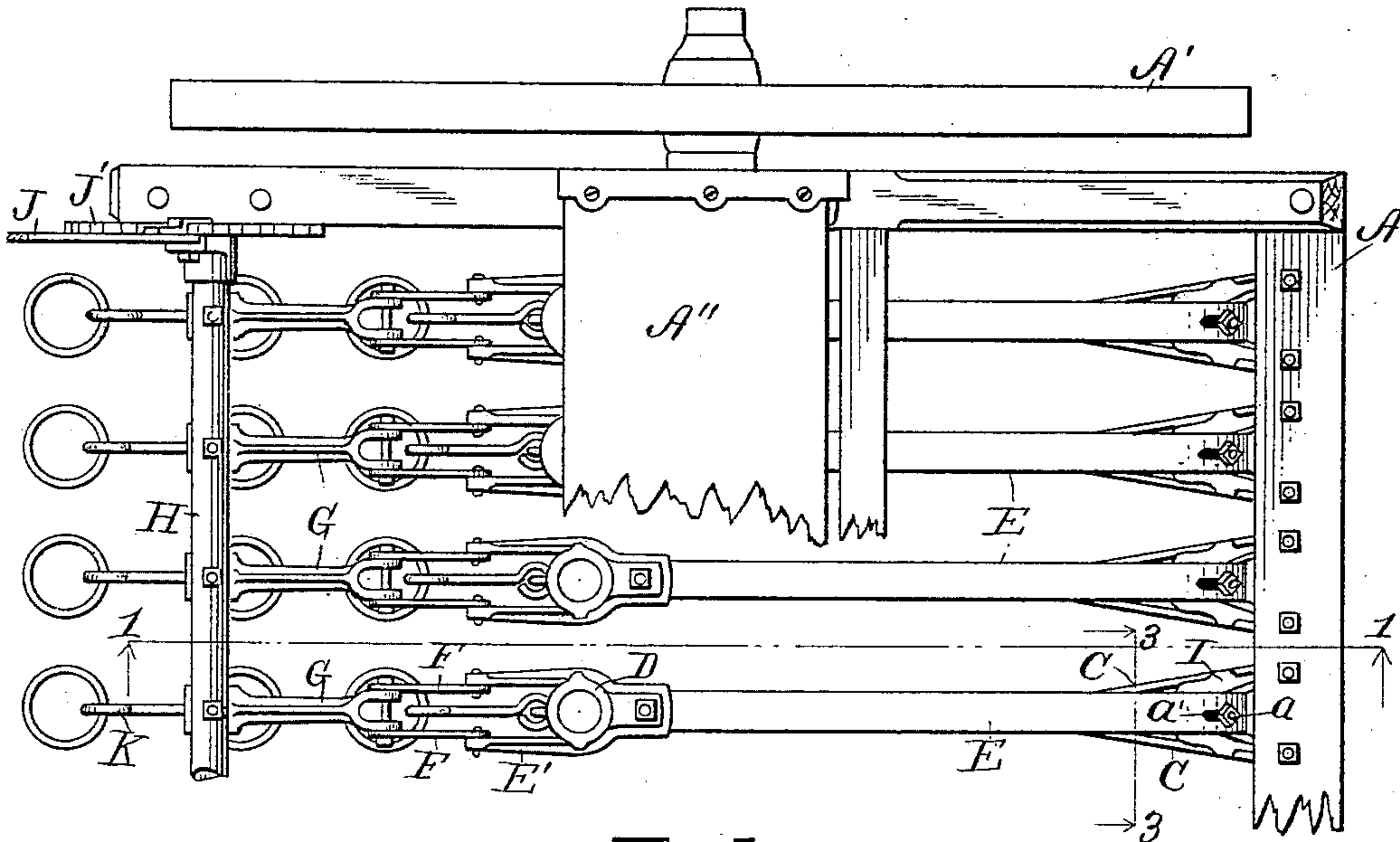
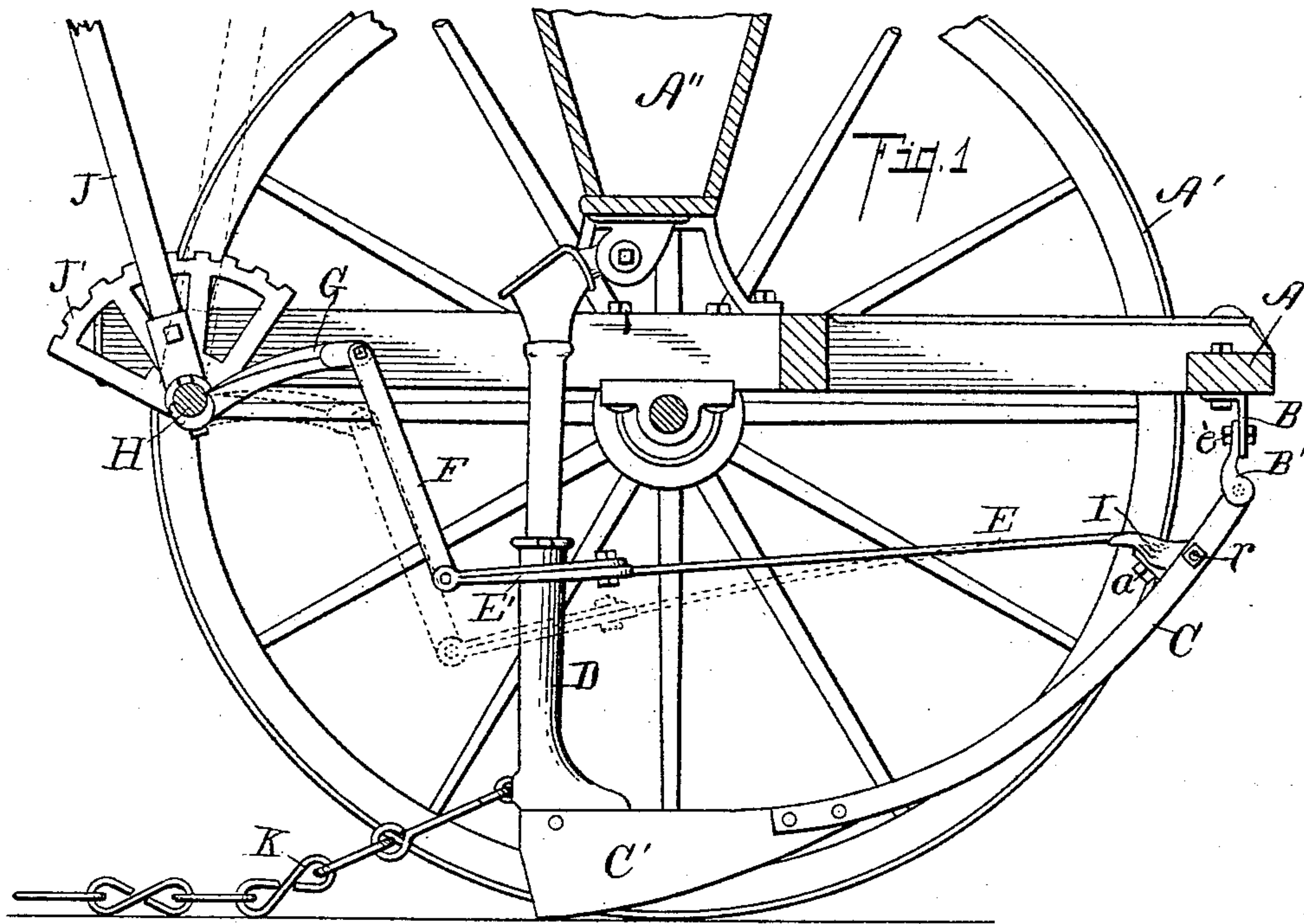
Patented Dec. 27, 1898.

W. F. HOYT.  
SHOE DRILL.

(Application filed Mar. 30, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

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*Chas. A. Earl*

Inventor,

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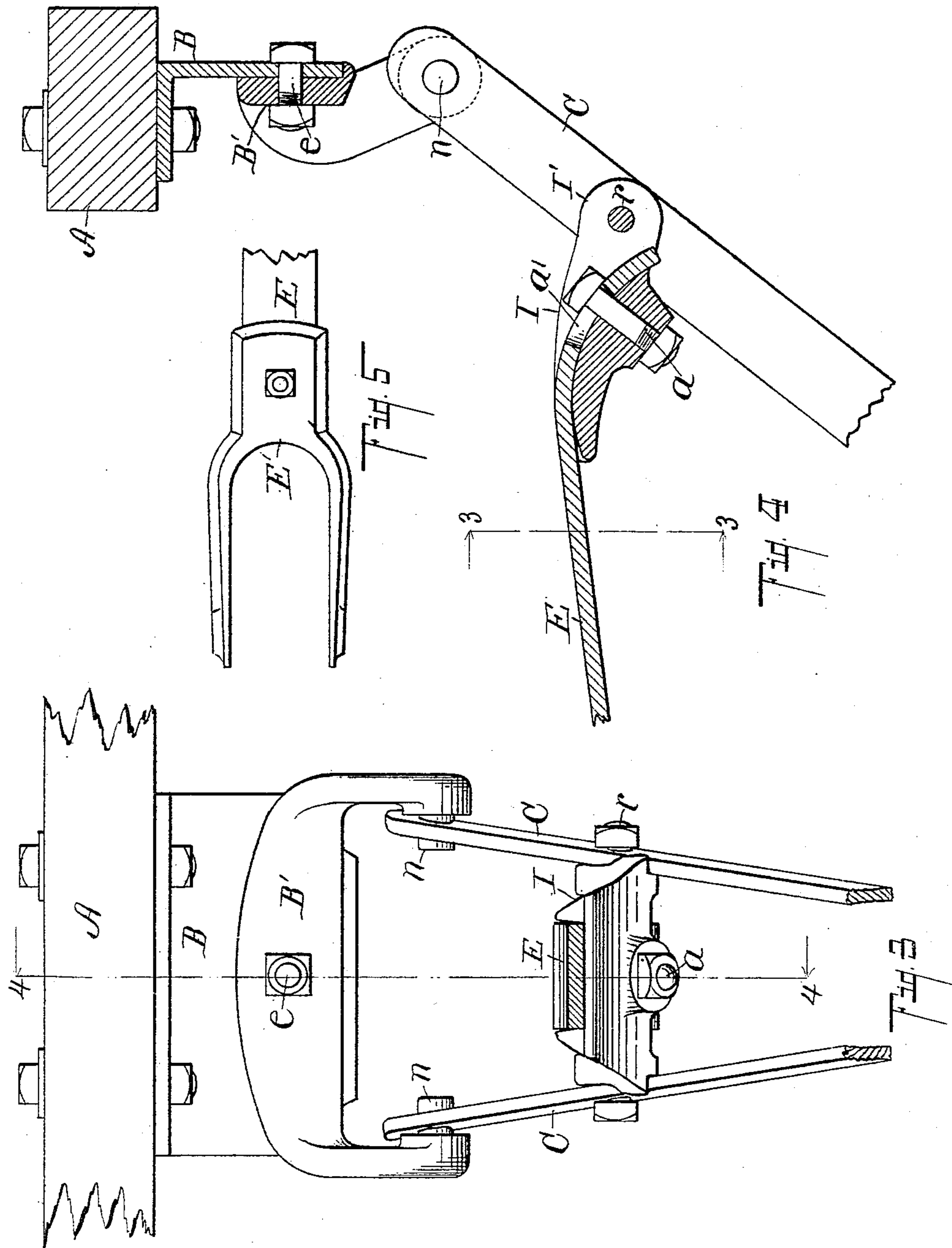
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Witnesses:

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# UNITED STATES PATENT OFFICE.

WILL F. HOYT, OF DOWAGIAC, MICHIGAN, ASSIGNOR TO THE DOWAGIAC  
MANUFACTURING COMPANY, OF SAME PLACE.

## SHOE-DRILL.

SPECIFICATION forming part of Letters Patent No. 616,616, dated December 27, 1898.

Application filed March 30, 1898. Serial No. 675,826. (No model.)

*To all whom it may concern:*

Be it known that I, WILL F. HOYT, a citizen of the United States, residing at the city of Dowagiac, in the county of Cass and State  
5 of Michigan, have invented a certain new and useful Shoe-Drill, of which the following is a specification.

This invention relates to improvements in grain-drills, and more particularly to improvements in grain-drills of the shoe or runner variety.

The objects of the invention are, first, to provide an improved and cheapened construction for applying pressure to the shoe; second, to  
15 provide an improved means of adjusting the spring to different tensions; third, to provide improved connections for the spring; fourth, to provide improved hangers for the front end of the draw-bar, and further objects appearing in the detailed description to follow. I accomplish these objects by the devices and means described in this specification.

The invention is definitely pointed out in the claims.

25 The parts of the structure to which my invention relates are fully illustrated in the accompanying drawings, in which—

Figure 1 is a detail sectional elevation of a portion of a drill embodying the features of  
30 my invention, taken on a line corresponding to line 1 1 of Fig. 2. Fig. 2 is a plan view of the portions appearing in Fig. 1. Fig. 3 is an enlarged detail sectional view taken on a line corresponding to lines 3 3 of Figs. 2 and 4,  
35 showing the hanger and adjusting-bracket for the draw-bars and spring. Fig. 4 is an enlarged detail sectional elevation taken on a line corresponding to line 4 4 of Fig. 3. Fig. 5 is an enlarged detail view of the fork E',  
40 secured to the rear end of the spring E, to embrace the boot of the shoe to guide and manipulate the same.

In the drawings all of the sectional views are taken looking in the direction of the little  
45 arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, A represents the main frame of the machine, A' are the carrying and driving wheels,

and A'' the seed-hopper, all of which are constructed in the usual form.

To the front bar of the main frame is secured a series of brackets B, corresponding in number to the number of shoes used in the drill. 55 To these brackets B are secured by suitable bolts *e* hangers B', which are U-shaped and have lugs or pins *n n* projecting toward each other. On these are supported the shoes C' by the drag-bars C C, which shoe and drag- 60 bars are in any well-known form. The drag-bars are closed together and allowed to spring out onto the pins *n n*. Inserted between the drag-bars is a bracket I, of such width that it wedges the drag-bar C outwardly onto the 65 pins *n n* and retains them in position. The bracket I has ears I', which project between the drag-bars C and through all of which a bolt *r* extends to retain the bracket in position. The bracket I has projecting lugs which 70 rest on the upper side of the drag-bars C. The spring employed for applying pressure in this place is a blade-spring E. A curved seat is provided for the same on the upper side of the bracket I, and the forward end of 75 the spring is curved to conform to this seat. Through the curved portion a longitudinal slot *a'* is formed, through which a bolt *a* projects to clamp the spring to position. It will be observed from this that by adjusting the 80 spring E back and forth on this curved seat and clamping it by the bolt *a* the elevation of the rear end will be varied, and consequently the adjustment of its tension accomplished. It is needless to remark that instead 85 of the bolt *a* projecting through the slot of the spring other means of adjusting this seat might be employed, though certainly the exact means used are the simplest and best.

Each shoe is provided with the usual boot 90 D at the rear, which receives the supply of grain from any usual feeding apparatus above. On the rear end of the flat spring E is secured a fork E', the same being conformed to fit the spring, so that a single bolt retains 95 the same properly in position. This fork is of such dimensions that it serves as a guide to the boot and in the manipulation of it will engage the flange or special projecting lugs at the top of the boot in raising the same, so 100



that it affords a convenient means for elevating the shoes. To the rear of the main frame A is secured the usual rock-shaft H, to be actuated by lever J, which is adjustable by the usual means in connection with a notched segment J', all of these details being of the usual form or of any well-known construction. Arms G are provided on the rock-shaft, corresponding to the number of shoes or runners in the drill. The forward ends of these arms G are connected by suitable links F to the prongs of the forks E', which are thus connected at a little distance from each other and serve in applying the pressure, owing to this fact, to secure considerable lateral stability.

In connection with the runners which I have shown the usual link and ring coverers K can be employed or press-wheels attached, according to the use to be made of the same. The press-wheels can be attached in any well-known way, and as they are not material to this invention I have not illustrated the same.

I desire to state in this connection that my improved spring and its connections could be utilized in connection with other styles of draw-bars, and I also desire to state that the spring-pressure is adapted for use on other than runner or shoe drills—as, for instance, on disk drills. I also desire to state that the hanger B and the bracket B' can be formed in one piece, or the hanger B' alone be attached directly to the frame, and, in fact, this is the preferred construction.

From this statement it will be observed that considerable variation is possible without departing from my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a grain-drill, the combination of a bracket B, the hanger B', secured thereto extending downwardly and having oppositely-pointing studs *n*; a shoe or hoe C', with double drag-bars C, supported on said studs *n*, and a bracket I, secured between the drag-bars to hold the same in position for the purpose specified.

2. In a grain-drill, the combination of a

hanger B', secured thereto extending downwardly and having oppositely-pointing studs *n*, a shoe or hoe C', with double drag-bars C, supported on said studs *n*, and a bracket I, secured between the drag-bars to hold the same in position for the purpose specified.

3. In a grain-drill, the combination of a shoe or runner C', upwardly-projecting drag-bars at the front thereof suitably pivoted and supported at their forward ends; a bracket I, projecting between the drag-bars and having projecting lugs or shoulders to rest on the top of the same retained in position by a suitable bolt or pin through the said drag-bars and having a curved seat on its upper side; a spring E, conformed at its forward end to said curved seat and containing a slot and a bolt passing through the bracket I, to adjust the spring, and suitable connections to the rear end of the spring for applying pressure thereto for the purpose specified.

4. In a grain-drill the combination of the drag-bars suitably supported on pivots on their forward ends, a bracket secured to said drag-bars and having a curved seat on its upper side and adapted to rest against the upper side of the drag-bars; and a spring the forward end of which is conformed to the said curved seat and means of securing the spring adjustably on the curved seat to adjust the tension of the same for the purpose specified.

5. In a grain-drill, the combination of a drag-bar, suitably pivoted at the front; a blade-spring E, secured to said drag-bar and projecting rearwardly therefrom; a fork E', secured to the rear end of said spring, the prongs of which extend to each side of the corresponding boot of the drill, means of applying pressure to the rear ends of said fork and of elevating the same to engage the flanged tops of the boot to control the drill for the purpose specified.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILL F. HOYT.

Witnesses:

E. S. McMASTER,  
F. W. JONES.