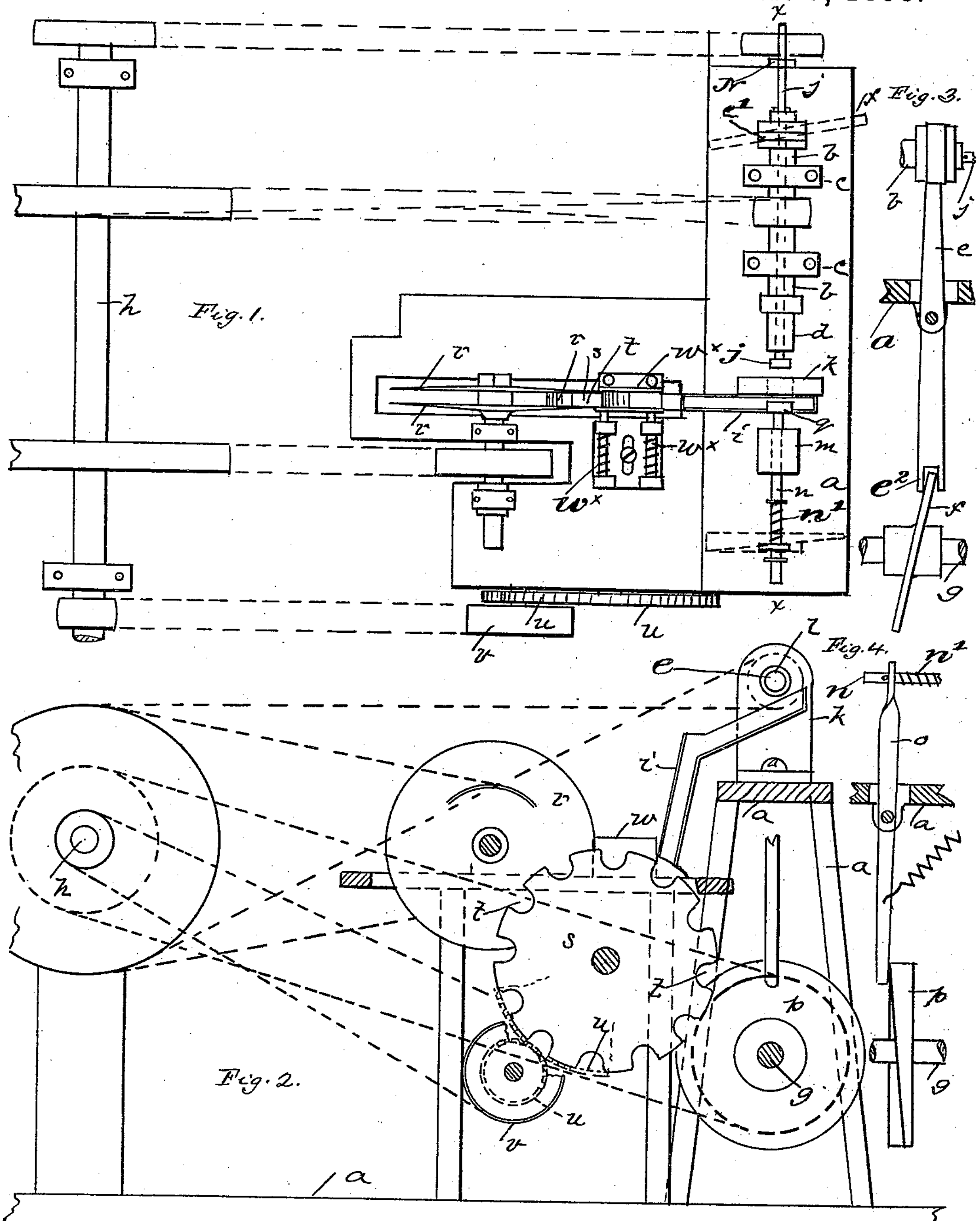
(No Model.)

3 Sheets—Sheet 1.

J. A. SNYDER.

CORK CUTTING AND FACING MACHINE.

No. 492,846. Patented Mar. 7, 1893.



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per

Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 2.

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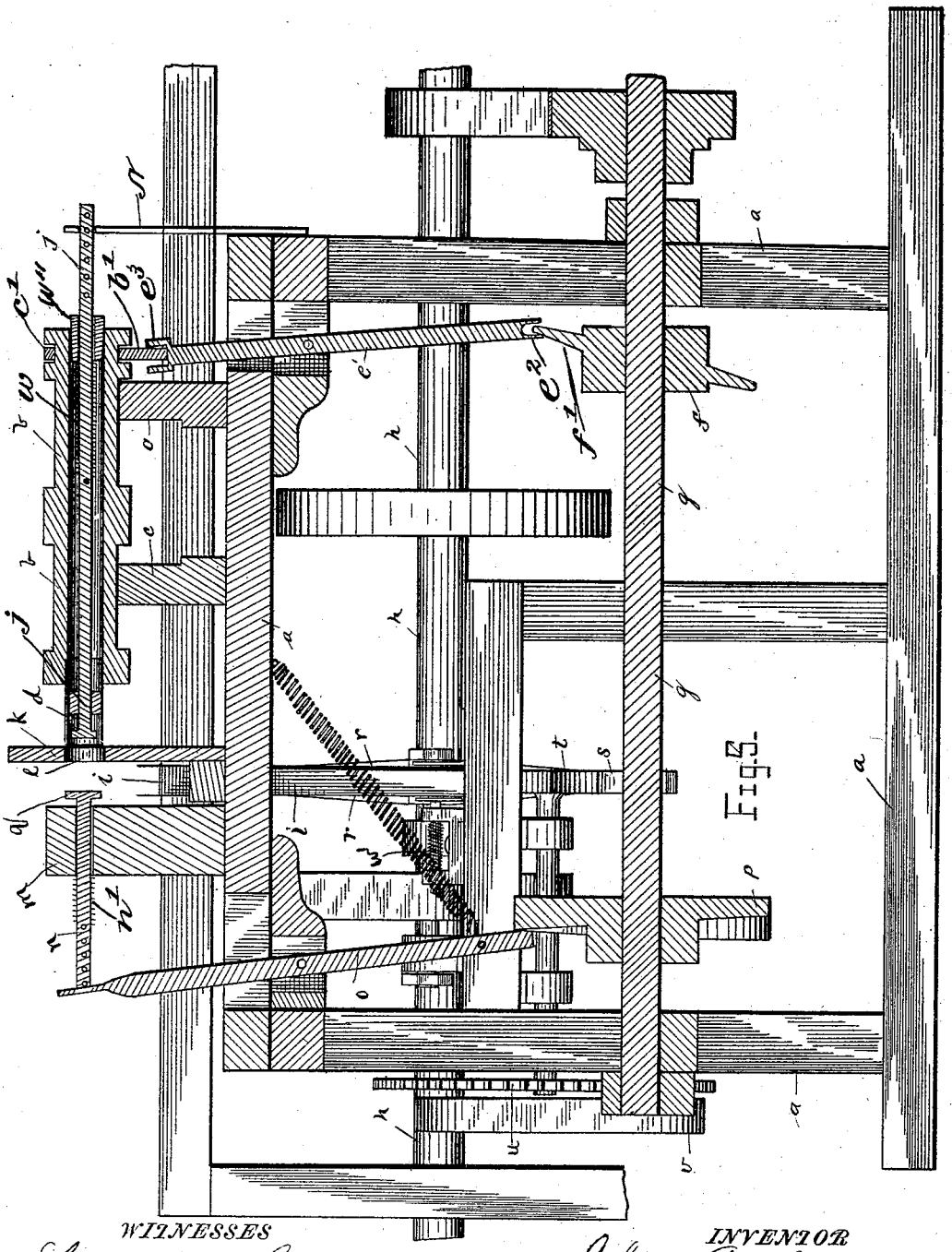

Fig. 2.

WITNESSES

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J. A. SNYDER.

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Fig. 6

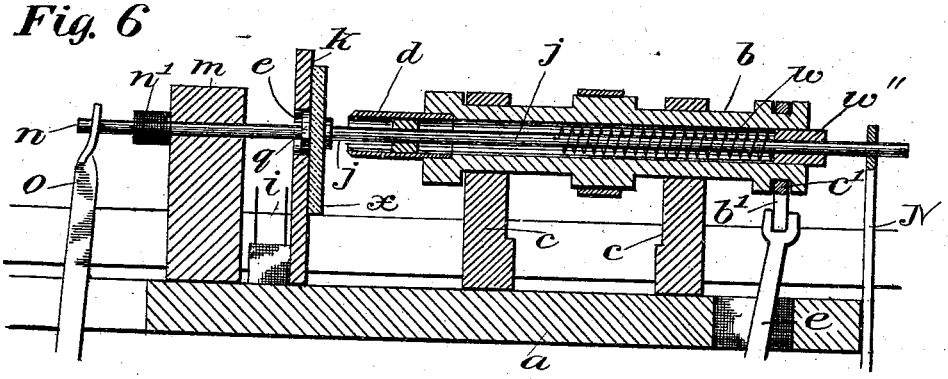
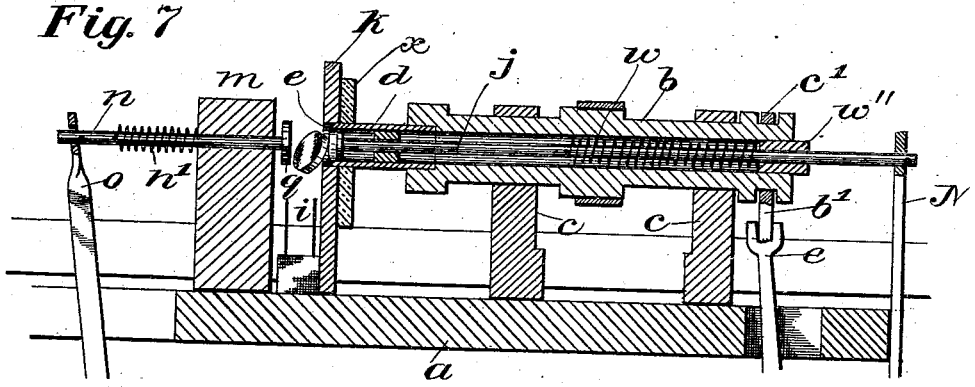


Fig. 7



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UNITED STATES PATENT OFFICE.

JOHN A. SNYDER, OF PITTSBURG, PENNSYLVANIA.

CORK CUTTING AND FACING MACHINE.

SPECIFICATION forming part of Letters Patent No. 492,846, dated March 7, 1893.

Application filed January 7, 1891. Serial No. 377,035. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. SNYDER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Cork Cutting and Facing Machines; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention has relation to improvements in cork cutting and facing machines, and it consists in the construction and arrangement of parts substantially as hereinafter described and particularly pointed out in the subjoined claim.

In the accompanying drawings: Figure 1 is a plan view of a machine constructed according to my invention. Fig. 2 is a side sectional elevation of the same. Fig. 3 is a front detailed elevation of the means for operating the punch. Fig. 4 is a front detailed elevation of the means for locking the cork while being punched, and Fig. 5 is a transverse section through the line x, x of Fig. 1, enlarged. Figs. 6 and 7 are fragmentary detail views taken in the plane of Fig. 5 and representing the several parts in two different positions.

Referring to the drawings, a designates the frame work of my machine, of suitable size and form of construction, having thereon suitable bearings c, in which is mounted a hollow shaft b provided at one end with a detachable cutter or punch d, which shaft is adapted to be moved in the direction of its length by means of a vertically vibrating lever e', pivoted near its middle to the frame. This lever has a forked lower end which is loosely connected to a staggered or barrel-cam f, mounted on a shaft g. The upper portion of the lever e' is provided with a socket e^3, which is loosely connected to a projecting portion b' of a collar c' encircling the outer end of the shaft b. The shaft g is given a rapid rotary motion by belt connections with the main driving shaft h.

The letter j represents a rod or bar inclosed within the shaft b and having a spring w encircling the body portion thereof, with one end secured to a pin in the bar and its opposite end abutting against a plug w'' in the outer end of the shaft b, said bar being provided with adjustments at its end to connect with an upright N, secured to the frame. Mounted on the frame a in front of the punch is a frame k, having a die e secured therein, and i is a chute arranged with its open mouth behind and just below said die e, and adapted to receive the outer cork as it falls therefrom after being cut as will be hereinafter explained. Mounted on the frame is a bearing m having arranged therein an endwise movable bar n with a spring n' encircling the same. The outer end of this bar n is adjustably connected to the upper end of a lever o, which is pivoted at its middle portion to the frame and has one end of a spring w' secured to it near its lower end, the other end of said spring being secured to the frame. The lower extremity of this lever o is in contact with a cam wheel p on shaft g whereby motion is imparted to the rod n. These connections with the rod serve when the machine is in motion to keep the head q thereof over the mouth of the chute i, thereby preventing the cork from being thrown over the chute when expelled from the cutter.

At the base of the chute i are two parallel rotary cutters r, which are given a rotary movement by belt connections with the main shaft h. Between these cutters r is a disk s having a series of pockets t arranged at regular intervals about its periphery which receive the corks when discharged from the chute i and force the same between the cutters r which face or trim the rough top and bottom of the corks. The disk s receives a slow rotary movement from suitable gearing v and belt wheel v' connected with the driving shaft. At the front of the cutters r and over the exit end of the chute i are arranged spring guides $w^\times$ which may be adjusted to suit various sizes of corks.

The operation is as follows:—The cork wood in its natural state is placed by the hand of the operator between the headed end of bar j and the frame k the parts being in the position seen in Fig. 6. The head q of bar n will then be held firmly by the cam wheel p on shaft g up into the opening of the die e as clearly seen, and the plug w'' in shaft b will cause said rod j to bear elastically on the cork

wood whereby when released by the hand it will be held in position for a cut. The machine is now set in motion and the shaft *b* being set in rapid rotary motion the staggered cam wheel *f* on shaft *g* operates through lever *e'* to move said shaft endwise to the position seen in Fig. 7, the bar *n* being at the same time withdrawn to the position seen in Fig. 7 by means of the cam *p*, so that the opening in the die is left free. The cork wood being thus cut through by the rotary and endwise movement of cutter *d*, the bar *j*, is forced endwise by the pressure of spring *w* placed under tension by the endwise movement of shaft *b*, until the stop on the rear end of said bar comes into contact with the support N, as seen in Fig. 7. By this endwise movement of bar *j*, which is very sudden, the cork cut out of the block *x*, and held within the cutter *d* is forced out therefrom, falling as seen in Fig. 7 down into the mouth of chute *i* whence it is carried down into one of the pockets *t*, of wheel *s*, and between the cutters *r*, as will be readily understood. The cork block *x* is now shifted about by the operator to present a fresh surface in front of cutter *d* for another cut, and the operation repeated. It will be seen that when the parts are in the position seen in Fig. 7 and the spring *w*, on bar *j*, still held compressed to a certain degree between its point of attachment to bar *j* and the plug *w''*, by reason of the movement of bar *j* through bearing N being less than the endwise movement of shaft *b*, said spring will by its elasticity react against plug *w''*, and so facilitate the backward movement of shaft *b*.

What I claim is—

The combination with a frame, of a longitudinally movable hollow shaft rotatably mounted thereon, a hollow cutter mounted in said shaft, a female die plate mounted on the frame and having its opening aligned with said cutter, a rod arranged in the hollow of said shaft and having its forward end projecting beyond said cutter therein, whereby the cork wood may be held in place between said rod and the die plate, a bearing on the frame aligned with and in the rear of said shaft, the rear end of said rod in the shaft projecting therefrom and being adapted for sliding engagement with said bearing and having a stop beyond said bearing, whereby such movement is limited, a spring arranged in the hollow of said shaft and connected at its forward end to said rod, the rear end of said spring being connected to the rear end of the hollow shaft, a rod longitudinally movable in the frame and aligned with the hollow shaft, the end of said rod having a head arranged in front of the opening in the die plate opposite the cutter, a retracting spring for said rod, a cork chute arranged on the frame with its mouth below the opening in the die plate and between said die plate and the headed end of said rod, and means for imparting longitudinal movement to said rod and longitudinal and rotary movement to said shaft, substantially as set forth.

In testimony that I claim the foregoing I hereunto affix my signature this 15th day of December, A. D. 1890.

JOHN A. SNYDER. [L. S.]

In presence of—
M. E. HARRISON,
J. A. HERRON.