(No Model.) 2 Sheets—Sheet 1.

L. A. FONTAINE.

PIN MACHINE.

No. 330,220. Patented Nov. 10, 1885.

Fig. 1

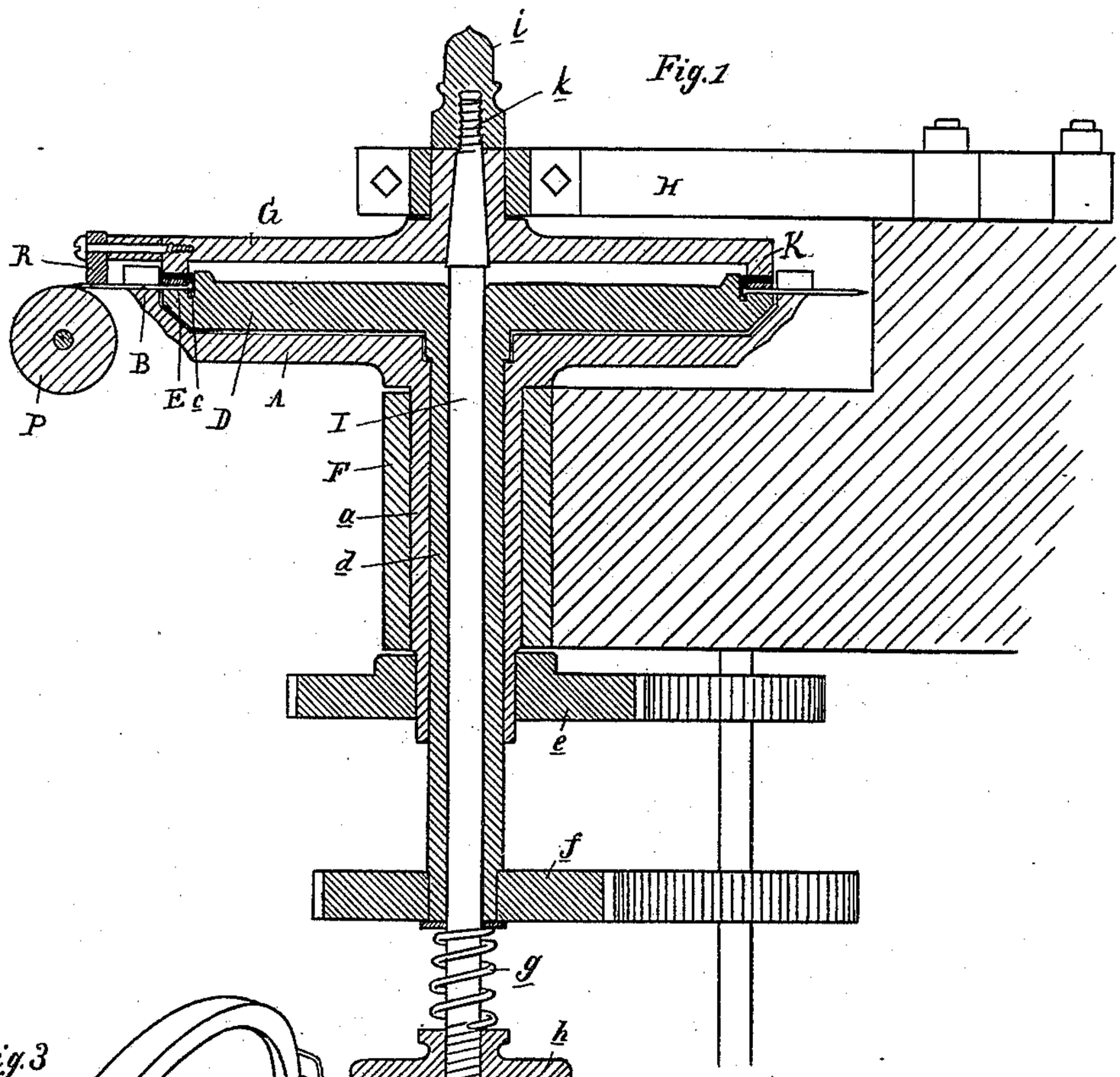


Fig. 3

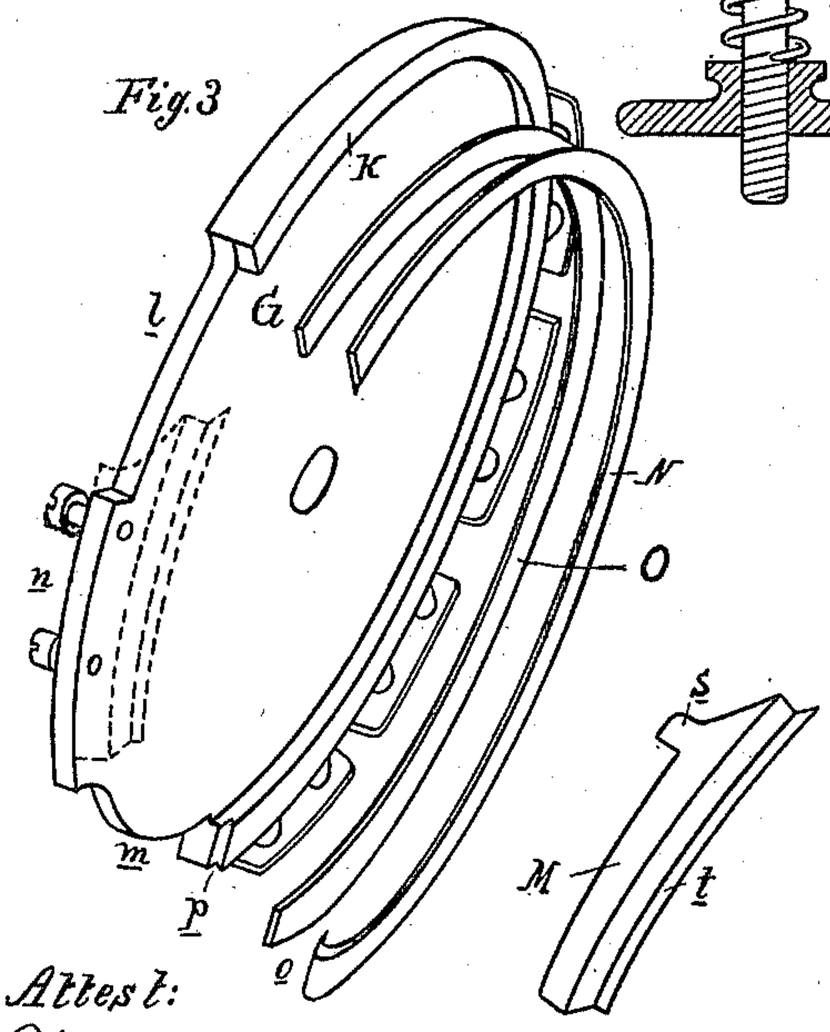
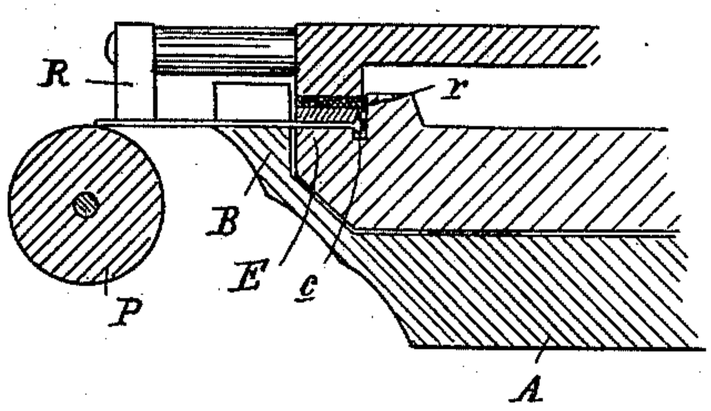


Fig. 4



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(No Model.) 2 Sheets—Sheet 2.

L. A. FONTAINE.

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Fig. 2

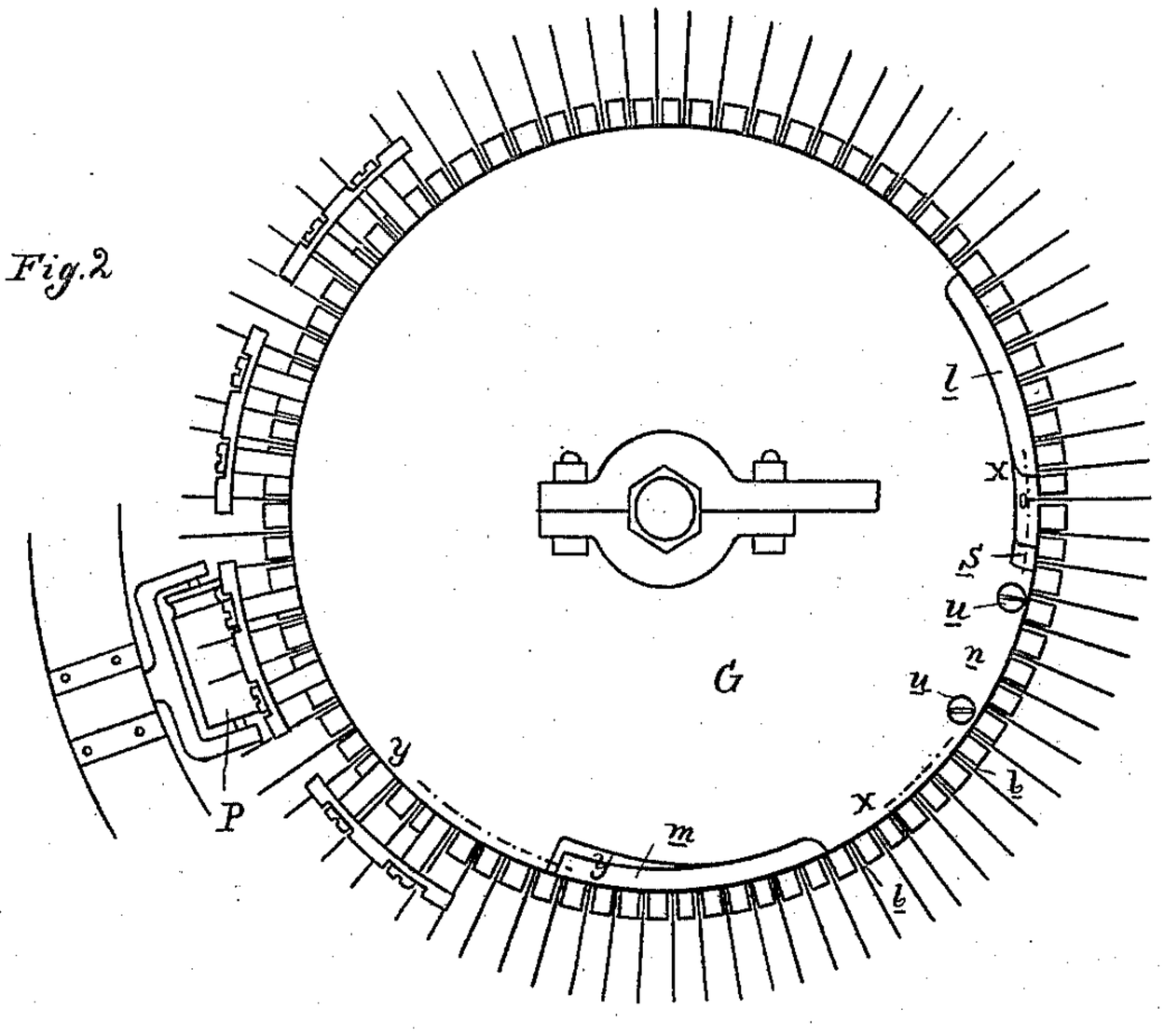


Fig. 6

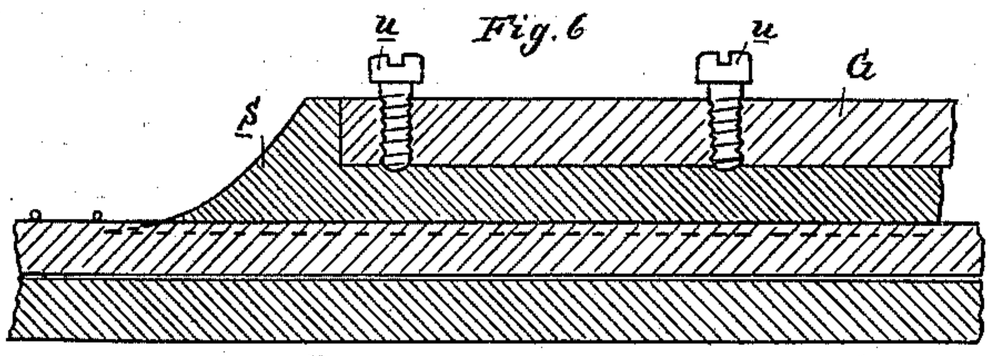
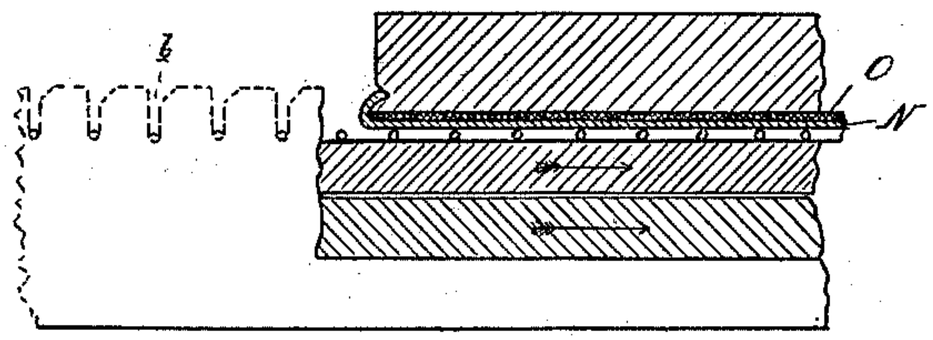


Fig. 5



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UNITED STATES PATENT OFFICE.

LOUIS A. FONTAINE, OF TOLEDO, OHIO.

PIN-MACHINE.

SPECIFICATION forming part of Letters Patent No. 330,220, dated November 10, 1885.

Application filed September 16, 1885. Serial No. 177,276. (No model.)

To all whom it may concern:

Be it known that I, LOUIS A. FONTAINE, of Toledo, in the county of Lucas and State of Ohio, have invented new and useful Improvements in Pin-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to a new and useful improvement in pin-machines; and it consists more specifically in an improved construction and arrangement of the revolving pin-carrier by means of which the pins are presented to the cutters for pointing, all as more fully hereinafter described.

In the drawings which accompany this specification, Figure 1 is a vertical central section of my improved pin-carrier. Fig. 2 is a plan view thereof. Fig. 3 is a detached perspective of certain parts more specifically hereinafter described. Fig. 4 is a part of Fig. 1 on a larger scale. Fig. 5 is a section on line *y y* in Fig. 2. Fig. 6 is a section on line *x x* in Fig. 2.

A is a circular turn-table having an annular raised rim, B, which is provided with a series of radial slits, *b*, (see Figs. 2 and 5,) into which the pins to be operated upon are inserted, as will appear hereinafter.

D is a rotary disk fitted within and supported upon the turn-table A. It is provided at its outer edge with the annular friction-rail E, which terminates on the inside in a channel, *c*, adapted to accommodate the head of the pins, as shown, so that the adjoining part of the body of the pins may freely rest upon the friction-rail E. The turn-table A is secured on top of a hollow shaft, *a*, which is journaled vertically in a box, F. The rotary disk D is secured on top of a hollow shaft, *d*, which fits within the hollow shaft *a*. The turn-table A and rotary disk D receive motion by means of suitable drive-connections on their shafts. Both are revolved in the same direction, indicated by arrows, Fig. 5; but the disk D revolves about twice as fast as the turn-table, so as to increase the speed of rotation of the pins.

G is a stationary disk of the same diameter as the rotary disk D. It is held in position on top of the turn-table by means of a suitable arm or bracket, H. A rod or stem, I, is axially secured to said disk and projects downward and through the hollow shaft *d*. It is provided upon its free end with a coil-spring, *g*, the tension of which is regulated by a screw-nut, *h*, as shown. The rod I is detachably secured to the stationary disk G by means of the nut *i* and the taper-seat *k* upon the end of the rod. This arrangement facilitates the taking apart and putting together of the different parts of the device.

In Fig. 3 is shown a detached perspective view of the stationary disk G, looking at its under side, which shows it to be provided with the segmental bearing-flange K, which forms about two-thirds of a circle. On the remaining third the disk is cut away at two places, *l* and *m*, which leave between them the section *n* of the rim of the disk, to which the scraper M is secured, as hereinafter described. The bearing-flange K of the stationary disk G forms the bed of an upper friction-rail, N, which is the counter-rail to the friction-rail E on the rotary disk D. This friction-rail consists of a segment of a thin flat steel ring provided on one end with a hook, *o*, which hooks into a corresponding recess, *p*, on the end of the bearing-rail K, and its inner edge is cut away so that when in position it forms a channel, *r*, which is the counterpart of the channel *c* on the lower friction-rail. The upper friction-rail, N, is not placed in direct contact with the bearing-flange K; but a strip of some elastic or textile material, O, is placed between them, so as to make the friction-rail slightly elastic.

P are rotary steel cutters, of the kind commonly used for sharpening pins, and R are guards adjustably secured to the pressure-disk G—one guard for each cutter.

In practice, the parts being constructed and arranged as shown and described, the pins to be sharpened are so inserted into the radial slits *b* of the turn-table at the cut-away portion *m* of the pressure-disk G that the heads of the pins lie in the channel *c*, and with the pins sticking outwardly. The rotation of the turn-table soon carries the pins so inserted under the upper friction-rail above described, and if the coil-spring *g* is put under proper tension by means of the nut *h* the two friction-rails will bear against the upper and lower

sides of the pins and revolve them upon their axis. At the same time the progressive motion of the turn-table carries them over the cutters, and while the pins are subjected to their action the guards R keep their points in proper contact therewith. After the pins are thus sharpened the rotation of the turn-table carries them toward the scraper M. This scraper is inserted under the part *n* of the pressure-disk and rides upon the friction-rail E. It is provided on the under side with a flange, *t*, which tracks in the channel *c*, and, together with the lug *s*, near its head, keeps it from being displaced, while a pair of set-screws, *u u*, may be adjusted to bear against the top side of the scraper, so as to make it hug the friction-rail. The forward end of the scraper has an inclined face, so that when it strikes the pins in its track they will be lifted up and ejected from the slits in the turn-table.

Having now described the construction and operation of the machine, I will explain the peculiar advantage of my improvements, which refer to the following parts: The construction and arrangement of the upper friction-rail, of the pressure-disk G, of the guards R, and of the scraper.

Heretofore in machines of this kind the upper friction-rail was formed by the flange K, and the disk, instead of being solid, as now, was partially divided into segmental sections by a series of radial slits which did not quite extend to the center of the disk. This arrangement made each section of friction-rail slightly yielding, independent of the other sections, but it did not accomplish the result of my improved rail, which, by being slightly elastic, will conform itself to all the inequalities and allow each individual pin to come in proper contact with it, so as to keep it revolving. It also had the disadvantage that it destroyed the continuity of the rail. Moreover, the guards R had the disadvantage of yielding correspondingly with the respective sections of the stationary disk to which they were secured. In my improvement they are secured to a solid disk, and if they are once properly adjusted they will always remain so in operation.

It will be noticed that my scraper is not secured to the stationary disk, but is detached therefrom and rides freely upon the lower friction-rail, and is held in position by the stationary disk. This is important.

In the old arrangement the device for that purpose was rigidly secured to the stationary disk, and was therefore influenced by its varitions, so it would not always hug the lower friction-rail.

When it is considered that the perfect operation of device for revolving the pins and presenting them to the cutters for sharpening is absolutely necessary to produce sharp and well formed points, the value of my improvement over the old construction, which was defective in operation, will be readily conceded.

What I claim as my invention is—

1. In a pin-machine, the combination, with the devices for rotating the pins, of two friction-rails, one of which is elastic, substantially as and for the purposes specified.

2. In a pin-machine, the combination, with the devices for rotating the pins, of two continuous friction-rails, one of which is elastic its whole length, substantially as specified.

3. In a pin-machine, the combination, with the devices for rotating the pins, of an elastic upper friction-rail attached to the stationary part thereof, and consisting of a thin flat elastic metal ring and of an elastic and pliable fabric, substantially as described.

4. In a pin-machine for the purpose described, the combination of the stationary disk G, segmental ring N, and elastic bearing O, interposed between, substantially as specified.

5. The combination of the stationary disk G, having segmental bearing-flange K and recess *p*, of the segmental ring N, having hook *o*, and of the elastic bearing O, all arranged substantially as specified.

6. In a pin-machine, the combination of a solid stationary disk, G, an elastic friction-rail, and the guards R, secured to said solid disks, substantially as specified.

7. In a pin-machine, the detached scraper M, arranged to rest upon the lower friction-rail and held in position by the stationary disk G, substantially as described.

LOUIS A. FONTAINE.

Witnesses:

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E. J. SCULLY.