No. 829,555. PATENTED AUG. 28, 1906.

F. J. TEMPLE & J. HOEHN.

FRICTION CLUTCH.

APPLICATION FILED MAR. 15, 1906.

2 SHEETS—SHEET 1.

Fig. 1

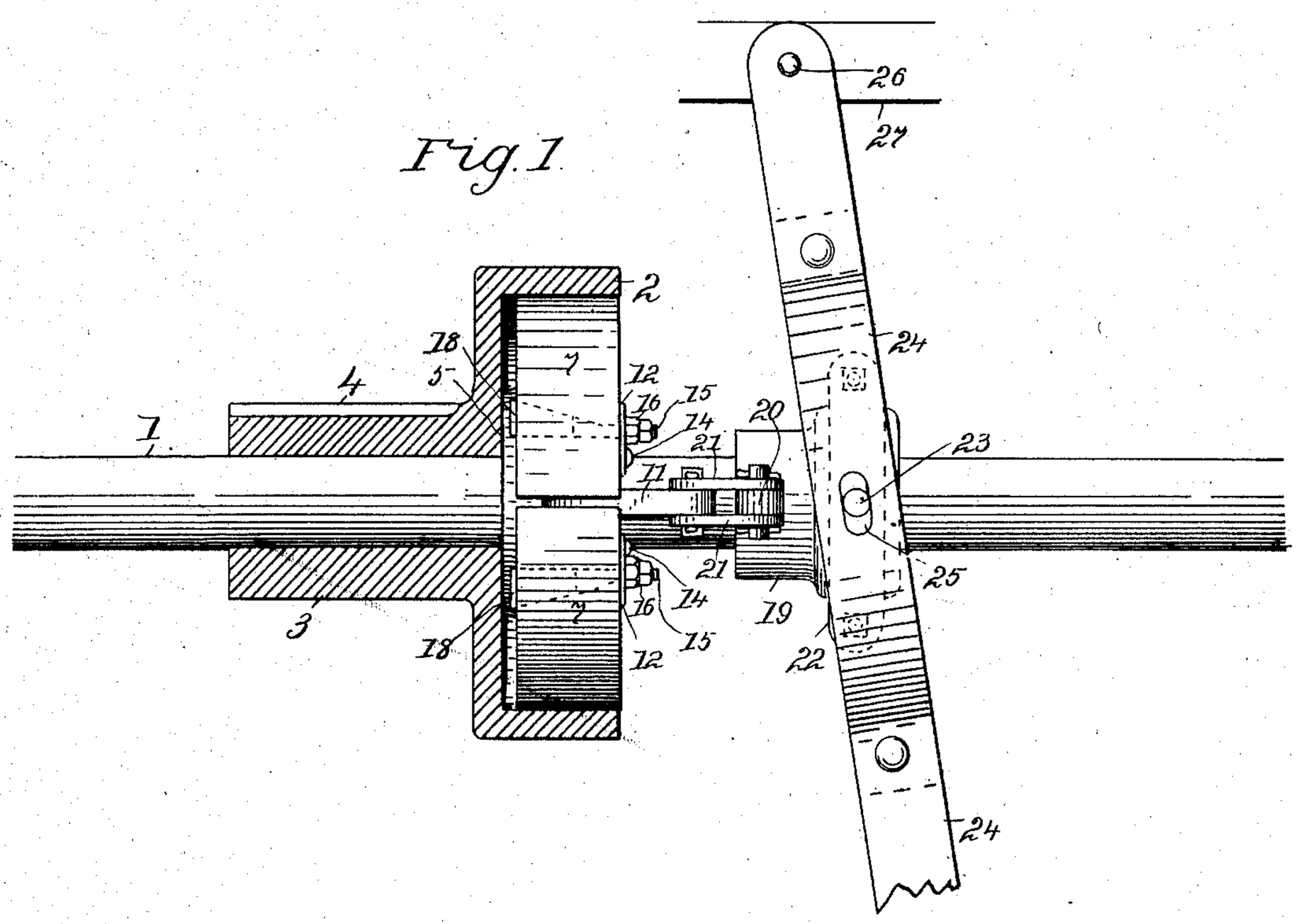
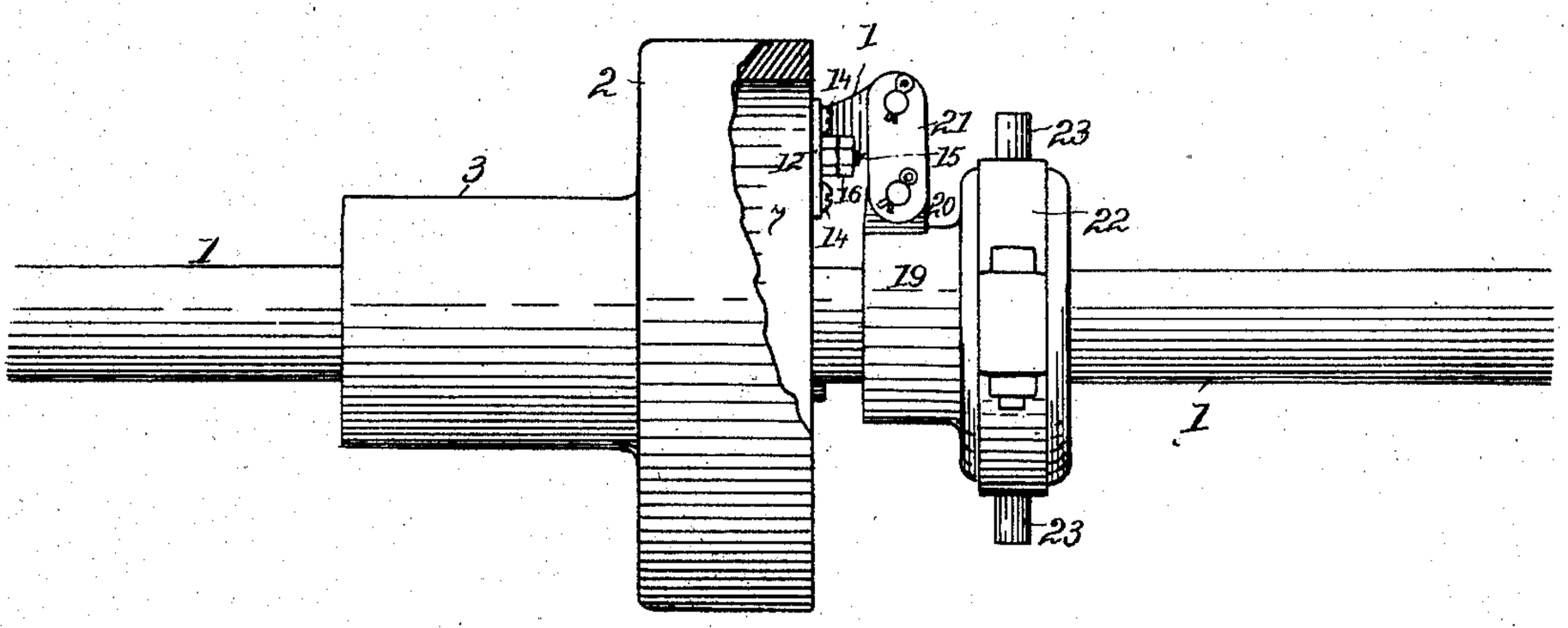


Fig. 2.



Witnesses.

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2 SHEETS—SHEET 2.

Fig. 3.

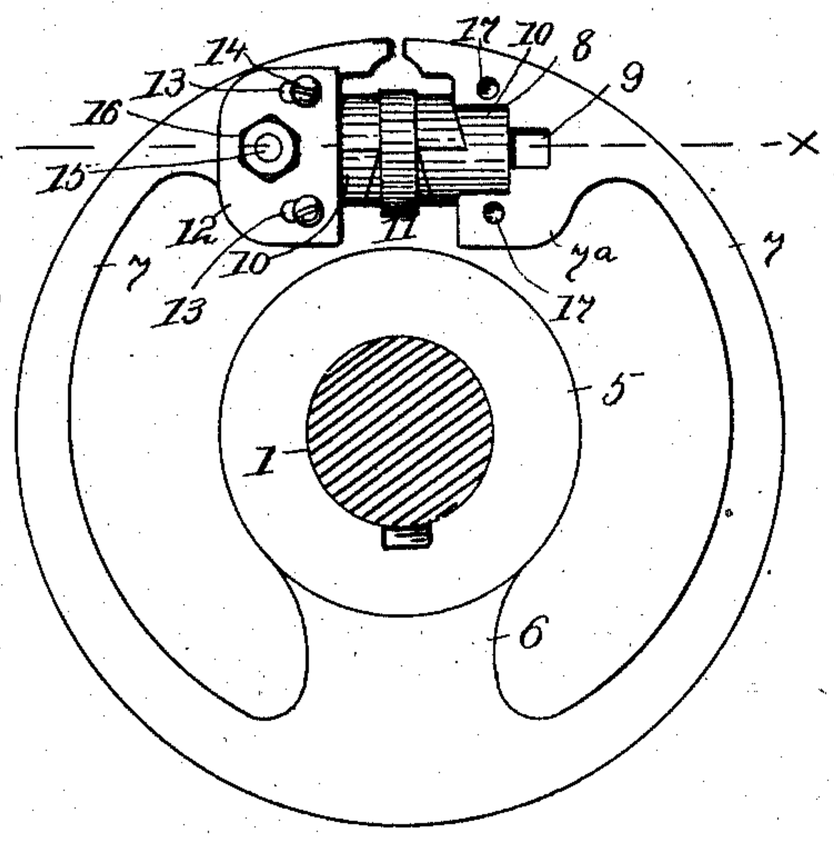

Fig. 4.

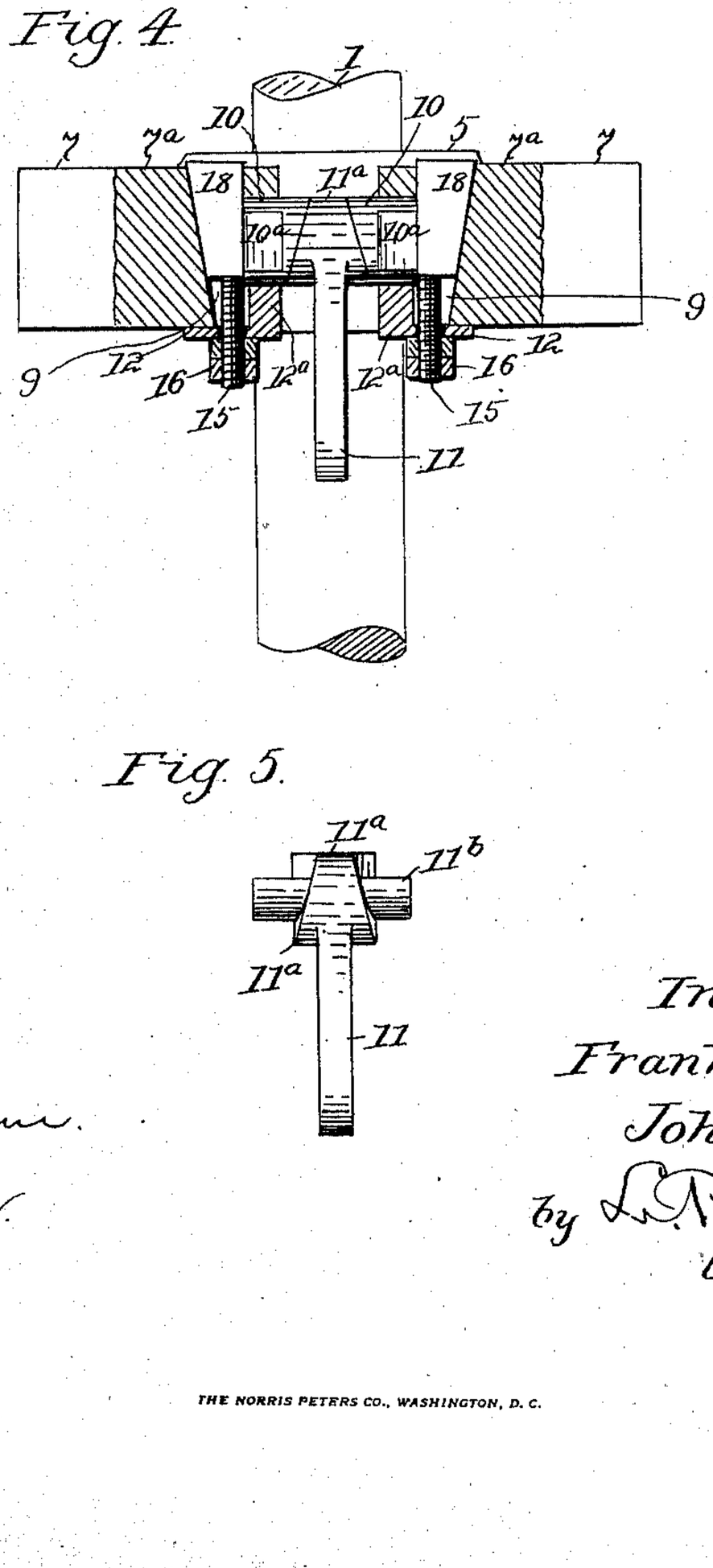

Fig. 5.

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UNITED STATES PATENT OFFICE.

FRANK J. TEMPLE AND JOHN HOEHN, OF DECATUR, ILLINOIS, ASSIGNORS TO UNION IRON WORKS, OF DECATUR, ILLINOIS, A CORPORATION OF ILLINOIS.

FRICTION-CLUTCH.

No. 829,555. Specification of Letters Patent. Patented Aug. 28, 1906.

Application filed March 15, 1906. Serial No. 306,287.

To all whom it may concern:

Be it known that we, FRANK J. TEMPLE and JOHN HOEHN, residents of the city of Decatur, county of Macon, and State of Illinois, have invented a certain new and useful Friction-Clutch, of which the following is a specification.

The object of this invention is to provide a simple and powerful friction-clutch that may be easily and quickly thrown in and out of engagement and that may be readily adjusted to compensate for wear.

The invention is exemplified in the structure hereinafter described, and it is defined in the appended claim.

In the drawings forming part of this specification, Figure 1 is a plan of a clutch embodying our invention, the flanged wheel being shown in section to expose the expansible ring therein. Fig. 2 is an elevation of the clutch, showing the toggle shifted to expand the ring. Fig. 3 is a face view of the expansible ring, showing a plate removed from an end of the split part of the ring to expose the ring-expanding appliances therein. Fig. 4 is a section on line X in Fig. 3. Fig. 5 is a detail of the ring-expanding member of the toggle-joint.

The flange-wheel 2 is journaled loosely on shaft 1 and is formed with a hub or sleeve 3, on which a pulley may be mounted and secured by means of a key in key-seat 4.

The hub 5 of the split ring is keyed onto the shaft, and the expansible extensions 7 of the ring are conjoined with the hub at a point opposite the split, as shown at 6 in Fig. 3. The conjoining ends of the split ring are enlarged, as shown at 7^a, and are recessed, as shown at 8. The recesses 8 are formed in a face of the split ring, and cam-collars 10 have bearings in the recesses.

Arm 11 forms a member of a ring-spreading toggle-joint, and it has cams 11^a, which coact with the cam-collars after the manner of a right-hand and left-hand screw-thread. A shaft 11^b extends axially through the cam-ring part of arm 11, and the cam-collars 10 are fitted onto the ends of the shaft. The cam-collars have plane surfaces 10^a on opposite sides of their inner ends, and these plane faces fit snugly in recesses 8 to hold the collars from turning.

Plates 12 are secured to the enlarged ends 7^a of the split ring by means of screws 14, and they have extensions 12^a, which close against the collars 10 and hold them in their recesses, as shown in Fig. 4.

Slots 9 are formed in enlargements 7^a back of recesses 8, and one side of each slot is at right angles with the face of the ring, while the other side of the slot is oblique. Wedges 18 fit in slots 9 with their parallel sides against ends of the cam-collars 10, and threaded shanks 15 extend from the smaller ends of the wedges through holes in plates 12. Nuts 16 are screwed onto the outer ends of the threaded shanks or bolt extensions of the wedges, and they provide means for moving the wedges in the slots to take up play resulting from wear in the contacting surfaces and for securely holding the wedges in any desired position of adjustment. The screws 14 extend through holes 13 in plates 12 and are screwed into threaded holes 17 in the split ring. (Shown only in Fig. 3.)

A collar 19 is mounted slidably on shaft 1 and is provided with a lug 20. Links 21 connect pivotally with lug 20 and with the swinging end of arm 11. A strap 22 loosely encircles collar 19 in an annular groove thereof, and it is supplied with trunnions 23. A shift-lever 24 embraces the strap 22 and engages trunnions 23 through slots 25. A pivot-pin 26 on a fixed bar 27 forms a fulcrum for the lever 24.

The collar 19 is thrown to the position shown in Fig. 2 to spread the split ring into engagement with the flange-wheel, and the clutch is detached by moving the collar to the position shown in Fig. 1. The links 21 of the toggle-joint swing arm 11 on shaft 11^b, and the right and left screw-thread action of the arm on collars 10 forces the collars apart and expands the split ring. When the pressure is relieved, the ring contracts through its own elasticity.

When wear in the contact-surfaces makes adjustment necessary, the lock-nuts are loosened, the controlling-nuts are screwed onto the bolt extensions 15 until the wedges

force the cam-collars endwise to an extent to make the clutch operative, and the lock-nuts are retightened.

We claim as new and desire to secure by Letters Patent—

In a friction-clutch, a split ring having cam-collars in its separated ends, wedges set behind the cam-collars crosswise thereof, screw-threaded shanks on the wedges, nuts on the shanks for adjusting the wedges and a cam-arm rotatable between the cam-collars for forcing the separated arms apart.

In testimony whereof we sign our names in the presence of two subscribing witnesses.

FRANK J. TEMPLE.
JOHN HOEHN.

Witnesses:
MAX H. HURD,
T. B. EWING.