

No. 893,532.

PATENTED JULY 14, 1908.

M. MORTON & H. MANN.
SCRIBING MECHANISM.

APPLICATION FILED JAN. 27, 1906.

3 SHEETS—SHEET 1.

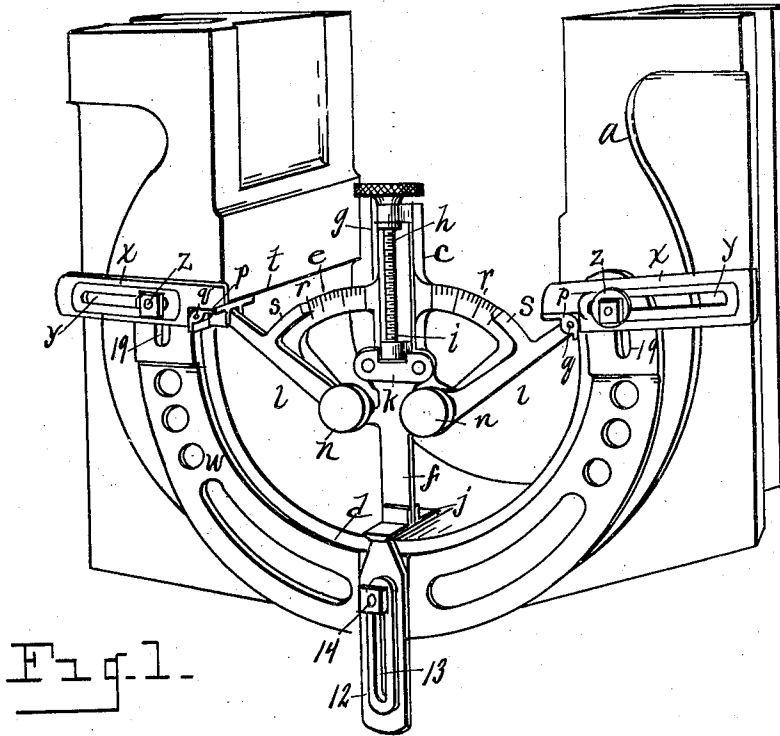


Fig. 1.

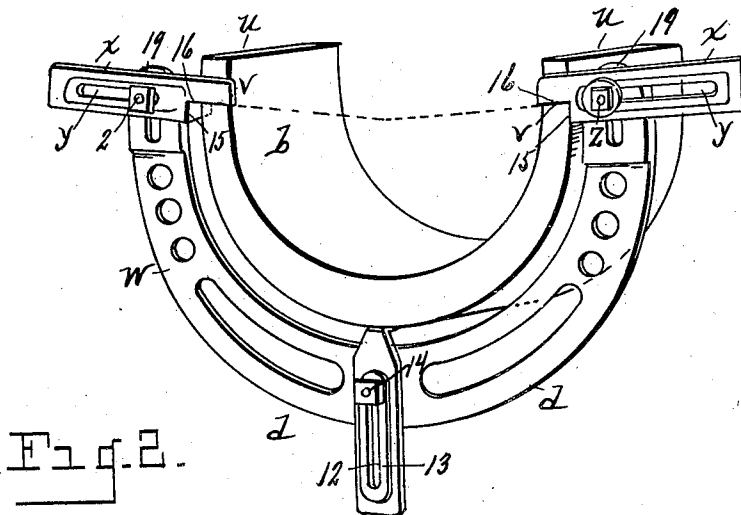


Fig. 2.

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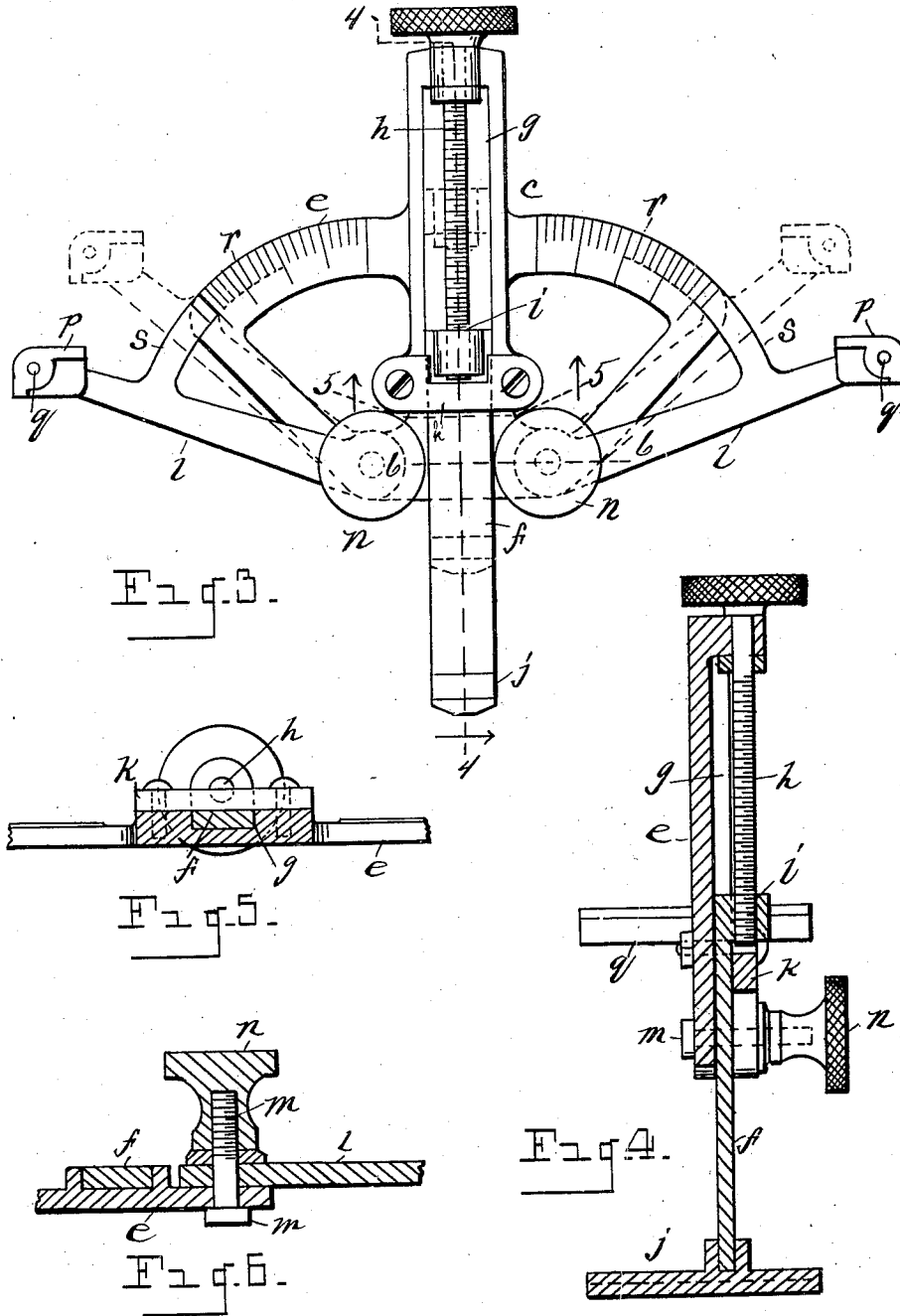
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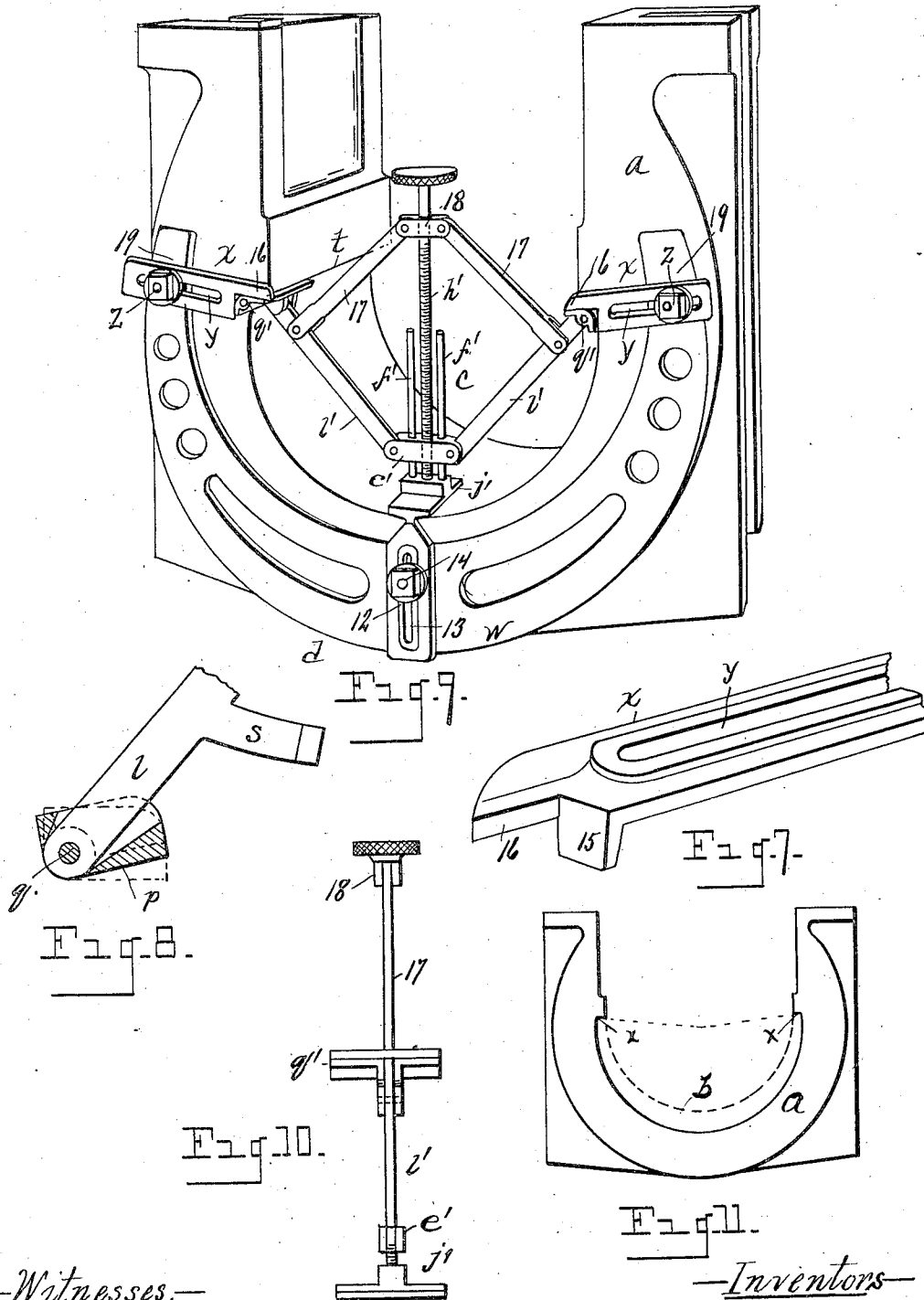
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3 SHEETS—SHEET 3.



—Witnesses.—

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UNITED STATES PATENT OFFICE.

MATTHEW MORTON, OF MUSKEGON HEIGHTS, AND HORACE MANN, OF MUSKEGON, MICHIGAN, ASSIGNORS TO MORTON MANUFACTURING COMPANY, OF MUSKEGON HEIGHTS, MICHIGAN, A CORPORATION OF MICHIGAN.

SCRIBING MECHANISM.

No. 893,532.

Specification of Letters Patent.

Patented July 14, 1908.

Application filed January 27, 1906. Serial No. 298,252.

To all whom it may concern:

Be it known that we, MATTHEW MORTON, a resident of Muskegon Heights, county of Muskegon, State of Michigan, and HORACE MANN, residing at Muskegon, county of Muskegon, State of Michigan, citizens of the United States, have invented a certain new and useful Improvement in Scribing Mechanism, of which the following is a specification, reference being had to the accompanying drawings, which form a part of this specification.

Our invention has for its object certain new and useful improvements in a scribing mechanism or device for laying out the work upon shells or brasses to be forced into locomotive driving boxes so that the work may be readily and accurately accomplished and when accomplished a perfect fit of the shell in the corresponding boxes will be assured.

We carry out our invention as hereinafter described and claimed and illustrated in the accompanying drawings in which

Figure 1 is a view in perspective of the scribing device as first applied to a driving box. Fig. 2 is a separate view in perspective of the arc shaped frame with its attachments applied to a shell. Fig. 3 is a plan view of the supporting frame or web with its attachments. Fig. 4 is a view in section on the line 4—4, Fig. 3. Fig. 5 is a view in section on the line 5—5, Fig. 3. Fig. 6 is a view in section on the line 6—6, Fig. 3. Fig. 7 is a view in perspective showing one of the adjustable arms of the arc shaped frame. Fig. 8 is a fragmentary view partly in section showing the jointed engagement of one of the feet upon the extremity of one of the swinging arms. Fig. 9 is a view in perspective illustrating a modification of the invention. Fig. 10 is a view from one edge or side of the scribing devices illustrated in Fig. 9, the driving box being omitted. Fig. 11 is a view in end elevation of a driving box.

Hitherto in fitting brasses or shells for a locomotive driving box no mechanism, it is believed, has ever been devised for accurately laying out the work to be done in fitting certain portions of the shells to insure a proper fit of the same in the corresponding driving box, the lack of said mechanism necessitating much waste of time in testing and measuring the work as it is being accomplished. By our improved device, however, we are enabled to so lay out the work for which our

improved scribing device is adapted, that no further testing or measuring is required to insure a perfect fit of the shell in the corresponding box, our improved mechanism enabling us to mark or scribe the shell in such a manner that the work can readily be carried on to the mark without difficulty or waste of time, and when the shell has been dressed to the mark a perfect fit thereof in the box will be provided.

Our invention therefore consists of the construction combination and arrangement of devices hereinafter described and claimed and illustrated in the accompanying drawings, in which

a represents a locomotive driving box into which a shell is to be driven, and *b* represents a shell to be scribed in readiness for the work to be further done thereupon to secure a proper fit of the shell in the box.

More particularly our invention aims to provide a device of this description where by the longitudinal edges of the shell may be accurately scribed so that said edges may be dressed down to secure a close fit of the shell in the box. Our invention embodies, first, a setting instrument *c* to be applied to the driving box, and second an adjustable instrument *d* to be adjusted by the setting instrument when in place in the driving box, the adjustable instrument being then removable from the setting instrument to be applied to the shell to be fitted, to properly mark or scribe the same. In the preferred form the setting instrument embodies a support or web indicated at *e* provided with a movable contact device or slide *f* movable upon the support, as in a guideway indicated at *g*, an adjusting screw *h* being employed having a threaded engagement with said slide as indicated at *i* for adjusting the slide. The slide is provided at its outer end with a foot *j*. A cross bar *k* serves to hold the slide *f* in the guideway *g*. Upon said support or web are also fulcrumed laterally swinging arms indicated at *l*, *l*, said arms being preferably fulcrumed upon the support by means of screws *m*, *m* and hand nuts *n*, *n*, so that the said arms may readily be disengaged from the support. The outer ends of the arms are provided with contact devices or feet *p* jointly connected therewith as indicated more particularly in Fig. 8 at *q* so that said feet may have a suitable oscillation. The support *e* is also provided with scales indicated

at r, r on each side of the guideway g , the swinging arms l being provided with index arms indicated at s, s traversing the corresponding scale.

5 It will be understood that the driving boxes are arc shaped on their inner peripheries, the curved or circular inner surfaces of the box terminating at longitudinal inwardly projecting shoulders indicated at t, t . It will
10 be further understood that the longitudinal extremities of the shells, indicated in Fig. 2 at u, u , are to be dressed down to snugly fit said shoulders t, t , the shells being driven into the corresponding box or forced into the
15 corresponding driving box under other suitable pressure. The thing to be accomplished by our improved mechanism is to accurately scribe or mark the extremities of the shell, as indicated, for example, at v, v , Fig. 2, so that
20 the extremities of the shell may be dressed down to said mark to insure the snug fit in the driving box desired. The setting instrument is applied to the driving box in the following manner. The feet p, p of the swing-
25 ing arms l, l , are located approximately against the shoulders t, t , of the driving box, or in the angle of said shoulders. Then the slide f is forced forward to cause this foot j to contact centrally with the curved portion of
30 the driving box, the action of forcing said slide f forward by means of the screw h tightening the feet p, p , of the swinging arms l, l , in the angles of the corresponding shoulders of the box. To insure the foot j being lo-
35 cated in a central position the index arms s, s , may be adjusted on the corresponding scales r uniformly, or to a uniform degree. The feet p, p and the foot j project outwardly beyond the face of the driving box.
40 The adjustable instrument d comprises essentially an arc shaped or circular frame indicated at w , provided toward its extremities with adjustable arms x, x , said arms being shown provided with elongated slots y , the
45 arms being engaged upon the extremities of the circular frame w by means of a screw z passed through the corresponding slot. The frame w is also provided with a central sliding arm indicated at the numeral 12, said
50 arm being also constructed with an elongated slot 13 and held in place on the frame by a screw 14. The arms x, x , are constructed with inwardly projecting shoulders 15 to en-
55 gage against the outer edge of the box, and with a shoulder indicated at 16 to be set on the line of the corresponding shoulder t of the box. The slide 12 is brought into contact with the foot j of the setting instrument.

When the arms of the instrument d have
60 been set against the feet p, p and j of the setting instrument, the instrument d is removed and applied to the shell, the arm 12 being located centrally against the outer periphery of the shell, as also the shoulders 15
65 of the arms x, x , the shoulders 16 projecting

across the shell in position for scribing the marks v .

To attach the setting implement for use with driving boxes of different sizes we prefer that the swinging arms l, l , should be
70 made removable so that arms of different lengths can readily be replaced upon the frame or web e which may readily be accomplished by loosening the nuts n, n . By such a construction our improved setting imple-
75 ment may be employed with driving boxes with all variations of measurements now in common use.

The modified form of the setting implement indicated in Figs. 9 and 10, accom-
80 plishes the same result as the setting instrument already described, and it has the more essential features from the same. The modified form of the setting instrument comprises swinging arms l', l' , each provided
85 with a swinging foot q' as in the setting instrument previously described, we have also an adjustable foot j' to be located centrally against the curved portion of the driving box, the feet q' being engaged in the angles
90 of the shoulders t, t , of the driving box. We have also here an adjusting screw h' to adjust the foot j' . Instead of engaging the swinging arms $l' l'$ upon a support or web of the form shown in Fig. 1, said arms, in the
95 present case, are jointly engaged with a support or bar e' , with which the screw h' has a threaded engagement whereby said bar may be raised and lowered and instead of the slide f working in a guideway we have, in the
100 present case, guide rods f', f' , working in the bar e' . The swinging arms $l' l'$ in the modified form are also jointly connected by toggle levers 17—17 with a connecting bar 18. The modified form of construction dis-
105 poses with the frame or web e and with the scales thereupon and the swinging arms $l' l'$ are consequently without the index arms s, s , employed in the preferred form of construction. It will be apparent, however, that the
110 generic features of the modified form of setting instruments are practically the same as those of the preferred form.

We prefer to construct the frame w with elongated slots toward its extremities indi-
115 cated at 19 Fig. 1 so that the corresponding arms x, x , may be adjusted lengthwise of the arc-shaped frame as well as transversely thereupon. The corresponding mechanism as a whole is obviously simple and efficient
120 while its construction and operations are also obviously simple.

It will readily be seen that by the manipulation of the adjusting screw h or h' , as the case may be, the contact feet will be ex-
125 panded into contact with the adjacent arms of the instrument d .

What we claim as our invention is:

1. An apparatus of the nature described comprising a support, laterally projecting
130

swinging arms fulcrumed to said support and oscillatory in opposite directions, contact devices jointly connected with the outer extremities of said arms to bear against the inner periphery of a locomotive driving box, and an intermediate adjustable contact device to bear against the inner periphery of the driving box at a point intermediate the contact devices of said laterally oscillatory arms.

2. An apparatus of the nature described comprising a movable support, laterally projecting arms fulcrumed to said support and oscillatory in opposite directions from said support, contact devices carried at the extremities of said arms to bear against the inner periphery of a locomotive driving box, and a contact device having an adjustable engagement with said support intermediate the fulcrum of said arms, and arranged to bear against the inner periphery of the driving box at a point intermediate the contact devices upon said arms.

3. An apparatus of the nature described comprising a support laterally projecting arms fulcrumed to the support oscillatory in opposite directions, contact devices carried

at the extremities of said arms to bear against the inner periphery of a locomotive driving box, an adjustable contact device carried by said support intermediate said arms arranged to bear against the inner periphery of the driving box at a point intermediate the laterally oscillatory arms, and a screw to adjust the intermediate contact device.

4. An apparatus of the nature described comprising a support, laterally projecting arms fulcrumed to the support oscillatory in opposite directions, contact devices carried at the extremities of said arms, an adjustable slide carried by said support provided with a contact device intermediate the contact devices upon said arms, and an adjusting screw engaged with said support to adjust said slide.

In testimony whereof, we have signed this specification in the presence of two subscribing witnesses.

MATTHEW MORTON.
HORACE MANN.

Witnesses:

J. A. FINHOLT,
ALEXANDER VAN ZANTEN.