

No. 789,771.

PATENTED MAY 16, 1905.

J. E. THOMÉ.

PROTECTING DEVICE FOR GRINDSTONES.

APPLICATION FILED MAR. 29, 1904.

3 SHEETS—SHEET 1.

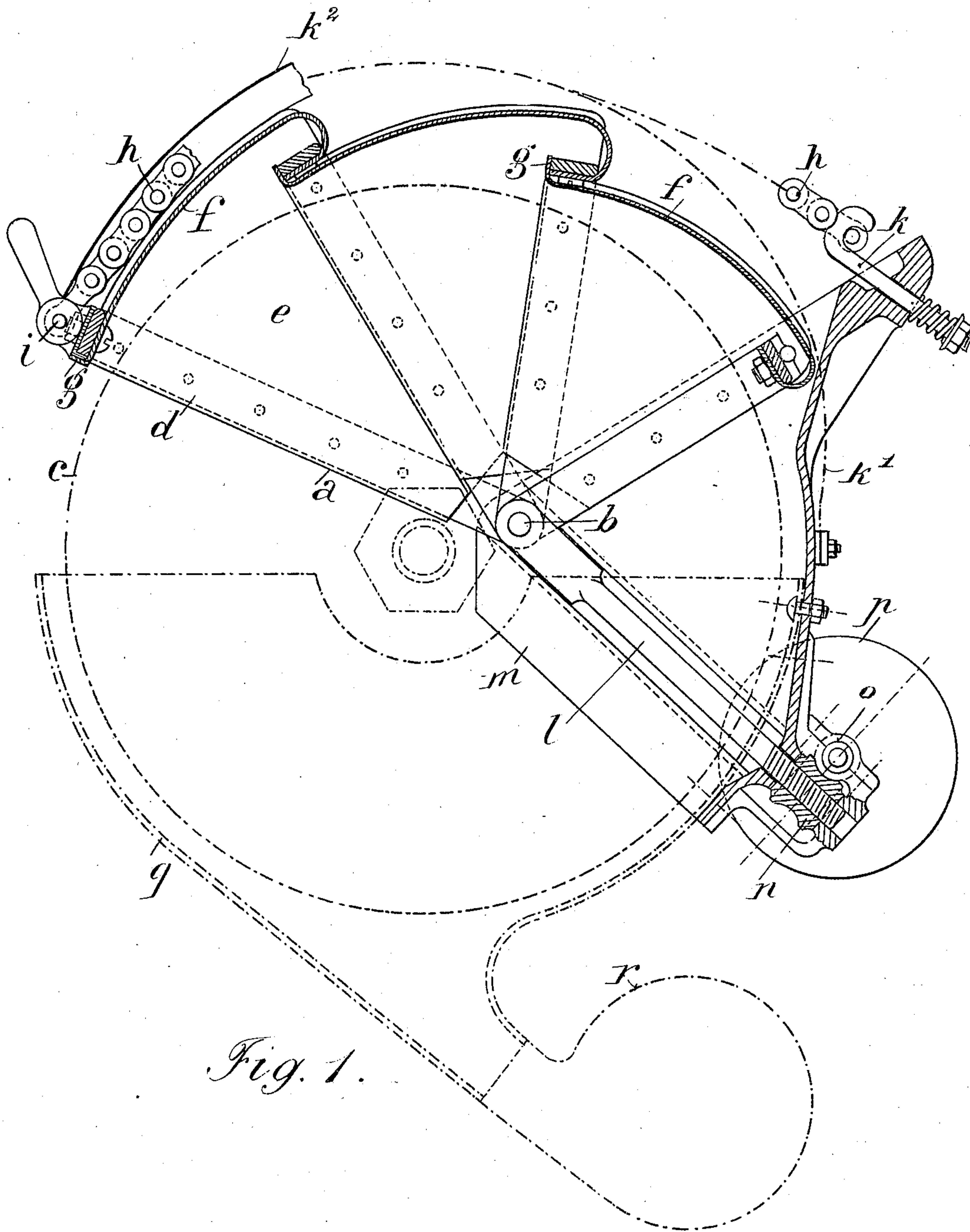


Fig. 1.

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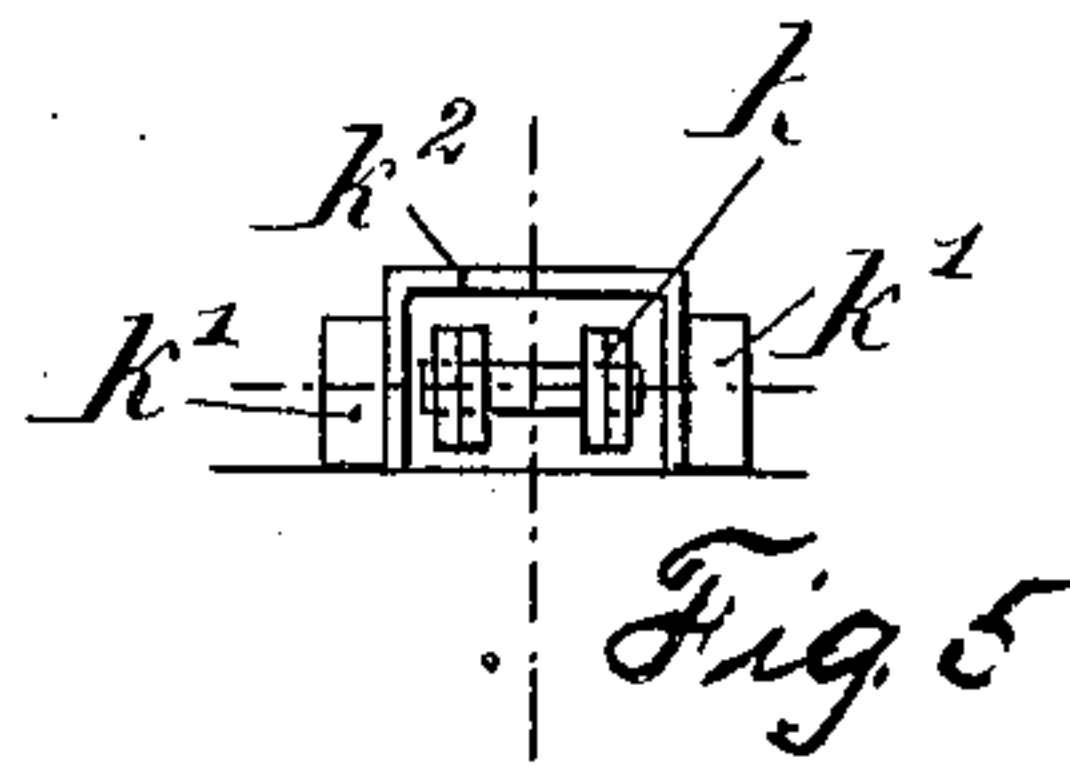
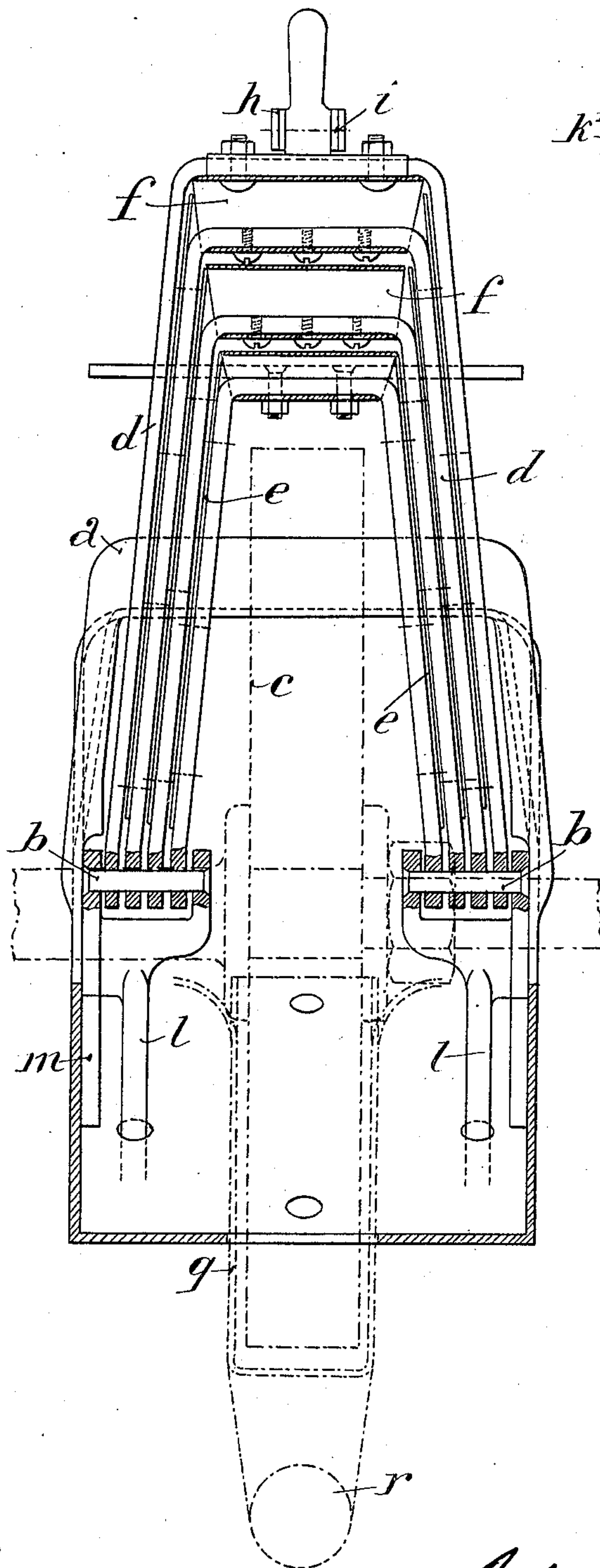


Fig. 2.

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3 SHEETS—SHEET 3.

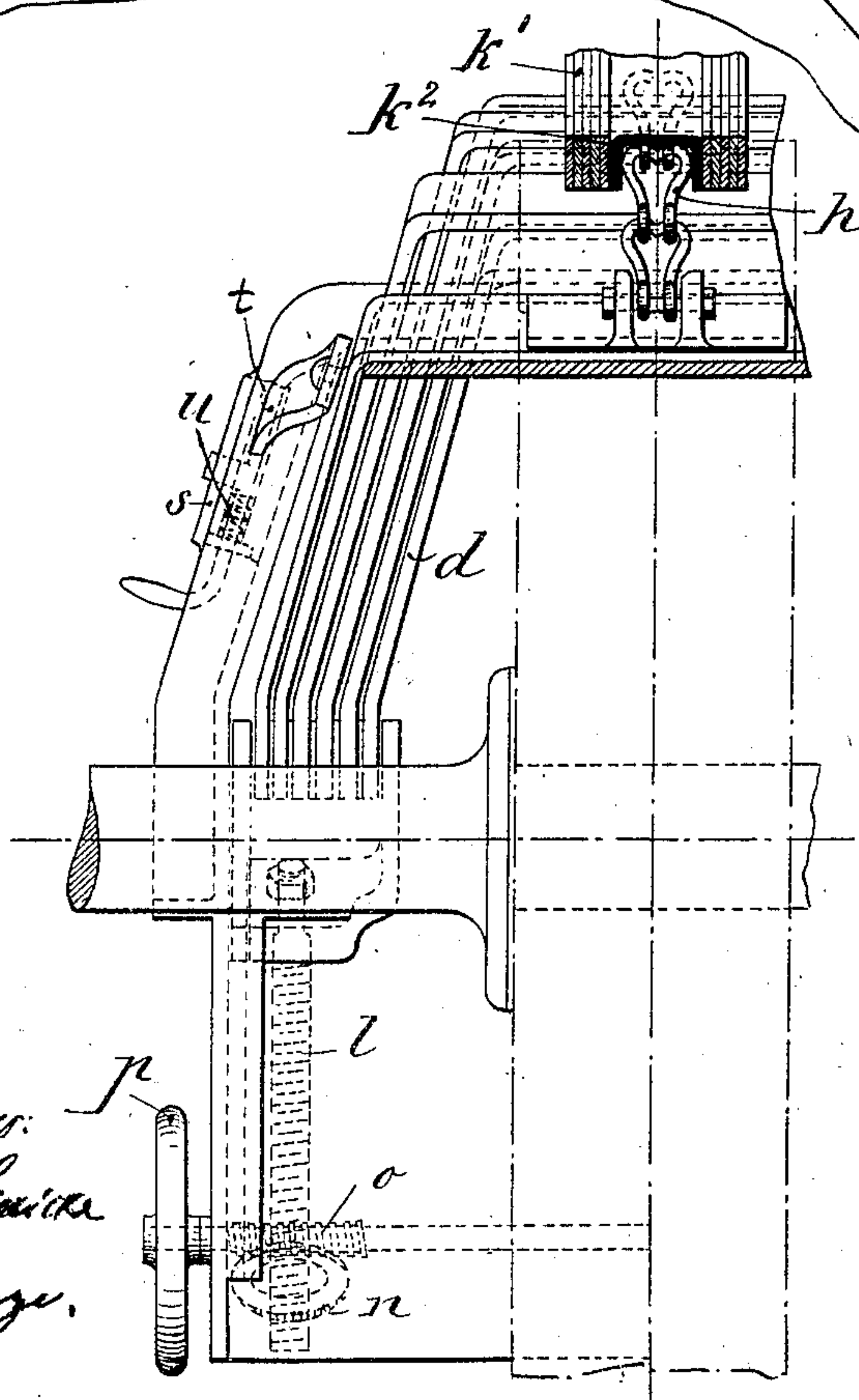
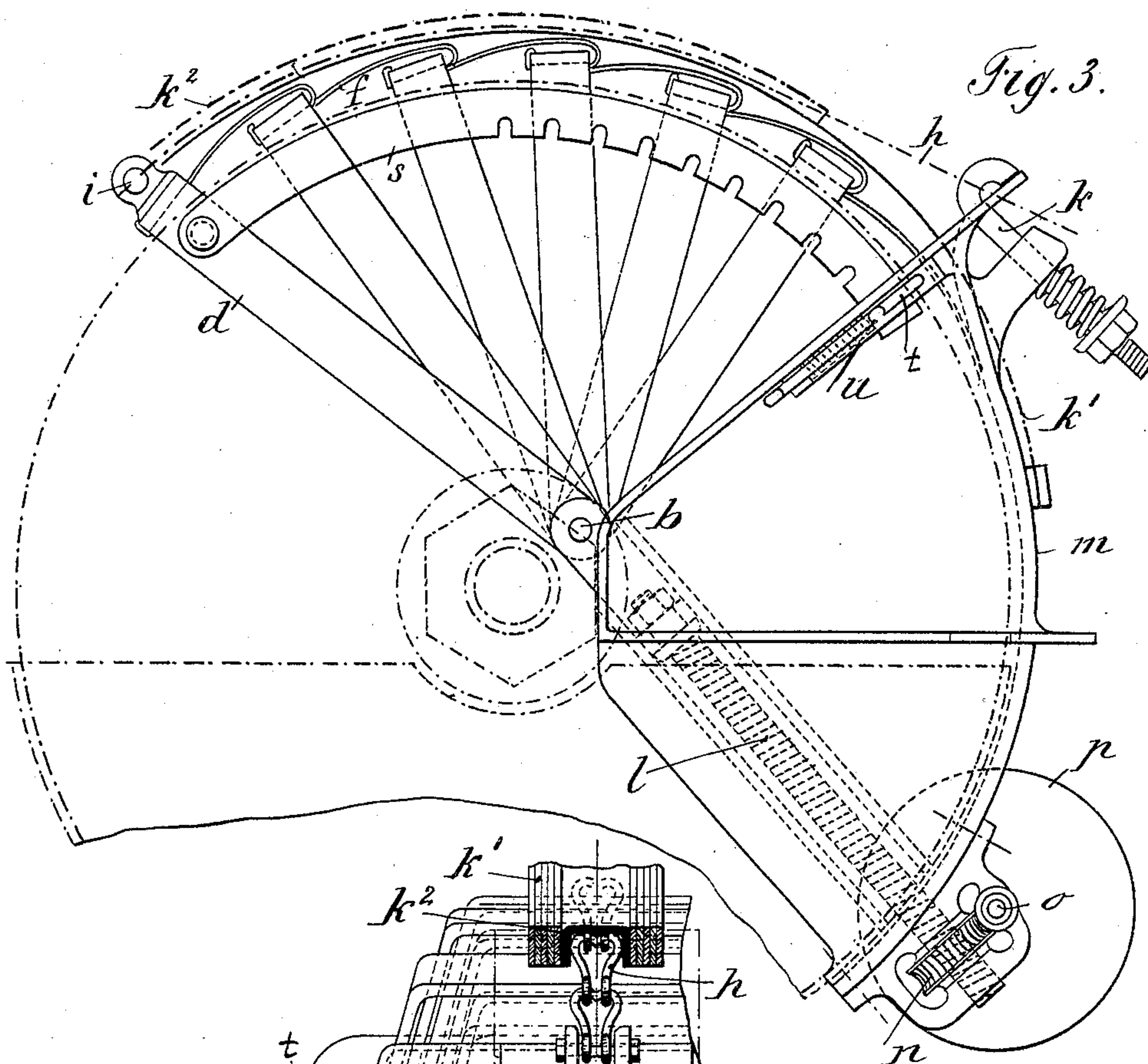


Fig. 4.

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UNITED STATES PATENT OFFICE.

JULIEN EMILE THOMÉ, OF NOUZON, FRANCE.

PROTECTING DEVICE FOR GRINDSTONES.

SPECIFICATION forming part of Letters Patent No. 789,771, dated May 16, 1905.

Application filed March 29, 1904. Serial No. 200,572.

To all whom it may concern:

Be it known that I, JULIEN EMILE THOMÉ, a citizen of France, residing at Nouzon, France, have invented an Improved Protecting Device for Grindstones, of which the following is a specification.

This invention relates to certain new and useful improvements in protecting devices for grindstones; and it has for its objects, among others, to provide a simple and efficient device for protecting grindstones in general, and particularly emery-wheels, such as rotate at a very high speed and are extremely dangerous on account of the accidental projection of their splints due to centrifugal force.

The device herein disclosed serves to protect the operator in case of bursting of the grindstone and is so constructed as to be readily folded like a carriage-top or folding fan. In connection therewith there are provided means for collecting the emery powder.

I aim also at improvements in details of construction, as will be hereinafter more specifically described.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of a grindstone to which my protector is applied, the latter being shown partly in section. Fig. 2 is a face view looking at the edge of the grindstone, with parts in vertical section. Fig. 3 is a side elevation showing a modified form of construction. Fig. 4 is a view at right angles to Fig. 3, showing practically one-half of the protector with portions in section. Fig. 5 is a detail of a portion of the belt.

Like letters of reference indicate like parts throughout the several views in which they appear.

Referring now to the details of the drawings by letter and referring first to Figs. 1 and 2, *a* designates the cap or protector, which is pivotally mounted at *b*, the pivot *b* being arranged upon opposite sides of the grindstone, as seen in Fig. 2, and the cap or protector composed of a plurality of arms *d*, which are bow-shaped, as seen in Fig. 2, being of such length that the connecting por-

tion easily frees or moves clear of the grindstone *c*, as will be evident from Fig. 2. The arms *d* are arranged, as seen in Fig. 2, equally spaced with their ends independently mounted on the pivot *b*, so that the arms may move to fold the cap like a folding fan when it is desired to close the same.

e designates spring-blades secured to and disposed between the arms *d*, as seen clearly in Figs. 1 and 2, while *f* designates strips of elastic or flexible material secured to and connecting the end or connecting portion of the arms *d* together, as clearly shown in Figs. 1 and 2. Any suitable means, as the screws shown, may be employed for thus securing the strips *f* to the arms.

In order to prevent the entire separation of the arms when the cap is unfolded, the strips *f*, which are of sufficiently-rigid material, are formed with the heels or right-angled portion *g* to contact with the edges of the connecting end portions of the bars or arms *d*, as seen clearly in Fig. 1. It will thus be readily understood how the cap or protector can be easily opened to cover the grindstone or closed when desired.

The cap is designed to fold at the rear, and in order to hold it in its different folding positions I provide a safety-chain *h*, attached at one end to a shaft, and a rod *i*, mounted on the connecting portion of the outer arm *d*, as shown clearly in Figs. 1 and 2, its other end being adjustably held by a hook engaging one of the links of the chain and passed loosely through an opening in the frame, as seen best in Fig. 1. This hook is provided with a nut on its outer end, while on the shanks of the hook between the said nut and the frame is a spring, as seen clearly in Fig. 1. This serves to relieve the device of the first shock in case of rupture. A belt *k*, preferably of buffalo leather, connected by a gusset *k*², as seen in Fig. 5, incloses the chain, as seen best in said Fig. 5, and serves to prevent the projection of any substances in case of rupture.

In case of rupture of the stone the spring-plates, the chain, and the protecting-belt cooperate to maintain in place the arms of the protector, which are subjected to the principal shock, and all these elements by forming

a triple protection and possessing a certain degree of elasticity will weaken in the desired manner the shock without liability of accident.

5 The cap or protector is capable of adjustment as occasion may require by the wearing away of the grindstone. For this purpose I provide screws *l*, one upon each side of the device mounted for movement through open-
 10 ings between the cheeks of the frame *m*, as seen in Fig. 2, the upper ends of said screws being formed into yokes, as best seen in Fig. 2, which receive the pivots *b*, on which the arms *d* are mounted. On the other ends of
 15 these screws are mounted pinions *n*, which are threaded upon the screw portions, as seen in Fig. 2. The ends of the screws are supported in yokes, as seen in Fig. 1, through
 20 openings in which they are free to move endwise. Motion is imparted to these screws to raise or lower the protector by means of a screw *o*, suitably mounted transversely of the frame and provided with a fly-wheel or hand-
 25 wheel *p*, as seen in Fig. 1, whereby it may be turned to impart simultaneous movement to the screw *l* through the medium of the pinion *n*.

The protector is designed as a whole to be portable and adapted to be placed over any
 30 grindstone and affixed to the frame thereof without difficulty.

In order to remove the dust and to prevent injury by the same, I provide a trough *q*, which receives the lower half of the grind-
 35 stone, as seen in Figs. 1 and 2, having a conductor portion leading to a fan-casing *r*, adapted to contain a suction-fan or aspirator of any known form, by which the dust may be drawn away from the grindstone and the fine
 40 emery collected when desired.

In Figs. 3 and 4 I have shown a somewhat modified form of construction, designed more especially for grindstones of large dimen-
 45 sions. In this instance I employ a greater number of arms *d* and form them of flat iron for strength and better resistance in case of rupture.

Upon each side of the device is a curved rack *s*, pivoted on the outer arm *d*, as seen in Fig.
 50 3, while *t* designates bolts adapted to engage the teeth of the racks, as shown. Springs *u* surround the shanks of the bolts, as shown, and handles are provided by which the bolts may be easily manipulated when desired. By this
 55 means the racks are securely locked to hold the cap or protector in its opened or partially-opened condition; but the bolts may be withdrawn and held out of engagement with the racks when desired, so as to allow of free
 60 movement of the cap or protector.

Other means than that shown in Fig. 1 may be employed in adjusting the protector. In Figs. 3 and 4 I have shown one form. A
 65 double endless screw *o* is fixed on the shaft of the fly-wheel *p* and engages the threaded pin-

ions *n*, acting on the screws *l*, the result being the same as obtained by the construction shown in Fig. 1. Other means for accomplishing this end may be employed, if desired.

What is claimed as new is—

1. A protecting device for grindstones comprising a plurality of arms mounted on pivots common to all of them, plates connecting the arms at the outer ends thereof, and means supporting said pivots for adjustably supporting
 75 the protector.

2. A protecting device for grindstones comprising a plurality of arms mounted on pivots common to all of them, plates connecting the arms at the outer ends thereof, and means supporting said pivots for adjustably supporting
 80 the protector, and means for locking said arms in adjusted position.

3. A protecting device for grindstones comprising a plurality of arms mounted on pivots common to all of them, plates connecting the arms at the outer ends thereof, and means supporting said pivots for adjustably supporting
 85 the protector and a chain for holding said protector in its different positions.

4. A protecting device for grindstones comprising a plurality of arms mounted on pivots common to all of them, plates connecting the arms at the outer ends thereof, and means supporting said pivots for adjustably supporting
 95 the protector and a chain for holding said protector in its different positions, and means for adjusting said chain.

5. A protecting device for grindstones comprising a plurality of arms mounted on pivots common to all of them, plates connecting the arms at the outer ends thereof, and means supporting said pivots for adjustably supporting
 100 the protector and a chain for holding said protector in its different positions, and means for adjusting said chain, and a protecting-belt covering said chain.

6. A protecting device for grindstones comprising a plurality of arms mounted on pivots common to all of them, plates connecting the
 110 arms at the outer ends thereof, and means supporting said pivots for adjustably supporting the protector and a chain for holding said protector in its different positions, and means for adjusting said chain, and yielding means
 115 for compensating for the shock.

7. A protecting device for grindstones comprising a plurality of arms mounted on pivots common to all of them, means connecting the arms at the ends, and plates mounted on said
 120 connecting means and extending from one to the other thereof.

8. A protecting device for grindstones comprising a plurality of arms mounted on pivots common to all of them, means connecting the
 125 arms at the ends, and plates mounted on said connecting means and extending from one to the other thereof and having upturned end portions to engage said connecting means.

9. A protecting device for grindstones com- 130

prising a plurality of arms mounted on pivots common to all of them, means connecting the arms at the ends, and plates mounted on said connecting means and extending from one to the other thereof and having upturned end portions to engage said connecting means, and a chain connected with the outermost of said arms and having yielding connection with the frame.

10 10. A protecting device for grindstones comprising a plurality of arms mounted on pivots common to all of them, means connecting the arms at the ends, and plates mounted on said connecting means and extending from one to the other thereof and having upturned end portions to engage said connecting means and a chain connected with the outermost of said arms and having yielding connection with the frame, and a protecting covering for said chain.

15 11. In a device of the character described, simultaneously-adjustable screws, means for operating them, pivots mounted in the upper

ends of said screws, and a folding protector mounted on said pivots.

25 12. In a device of the character described, simultaneously-adjustable screws, means for operating them, pivots mounted in the upper ends of said screws, and a folding protector mounted on said pivots, and means for limiting the unfolding of the arms of the protector.

30 13. In a device of the character described, simultaneously-adjustable screws, means for operating them, pivots mounted in the upper ends of said screws, and a folding protector mounted on said pivots, and means for limiting the unfolding of the arms of the protector, and a chain connected at one end with the folding arms of the protector and at the other end yieldingly mounted.

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

JULIEN EMILE THOMÉ.

Witnesses:

VICTOR PRÉVOST,
HANSON C. COXE.